

Title 296 WAC

LABOR AND INDUSTRIES, DEPARTMENT OF

Chapters

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Chapter 296-05 WAC APPRENTICESHIP RULES

WAC	
296-05-316	Apprenticeship agreements—Standards requirements.

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) Explain the program sponsor's request for apprentices in the area covered by the apprenticeship standards established under these rules and a plan to include reasonable continuous employment.

(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 opportu-

nity 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.

(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. 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: Chapter 49.04 RCW. 07-22-096, § 296-05-316, filed 11/6/07, effective 1/1/08. Statutory Authority: RCW 49.04.010. 05-10-087, § 296-05-316, filed 5/4/05, effective 6/15/05. Statutory Authority: RCW 49.04.010 and 2001 c 204 (SHB 1234). 02-10-083, § 296-05-316, filed 4/29/02, effective 6/1/02. 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.]

Chapter 296-15 WAC

WORKERS' COMPENSATION SELF-INSURANCE RULES AND REGULATIONS

WAC

296-15-360

Qualifications of personnel.

WAC 296-15-360 Qualifications of personnel. (1) How does an individual initially become a department-approved claims administrator?

In order to become a department-approved claims administrator, an individual must first have a minimum of three years of experience in the administration of time loss claims under Title 51 RCW. The experience must have occurred within the five years immediately prior to the filing of the application.

An individual must then take and pass the department's "self-insurance claims administrator" test. After passing the test, an individual is designated a department-approved claims administrator. The initial designation of department-approved claims administrator is valid for five years.

(2) How does an applicant receive approval to take the test? To be approved to take the "self-insurance claims administration" test, an applicant must submit a completed application form to the department (Form F207-177-000). The application must be received by the department no less than forty-five days prior to the scheduled test date.

The department will review the application and determine if the applicant meets the minimum requirements to take the test. Notification of approval to take the test will be mailed to the applicant no less than fourteen days prior to the scheduled test date.

(3) What happens when an applicant fails the test? When an applicant fails the test, the applicant must reapply to take the test again. An applicant will not be permitted to

retake the test until six months have passed after the failed result.

The most recent test results will determine an individual's status as a claims administrator.

(4) How does a department-approved administrator maintain their approved status beyond the initial five-year designation? An administrator may maintain approved status by:

(a) Retaking and passing the "self-insurance claims administrator" test as outlined in subsection (1) of this section; or

(b) Providing documentation to the department that the individual has remained employed for a minimum of three of the last five years in the administration of, or the oversight of, claims under Title 51 RCW, and meeting the continuing education criteria.

To meet continuing education criteria, the administrator must submit verification to the department that a minimum of seventy-five credits have been obtained prior to lapse of the approved status. Extensions will not be granted.

Credits must be earned in the following categories:

- (i) Twenty claims process/procedure credits;
- (ii) Twenty legal credits;
- (iii) Twenty medical credits;
- (iv) Two ethics credits; and
- (v) Thirteen elective credits (e.g., industry-specific training).

The seventy-five credits must include any training designated as mandatory by the department. If an administrator fails to complete sufficient continuing education credits, he or she will be required to retake the written test.

Assignment of course credit will be determined by the department review committee.

(c) Individuals whose department-approved status expires between October 1, 2008, and September 30, 2012, and who exercise the continuing education option in lieu of retaking the test, must meet the following modified requirements. If the individual's certification expiration date falls between:

(i) 10/1/2008 - 3/31/2009: Earn a minimum of thirty credits (eight process/procedure credits, eight legal credits, eight medical credits, one ethics credit, and five elective credits);

(ii) 4/1/2009 - 9/30/2009: Earn a minimum of thirty-five credits (ten process/procedure credits, ten legal credits, ten medical credits, one ethics credit, and four elective credits);

(iii) 10/1/2009 - 3/31/2010: Earn a minimum of forty credits (eleven process/procedure credits, eleven legal credits, eleven medical credits, one ethics credit, and six elective credits);

(iv) 4/1/2010 - 9/30/2010: Earn a minimum of forty-five credits (twelve process/procedure credits, twelve legal credits, twelve medical credits, two ethics credits, and seven elective credits);

(v) 10/1/2010 - 3/31/2011: Earn a minimum of fifty credits (fourteen process/procedure credits, fourteen legal credits, thirteen medical credits, two ethics credits, and seven elective credits);

(vi) 4/1/2011 - 9/30/2011: Earn a minimum of fifty-five credits (fifteen process/procedure credits, fifteen legal cred-

its, fifteen medical credits, two ethics credits, and eight elective credits);

(vii) 10/1/2011 - 3/31/2012: Earn a minimum of sixty credits (sixteen process/procedure credits, sixteen legal credits, sixteen medical credits, two ethics credits, and ten elective credits);

(viii) 4/1/2012 - 9/30/2012: Earn a minimum of sixty-five credits (eighteen process/procedure credits, eighteen legal credits, eighteen medical credits, two ethics credits, and nine elective credits).

(5) How does an approved administrator report earned continuing education credit to the department?

Each department-approved administrator must track and report earned credits at the department's online data base. The approved administrator must obtain and retain signed verification of courses attended. Verification of earned credits must be received by the department by the date the approved administrator's certification expires. Extensions will not be granted.

The department may audit the reported credits of any approved administrator at random, or "for cause." Falsification of reported credits will result in revocation of the individual's approved administrator status, and may result in the department's refusal of future applications to take the self-insurance claims administrator test.

(6) The department-approved claims administrator must notify the department within thirty calendar days of the effective date of a change in mailing address, work location, or name.

[Statutory Authority: RCW 51.04.020, 51.14.020, 51.32.190, 51.14.090, and 51.14.095. 07-17-162, § 296-15-360, filed 8/22/07, effective 10/1/07; 06-06-066, § 296-15-360, filed 2/28/06, effective 4/1/06.]

Chapter 296-17 WAC

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

WAC

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DISPOSITION OF SECTIONS FORMERLY
CODIFIED IN THIS CHAPTER

296-17-86505	2007 Alternative claim-free experience modification calculation. [Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020, 07-12-045, § 296-17-86505, filed 5/31/07, effective 7/1/07.] Repealed by 07-24-046, filed 12/1/07, effective 1/1/08. Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020(1).
296-17-891	Table IV-A. [Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020, 07-12-045, § 296-17-891, filed 5/31/07, effective 7/1/07.] Repealed by 07-24-046, filed 12/1/07, effective 1/1/08. Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020(1).

WAC 296-17-31001 Introduction. WAC 296-17-31001 through 296-17-35204 provides rules applicable to workers' compensation insurance coverage (industrial insurance) that employers in the state of Washington must provide for their workers. We refer to these rules (WACs) as sections and the complete body of information as the *workers' compensation underwriting manual*. The workers' compensation underwriting manual contains sections (WACs) that define or explain:

- Words and phrases which we use
- Who the workers' compensation system applies to
- How to obtain workers' compensation coverage
- Why a classification system is necessary
- How our classification plan is designed
- How our classification approach compares to other states
- How we assign classifications to your business
- How we classify your business if a specific classification treatment is not referenced in our classification plan
- How employers report and pay premiums to us
- How we compute base rates
- Audit and recordkeeping requirements
- Experience rating plan
- Base rate tables.

[Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020, 07-12-045, § 296-17-31001, filed 5/31/07, effective 7/1/07. Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-31001, filed 8/28/98, effective 10/1/98.]

WAC 296-17-31002 General rule definitions. In developing the general reporting rules and classifications which govern Washington's workers' compensation classification plan, we have used certain words or phrases which could have several meanings. Many of these words or phrases are defined by law in the Revised Code of Washington (*Title 51 RCW*) and can be found in **Appendix A** of this manual. Some words, however, are not defined by law. To reduce the misunderstanding which can result by our use of certain words or phrases not defined in law (*Title 51 RCW*), we have developed definitions which will govern what these words and phrases mean for purposes of this chapter (*chapter 296-17 WAC*).

The following words or phrases mean:

Account: A unique numerical reference that we assign to you that identifies your business or businesses and allows us to track exposure that you report to us and losses (*claims*) which we pay on your behalf.

Account manager: An individual who works in the underwriting section of the department of labor and industries and manages an employer's workers' compensation

insurance account. An account manager is also referred to as an underwriter.

Actual hours worked: A worker's composite work period beginning with the starting time of day that the employee's 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 an employee. The following example is provided to illustrate how work hours are to be reported. If you have questions on reporting please contact our underwriting section at 360-902-4817.

Example: *A carpet installer arrives at the employer's place of business at 8:00 a.m. to pick up supplies, carpet, and the job assignment. The carpet installer arrives at the job site at 9:00 a.m. and works until 12 noon. The installer takes a half hour nonpaid lunch period and resumes working from 12:30 p.m. until 4:00 p.m. The installer then returns to the employer's premise to drop off supplies and carpet waste. The installer leaves the employer's premise at 5:30 p.m. The employer is to report nine hours of work time regardless of whether the employee is paid by the hour or by the number of yards of carpet installed.*

All: When a classification contains a descriptive phrase beginning with "all" such as in "all employees," "all other employees," "all operations," or "all work to completion," it includes all operations and employments which are normally associated with the type of business covered by the classification. This condition applies even if the operations or employments are physically separated or conducted at a separate location. Operations or employments are to be classified separately when the classification wording requires it, or when the operations or employments are not incidental to, and not usually associated with, the business described by the classification.

And: When this word is contained in any rule it is to be considered the same as the phrase "and/or."

Basic classification: A grouping of businesses or industries having common or similar exposure to loss without regard to the separate employments, occupations or operations which are normally associated with the business or industry. Basic classifications describe a specific type of business operation or industry such as mechanical logging, sawmills, aircraft manufacturing, or restaurants. In most business operations some workers are exposed to very little hazard, while others are exposed to greater hazard. Since a basic classification reflects the liability (*exposure to hazard*) of a given business or industry, all the operations and occupations that are common to an industry are blended together and included in the classification. The rate for a basic classification represents the average of the hazards within the classification. All classifications contained in this manual are considered basic classifications with the exception of classifications 4806, 4900, 4904, 5206, 6301, 6302, 6303, 7100, 7101, and temporary help classifications 7104 through 7122. Classification descriptions contained in WAC 296-17A-0101 through 296-17A-7400 establish the intended purpose or scope of each classification. These descriptions will routinely include types of businesses, operations, processes or employments which are either included or excluded from the classification. These references are not to be considered an all

inclusive listing unless the classification wording so specifies.

But not limited to: When this phrase is used in any rule in this manual it is not to be interpreted as an all inclusive list. Such a list is meant to provide examples of operations, employments, processes, equipment or types of businesses which are either included or excluded from the scope of the classification.

Excludes or excluding: When a classification contains a descriptive phrase beginning with "excludes" or "excluding" such as "excluding drivers or delivery," "excluding second hand appliance stores," or "excludes construction operations," you must report those operations in a separate classification. If a business fails to keep the records required in the auditing recordkeeping section of this manual and we discover this, we will assign all workers hours for which records were not maintained to the highest rated classification applicable to the work which was performed.

Exposure: Worker hours, worker days, licenses, material, payroll or other measurement which we use to determine the extent to which an employer's workers have been exposed to the hazards found within a particular business or industry classification.

Governing classification: Is the basic classification assigned to a business that produces the largest number of worker hours during a calendar year (*twelve months*). The governing classification rule applies only to situations where a business has been assigned two or more basic classifications and is used for the sole purpose of determining what classification applies to employees and covered owners who support two or more operations. The governing classification rule is not to be used to determine the basic classification of a business.

Includes or including: When a classification contains a descriptive phrase beginning with "includes" or "including" such as "including clerical office," "including meter readers," or "includes new construction or extension of lines," you must report these operations in that basic classification even though they may be specifically described by some other classification contained in this manual or may be conducted at a separate location.

Industrial insurance: Refer to the definition of "workers' compensation insurance."

N.O.C.: This abbreviation stands for not otherwise classified. Classifications are often worded in this way when there are many variations of the same general type of business and it would be nearly impossible to list all the variations. Before a classification designated with N.O.C. is used, all other related classifications must be reviewed to determine if the business or industry is specified in another classification.

Example: *You operate a retail store that sells greeting cards. In our search to classify your business we come across a classification that covers retail stores N.O.C. Before our underwriter assigns this classification to your business, they would look at other retail store classifications to see if a more precise classification could be found. In our review we note several classifications such as grocery and department stores where greeting cards are sold. None of these classifications, however, specify that they include stores that exclusively sell greeting cards. Classification 6406 "Retail stores, N.O.C.,"*

on the other hand, contains language in its description that states it includes stores that sell items such as greeting cards, table top appliances, tropical fish and birds, and quick print shops. We would assign classification 6406 "Retail stores, N.O.C." to your business.

Or: Refer to the definition of the word "and."

Premium: The total amount of money owed to the department of labor and industries as calculated by multiplying the assigned classification composite rate by the total units of exposure.

Rate: The amount of premium due for each unit of exposure. All rates are composite rates per worker hour except as otherwise provided for by other rules in this manual.

Risk: All insured operations of one employer within the state of Washington.

Temporary help: The term "temporary help" means the same as temporary service contractors defined in (*Title 19 RCW*) and applies to any person, firm, association or corporation conducting a business which consists of employing individuals directly for the purpose of furnishing such individuals on a part-time or temporary help basis to others.

Underwriter: Refer to the definition of an "account manager."

Work day: Any consecutive twenty-four hour period.

Work hour: Refer to the definition of "actual hours worked."

Workers' compensation insurance: The obligation imposed on an employer by the industrial insurance laws (*Title 51 RCW*) of the state of Washington to insure the payment of benefits prescribed by such laws.

[Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020, 07-12-045, § 296-17-31002, filed 5/31/07, effective 7/1/07. Statutory Authority: RCW 51.16.035, 51.16.100, 05-12-031, § 296-17-31002, filed 5/24/05, effective 7/1/05. Statutory Authority: RCW 51.04.020 and 51.16.035, 04-18-025, § 296-17-31002, filed 8/24/04, effective 10/1/04. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.12.120, 03-23-025, § 296-17-31002, filed 11/12/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-31002, filed 8/28/98, effective 10/1/98.]

WAC 296-17-31011 Classification system and plan.

(1) What is a workers' compensation classification system?

A workers' compensation classification system is an objective method of collecting money (*premiums*) to pay the benefits of workers injured on the job. We believe the method used to spread this cost among the employers we insure should be fair and have some relationship to their hazard and potential for loss. Classifications are the tool used to achieve a fair method of distributing the risk among employers we insure. Objective boundaries are established for each classification. These boundaries describe the types of businesses which are included in the classification, as well as the operations and employments routinely encountered. We refer to these objective boundaries as the scope of the classification. Once these boundaries have been defined, we can begin collecting information about the employers assigned to each classification. The information includes the exposure which is being covered (*risk*) and the losses (*claims*) which are related to these businesses. Next, we use this information to establish premium rates that employers in each industry will pay for their workers' compensation insurance. Our goal is to

produce fair insurance rates which reflect the hazardous nature of each industry. We have tailored our classification system in Washington to reflect industries found in our state. This makes our system responsive to change and provides rate payer equity to the employers we insure. Employers engaged in more hazardous industries such as logging will pay higher insurance rates than employers engaged in less hazardous businesses such as retail store operations.

(2) Why is a classification system needed?

We need a classification system to provide fair premium rates. Washington law (*RCW 51.16.035*) also requires us to have a classification system.

(3) Is the classification system the same as the classification plan?

No, we refer to the body of rules (*WACs*) which establish the general parameters of how classifications are to be used as the "classification system." These rules speak to the requirements of workers' compensation insurance and to our general classification approach, such as classifying by nature of business in the state of Washington, not by occupation of worker. The "classification plan" refers to all of the various classification descriptions which describe different types of business or industry. The classification system rules (*general rules*) will apply to all businesses unless another treatment is specifically provided for in the classification plan rules (*special rules*).

(4) How is our classification plan designed?

We have designed a plan which is keyed to the nature of the businesses or industries of the employers we insure. Our plan has over three hundred business or industry classifications. Each classification carries a premium rate which reflects the hazards that workers are exposed to. Descriptions of our classifications can be found in *WAC 296-17A-0101* through *296-17A-7400*.

(5) Is your classification approach similar to the approach used by private insurance companies?

Yes, we are required by law (*RCW 51.16.035*) to use the same classification (*underwriting*) approach used by private carriers.

[Statutory Authority: *RCW 51.06.035, 51.08.010, 51.04.020, 07-12-045, § 296-17-31011, filed 5/31/07, effective 7/1/07. Statutory Authority: RCW 51.16.035, 51.04.020, 00-14-052, § 296-17-31011, filed 7/1/00, effective 7/1/00. Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-31011, filed 8/28/98, effective 10/1/98.*]

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, 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 account 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 account manager to verify what other classifications would apply to the project. The name and phone number of your account 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 account 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 in good standing by confirming their status on the department's web site or contacting your account manager.

(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.

(10) What classification should I use to report construction site cleanup by my employees? You should report the cleanup of construction debris in the same classification that applied to the work which generated the debris unless another classification treatment is provided for in other rules. For example, if you are a roofing contractor and you have an employee pick up roofing debris at the construction (project) site, you would report the employee involved in the site cleanup in the roofing classification (0507). If you are the general contractor at a construction site and have either classification 0510 "wood frame building construction" or classification 0518 "nonwood frame building construction" assigned to your business, you would report site cleanup in the classification applicable to the type of building you are constructing. For example, if you are a general contractor and you are engaged in building a single-family wood frame dwelling, you would report construction site cleanup by your employees in classification 0510 "wood frame building construction."

(11) I am a construction site clean-up contractor, my employees only pick up construction debris, we do no construction work, what classification do I report site cleanup in? If your employees are collecting and/or removing construction site debris, you would report in classification 4305-22. If your employees are collecting and/or removing nonconstruction debris such as household junk, garden waste, basement debris, furniture and appliances, you would also report in classification 4305-22. If you have contracts to clean up construction debris and also provide preoccupancy clean up work and are not a construction contractor, then you can divide hours between the two risk classifications 4305-22 and 6602-03 providing accurate accounting records are kept for both activities.

(12) What classification should I use to report the work time of my employees when they are involved in the set up of scaffolding, hoists, cranes, towers or elevators at a construction site? We use the same classification treatment for this type of work as we do with construction site cleanup. For example, if you are a roofing contractor and you have an employee set up scaffolding at the construction (project) site, you would report the employee involved in the set up of scaffolding in the roofing classification (0507). If you are the general contractor at a construction site and have either classification 0510 "wood frame building construction" or classification 0518 "nonwood frame building construction" assigned to your business, you would report the set up of scaffolding at the construction in the classification applicable to the type of building you are constructing. For example, if you are a general contractor and you are engaged in building a single-family wood frame dwelling, you would report scaffolding set up by your employees in classification 0510 "wood frame building construction." Helicopter services that are engaged to assist in lifting beams, air condition-

ing units, statues and other objects onto buildings or structures are to be reported separately in classification 6803.

(13) **Is preoccupancy cleanup of a building by my employees classified the same as debris cleanup at a construction site?** Since your understanding of what preoccupancy clean-up work is may be different from ours, we need to share with you our understanding before we can answer this question. Our understanding in this area is that preoccupancy cleanup occurs after the building is finished. The clean-up work consists of washing paint and overspray from windows, vacuuming carpets, washing floors and fixtures, and dusting woodwork, doors and cabinets. If you have employees whose duties are limited to this type of cleaning, we will allow you to report their work time in classification 6602 "janitors."

(14) **If I have an employee who does some construction work, construction site cleanup and preoccupancy cleanup, can I divide their work time between the janitor and a construction classification?** No, we will not permit you to divide the work time of an employee between the janitor classification and a construction classification. If you have an employee who does preoccupancy clean-up work for you, and that employee also performs other nonpreoccupancy clean-up work for you such as construction work, shop work or construction site debris clean-up work, then you must report all of their work time in the applicable construction or nonshop classification.

[Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020, 07-12-045, § 296-17-31013, filed 5/31/07, effective 7/1/07. Statutory Authority: RCW 51.16.035, 51.16.100, 06-12-075, § 296-17-31013, filed 6/6/06, effective 1/1/07; 05-12-031, § 296-17-31013, filed 5/24/05, effective 7/1/05. Statutory Authority: 2004 c 243, RCW 51.04.020 and 51.16.035, 04-20-023, § 296-17-31013, filed 9/28/04, effective 11/1/04. Statutory Authority: RCW 51.04.020 and 51.16.035, 04-18-025, § 296-17-31013, filed 8/24/04, effective 10/1/04; 04-13-017, § 296-17-31013, filed 6/4/04, effective 7/5/04. 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 296-17-31018 Exception classifications. (1) What are exception classifications?

In *WAC 296-17-31012* we discussed our classification policy. We described the process used to classify risk and stated that we assign the basic classification or basic classifications that best describe the nature of your company's business. While this policy is modeled after the policy used by private insurance carriers and is geared to administrative ease for you, we recognize that there are some duties or operations where your employees do not share the same general workplace hazards that your other employees are exposed to. To provide for those operations that are outside the scope of a basic classification, we have created three types of exception classifications listed below:

- Standard exception classifications,
- Special exception classifications, and
- General exclusion classifications.

(2) What are the standard exception classifications?

Standard exception classifications cover those employments that are administrative in nature and common to many industries. Employees covered by a standard exception classification cannot be exposed to any operative hazard of the business. If the language of the basic classification assigned

to your business does not include these employments, you may be able to report them separately. The standard exception classifications are:

- Classification 4904 (*WAC 296-17A-4904*) "clerical office employment." This classification includes clerical, administrative, and drafting employees.
- Sales personnel classifications 6301 (*WAC 296-17A-6301*), and 6303 (*WAC 296-17A-6303*) includes outside sales personnel and messengers.
- Classification 7101 (*WAC 296-17A-7101*) applies to corporate officers who have elected optional coverage. A corporate officer as used in these rules is a person who is an officer in the corporation, such as the president, who also serves on the corporation's board of directors and owns stock in the corporation.
- Classification 7100 (*WAC 296-17A-7100*) applies to members of a limited liability company who have elected optional coverage.

Clerical office employees are defined as employees whose duties are limited to: Answering telephones; handling correspondence; creating or maintaining financial, employment, personnel, or payroll records; composing informational material on a computer; creating or maintaining computer software; and technical drafting. Their work must be performed in a clerical office which is restricted to:

- A work area which is physically separated by walls, partitions, or other physical barriers, from all other work areas of the employer, and
- Where only clerical office work as described in this rule is performed.

A clerical office does not include any work area where inventory is located, where products are displayed for sale, or area where the customer brings products for payment. Clerical office employees can perform cashiering and telephone sales work if they do not provide any retail or wholesale customer service that involves handling, showing, demonstrating, or delivering any product sold by the employer. Clerical office employees can make bank deposits, pick up and deliver mail at the post office, or purchase office supplies, if their primary work duties are clerical office duties as defined in this rule.

Sales personnel are defined as employees whose duties are limited to: Soliciting new customers by telephone or in person; servicing existing customer accounts; showing, selling, or explaining products or services; completing correspondence; placing orders; performing public relations duties; and estimating. Although some of sales person's duties may be performed in a clerical office, most of their work is conducted away from the employer's physical business location or in showrooms. We refer to work that takes place away from the employer's premises as "*outside sales*." Sales personnel whose duties include customer service activities such as, but not limited to, the delivery of product, stocking shelves, handling inventory, or otherwise merchandising products sold to retail or wholesale customers are excluded from all standard exception classifications. Sales personnel with duties such as delivery and stocking of shelves are to be reported in the basic classification applicable to the business unless the basic classification assigned to the business requires another treatment.

Messengers are defined as employees whose duties are delivering interoffice mail, making deposits, and similar

duties that are exclusively for the administration of the employer's business. Classification 6303 "messengers" does not include delivering mail or packages to the employer's customer or as a service to the public. If a messenger is engaged in delivering mail or packages as a service to the public they are to be assigned to the basic classification of the business or classification 1101 as applicable.

Corporate officers duties in classification 7101 must be limited to: Clerical duties; outside sales duties as described above; administrative duties such as hiring staff, attending meetings, negotiating contracts, and performing public relations work. To qualify for this classification, a corporate officer must:

- Be a shareholder in the corporation,
- Be elected as a corporate officer and empowered in accordance with the articles of incorporation or bylaws of the corporation,
- Serve on the corporation's board of directors,
- Not have any exposure to any operative hazard of the business, and
- Not directly supervise employees who have any exposure to any operative hazard of the business.

Members of a limited liability company (LLC) duties in classification 7100 must be limited to: Clerical duties; outside sales duties as described above; administrative duties such as hiring staff, attending meetings, negotiating contracts, and performing public relations work. This includes only those members who have duties and authority similar to the exemption criteria of corporate officers in RCW 51.12.020.

Classification 6303 may apply to a corporate officer or member of a limited liability company whose duties are limited to outside sales activities as described in the sales personnel section of this rule. Under no circumstance is classification 4904 to be assigned to any corporate officer or member of a limited liability company. You cannot divide the work hours of an employee between a standard exception classification and a basic classification unless it is permitted by another rule. If an employee works part of their time in a standard exception classification and part of their time in your basic classification, then all exposure (hours) must be reported in the highest rated basic classification applicable to the work being performed.

(3) What are the special exception classifications?

Special exception classifications represent operations found within an employer's business that are allowed to be reported separately when certain conditions are met. Assuming the conditions noted under each exception below have been met, the following classifications may be used even if your basic classification includes the phrases "all operations" or "all employees." These special exceptions are subject to a division of worker hours in connection with all other basic classifications unless specifically prohibited in an individual classification WAC rule.

Security guards - classification 6601 (*WAC 296-17A-6601*) will apply if the security guard:

- Is an employee of an employer engaged in logging or construction,
- Is for the purpose of guarding the employer's logging or construction sites,

- Is employed at the site only during the hours the employer is not conducting any other operations at the site,
- Has no other duties during their work shift as a security guard.

If all of the above conditions are not met, the security guard is to be reported in the basic classification applicable to the construction or logging operation being conducted.

Janitors - classification 6602 (*WAC 296-17A-6602*) will apply if:

- The janitorial/cleaning activities being performed are limited to the employer's clerical office,
- The clerical office meets the criteria described earlier in this rule, and
- The employer's office employment is assigned to be reported in classification 4904.

Construction: Superintendent or project manager - classification 4900 (*WAC 296-17A-4900*) will apply if the superintendent or project manager:

- Is an employee of a licensed contractor engaged in construction,
- Has no direct control over work crews,
- Performs no construction labor at the construction site or project location.

If all of the conditions are not met, the superintendent or project manager is to be reported in the basic classification applicable to the construction project.

Construction: Estimator - classification 4911 (*WAC 296-17A-4911*) will apply if the estimator:

- Is the employee of a licensed contractor engaged in construction, and
- Has no duties other than estimating during their work shift.

If these conditions are not met, the estimator is to be reported in the basic classification applicable to their employer's business or the construction project.

Log truck drivers - classification 5003 (*WAC 296-17A-5003*) will apply if the log truck driver has no other duties during their work shift that are subject to the logging classification 5001 (*WAC 296-17A-5001*).

(4) What are the general exclusion classifications?

General exclusion classifications represent operations that are so exceptional or unusual that they are excluded from the scope of all basic classifications. If you have these operations, we will assign a separate classification to cover them. You must keep accurate records of the work hours your employees work in these classifications. If you do not keep accurate time records for each employee performing work covered by a general exclusion classification, we will assign the work hours in question to the highest rated classification applicable to those hours. The general exclusion classifications are:

- Aircraft operations: All operations of the flying crew.
- Racing operations: All operations of the drivers and pit crews.
- Diving operations: All operations of diving personnel and ship tenders who assist in diving operations.
- New construction or alterations of the business premises.
- Musicians and entertainers.

A division of work time is permitted between a standard exception classification and flight crew operations, racing

operations, or diving operations. If you fail to keep original time records that clearly show the time spent in the office or in sales work, we will assign all work hours in question to the highest rated classification applicable to the work hours in question.

Example: Assume a corporate officer performs duties which are described in classification 7101. Occasionally, the officer flies a plane to attend a meeting. You would report the flying exposure (hours) of the corporate officer in classification 6803. The remainder of the corporate officer's time would continue to be reported in classification 7101.

[Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020, 07-12-045, § 296-17-31018, filed 5/31/07, effective 7/1/07. Statutory Authority: RCW 51.16.035, 51.16.100, 06-12-075, § 296-17-31018, filed 6/6/06, effective 1/1/07. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.12.120, 03-23-025, § 296-17-31018, filed 11/12/03, effective 1/1/04. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073, 99-24-055, § 296-17-31018, filed 11/29/99, effective 12/31/99. Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-31018, filed 8/28/98, effective 10/1/98.]

WAC 296-17-31021 Units of exposure. (1) What is a "unit of exposure?"

A unit of exposure is the measure which is used to help determine the premium you will pay. For most businesses the unit of exposure is the **hours** worked by their employees. Because not all employees are compensated based on the hours they work, we have developed reporting alternatives to make reporting to us easier. Those alternatives are outlined in subsection (2) of this section. In other cases, the department *may* authorize some other method in assuming workers hours for premium calculation purposes.

(2) What are the alternatives to actual hours worked? The exceptions are:

- **Apartment house managers, caretakers, domestic, home care or similar employees:** To determine the number of hours you need to report to us, divide an employee's total compensation, including housing and utility allowances, by the average hourly wage for the classification. The total number of work hours to be reported for each employee is not to exceed 520 hours per quarter. You will need to call us at (360) 902-4817 to obtain average hourly wage information.
- **Commission employees - outside (such as, but not limited to, real estate and insurance sales):** You must select one of the following methods to report your commission employees - outside:
 - Actual hours worked; or
 - Assumed hours of eight hours per day for part-time employees or one hundred-sixty hours per month for full-time employees.

All outside commission employees of an employer must be reported by the same method. You cannot report some outside commission employees based on the actual hours they work and others using the eight hours per day for part-time employees or one hundred-sixty hours per month for full-time employees method.
- **Drywall - stocking, installation, scrapping, taping, and texturing:** Premiums are based on material installed/finished rather than the hours it took to install/finish the drywall.
- **Horse racing - excluding jockeys:** Employers in the horse racing industry pay premiums based on a type of license their employees hold rather than the hours the employees work. Premiums are collected by the Wash-

ington horse racing commission at the time of licensing.

- **Jockeys:** Report ten hours for each race/mount or for any day in which duties are reported.
- **Pilots and flight crew members:** Pilots and flight crew members having flight duties during a work shift including preflight time shall have premium calculated by utilizing daily readings logged per federal requirements of the aircraft tachometer time: Provided, That if the total tachometer time for any day includes a fraction of an hour, the reportable time will be increased to the next full hour: Provided further, That pilots and flight crew members who assume nonflying duties during a work shift will have premium calculated in accordance with the appropriate rules and classifications applicable to nonflight duties.
- **Race car drivers:** Report ten hours for each race/heat.
- **Salaried employees:** You must select one of the following methods to report your salaried employees:
 - Actual hours worked; or
 - Assumed hours of one hundred-sixty hours per month.

All salaried employees of an employer must be reported by the same method. You cannot report some salaried employees based on the actual hours they work and others using the one hundred sixty hours per month method. Provided further, as in the case of contract personnel employed by schools and/or school districts, the school or school district shall report actual hours worked for each employee, one hundred sixty hours per month for each employee, or the department *may* authorize some other method in assuming workers hours for premium calculation purposes.

(3) Can I use assumed work hours for piece workers?

No, if you employ piece workers you must report the actual hours these individuals work for you unless another unit of exposure is required.

Example: If you have employees engaged in drywall work you would report and pay premiums on the basis of the square footage of the material they installed not the hours they worked.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324, 07-24-045, § 296-17-31021, filed 12/1/07, effective 1/1/08. Statutory Authority: RCW 51.16.035, 51.16.100, 05-23-161, § 296-17-31021, filed 11/22/05, effective 1/1/06. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.12.120, 03-23-025, § 296-17-31021, filed 11/12/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 51.04.020, 00-14-052, § 296-17-31021, filed 7/1/00, effective 7/1/00. Statutory Authority: RCW 51.16.035, 99-18-068, § 296-17-31021, filed 8/31/99, effective 10/1/99; 98-18-042, § 296-17-31021, filed 8/28/98, effective 10/1/98.]

WAC 296-17-352 Audits. An audit of the employer's books, records and payrolls performed pursuant to the authority contained in RCW 51.48.040 may include but will not be limited to:

(1) An audit to determine whether an employer engaged in a business or trade has employment subject to the industrial insurance laws.

(2) A visual inspection of the employer's workplace or places for the purpose of determining appropriate classifications in accordance with the industrial insurance laws and rules as set forth in chapter 296-17A WAC.

(3) Audits containing a complete and detailed examination of the employer's books and records for a specific period to establish the reporting of the employer's payroll in accordance with the industrial insurance laws and the rules as set

forth in chapter 296-17 WAC, and as well, chapter 296-15 WAC in the event the employer has been certified a self-insurer.

Except as otherwise provided in this rule any audit time period may be less than, but will not exceed, three years of the due dates of any payments from any employer where the department has requested submission of the employer's books, or three years of the due dates of any payments where the employer makes claim for adjustment, recomputation or alteration of any such payment: Provided, That an employer certified to self-insure pursuant to the authority contained in chapter 51.14 RCW, shall be subject to such audit as deemed necessary to guarantee its compliance with the industrial insurance laws and rules and regulations for self-insurers: Provided further, That an employer who fails to make any books and records, or certified copies thereof, available for audit in the state of Washington, will be charged for all costs incurred by the department in auditing any books and records maintained at other places: Provided further, That in any instance where fraud may be indicated with respect to underpayment or nonpayment of premiums the audit time period may be extended beyond that previously set forth.

[Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020, 07-12-045, § 296-17-352, filed 5/31/07, effective 7/1/07. Statutory Authority: RCW 51.16.035, 85-06-026 (Order 85-7), § 296-17-352, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.020(1) and 51.16.035, 78-12-043 (Order 78-23), § 296-17-352, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-352, filed 11/30/76; Order 76-18, § 296-17-352, filed 5/28/76, effective 7/1/76.]

WAC 296-17-35203 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(6).

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 sepa-

rate 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 due 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 canceled 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 entity that awarded the contract can verify the status of the contractors' account online at the department's web site (www.lni.wa.gov) or by calling the account manager. The landowner, firm, or contractor will not be released from premium liability 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 296-17A-5005.

(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 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) **What is the unit of exposure for drywall reporting?** Your premiums for workers installing and finishing drywall (reportable in risk classifications 0540, 0541, 0550, and 0551) are based on the amount of material installed and finished, not the number of hours worked.

The amount of material installed equals the amount of material purchased or taken from inventory for a job. No deduction can be made for material scrapped (debris). A deduction is allowed for material returned to the supplier or inventory.

The amount of material finished for a job equals the amount of material installed. No deduction can be made for a portion of the job that is not finished (base layer of double-board application or unfinished rooms).

Example: Drywall installation firm purchases 96 4' x 8' sheets of material for a job which includes some double-wall installation. The firm hangs all or parts of 92 sheets, and returns 4 sheets to the supplier for credit. Drywall finishing firm tapes, primes and textures the same job. Both firms should report 2,944 square feet (4 x 8 x 92) for the job.

(b) **I do some of the work myself. Can I deduct material I as an owner install or finish?** Yes. Owners (sole proprietors, partners, and corporate officers) who have not elected coverage may deduct material they install or finish.

When you as an owner install (including scrap) or finish (including tape and prime or texture) only part of a job, you may deduct an amount of material proportional to the time you worked on the job, considering the total time you and your workers spent on the job.

To deduct material installed or finished by owners, you must report to the department by job, project, site or location the amount of material you are deducting for this reason. You must file this report at the same time you file your quarterly report:

$$\text{Total owners hours} \div (\text{owners hours} + \text{workers hours}) = \text{\% of owner discount.}$$

$$\text{\% of owner discount} \times (\text{total footage of job} - \text{subcontracted footage, if any}) = \text{Total owner deduction of footage.}$$

(c) **Can I deduct material installed or finished by subcontractors?** You may deduct material installed or taped by subcontractors you are not required to report as your workers.

You may not deduct for material only scrapped or primed and textured by subcontractors.

To deduct material installed or taped by subcontractors, you must report to the department by job, project, site or location the amount of material being deducted. You must file this report at the same time you file your quarterly report. You must have and maintain business records that support the number of square feet worked by the subcontractor.

(d) I understand there are discounted rates available for the drywall industry. How do I qualify for them? To qualify for discounted drywall installation and finishing rates, you must:

(i) Have an owner attend two workshops the department offers (one workshop covers claims and risk management, the other covers premium reporting and recordkeeping);

(ii) Provide the department with a voluntary release authorizing the department to contact material suppliers directly about the firm's purchases;

(iii) Have and keep all your industrial insurance accounts in good standing (including the accounts of other businesses in which you have an ownership interest), which includes fully and accurately reporting and paying premiums as they come due, including reporting material deducted as owner or subcontractor work;

(iv) Provide the department with a supplemental report (filed with the firm's quarterly report) showing by employee the employee's name, Social Security number, the wages paid them during the quarter, how they are paid (piece rate, hourly, etc.), their rate of pay, and what work they performed (installation, scrapping, taping, priming/texturing); and

(v) Maintain accurate records about work you subcontracted to others and materials provided to subcontractors (as required by WAC 296-17-31013), and about payroll and employment (as required by WAC 296-17-35201).

The discounted rates will be in effect beginning with the first quarter your business meets all the requirements for the discounted rates.

Note: If you are being audited by the department while your application for the discounted classifications is pending, the department will not make a final decision regarding your rates until the audit is completed.

(e) Can I be disqualified from using the discounted rates? Yes. You can be disqualified from using the discounted rates for three years if you:

(i) Do not file all reports, including supplemental reports, when due;

(ii) Do not pay premiums on time;

(iii) Underreport the amount of premium due; or

(iv) Fail to maintain the requirements for qualifying for the discounted rates.

Disqualification takes effect when a criterion for disqualification exists.

Example: A field audit in 2002 reveals that the drywall installation firm underreported the amount of premium due in the second quarter of 2001. The firm will be disqualified from the discounted rates beginning with the second quarter of 2001, and the premiums it owed for that quarter and subsequent quarters for three years will be calculated using the nondiscounted rates.

If the drywall underwriter learns that 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 promptly, the drywall underwriter may refer your business for an audit.

If, as a result of an audit, the department determines your business has not complied with the conditions in this rule, your business will be disqualified from using the discounted classifications for three years (thirty-six months) from the period of last noncompliance.

(f) If I discover I have made an error in reporting or paying premium, what should I do? If you discover you have made a mistake in reporting or paying premium, you should contact the department and correct the mistake. Firms not being audited by the department who find errors in their reporting and paying premiums, and who voluntarily report their errors and pay any required premiums, penalties and interest promptly, will not be disqualified from using the discounted rates unless the department determines they acted in bad faith.

(7) Safe patient handling rule. The following subsection will apply to all hospital industry employers as applicable.

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

(i) "Hospital" means an "acute care hospital" as defined in (a)(ii) of this subsection, a "mental health hospital" as defined in (a)(iii) of this subsection, or a "hospital, N.O.C. (not otherwise classified)" as defined in (a)(iv) of this subsection.

(ii) "Acute care hospital" means any institution, place, building, or agency providing accommodations, facilities, and services over a continuous period of twenty-four hours or more for observation, diagnosis, or care of two or more individuals not related to the operator who are suffering from illness, injury, deformity, or abnormality, or from any other condition for which obstetrical, medical, or surgical services would be appropriate for care or diagnosis. "Hospital" as used in this rule does not include:

Hotels, or similar places furnishing only food and lodging, or simply domiciliary care; nor does it include

Clinics, or physicians' offices where patients are not regularly kept as bed patients for twenty-four hours or more; nor does it include

Nursing homes, as defined and which come within the scope of chapter 18.51 RCW; nor does it include

Birthing centers, which come within the scope of chapter 18.46 RCW; nor does it include

Psychiatric or alcoholism hospitals, which come within the scope of chapter 71.12 RCW; nor

Any other hospital or institution specifically intended for use in the diagnosis and care of those suffering from mental illness, mental retardation, convulsive disorders, or other abnormal mental conditions.

Furthermore, nothing in this chapter will be construed as authorizing the supervision, regulation, or control of the remedial care or treatment of residents or patients in any hospital conducted for those who rely primarily upon treatment by prayer or spiritual means in accordance with the creed or tenets of any well-recognized church or religious denominations.

(iii) "Mental health hospital" means any hospital operated and maintained by the state of Washington for the care of the mentally ill.

(iv) "Hospitals, N.O.C." means health care facilities that do not qualify as acute care or mental health hospitals and may be privately owned facilities established for purposes such as, but not limited to, treating psychiatric disorders and chemical dependencies or providing physical rehabilitation.

(v) "Safe patient handling" means the use of engineering controls, lifting and transfer aids, or assistance devices, by lift teams or other staff, instead of manual lifting to perform the acts of lifting, transferring and repositioning health care patients.

(vi) "Lift team" means hospital employees specially trained to conduct patient lifts, transfers, and repositioning using lifting equipment when appropriate.

(vii) "Department" means the department of labor and industries.

(b) Hospitals will report worker hours in the risk classification that describes the nature of their operations and either their level of implementation of, or need for, the safe patient handling program.

(c) A fully implemented safe patient handling program must include:

(i) Acquisition of at least the minimum number of lifts and/or appropriate equipment for use by lift teams as specified in chapters 70.41 and 72.23 RCW.

(ii) An established safe patient handling committee with at least one-half of its membership being front line, nonmanagerial direct care staff to design and recommend the process for implementing a safe patient handling program.

(iii) Implementation of a safe patient handling policy for all shifts and units.

(iv) Conducting patient handling hazard assessments to include such variables as patient-handling tasks, types of nursing units, patient populations, and the physical environment of patient care areas.

(v) Developing a process to identify appropriate use of safe patient handling policy based on a patient's condition and availability of lifting equipment or lift teams.

(vi) Conducting an annual performance evaluation of the program to determine its effectiveness with results reported to the safe patient handling committee.

(vii) Consideration, when appropriate, to incorporate patient handling equipment or the physical space and construction design needed to incorporate that equipment at a later date during new construction or remodeling.

(viii) Development of procedures that allow employees to choose not to perform or participate in patient handling activities that the employee believes will pose a risk to him/herself or to the patient.

(d) Department staff will conduct an on-site survey of each acute care and mental health hospital before assigning a risk classification. Subsequent surveys may be conducted to confirm whether the assigned risk classification is still appropriate.

(e) To remain in classification 6120-00 or 7200-00, a hospital must submit a copy of the annual performance evaluation of their safe patient handling program, as required by chapters 70.41 and 72.23 RCW, to the Employer Services

Program, Department of Labor and Industries, P.O. Box 44140, Olympia, Washington, 98504.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17-35203, filed 12/1/07, effective 1/1/08. Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020. 07-12-045, § 296-17-35203, filed 5/31/07, effective 7/1/07. Statutory Authority: RCW 51.16.035 and 51.16.-100. 06-23-127, § 296-17-35203, filed 11/21/06, effective 1/1/07; 05-23-161, § 296-17-35203, filed 11/22/05, effective 1/1/06. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.12.120. 03-23-025, § 296-17-35203, filed 11/12/03, effective 1/1/04. Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073. 02-09-093, § 296-17-35203, filed 4/17/02, effective 7/1/02. 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 296-17-855 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 expected losses for an average employer reporting the same exposures in each classification. The comparison shall contain actuarial refinements designed to weigh the extent to which the actual experience is credible, 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 factor shall be calculated from the formula:

$$\text{EXPERIENCE MODIFICATION FACTOR} = \frac{\text{Credible Actual Primary Loss} + \text{Credible Actual Excess Loss}}{\text{Expected Loss}}$$

Where

$$\text{Credible Actual Primary Loss} = \text{Actual Primary Loss} \times \text{Primary Credibility}$$

$$+ \text{Expected Primary Loss} \times (100\% - \text{Primary Credibility})$$

$$\text{Credible Actual Excess Loss} = \text{Actual Excess Loss} \times \text{Excess Credibility}$$

$$+ \text{Expected Excess Loss} \times (100\% - \text{Excess Credibility})$$

The meaning and function of each term in the formula is specified below.

For each claim, the actual primary loss is the first dollar portion of the claim costs, which has been shown in actuarial studies, to have the greater credibility in predicting future experience. These amounts are summed over all claims. For each claim in excess of \$20,112 the actual primary loss shall be determined from the formula:

$$\text{ACTUAL PRIMARY LOSS} = \frac{50,280}{(\text{Total loss} + 30,168)} \times \text{total loss}$$

For each claim, less than \$20,112 the full value of the claim shall be considered a primary loss.

For each claim, the excess actual loss is the remaining portion of the claim costs, which have been shown in actuarial studies to have less credibility in predicting future experience. The excess actual loss for each claim shall be determined by subtracting the primary loss from the total loss. These amounts are summed over all claims.

For any claim without disability benefits (time loss, partial permanent disability, total permanent disability or death) either actually paid or estimated to be paid, the total actual losses for calculating the primary loss and excess loss shall first be reduced by the lesser of \$1,640 or the total cost of the claim. Here are some examples for these claims:

Total Loss	Total Loss (after deduction)	Primary Loss	Excess Loss
200	-	-	-
2,000	360	360	-
20,000	18,360	18,360	-
200,000	198,360	43,643	154,717
2,000,000	502,800	47,434	455,366

Note: The deduction, \$1,640, is twice the average case incurred cost of these types of claims occurring during the three-year period used for experience rating. On average this results in reducing the average actual loss about seventy percent for these types of claims adjusted. This is done to help make the transition between the two different experience rating methods better by helping make the change in experience factor reasonable for small changes to the actual losses. The \$2,000,000 loss is limited by the Maximum Claim Value before the reduction of \$1,640 is applied.

For each employer, the primary credibility and the excess credibility determines the percentage weight given to the corresponding actual primary losses and the actual excess losses, included in the calculation of the experience modification, based on the volume of expected losses. Primary credibility and excess credibility values are set forth in Table II.

An employer's expected losses shall be determined by summing the expected loss for each of the three years of the experience period, which are calculated by multiplying the reported exposure in each classification during the year by the corresponding classification expected loss rate and rounding the result to the nearest cent. Classification expected loss rates by year are set forth in Table III.

Expected losses in each classification shall be multiplied by the classification "Primary-Ratio" to obtain "expected primary losses" which shall be rounded to the nearest cent. Expected excess losses shall then be calculated by subtracting expected primary losses from expected total losses rounded to the nearest cent. Primary-Ratios are also set forth in Table III.

[Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020 (1). 07-24-046, § 296-17-855, filed 12/1/07, effective 1/1/08; 06-24-054, § 296-17-855, filed 12/1/06, effective 1/1/07. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.32.073. 05-23-162, § 296-17-855, filed 11/22/05, effective 1/1/06; 04-24-025, § 296-17-855, filed 11/23/04, effective 1/1/05. Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, and 51.18.010. 03-24-066, § 296-17-855, filed 12/1/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 51.32.073, 51.18.010, and 51.04.020(1). 02-24-029, § 296-17-855, filed 11/27/02, effective 1/1/03. 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 296-17-86507 2007 Claim-free experience modification phase-in limitation. For calendar year 2007, if the experience modification factor using WAC 296-17-860 is greater than 100% of the experience modification factor using WAC 296-17-86505, then the experience modification factor shall be limited to 100% of the factor using WAC 296-17-86505.

[Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020. 07-12-045, § 296-17-86507, filed 5/31/07, effective 7/1/07.]

WAC 296-17-870 Evaluation of actual losses. Except as provided in the following subsections of this paragraph, actual losses shall include all payments as of the "valuation date" for each claim arising from an accident occurring during the experience period. Losses for claims open as of the valuation date may also include a reserve for future payments. Actual losses on claims for accidents occurring outside of the experience period shall not be included.

(1) **Valuation date.** The valuation date shall be on and include December 31, one year and one day immediately preceding the effective date of premium rates as set forth in WAC 296-17-895. For experience modifications effective January 1, 1990, and thereafter, the valuation date shall be June 1, seven months immediately preceding the effective date of premium rates.

(2) **Retroactive adjustments - revision of losses between valuation dates.** No claim value shall be revised between valuation dates and no retroactive adjustment of an experience modification shall be made because of disputation concerning the judgment of the claims examiner or because of subsequent developments except as specifically provided in the following cases:

(a) In cases where loss values are included or excluded through mistake other than error of judgment.

(b) In cases where a third party recovery is made, subject to subsection (4)(a) of this section.

(c) In cases where the claim qualifies as a second injury claim under the provisions of RCW 51.16.120.

(d) In cases where a claim, which was previously evaluated as a compensable claim, is closed and is determined to be noncompensable (ineligible for benefits other than medical treatment).

(e) In cases where a claim is closed and is determined to be ineligible for any benefits.

In the above specified cases retroactive adjustment of the experience modification shall be made for each rating in which the claim was included. Retroactive adjustments will not be made for rating periods more than ten years prior to the date on which the claim status was changed.

(3) **Average death value.** Each fatality occurring to a worker included within the mandatory or elective coverage of Title 51 RCW shall be assigned the "average death value."

The "average death value" shall be the average incurred cost for all such fatalities occurring during the experience period. The average death value is set forth in WAC 296-17-880 (Table II).

(4) Third-party recovery - effect on experience modification.

(a) For claims with injury dates prior to July 1, 1994, 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 actual losses until such time as the third-party action has been completed. If a third-party recovery is made after a claim had previously been used in an experience modification calculation, the experience modification shall be retroactively adjusted. The department shall compute a percentage recovery by dividing the current valuation of the claim into the amount recovered or recoverable as of the recovery date, and shall reduce both primary and excess losses previously used in the experience modification calculation by that percentage.

(b) For claims with injury dates on or after July 1, 1994, if the department determines that there is a reasonable potential of recovery from an action against a third party, both primary and excess values of the claim shall be reduced by fifty percent for purposes of experience modification calculation, until such time as the third-party action has been completed. This calculation 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 future experience modification calculations.

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

(d) Definitions:

(i) As used in this section, "recovery date" means the date the money is received at the department or the date the order confirming the distribution of the recovery becomes final, whichever comes first.

(ii) As used in this section, "recoverable" means any amount due as of the recovery date and/or any amount available to offset case reserved future benefits.

(5) Second injury claims. The primary and excess values of any claim which becomes eligible for second injury relief under the provisions of RCW 51.16.120, as now or hereafter amended, shall be reduced by the percentage of relief granted.

(6) Occupational disease claims. When a claim results from an employee's exposure to an occupational disease hazard, the "date of injury," for the purpose of experience rating, will be the date the disability was diagnosed and that gave rise to the filing of a claim for benefits. The cost of any occupational disease claim, paid from the accident fund and medical aid fund and arising from exposure to the disease hazard under two or more employers, shall be prorated to each period of employment involving exposure to the hazard. Each insured employer who had employed the claimant during the experience period, and for at least ten percent of the claim-

ant's exposure to the hazard, shall be charged for his/her share of the claim based upon the prorated costs.

(7) Maximum claim value. No claim shall enter an employer's experience record at a value greater than the "maximum claim value." The maximum claim value is set forth in WAC 296-17-880 (Table II).

(8) Catastrophic losses. Whenever a single accident results in the deaths or total permanent disability of three or more workers employed by the same employer, costs charged to the employer's experience shall be limited as required by RCW 51.16.130.

(9) Acts of terrorism. Whenever any worker insured with the state fund sustains an injury or occupational disease as a result of an incident certified to be an act of terrorism under the U.S. Terrorism Risk Insurance Act of 2002, the costs of the resulting claim shall be excluded from the experience rating computation of the worker's employer.

(10) Claims filed by preferred workers. The costs of subsequent claims filed by certified preferred workers will not be included in experience calculations, as provided in WAC 296-16-010.

(11) Life and rescue phase of emergencies: This provision applies to "emergency workers" of nongovernmental employers assigned to report in classification 7205 (WAC 296-17A-7205) who assist in a life and rescue phase of a state or local emergency (disaster). The life and rescue phase of an emergency is defined in RCW 51.16.130(3) as being the first seventy-two hours after a natural or man-made disaster has occurred. For an employer to qualify for this special experience rating relief, a state or local official such as, but not limited to, the governor; a county executive; a mayor; a fire marshal; a sheriff or police chief must declare an emergency and must request help from private sector employers to assist in locating and rescuing survivors. This special relief is only applicable to nongovernmental employers during this initial seventy-two hour phase of the declared emergency unless the emergency has been extended by the official who declared the emergency. The cost of injuries or occupational disease claims filed by employees of nongovernmental employers assisting in the life and rescue phase of a declared emergency will not be charged to the experience record of the nongovernmental state fund employer.

[Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020, 07-12-045, § 296-17-870, filed 5/31/07, effective 7/1/07. Statutory Authority: RCW 51.16.035, 51.16.100, 05-23-161, § 296-17-870, filed 11/22/05, effective 1/1/06. Statutory Authority: RCW 51.16.035 and 51.04.020, 04-10-045, § 296-17-870, filed 4/30/04, effective 6/1/04. Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, and 51.18.010, 03-24-066, § 296-17-870, filed 12/1/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-870, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-870, filed 5/31/96, effective 7/1/96. Statutory Authority: RCW 51.04.020(1) and 51.16.035, 90-13-018, § 296-17-870, filed 6/8/90, effective 7/9/90; 89-24-051 (Order 89-22), § 296-17-870, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035 and 51.04.020, 88-24-012 (Order 88-30), § 296-17-870, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035, 88-16-012 (Order 88-12), § 296-17-870 filed 7/22/88, effective 1/1/89; 81-24-042 (Order 81-30), § 296-17-870, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035, 78-12-043 (Order 78-23), § 296-17-870, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-870, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-870, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-870, filed 11/9/73, effective 1/1/74.]

WAC 296-17-87305 Initial recalculation of experience factor. When an entity acquires the past experience of an existing firm (business) or portion thereof, the following treatment shall apply until the next date for the general calculation of all employers' experience factors. The purpose of this subsection is to produce the same premium level that would have been generated had no change in the ownership of a firm (business) occurred.

(1) Acquiring entity retains all rating experience associated with the firm (business), or portion thereof, being acquired. The selling entity shall revert to an experience factor of unity (1.0000) until such time as it may requalify for experience rating or unless another treatment is specified in these rules.

(2) If the acquiring entity already has an experience factor, it shall be assigned a weighted average of its existing experience factor and the acquired experience factor. Weights will be based on expected losses. In the event the acquiring entity does not have an existing experience factor, it shall be assigned an experience factor developed from the past experience of the firm (business) or portion thereof being acquired.

(3) If the past experience of the firm (business) cannot be segregated between the operations remaining with the selling entity and the operations being taken over by the acquiring entity, then the entire experience of the firm (business) shall remain with the selling entity. In the event that the past experience can be segregated, the following shall apply:

(a) Separate experience factors shall be calculated for each portion of the firm (business) being sold using the experience rating procedures in WAC 296-17-855 through 296-17-870.

(b) Both experience factors shall be increased or decreased in the same proportion, if necessary, so that their weighted average is the same as the selling entity's experience factor prior to the sale or change.

(c) The selling entity shall be assigned the experience factor for the experience it is retaining.

(d) The experience factor developed in (a) and (b) of this subsection shall be used in accordance with subsection (2) of this section.

[Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020(1). 07-24-046, § 296-17-87305, filed 12/1/07, effective 1/1/08. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-20-092, § 296-17-87305, filed 10/1/90, effective 11/1/90; 89-24-051 (Order 89-22), § 296-17-87305, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-87305, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-87305, filed 11/30/79, effective 1/1/80.]

WAC 296-17-875 Table I.

Primary Losses for Selected Claim Values Effective January 1, 2008

CLAIM VALUE	PRIMARY LOSS
5,000	5,000
10,000	10,000
15,000	15,000
20,112	20,112
29,834	25,000
44,627	30,000
69,102	35,000

Primary Losses for Selected Claim Values Effective January 1, 2008

CLAIM VALUE	PRIMARY LOSS
100,000	38,627
200,000	43,690
222,141*	44,268
300,000	45,686
400,000	46,754
502,800**	47,434
1,000,000	47,434

* Average death value
 ** Maximum claim value

[Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020 (1). 07-24-046, § 296-17-875, filed 12/1/07, effective 1/1/08; 06-24-054, § 296-17-875, filed 12/1/06, effective 1/1/07. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.32.073. 05-23-162, § 296-17-875, filed 11/22/05, effective 1/1/06; 04-24-025, § 296-17-875, filed 11/23/04, effective 1/1/05. Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, and 51.18.010. 03-24-066, § 296-17-875, filed 12/1/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 51.32.073, 51.18.010, and 51.04.020(1). 02-24-029, § 296-17-875, filed 11/27/02, effective 1/1/03. 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. 86-12-041 (Order 86-18), § 296-17-875, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-875, filed 11/27/85, effective 1/1/86; 84-24-016 (Order 84-23), § 296-17-875, filed 11/28/84, effective 1/1/85; 83-24-017 (Order 83-36), § 296-17-875, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-875, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-875, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-875, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-875, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-875, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-875, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-875, filed 11/30/76; Order 75-38, § 296-17-875, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-875, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-875, filed 11/9/73, effective 1/1/74.]

WAC 296-17-880 Table II.

PRIMARY AND EXCESS CREDIBILITY VALUES Effective January 1, 2008

Maximum Claim Value = \$ 502,800
 Average Death Value = \$ 222,141

Expected Losses	Primary Credibility	Excess Credibility
1 -	7,329 12%	7%
7,330 -	7,822 13%	7%
7,823 -	8,323 14%	7%
8,324 -	8,829 15%	7%

Workers' Compensation Insurance

296-17-880

Expected Losses	Primary Credibility	Excess Credibility	Expected Losses	Primary Credibility	Excess Credibility
8,830 - 9,340	16%	7%	354,128 - 386,519	64%	18%
9,341 - 9,859	17%	7%	386,520 - 387,463	64%	19%
9,860 - 10,384	18%	7%	387,464 - 419,119	65%	19%
10,385 - 10,915	19%	7%	419,120 - 427,786	65%	20%
10,916 - 11,454	20%	7%	427,787 - 451,925	66%	20%
11,455 - 12,000	21%	7%	451,926 - 468,110	66%	21%
12,001 - 12,555	22%	7%	468,111 - 484,939	67%	21%
12,556 - 13,116	23%	7%	484,940 - 508,434	67%	22%
13,117 - 13,687	24%	7%	508,435 - 518,165	68%	22%
13,688 - 14,267	25%	7%	518,166 - 548,756	68%	23%
14,268 - 14,855	26%	7%	548,757 - 551,603	69%	23%
14,856 - 15,452	27%	7%	551,604 - 585,257	69%	24%
15,453 - 16,061	28%	7%	585,258 - 589,079	69%	25%
16,062 - 16,680	29%	7%	589,080 - 619,128	70%	25%
16,681 - 17,310	30%	7%	619,129 - 629,403	70%	26%
17,311 - 17,953	31%	7%	629,404 - 653,218	71%	26%
17,954 - 18,608	32%	7%	653,219 - 669,727	71%	27%
18,609 - 19,277	33%	7%	669,728 - 687,531	72%	27%
19,278 - 19,959	34%	7%	687,532 - 710,049	72%	28%
19,960 - 20,657	35%	7%	710,050 - 722,066	73%	28%
20,658 - 21,371	36%	7%	722,067 - 750,373	73%	29%
21,372 - 22,103	37%	7%	750,374 - 756,827	74%	29%
22,104 - 22,855	38%	7%	756,828 - 790,696	74%	30%
22,856 - 23,626	39%	7%	790,697 - 791,817	75%	30%
23,627 - 24,420	40%	7%	791,818 - 827,037	75%	31%
24,421 - 25,238	41%	7%	827,038 - 831,019	75%	32%
25,239 - 26,083	42%	7%	831,020 - 862,490	76%	32%
26,084 - 26,957	43%	7%	862,491 - 871,342	76%	33%
26,958 - 27,864	44%	7%	871,343 - 898,177	77%	33%
27,865 - 28,808	45%	7%	898,178 - 911,666	77%	34%
28,809 - 29,793	46%	7%	911,667 - 934,102	78%	34%
29,794 - 30,826	47%	7%	934,103 - 951,989	78%	35%
30,827 - 31,914	48%	7%	951,990 - 970,266	79%	35%
31,915 - 33,068	49%	7%	970,267 - 992,312	79%	36%
33,069 - 34,301	50%	7%	992,313 - 1,006,672	80%	36%
34,302 - 35,631	51%	7%	1,006,673 - 1,032,635	80%	37%
35,632 - 37,087	52%	7%	1,032,636 - 1,043,322	81%	37%
37,088 - 38,711	53%	7%	1,043,323 - 1,072,958	81%	38%
38,712 - 38,877	54%	7%	1,072,959 - 1,080,220	82%	38%
38,878 - 40,583	54%	8%	1,080,221 - 1,113,282	82%	39%
40,584 - 42,867	55%	8%	1,113,283 - 1,117,368	83%	39%
42,868 - 64,878	56%	8%	1,117,369 - 1,153,606	83%	40%
64,879 - 71,508	57%	8%	1,153,607 - 1,154,768	84%	40%
71,509 - 102,139	57%	9%	1,154,769 - 1,192,421	84%	41%
102,140 - 105,201	57%	10%	1,192,422 - 1,193,927	84%	42%
105,202 - 132,958	58%	10%	1,193,928 - 1,230,331	85%	42%
132,959 - 145,525	58%	11%	1,230,332 - 1,234,251	85%	43%
145,526 - 163,970	59%	11%	1,234,252 - 1,268,503	86%	43%
163,971 - 185,847	59%	12%	1,268,504 - 1,274,575	86%	44%
185,848 - 195,170	60%	12%	1,274,576 - 1,306,935	87%	44%
195,171 - 226,171	60%	13%	1,306,936 - 1,314,899	87%	45%
226,172 - 226,566	61%	13%	1,314,900 - 1,345,634	88%	45%
226,567 - 258,158	61%	14%	1,345,635 - 1,355,220	88%	46%
258,159 - 266,494	61%	15%	1,355,221 - 1,384,601	89%	46%
266,495 - 289,948	62%	15%	1,384,602 - 1,395,544	89%	47%
289,949 - 306,817	62%	16%	1,395,545 - 1,423,838	90%	47%
306,818 - 321,937	63%	16%	1,423,839 - 1,435,868	90%	48%
321,938 - 347,141	63%	17%	1,435,869 - 1,463,349	91%	48%
347,142 - 354,127	64%	17%	1,463,350 - 1,476,190	91%	49%

Expected Losses	Primary Credibility	Excess Credibility
1,476,191 - 1,503,136	92%	49%
1,503,137 - 1,516,514	92%	50%
1,516,515 - 1,543,203	93%	50%
1,543,204 - 1,556,837	93%	51%
1,556,838 - 1,583,552	94%	51%
1,583,553 - 1,597,160	94%	52%
1,597,161 - 1,624,187	95%	52%
1,624,188 - 1,637,483	95%	53%
1,637,484 - 1,665,109	96%	53%
1,665,110 - 1,677,807	96%	54%
1,677,808 - 1,706,322	97%	54%
1,706,323 - 1,718,130	97%	55%
1,718,131 - 1,747,831	98%	55%
1,747,832 - 1,758,453	98%	56%
1,758,454 - 1,789,638	99%	56%
1,789,639 - 1,798,776	99%	57%
1,798,777 - 1,831,746	100%	57%
1,831,747 - 1,874,157	100%	58%
1,874,158 - 1,916,876	100%	59%
1,916,877 - 1,959,906	100%	60%
1,959,907 - 2,003,250	100%	61%
2,003,251 - 2,046,912	100%	62%
2,046,913 - 2,090,895	100%	63%
2,090,896 - 2,135,202	100%	64%
2,135,203 - 2,179,839	100%	65%
2,179,840 - 2,224,808	100%	66%
2,224,809 - 2,270,113	100%	67%
2,270,114 - 2,315,756	100%	68%
2,315,757 - 2,361,744	100%	69%
2,361,745 - 2,408,078	100%	70%
2,408,079 - 2,454,764	100%	71%
2,454,765 - 2,501,806	100%	72%
2,501,807 - 2,549,205	100%	73%
2,549,206 - 2,596,970	100%	74%
2,596,971 - 2,645,101	100%	75%
2,645,102 - 2,693,604	100%	76%
2,693,605 - 2,742,484	100%	77%
2,742,485 - 2,791,745	100%	78%
2,791,746 - 2,841,390	100%	79%
2,841,391 - 2,891,425	100%	80%
2,891,426 - 2,941,855	100%	81%
2,941,856 - 2,992,683	100%	82%
2,992,684 - 3,043,915	100%	83%
3,043,916 - 3,095,555	100%	84%
3,095,556 - 3,147,609	100%	85%
3,147,610 & Over	100%	86%

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.]

WAC 296-17-885 Table III.

**Expected Loss Rates and Primary Ratios
for Indicated Fiscal Year
Expected Loss Rates in Dollars Per Worker Hour
Effective January 1, 2008**

Class	2004	2005	2006	Primary Ratio
0101	1.2923	1.0989	0.9405	0.458
0103	1.7197	1.4658	1.2548	0.470
0104	0.9388	0.7998	0.6839	0.470
0105	1.3161	1.1381	0.9769	0.537
0107	1.2381	1.0485	0.8957	0.443
0108	0.9388	0.7998	0.6839	0.470
0112	0.7679	0.6562	0.5615	0.482
0201	2.4471	2.0570	1.7471	0.421
0202	3.1766	2.6829	2.3114	0.402
0210	1.1827	1.0011	0.8537	0.444
0212	1.3598	1.1538	0.9849	0.454
0214	1.3333	1.1325	0.9601	0.477
0217	1.1010	0.9403	0.8030	0.486
0219	0.9948	0.8514	0.7346	0.465
0301	0.6304	0.5471	0.4710	0.549
0302	1.9304	1.6320	1.3858	0.448
0303	1.8522	1.5599	1.3274	0.424
0306	0.9924	0.8429	0.7153	0.476
0307	0.9680	0.8263	0.7048	0.489
0308	0.5505	0.4813	0.4157	0.573
0403	1.7153	1.4862	1.2730	0.551
0502	1.5269	1.2930	1.1003	0.452
0504	1.6228	1.3843	1.1935	0.453
0507	2.8623	2.4467	2.1105	0.463
0508	2.0131	1.6878	1.4382	0.399
0509	1.7184	1.4506	1.2404	0.426
0510	1.5547	1.3367	1.1481	0.504
0511	1.6595	1.4119	1.2023	0.476
0512	1.5573	1.3180	1.1252	0.442
0513	0.8054	0.6888	0.5876	0.497
0514	1.8923	1.6142	1.3768	0.483
0516	1.6543	1.4050	1.2041	0.448
0517	1.8543	1.5812	1.3628	0.452
0518	1.5719	1.3289	1.1346	0.436
0519	2.2276	1.8804	1.6129	0.413
0521	0.5845	0.4999	0.4293	0.477
0601	0.6563	0.5607	0.4794	0.487
0602	0.8052	0.6874	0.5826	0.507
0603	1.0259	0.8643	0.7365	0.425

[Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020 (1). 07-24-046, § 296-17-880, filed 12/1/07, effective 1/1/08; 06-24-054, § 296-17-880, filed 12/1/06, effective 1/1/07. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.32.073. 05-23-162, § 296-17-880, filed 11/22/05, effective 1/1/06; 04-24-025, § 296-17-880, filed 11/23/04, effective 1/1/05. Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, and 51.18.010. 03-24-066, § 296-17-880, filed 12/1/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 51.32.073, 51.18.010, and 51.04.020(1). 02-24-029, § 296-17-880, filed 11/27/02, effective 1/1/03. 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-

Workers' Compensation Insurance

296-17-885

Class	2004	2005	2006	Primary Ratio	Class	2004	2005	2006	Primary Ratio
0604	1.0123	0.8754	0.7570	0.518	3410	0.2987	0.2618	0.2267	0.581
0606	0.5511	0.4790	0.4114	0.563	3411	0.4869	0.4196	0.3598	0.524
0607	0.5412	0.4684	0.4011	0.548	3412	0.5888	0.5021	0.4292	0.476
0608	0.3801	0.3264	0.2804	0.497	3414	0.5828	0.5036	0.4315	0.539
0701	2.0548	1.7035	1.4377	0.369	3415	0.8492	0.7238	0.6268	0.441
0803	0.4721	0.4102	0.3513	0.568	3501	1.0940	0.9459	0.8153	0.521
0901	1.5719	1.3289	1.1346	0.436	3503	0.3183	0.2808	0.2459	0.584
1002	1.0127	0.8718	0.7516	0.500	3506	1.0789	0.9140	0.7759	0.464
1003	0.8071	0.6939	0.5987	0.494	3509	0.4235	0.3735	0.3223	0.624
1004	0.5289	0.4545	0.3874	0.523	3510	0.3716	0.3246	0.2796	0.581
1005	8.5188	7.2538	6.1992	0.461	3511	0.7285	0.6298	0.5438	0.519
1007	0.3743	0.3200	0.2734	0.491	3512	0.3498	0.3061	0.2655	0.574
1101	0.7394	0.6407	0.5501	0.545	3513	0.4850	0.4173	0.3672	0.441
1102	1.3609	1.1635	0.9948	0.488	3602	0.1335	0.1166	0.1005	0.579
1103	1.2423	1.0646	0.9225	0.459	3603	0.4816	0.4182	0.3616	0.539
1104	0.5531	0.4824	0.4180	0.554	3604	0.8426	0.7275	0.6357	0.486
1105	0.9232	0.7904	0.6803	0.479	3605	0.5400	0.4673	0.3999	0.547
1106	0.3564	0.3107	0.2714	0.531	3701	0.2803	0.2432	0.2094	0.552
1108	0.6580	0.5696	0.4893	0.542	3702	0.4588	0.3996	0.3432	0.573
1109	1.5467	1.3391	1.1559	0.527	3708	0.6421	0.5541	0.4751	0.532
1301	0.6416	0.5577	0.4698	0.608	3802	0.2061	0.1805	0.1551	0.598
1303	0.2280	0.1989	0.1700	0.590	3808	0.4392	0.3769	0.3232	0.501
1304	0.0295	0.0257	0.0220	0.561	3901	0.1772	0.1568	0.1364	0.621
1305	0.4363	0.3802	0.3262	0.578	3902	0.4975	0.4336	0.3758	0.551
1401	0.5078	0.4363	0.3821	0.446	3903	1.1476	1.0011	0.8751	0.533
1404	0.7932	0.6908	0.5952	0.562	3905	0.1629	0.1435	0.1251	0.593
1405	0.6071	0.5313	0.4534	0.608	3906	0.4927	0.4302	0.3726	0.562
1407	0.5851	0.5096	0.4415	0.547	3909	0.2688	0.2368	0.2052	0.612
1501	0.6072	0.5247	0.4492	0.541	4002	1.4196	1.2198	1.0360	0.531
1507	0.5757	0.4971	0.4255	0.536	4101	0.3223	0.2786	0.2397	0.530
1701	0.9505	0.8141	0.7003	0.478	4103	0.4580	0.4042	0.3501	0.616
1702	2.1811	1.8244	1.5571	0.381	4107	0.1717	0.1489	0.1287	0.533
1703	0.8628	0.7253	0.6121	0.436	4108	0.1565	0.1361	0.1179	0.545
1704	0.9505	0.8141	0.7003	0.478	4109	0.2158	0.1868	0.1615	0.526
1801	0.5417	0.4624	0.4009	0.445	4201	0.7187	0.6169	0.5218	0.537
1802	0.7357	0.6339	0.5418	0.526	4301	0.6780	0.5939	0.5139	0.581
2002	0.7436	0.6465	0.5583	0.545	4302	0.6894	0.5996	0.5151	0.564
2004	0.9824	0.8551	0.7366	0.559	4304	1.0468	0.9092	0.7903	0.522
2007	0.4940	0.4277	0.3687	0.532	4305	1.2504	1.0771	0.9143	0.545
2008	0.3333	0.2868	0.2481	0.491	4401	0.4210	0.3638	0.3172	0.492
2009	0.4135	0.3614	0.3134	0.564	4402	0.8608	0.7544	0.6505	0.596
2101	0.6906	0.5975	0.5175	0.512	4404	0.5811	0.5083	0.4383	0.581
2102	0.5456	0.4770	0.4120	0.577	4501	0.1922	0.1698	0.1467	0.631
2104	0.3683	0.3237	0.2826	0.575	4502	0.0417	0.0364	0.0317	0.538
2105	0.5846	0.5108	0.4372	0.597	4504	0.1141	0.1010	0.0879	0.634
2106	0.4360	0.3804	0.3290	0.560	4601	0.7683	0.6664	0.5753	0.535
2201	0.2522	0.2189	0.1895	0.532	4802	0.3294	0.2859	0.2499	0.501
2202	0.7379	0.6394	0.5490	0.546	4803	0.3043	0.2685	0.2353	0.583
2203	0.4840	0.4235	0.3657	0.581	4804	0.5366	0.4700	0.4053	0.590
2204	0.2522	0.2189	0.1895	0.532	4805	0.3041	0.2668	0.2320	0.580
2401	0.5006	0.4343	0.3710	0.563	4806	0.0611	0.0533	0.0463	0.542
2903	0.6529	0.5685	0.4919	0.551	4808	0.5158	0.4462	0.3884	0.499
2904	0.7452	0.6447	0.5582	0.519	4809	0.3934	0.3457	0.3003	0.589
2905	0.5723	0.5017	0.4340	0.584	4810	0.1473	0.1297	0.1133	0.584
2906	0.3317	0.2882	0.2484	0.554	4811	0.2838	0.2493	0.2175	0.578
2907	0.5351	0.4686	0.4038	0.589	4812	0.4079	0.3574	0.3087	0.590
2908	1.0651	0.9131	0.7844	0.488	4813	0.1621	0.1421	0.1242	0.562
2909	0.3994	0.3482	0.3013	0.559	4900	0.3229	0.2727	0.2337	0.420
3101	0.9234	0.7891	0.6765	0.479	4901	0.0776	0.0667	0.0573	0.506
3102	0.2803	0.2432	0.2094	0.552	4902	0.1128	0.0984	0.0842	0.587
3103	0.5816	0.5023	0.4336	0.513	4903	0.1596	0.1401	0.1191	0.637
3104	0.6198	0.5321	0.4568	0.500	4904	0.0295	0.0259	0.0224	0.580
3105	0.7612	0.6597	0.5681	0.540	4905	0.3779	0.3326	0.2903	0.584
3303	0.4512	0.3934	0.3378	0.578	4906	0.0976	0.0853	0.0733	0.594
3304	0.4808	0.4230	0.3663	0.601	4907	0.0541	0.0471	0.0409	0.556
3309	0.4422	0.3826	0.3304	0.528	4908	0.0818	0.0721	0.0636	0.560
3402	0.5400	0.4666	0.4014	0.528	4909	0.0412	0.0363	0.0323	0.526
3403	0.2100	0.1810	0.1564	0.512	4910	0.4878	0.4221	0.3658	0.513
3404	0.4972	0.4326	0.3729	0.556	4911	0.0656	0.0567	0.0491	0.525
3405	0.3132	0.2718	0.2340	0.550	5001	5.7543	4.8570	4.1537	0.420
3406	0.2058	0.1808	0.1566	0.593	5002	0.6136	0.5330	0.4554	0.571
3407	0.7313	0.6286	0.5396	0.504	5003	2.1347	1.8047	1.5467	0.422
3408	0.1848	0.1622	0.1385	0.620	5004	0.9396	0.8078	0.7011	0.476
3409	0.1752	0.1554	0.1335	0.662	5005	0.6001	0.5112	0.4394	0.451

Class	2004	2005	2006	Primary Ratio	Class	2004	2005	2006	Primary Ratio
5006	1.5992	1.3483	1.1575	0.403	6709	0.2982	0.2632	0.2284	0.609
5101	0.9195	0.8002	0.6859	0.574	6801	0.6210	0.5398	0.4589	0.592
5103	0.7676	0.6723	0.5812	0.585	6802	0.4947	0.4336	0.3728	0.601
5106	0.7676	0.6723	0.5812	0.585	6803	0.9244	0.7739	0.6656	0.364
5108	0.9196	0.8058	0.6939	0.599	6804	0.2948	0.2563	0.2206	0.564
5109	0.5757	0.4972	0.4264	0.533	6809	5.0004	4.3792	3.8100	0.566
5201	0.4316	0.3736	0.3207	0.549	6901	0.0189	0.0181	0.0173	0.714
5204	0.9447	0.8089	0.7002	0.466	6902	1.0415	0.8768	0.7457	0.422
5206	0.4183	0.3594	0.3075	0.515	6903	7.6603	6.3919	5.5502	0.322
5207	0.1790	0.1585	0.1380	0.624	6904	0.4411	0.3857	0.3241	0.642
5208	0.8177	0.7068	0.6106	0.517	6905	0.3977	0.3474	0.2948	0.619
5209	0.7464	0.6422	0.5544	0.496	6906	0.1568	0.1466	0.1372	0.712
5301	0.0362	0.0317	0.0272	0.597	6907	1.3586	1.1822	1.0196	0.555
5302	0.0196	0.0170	0.0148	0.543	6908	0.4711	0.4105	0.3525	0.575
5305	0.0541	0.0478	0.0413	0.638	6909	0.1223	0.1076	0.0929	0.601
5306	0.0636	0.0560	0.0482	0.613	7100	0.0338	0.0292	0.0255	0.487
5307	0.5835	0.5056	0.4317	0.561	7101	0.0252	0.0216	0.0188	0.452
6103	0.0846	0.0749	0.0651	0.626	7102	4.3171	3.8400	3.4205	0.583
6104	0.3775	0.3315	0.2870	0.593	7103	0.6355	0.5498	0.4686	0.556
6105	0.3630	0.3140	0.2699	0.535	7104	0.0316	0.0278	0.0238	0.625
6107	0.1401	0.1235	0.1079	0.596	7105	0.0338	0.0299	0.0256	0.650
6108	0.4722	0.4150	0.3602	0.591	7106	0.2099	0.1850	0.1603	0.613
6109	0.0998	0.0866	0.0744	0.559	7107	0.2333	0.2050	0.1799	0.565
6110	0.6561	0.5712	0.4926	0.557	7108	0.2005	0.1767	0.1546	0.586
6121	0.3691	0.3200	0.2753	0.545	7109	0.1393	0.1230	0.1066	0.618
6201	0.3211	0.2747	0.2367	0.477	7110	0.3484	0.2991	0.2565	0.500
6202	0.6737	0.5847	0.5080	0.523	7111	0.3995	0.3422	0.2930	0.493
6203	0.1027	0.0921	0.0805	0.678	7112	0.6747	0.5883	0.5092	0.560
6204	0.1282	0.1124	0.0975	0.589	7113	0.3831	0.3361	0.2935	0.567
6205	0.2657	0.2321	0.2009	0.566	7114	0.5463	0.4826	0.4180	0.622
6206	0.2386	0.2085	0.1800	0.577	7115	0.5986	0.5259	0.4574	0.586
6207	1.1091	0.9711	0.8590	0.520	7116	0.7126	0.6229	0.5395	0.565
6208	0.2491	0.2194	0.1918	0.582	7117	1.7551	1.5436	1.3315	0.612
6209	0.3266	0.2862	0.2486	0.574	7118	1.4140	1.2356	1.0696	0.570
6301	0.1383	0.1175	0.1006	0.457	7119	1.3745	1.1991	1.0298	0.578
6302	0.1983	0.1738	0.1505	0.583	7120	6.3153	5.4661	4.7204	0.526
6303	0.0717	0.0622	0.0536	0.539	7121	5.8741	5.0835	4.3915	0.524
6304	0.4225	0.3724	0.3253	0.587	7122	0.5813	0.5145	0.4468	0.626
6305	0.1052	0.0928	0.0808	0.597	7201	1.5270	1.3180	1.1205	0.550
6306	0.3357	0.2926	0.2519	0.570	7202	0.0348	0.0300	0.0255	0.527
6308	0.0688	0.0602	0.0518	0.586	7203	0.1296	0.1148	0.1013	0.596
6309	0.1983	0.1738	0.1505	0.583	7204	0.0000	0.0000	0.0000	0.500
6402	0.2909	0.2572	0.2219	0.638	7301	0.5321	0.4605	0.4011	0.500
6403	0.1822	0.1605	0.1397	0.594	7302	1.0314	0.8964	0.7806	0.521
6404	0.2401	0.2105	0.1823	0.583	7307	0.5071	0.4424	0.3849	0.540
6405	0.5801	0.5004	0.4304	0.522	7308	0.3293	0.2913	0.2546	0.608
6406	0.1256	0.1108	0.0960	0.613	7309	0.2744	0.2421	0.2114	0.593
6407	0.2851	0.2494	0.2156	0.578					
6408	0.4132	0.3594	0.3086	0.571					
6409	0.8366	0.7179	0.6130	0.512					
6410	0.2932	0.2549	0.2203	0.551					
6501	0.1721	0.1513	0.1303	0.611					
6502	0.0396	0.0346	0.0299	0.568					
6503	0.0789	0.0678	0.0575	0.537					
6504	0.4100	0.3625	0.3157	0.617					
6505	0.1073	0.0950	0.0830	0.609					
6506	0.1105	0.0974	0.0845	0.611					
6509	0.3816	0.3350	0.2913	0.580					
6510	0.4802	0.4092	0.3512	0.459					
6511	0.3800	0.3342	0.2898	0.594					
6512	0.2362	0.2059	0.1782	0.554					
6601	0.1969	0.1720	0.1494	0.562					
6602	0.5245	0.4572	0.3963	0.553					
6603	0.3413	0.2963	0.2545	0.555					
6604	0.0864	0.0760	0.0655	0.605					
6605	0.3145	0.2775	0.2419	0.603					
6607	0.1766	0.1539	0.1332	0.550					
6608	0.5580	0.4695	0.3986	0.430					
6620	4.3528	3.8318	3.2406	0.663					
6704	0.1695	0.1484	0.1273	0.601					
6705	0.8379	0.7423	0.6536	0.597					
6706	0.3301	0.2880	0.2519	0.536					
6707	3.6539	3.2686	2.8014	0.708					
6708	8.9411	7.7752	6.9710	0.442					

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

Class	2004	2005	2006	Primary Ratio
0540	0.0218	0.0186	0.0158	0.463
0541	0.0129	0.0109	0.0093	0.442
0550	0.0282	0.0235	0.0200	0.385
0551	0.0167	0.0140	0.0119	0.392

[Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020 (1). 07-24-046, § 296-17-885, filed 12/1/07, effective 1/1/08; 06-24-054, § 296-17-885, filed 12/1/06, effective 1/1/07. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.32.073. 05-23-162, § 296-17-885, filed 11/22/05, effective 1/1/06; 04-24-025, § 296-17-885, filed 11/23/04, effective 1/1/05. Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, and 51.18.010. 03-24-066, § 296-17-885, filed 12/1/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 51.32.073, 51.18.010, and 51.04.020(1). 02-24-029, § 296-17-885, filed 11/27/02, effective 1/1/03. 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:
Effective 1/1/2008**

Expected Loss Range	Maximum Experience Modification
1 - 6,636	0.90
6,637 - 8,104	0.89
8,105 - 8,977	0.88
8,978 - 9,785	0.87
9,786 - 10,637	0.86
10,638 - 11,530	0.85
11,531 - 12,316	0.84
12,317 - 13,113	0.83
13,114 - 13,944	0.82
13,945 - 14,808	0.81
14,809 - 15,706	0.80
15,707 - 16,638	0.79
16,639 - 17,606	0.78
17,607 - 18,608	0.77
18,609 - 19,646	0.76
19,647 - 20,719	0.75
20,720 - 21,828	0.74
21,829 - 22,973	0.73
22,974 - 24,156	0.72
24,157 - 25,374	0.71
25,375 - 26,631	0.70

Expected Loss Range	Maximum Experience Modification
26,632 - 27,924	0.69
27,925 - 29,254	0.68
29,255 - 30,623	0.67
30,624 - 32,027	0.66
32,028 - 33,471	0.65
33,472 - 35,721	0.64
35,722 - 38,782	0.63
38,783 - 42,319	0.62
42,320 - 49,197	0.61
49,198 & Over	0.60

[Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020 (1). 07-24-046, § 296-17-890, filed 12/1/07, effective 1/1/08; 06-24-054, § 296-17-890, filed 12/1/06, effective 1/1/07. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.32.073. 05-23-162, § 296-17-890, filed 11/22/05, effective 1/1/06; 04-24-025, § 296-17-890, filed 11/23/04, effective 1/1/05. Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, and 51.18.010. 03-24-066, § 296-17-890, filed 12/1/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 51.32.073, 51.18.010, and 51.04.020(1). 02-24-029, § 296-17-890, filed 11/27/02, effective 1/1/03. 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, 2008	
	Accident Fund	Medical Aid Fund
	0101	1.3976
0103	1.8375	1.0211
0104	1.0147	0.5571
0105	1.3287	0.9325
0107	1.3718	0.6993
0108	1.0147	0.5571
0112	0.8199	0.4747
0201	2.8463	1.2139
0202	3.4002	1.8451
0210	1.3188	0.6333

Base Rates Effective January 1, 2008			Base Rates Effective January 1, 2008		
Class	Accident Fund	Medical Aid Fund	Class	Accident Fund	Medical Aid Fund
0212	1.5001	0.7574	1501	0.6215	0.4104
0214	1.5157	0.7077	1507	0.5948	0.3963
0217	1.1863	0.6515	1701	0.9796	0.6133
0219	1.0164	0.6697	1702	2.5100	1.0602
0301	0.6154	0.4647	1703	1.0304	0.3841
0302	2.2113	0.9929	1704	0.9796	0.6133
0303	2.1198	0.9334	1801	0.5447	0.3893
0306	1.1251	0.5446	1802	0.7773	0.5017
0307	1.0570	0.5909	2002	0.7131	0.5700
0308	0.5121	0.4310	2004	0.9479	0.7397
0403	1.7332	1.1790	2007	0.4853	0.3658
0502	1.7183	0.8134	2008	0.3264	0.2425
0504	1.6701	1.0241	2009	0.3807	0.3486
0507	2.9215	1.8753	2101	0.6614	0.5199
0508	2.3191	0.9933	2102	0.5095	0.4368
0509	1.9060	0.9417	2104	0.3148	0.3351
0510	1.5905	1.0234	2105	0.5806	0.4454
0511	1.8421	0.9551	2106	0.4134	0.3594
0512	1.7354	0.8743	2201	0.2381	0.1895
0513	0.8687	0.4856	2202	0.7380	0.5282
0514	2.0708	1.1353	2203	0.4515	0.3858
0516	1.7840	0.9736	2204	0.2381	0.1895
0517	1.9147	1.1740	2401	0.5140	0.3497
0518	1.7564	0.8790	2903	0.6150	0.5222
0519	2.4405	1.2485	2904	0.7154	0.5709
0521	0.6078	0.3663	2905	0.5264	0.4830
0601	0.7082	0.4141	2906	0.3266	0.2656
0602	0.9060	0.4596	2907	0.5072	0.4335
0603	1.1671	0.5437	2908	1.1021	0.6958
0604	0.9791	0.7505	2909	0.3745	0.3222
0606	0.5448	0.4088	3101	0.9795	0.5905
0607	0.5506	0.3746	3102	0.2751	0.2146
0608	0.3929	0.2581	3103	0.5695	0.4117
0701	2.5420	0.7997	3104	0.6427	0.4175
0803	0.4740	0.3431	3105	0.7554	0.5842
0901	1.7564	0.8790	3303	0.4405	0.3380
1002	1.0110	0.6969	3304	0.4313	0.4127
1003	0.8081	0.5610	3309	0.4287	0.3277
1004	0.5663	0.3293	3402	0.5440	0.3996
1005	9.2832	4.8682	3403	0.2069	0.1570
1007	0.4011	0.2306	3404	0.4833	0.3932
1101	0.7373	0.5220	3405	0.3089	0.2430
1102	1.4486	0.8079	3406	0.1892	0.1884
1103	1.2252	0.8425	3407	0.7525	0.4867
1104	0.5116	0.4459	3408	0.1849	0.1446
1105	0.9491	0.6070	3409	0.1583	0.1501
1106	0.3162	0.3128	3410	0.2708	0.2416
1108	0.6628	0.4866	3411	0.5005	0.3348
1109	1.4961	1.1065	3412	0.6373	0.3612
1301	0.6997	0.3829	3414	0.5950	0.4029
1303	0.2287	0.1676	3415	0.8608	0.5840
1304	0.0295	0.0220	3501	1.0809	0.7812
1305	0.4300	0.3236	3503	0.2621	0.3000
1401	0.4645	0.3825	3506	1.2340	0.5977
1404	0.7597	0.5933	3509	0.3815	0.3569
1405	0.6140	0.4667	3510	0.3560	0.2995
1407	0.5419	0.4532	3511	0.7162	0.5477

Workers' Compensation Insurance

296-17-895

Base Rates Effective January 1, 2008			Base Rates Effective January 1, 2008		
Class	Accident Fund	Medical Aid Fund	Class	Accident Fund	Medical Aid Fund
3512	0.3240	0.3196	4910	0.4665	0.3703
3513	0.4304	0.3916	4911	0.0632	0.0513
3602	0.1277	0.1074	5001	6.3769	3.0302
3603	0.4635	0.3881	5002	0.6271	0.4375
3604	0.7732	0.6913	5003	2.3266	1.1565
3605	0.5549	0.3756	5004	0.9026	0.6638
3701	0.2751	0.2146	5005	0.6307	0.3616
3702	0.4540	0.3592	5006	1.7478	0.8728
3708	0.6557	0.4400	5101	0.9144	0.6798
3802	0.1974	0.1626	5103	0.7143	0.6546
3808	0.4560	0.2873	5106	0.7143	0.6546
3901	0.1501	0.1667	5108	0.8699	0.7534
3902	0.4621	0.4047	5109	0.5894	0.4109
3903	1.0038	0.9838	5201	0.4337	0.3134
3905	0.1408	0.1541	5204	0.9380	0.6509
3906	0.4536	0.3941	5206	0.4408	0.2832
3909	0.2394	0.2380	5207	0.1506	0.1685
4002	1.5407	0.8397	5208	0.8031	0.6183
4101	0.3230	0.2363	5209	0.7464	0.5384
4103	0.4079	0.4155	5300	0.1128	0.0840
4107	0.1664	0.1351	5301	0.0347	0.0302
4108	0.1476	0.1286	5302	0.0186	0.0156
4109	0.2091	0.1674	5305	0.0482	0.0494
4201	0.8008	0.4084	5306	0.0583	0.0557
4301	0.6214	0.5537	5307	0.5980	0.3891
4302	0.6824	0.5197	6103	0.0732	0.0830
4304	0.9661	0.8251	6104	0.3431	0.3189
4305	1.3483	0.7513	6105	0.3640	0.2618
4401	0.3929	0.3434	6107	0.1215	0.1500
4402	0.7973	0.6825	6108	0.4206	0.4159
4404	0.5516	0.4728	6109	0.0994	0.0777
4501	0.1757	0.1839	6110	0.6268	0.4957
4502	0.0386	0.0376	6120	0.2918	0.2190
4504	0.0999	0.1190	6121	0.3647	0.2738
4601	0.7442	0.5735	6201	0.3310	0.2269
4801	1.4067	1.8451	6202	0.6277	0.5453
4802	0.2945	0.2696	6203	0.0812	0.1155
4803	0.2465	0.2800	6204	0.1160	0.1170
4804	0.5029	0.4312	6205	0.2468	0.2154
4805	0.2677	0.2642	6206	0.2236	0.1936
4806	0.0552	0.0507	6207	0.8819	1.0671
4808	0.4795	0.4017	6208	0.2100	0.2356
4809	0.3456	0.3350	6209	0.2951	0.2877
4810	0.1255	0.1364	6301	0.1496	0.0818
4811	0.2483	0.2695	6302	0.1813	0.1700
4812	0.3805	0.3469	6303	0.0705	0.0553
4813	0.1392	0.1463	6304	0.3554	0.3852
4900	0.3535	0.1786	6305	0.0904	0.0974
4901	0.0796	0.0546	6306	0.3243	0.2626
4902	0.1128	0.0840	6308	0.0653	0.0559
4903	0.1628	0.1238	6309	0.1813	0.1700
4904	0.0275	0.0256	6402	0.2613	0.2535
4905	0.3193	0.3378	6403	0.1585	0.1652
4906	0.0948	0.0770	6404	0.2190	0.2029
4907	0.0502	0.0458	6405	0.5873	0.4198
4908	0.0765	0.1166	6406	0.1114	0.1138
4909	0.0369	0.0649	6407	0.2650	0.2341

Base Rates Effective January 1, 2008			Base Rates Effective January 1, 2008		
Class	Accident Fund	Medical Aid Fund	Class	Accident Fund	Medical Aid Fund
6408	0.4086	0.3195	7116	0.6503	0.5550
6409	0.8920	0.5342	7117	1.6093	1.4568
6410	0.2815	0.2407	7118	1.2987	1.1337
6501	0.1604	0.1403	7119	1.3315	1.0089
6502	0.0377	0.0327	7120	6.1411	4.7003
6503	0.0870	0.0517	7121	5.7028	4.3816
6504	0.3477	0.3881	7122	0.4964	0.5236
6505	0.0897	0.1099	7200	1.2949	0.7366
6506	0.0973	0.0999	7201	1.6186	0.9208
6509	0.3370	0.3377	7202	0.0370	0.0236
6510	0.5078	0.2888	7203	0.1014	0.1418
6511	0.3361	0.3188	7204	0.0000	0.0000
6512	0.2180	0.1789	7205	0.0000	0.0000
6601	0.1786	0.1643	7301	0.4920	0.4202
6602	0.4819	0.4112	7302	0.9354	0.8159
6603	0.3385	0.2516	7307	0.4591	0.4187
6604	0.0803	0.0738	7308	0.2779	0.3367
6605	0.2745	0.3171	7309	0.2294	0.2507
6607	0.1653	0.1395	7400	1.6186	0.9208
6608	0.6480	0.2810			
6620	4.4945	3.1943			
6704	0.1639	0.1298			
6705	0.6547	0.8704			
6706	0.2846	0.2813			
6707	3.4185	3.7372			
6708	6.6988	8.9057			
6709	0.2625	0.2703			
6801	0.6603	0.4714			
6802	0.4751	0.4076			
6803	1.0216	0.4912			
6804	0.2899	0.2336			
6809	4.5185	4.5429			
6901	0.0000	0.0659			
6902	1.1946	0.5072			
6903	8.1636	4.3648			
6904	0.4812	0.2802			
6905	0.4155	0.2907			
6906	0.0000	0.2907			
6907	1.2985	1.0152			
6908	0.4647	0.3585			
6909	0.1126	0.1069			
7100	0.0314	0.0269			
7101	0.0244	0.0193			
7102	2.9961	4.7722			
7103	0.6616	0.4115			
7104	0.0300	0.0270			
7105	0.0314	0.0288			
7106	0.1847	0.1800			
7107	0.1957	0.2287			
7108	0.1666	0.1858			
7109	0.1230	0.1242			
7110	0.3611	0.2224			
7111	0.4214	0.2532			
7112	0.6291	0.5454			
7113	0.3275	0.3351			
7114	0.4767	0.4703			
7115	0.5213	0.5177			

In calendar year 2008, the department will pay such dividends from the accident fund to employers not participating in the retrospective rating program during the period July 1, 2007, through December 31, 2007, as the department's actuaries determine to be necessary to equalize the proportion of losses funded between retro and nonretro employers.

[Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020 (1). 07-24-046, § 296-17-895, filed 12/1/07, effective 1/1/08. Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020, 07-12-045, § 296-17-895, filed 5/31/07, effective 7/1/07; 07-07-032 and 07-07-129, § 296-17-895, filed 3/12/07 and 3/21/07, effective 7/1/07. Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020(1). 06-24-054, § 296-17-895, filed 12/1/06, effective 1/1/07. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.32.073. 05-23-162, § 296-17-895, filed 11/22/05, effective 1/1/06; 04-24-025, § 296-17-895, filed 11/23/04, effective 1/1/05. Statutory Authority: RCW 51.04.020 and 51.16.035. 04-13-017, § 296-17-895, filed 6/4/04, effective 7/5/04. Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, and 51.18.010. 03-24-066, § 296-17-895, filed 12/1/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 51.32.073, 51.18.010, and 51.04.020(1). 02-24-029, § 296-17-895, filed 11/27/02, effective 1/1/03. 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; 88-12-050 (Order 88-06), § 296-17-895, filed 5/31/88, effective 7/1/88; 88-06-047 (Order 87-33), § 296-17-895, filed 3/1/88; 87-24-060 (Order 87-26), § 296-17-895, filed 12/1/87, effective 1/1/88; 87-12-032 (Order 87-12), § 296-17-895, filed 5/29/87, effective 7/1/87. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-24-042 (Order 86-41), § 296-17-895, filed 11/26/86. Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-895, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-895, filed 11/27/85, effective 1/1/86; 85-13-046 (Order 85-13), § 296-17-895, filed 6/17/85; 85-06-026 (Order 85-7), § 296-17-895, filed 2/28/85, effective 4/1/85; 84-24-016 (Order 84-23), § 296-17-895, filed 11/28/84, effective 1/1/85. Statutory Authority: RCW 51.04.020(1). 84-12-048 (Order 84-12), § 296-17-895, filed 6/1/84. Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-895, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-895, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-895, filed 11/30/81, effective 1/1/82; 81-04-024 (Order 81-02), § 296-17-895, filed 1/30/81; 80-17-016 (Order 80-23), § 296-17-895, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-895, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-895, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-895, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-895, filed 12/1/77; Order 77-10, § 296-17-895, filed 5/31/77; Order 76-36, § 296-17-895, filed 11/30/76; Order 76-18, § 296-17-895, filed 5/28/76, effective 7/1/76; Order 75-38, § 296-17-895, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-895, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-895, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-895, filed 11/9/73, effective 1/1/74.]

WAC 296-17-89502 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, 2008

Class	Accident Fund	Medical Aid Fund	Supplemental Pension Fund
0540	0.0244	0.0118	0.0006
0541	0.0145	0.0066	0.0006
0550	0.0327	0.0131	0.0006
0551	0.0194	0.0077	0.0006

In calendar year 2008, the department will pay such dividends from the accident fund to employers not participating in the retrospective rating program during the period July 1, 2007, through December 31, 2007, as the department's actuaries determine to be necessary to equalize the proportion of losses funded between retro and nonretro employers.

[Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020(1). 07-24-046, § 296-17-89502, filed 12/1/07, effective 1/1/08. Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020. 07-12-045, § 296-17-89502, filed 5/31/07, effective 7/1/07; 07-07-032 and 07-07-129, § 296-17-89502, filed 3/12/07 and 3/21/07, effective 7/1/07. Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020(1). 06-24-054, § 296-17-89502, filed 12/1/06, effective 1/1/07. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.32.073. 05-23-162, § 296-17-89502, filed 11/22/05, effective 1/1/06; 04-24-025, § 296-17-89502, filed 11/23/04, effective 1/1/05. Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, and 51.18.010. 03-24-066, § 296-17-89502, filed 12/1/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 51.32.073, 51.18.010, and 51.04.020(1). 02-24-029, § 296-17-89502, filed 11/27/02, effective 1/1/03. 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 296-17-89504 Horse racing industry industrial insurance, medical aid, and supplemental pension by class.

Base Rates Effective
January 1, 2008

Class	Accident Fund	Medical Aid Fund	Supplemental Pension Fund
6614	39*	20*	1
6615	284*	150*	1
6616	13*	6*	1
6617	100*	44*	1
6618	99*	25*	1
6622	526**	253**	1
6623	130**	54**	1

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

** These rates are calculated on a per 12 horse stalls for parimutuel race tracks and are base rated.

[Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020(1). 07-24-046, § 296-17-89504, filed 12/1/07, effective 1/1/08. Statutory Authority: RCW 51.06.035, 51.08.010, 51.04.020. 07-12-045, § 296-17-89504, filed 5/31/07, effective 7/1/07; 07-07-032 and 07-07-129, § 296-17-89504, filed 3/12/07 and 3/21/07, effective 7/1/07.]

WAC 296-17-89505 2007 Rate holiday dividend. What is happening?

As part of the medical aid fund rate holiday for the third and fourth quarters of 2007, the department will be refunding to eligible state fund employers a percentage of accident fund premiums they reported and paid for the hours worked from July 1 to December 31, 2007.

Why is the department doing this?

The department is doing this so that retro and nonretro employers pay for the same fair share of their expected losses after the net retro refunds and dividends are taken into consideration.

Who is eligible?

To be eligible, an employer must have reported and paid accident fund premiums by June 1, 2008, for the work done in at least one quarter of the two quarters covered by the rate holiday and must not have participated in the retrospective rating program during that quarter.

Why are retro employers not eligible?

Instead of this dividend, retro employers in aggregate will be receiving larger retrospective rating adjustments because the department will be calculating adjustments as though employers had paid medical aid premiums for the third and fourth quarters of 2007.

How will the dividend work?

The department will fix the dividend percentage using data available to the department as of June 1, 2008, and then announce this to the public. The department will then apply that percentage to the amount of accident fund premiums each eligible employer paid for the work done in each quarter

they were eligible to calculate the dividend amount. The dividend amount will then be distributed by the department either by applying a credit or issuing a check. Employers owing the department money will receive a credit to their industrial insurance account; employers not owing the department money will be sent a check (what the state calls a warrant drawn on the state treasury).

How will the department calculate the dividend percentage?

The department will calculate the dividend percentage using the following formula, rounded to four decimal places:

$$1.0 - (1.0 - 19\% \times \text{Standard Premium}/\text{Accident Fund Premium})/81\%$$

Standard Premium and the Accident Fund Premium are the sums of the standard premiums and accident fund premiums respectively for retrospective rating participants for hours worked during the period July 1, 2007, to December 31, 2007, using data evaluated on June 1, 2008.

[Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020(1). 07-24-046, § 296-17-89505, filed 12/1/07, effective 1/1/08.]

WAC 296-17-90402 Definitions. To reduce misunderstandings that can result by our use of certain words or phrases, we have developed definitions that govern what these words or phrases will mean for retro purposes.

Account: An individual employer's industrial insurance account and related subaccounts, or in the case of a retro group it means the sponsoring organization's industrial insurance account.

Account in good standing: A phrase we use when an employer and/or sponsoring organization is current with all payments due L&I and in compliance with L&I laws, rules and regulations at the time of enrollment or reenrollment. For an account to be in good standing you must:

- Have an active L&I industrial insurance account.
- Submit all reports required by L&I when they were due.
- Pay all industrial insurance premium payments, assessments, penalties and interest when due.

Note: This requirement also includes the payment of other fees, fines, penalties and assessments established by the department such as safety violations and computer access fees. An account may be deemed to be in good standing if the employer or group (sponsoring organization) is current with an L&I approved written repayment agreement.

- Not participate in the activities described in WAC 296-17-90428 concerning the direct payment of medical services.

Note: Organizations that sponsor a group must also file the safety plan when applicable (WAC 296-17-90409) and the annual safety report required in WAC 296-17-90411 to be in good standing.

Adjustment: The process of calculating retrospective premium, and any resulting refund or assessment.

Note: For the first adjustment of a coverage period, retrospective premium is compared to the standard premium due. The difference will be refunded if the retrospective premium is lower than the standard premium due. You will be assessed the difference if the retrospective premium is higher than the standard premium due. In subsequent adjustments of the coverage period, the new retrospective premium is compared to the prior net retrospective premium to determine the amount of refund or assessment.

Workers' Compensation Insurance

296-17-90402

RETROSPECTIVE PREMIUM ADJUSTMENT FOR:

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STATE OF WASHINGTON
DEPT OF LABOR AND INDUSTRIES
INSURANCE SERVICES
PROGRAM/SYSTEM A2522235

NOTTA-REAL COMPANY INC
9999 MAIN ST NW
SAMSONVILLE, WA 98000

EG05

COVERAGE PERIOD	RETRO ID	ADJUSTMENT NUMBER	ADJUSTMENT DATE	RETROSPECTIVE RATING PLAN	MAXIMUM PREMIUM RATIO
07/01/99 - 06/30/00	999999	2	05/09/02	B	1.45

RETROSPECTIVE PREMIUM CALCULATION

BASIC PREMIUM RATIO	.000	X	STANDARD PREMIUM DUE	204,602		
PLUS						
LOSS CONVERSION FACTOR	.983	X	TOTAL INCURRED LOSSES (DEVELOPED)	96,334	EQUALS	INDICATED RETROSPECTIVE PREMIUM 94,696
MAXIMUM PREMIUM RATIO	1.45	X	STANDARD PREMIUM DUE	204,602	EQUALS	MAXIMUM PREMIUM 296,673
e >= 301,804 DEVELOPED LOSSES						
MINIMUM PREMIUM RATIO	.000	X	STANDARD PREMIUM DUE	204,602	EQUALS	MINIMUM PREMIUM 0
e <= 0 DEVELOPED LOSSES						
BREAK-EVEN DEVELOPED LOSSES = 208,140					RETROSPECTIVE PREMIUM	94,696

ADDITIONAL PREMIUM OR REFUND CALCULATION

PRIOR RETROSPECTIVE PREMIUM PAID	135,979	-	RETROSPECTIVE PREMIUM	94,696	EQUALS	OR	ADDITIONAL PREMIUM DUE	0
							PREMIUM REFUND	41,283

PRIOR ADJUSTMENTS

ADJ NO	EMPLOYER MEMBERS	SIZE GROUP	STANDARD PREMIUM DUE	TOTAL INCURRED LOSSES (DEVELOPED)	RETRO PREMIUM	REFUND AMOUNT	ADDITIONAL PREMIUM DUE	ADDITIONAL PREMIUM PAID
1.00	2	26	204,602	138,331	135,979	68,623	0	0

Basic premium ratio (BPR): A component of the retrospective rating premium formula. The BPR represents a charge for administrative costs (except claims handling) and an insurance charge that covers the cost of having retrospective premium limited by the selected maximum premium ratio.

Case reserve: L&I's estimate of the cost associated with a specific claim.

Coverage period: A twelve-month period beginning January 1 and ending December 31, or April 1 through March

31, or July 1 through June 30, or October 1 through September 30. Only claims with a date-of-injury within the selected coverage period and the standard premium due for the same coverage period are used to calculate retrospective premium. Effective with the October 1, 2000, coverage period and all subsequent coverage periods thereafter, each coverage period will have three mandatory adjustments and no optional adjustments. The first adjustment will occur nine months after the coverage period has ended. Each subsequent valuation will take place in twelve-month intervals.

Note: The coverage period for a retro group is selected by the sponsoring organization and the coverage period of an individual enrollment is selected by the employer.

Date of enrollment or reenrollment: A phrase used by L&I to establish when participation in retro begins. The date of enrollment or reenrollment is the first day of the coverage period.

Note: A sponsoring organization can add new group members each quarter during the coverage period. We refer to this as "staggered enrollment." Employers seeking to participate in an organization's group after the coverage period has begun must meet all of the application requirements found in WAC 296-17-90413. Staggered enrollment applications must be received in our Tumwater office by the 15th calendar day of the month prior to the selected quarter (i.e., December 15 for January 1; March 15 for April 1; June 15 for July 1; or September 15 for October 1). If the due date falls on a weekend or holiday, the application will be due on the next business day. Employers that participate in a retro group on a staggered enrollment basis are required to participate for the remainder of the coverage period unless they sell or close the enrolled business or become self-insured.

Developed losses, a.k.a. total incurred losses (developed): A component of the retrospective rating premium formula determined on each valuation date. Developed losses are determined by summing up the result of multiplying the incurred losses by the applicable pure loss development factors and then by the performance adjustment factor.

Freeze date: See valuation date.

Group: Employer members of an organization who have agreed to have their retrospective premium calculated using the combined applicable standard premium and related developed loss data of the participants as a whole.

Homogeneity: A word used to convey the requirement that retro groups be made up of like businesses.

Incurred losses: A cost measure of a claim. For open claims, incurred losses are the total of costs paid-to-date which have been assigned to a given employer account, or the case reserve established by the department, whichever is greater. For closed claims, incurred losses are the total of costs paid-to-date which have been assigned to a given employer account, regardless of any case reserve that may have been established.

Loss conversion factor (LCF): A component of the retrospective premium formula, the LCF represents an expense charge for claims handling and the present value of developed losses.

Note: LCF can be found in WAC 296-17-90493 through 296-17-90497.

Loss development factor (LDF): For each coverage period and valuation date, the department calculates accident and medical aid loss development factors by type of claim. Each loss development factor is calculated by multiplying the pure loss development factor by the performance adjustment factor for the same coverage period and valuation date.

Loss ratio: The numerical result of dividing developed losses by standard premium.

Note: The retrospective premium calculation will generate a net refund if the basic premium ratio (BPR) + (Loss Ratio x the Loss conversion factor (LCF)) is less than 1. The BPR and LCF are determined by the plan selected by the individual enrollee, or in the case of a group by the sponsoring organization and the premium size of the individual enrollee or the group. Once these have been selected the retro group can only influence the loss ratio to determine the amount of refund. L&I suggests an evaluation of each claim to deter-

mine if there are trends and patterns and that the sponsoring organization implement workplace safety measures to eliminate or reduce loss regardless of the loss ratio.

Maximum premium ratio (MPR): A factor preselected by the organization (group) or individually enrolled employer. The MPR is multiplied by the standard premium (SP) to determine the maximum retrospective premium requirement for a given coverage period.

Note: MPRs can be found in WAC 296-17-90493 through 296-17-90497.

Member of a group: These are the individual employees that participate in a group plan of a sponsoring organization.

Minimum premium ratio (MnPR): An actuarially determined factor applicable to plans A1, A2 and A3. The MnPR is multiplied by the standard premium (SP) to determine the minimum retrospective premium requirement for a given coverage period.

Note: MnPRs can be found in WAC 296-17-90494 through 296-17-90496.

Pension claim: A claim designated as a fatality or total permanent disability.

Performance adjustment factor (PAF): An actuarially determined factor unique to each retro coverage period that ensures that aggregate refunds reflect the relative performance of retro versus nonretro state fund employers.

Plan: A numeric table developed by L&I used to calculate the retrospective premium requirement of a group or individually enrolled employer.

Note: A group or individually enrolled employer preselects from one of five plans (A, A1, A2, A3 or B). The selected plan (along with the MPR and standard premium volume) determines the minimum premium, basic premium and the loss conversion factor that is applied to the developed losses used in the retrospective premium calculation.

Premium: Money paid (due) from an employer for workers' compensation insurance. It does not include money paid as fees, fines, penalties or deposits.

Pure developed loss: The pure developed loss amount is determined by summing up the result of multiplying the incurred losses by the applicable pure loss development factors. This amount is used when pure developed loss amounts from a single accident are capped at a predetermined loss limitation amount.

Pure loss development factor (pure LDF): For each coverage period and valuation date, the department calculates accident and medical aid pure loss development factors by type of claim. Based on historical trends we know that the total incurred losses for claims in a coverage period tend to increase over time. This can be the result of claim reopenings and other changes in the condition of a claim. These factors anticipate and distribute these increases among all the claims in a coverage period. For enrollments during 2007 and prior, the department will only consider pension and nonpension claim types. For enrollments starting during 2008 and afterwards, the department will consider fatality, total permanent disability, permanent partial disability, time loss, miscellaneous accident fund and medical only types of claims.

Qualified employer: A phrase used by L&I to describe an employer that has an industrial insurance account and that

the account is in good standing at the time of enrollment or reenrollment.

Retrospective premium: The net premium for a group or individually enrolled employer after an adjustment for a given coverage period. The retrospective premium is determined using the formulas and provisions found in WAC 296-17-90446.

Standard premium: A phrase used by L&I to denote the total accident fund and medical aid fund premiums paid (due) by a group or individually enrolled employer for a given coverage period.

Note: The supplemental pension assessment portion of total premiums due (paid) is not included. If the group includes employers subject to the staggered enrollment provision of the retro rules, the standard premium is the total accident fund and medical aid fund premiums due (paid) for the calendar months in which they have been accepted into a group.

Type of claim: The following claims are defined as follows in order of the severity of the claim:

Fatality: Any claim, which is not a total permanent disability claim, where death either results or is expected to result from the work related injury or illness.

Total permanent disability: Any claim where a total permanent disability pension has been awarded or is expected to be awarded.

Permanent partial disability: Any claim, which is not a pension claim, where a permanent partial disability award either has been awarded or is expected to be awarded.

Time loss: Any claim, which is not a pension nor a permanent partial disability claim, where time loss or loss of earning power benefits have either been awarded or are expected to be awarded.

Miscellaneous accident fund: Any claim, which is not a pension, permanent partial disability, nor time loss claim, to which other miscellaneous benefits have been awarded or are expected to be awarded from the accident fund.

Medical only: Any claim where the only insurance benefits awarded or expected to be awarded to the claim are medical aid fund benefits.

Valuation date: The date selected by L&I in which incurred losses for applicable claims are measured and captured for the purpose of calculating retrospective premium.

Note: Changes in incurred losses that occur after the valuation date will not be considered until the next applicable valuation date. The first valuation date is nine months after the coverage period ends. All subsequent valuations will occur in twelve-month intervals.

[Statutory Authority: RCW 51.18.010 and 51.16.035. 07-17-140, § 296-17-90402, filed 8/21/07, effective 10/1/07. Statutory Authority: RCW 51.18.010(1). 02-23-089, § 296-17-90402, filed 11/20/02, effective 1/1/03. Statutory Authority: RCW 51.18.010. 00-11-060, § 296-17-90402, filed 5/12/00, effective 7/1/00.]

WAC 296-17-90445 Valuation of coverage period.

Our responsibility:

• Nine months after the coverage period has ended, we will do an initial valuation of the losses for each employer and group participating in retrospective rating.

Note: Effective with the October 1, 2000, coverage period and all subsequent coverage periods thereafter, each retrospective rating plan has three mandatory valuations and no optional valuations. The first valuation takes place roughly nine months from the last day of the coverage period. Each sub-

sequent valuation will occur at twelve-month intervals from the initial evaluation date.

Example: Assume that your coverage period began July 1, 2001, and ended June 30, 2002 (twelve calendar months). Our first valuation date would occur the end of March 2003. This is roughly nine months from the last day of the coverage period.

• On the valuation date, all claims with injury dates that fall within the coverage period are valued and the incurred losses that have been established for these claims are "captured" or "frozen."

Note: Our valuation is limited to the open or closed status of a claim on the evaluation date. We do not consider adjudicative decisions (i.e., claim allowance, case reserve, wage determination and dependent status) surrounding a claim in our valuation.

• During the adjustment process we convert the captured incurred loss of each claim into developed losses using the appropriate loss development and performance adjustment factors. Retrospective premium is then calculated using the applicable formulas and tables in the retrospective rating manual.

• Prior to the application of the performance adjustment factor, we will cap the pure developed loss value for any one claim or group of claims arising from a single accident that has collective pure developed losses in excess of five hundred thousand dollars at a maximum of five hundred thousand dollars.

• Since the standard premium used in the retro calculation is based on premiums reported but not necessarily paid, we will deduct from the standard premium calculation any unpaid member premiums.

Note: A sponsoring organization and L&I can enter into an agreement for an alternate debt recovery method.

• Approximately twenty days after the valuation date, if entitled, we will send you your premium refund.

Note: If you participate in an individual plan or retro group, we will not issue a refund check if it is less than ten dollars. If a refund is less than ten dollars, we will credit the amount to your industrial insurance account and you can deduct the amount from your next premium payment. All retro group refunds are paid directly to the sponsoring organization. It is the responsibility of the sponsoring organization to distribute any refund to the group members. L&I does not regulate how refunds are distributed to group members. Employers that participate in retro are not required to share any of their retro refund with employees nor can they charge employees in the event of an additional assessment.

• We will send you a bill if you owe us additional premium.

Note: If you owe additional premium, it is due thirty days after we communicate the decision to you. We will charge penalties on any additional premium not paid when it is due (RCW 51.48.210). If you (employer in an individual plan or sponsoring organization of a retro group) are entitled to a refund for one coverage period and owe additional premiums for another coverage period, we will deduct the additional premiums due L&I from the refund. We will refund the difference to you. In the event that this adjustment still leaves a premium balance due, we will send you a bill for the balance. If an organization sponsors multiple retro groups and one group earns a refund and the other owes additional premium from a retro adjustment, we will deduct the additional premium from the refund due and issue a net refund to the organization for the difference or bill them for the remaining additional premium as applicable.

[Statutory Authority: RCW 51.18.010 and 51.16.035. 07-17-140, § 296-17-90445, filed 8/21/07, effective 10/1/07. Statutory Authority: RCW 51.18.010(1). 02-23-089, § 296-17-90445, filed 11/20/02, effective 1/1/03. Statutory Authority: RCW 51.18.010. 00-11-060, § 296-17-90445, filed 5/12/00, effective 7/1/00.]

WAC 296-17-90492 Table I.

RETROSPECTIVE RATING PLANS A, A1, A2, A3, AND B
STANDARD PREMIUM SIZE RANGES
Effective January 1, 2008

Size Group Number	Standard Premium Range
63	\$4,761 - \$5,751
62	5,752 - 6,907
61	6,908 - 8,219
60	8,220 - 9,723
59	9,724 - 11,445
58	11,446 - 13,379
57	13,380 - 15,589
56	15,590 - 17,929
55	17,930 - 20,399
54	20,400 - 22,999
53	23,000 - 25,749
52	25,750 - 28,629
51	28,630 - 31,639
50	31,640 - 34,809
49	34,810 - 38,129
48	38,130 - 41,489
47	41,490 - 44,869
46	44,870 - 48,579
45	48,580 - 52,699
44	52,700 - 57,289
43	57,290 - 62,369
42	62,370 - 68,069
41	68,070 - 74,439
40	74,440 - 81,559
39	81,560 - 89,589
38	89,590 - 98,689
37	98,690 - 108,929
36	108,930 - 119,899
35	119,900 - 131,799
34	131,800 - 144,999
33	145,000 - 159,399
32	159,400 - 175,399
31	175,400 - 191,999
30	192,000 - 210,499
29	210,500 - 231,299
28	231,300 - 254,999
27	255,000 - 282,399
26	282,400 - 313,899
25	313,900 - 350,099
24	350,100 - 392,499
23	392,500 - 442,399
22	442,400 - 500,799
21	500,800 - 570,699
20	570,700 - 654,899
19	654,900 - 755,999
18	756,000 - 880,499
17	880,500 - 1,035,699
16	1,035,700 - 1,258,999
15	1,259,000 - 1,567,999

Size Group Number	Standard Premium Range
14	1,568,000 - 2,003,999
13	2,004,000 - 2,560,999
12	2,561,000 - 3,270,999
11	3,271,000 - 4,334,999
10	4,335,000 - 6,003,999
9	6,004,000 - 8,654,999
8	8,655,000 - 12,539,999
7	12,540,000 - 18,469,999
6	18,470,000 - 28,709,999
5	28,710,000 - 45,319,999
4	45,320,000 & Over

[Statutory Authority: RCW 51.16.035, 51.32.073, 51.08.010, and 51.04.020 (1). 07-24-046, § 296-17-90492, filed 12/1/07, effective 1/1/08; 06-24-054, § 296-17-90492, filed 12/1/06, effective 1/1/07. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.32.073. 05-23-162, § 296-17-90492, filed 11/22/05, effective 1/1/06; 04-24-025, § 296-17-90492, filed 11/23/04, effective 1/1/05. Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, and 51.18.010. 03-24-066, § 296-17-90492, filed 12/1/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 51.32.073, 51.18.010, and 51.04.020(1). 02-24-029, § 296-17-90492, filed 11/27/02, effective 1/1/03. 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.]

WAC 296-17-920 Assessment for supplemental pension fund. The amount of 39.1 mils (\$0.0391) 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 51.16.035, 51.32.073, 51.08.010, and 51.04.020 (1). 07-24-046, § 296-17-920, filed 12/1/07, effective 1/1/08; 06-24-054, § 296-17-920, filed 12/1/06, effective 1/1/07. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.32.073. 05-23-162, § 296-17-920, filed 11/22/05, effective 1/1/06; 04-24-025, § 296-17-920, filed 11/23/04, effective 1/1/05. Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, and 51.18.010. 03-24-066, § 296-17-920, filed 12/1/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 51.32.073, 51.18.010, and 51.04.020(1). 02-24-029, § 296-17-920, filed 11/27/02, effective 1/1/03. 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 296-17A WAC

CLASSIFICATIONS FOR WASHINGTON WORKERS' COMPENSATION INSURANCE

WAC

296-17A-0307	Classification 0307.
296-17A-0508	Classification 0508.
296-17A-0510	Classification 0510.
296-17A-1002	Classification 1002.
296-17A-1003	Classification 1003.
296-17A-1101	Classification 1101.
296-17A-1105	Classification 1105.
296-17A-1108	Classification 1108.
296-17A-1109	Classification 1109.
296-17A-1407	Classification 1407.
296-17A-1501	Classification 1501.
296-17A-2903	Classification 2903.
296-17A-2908	Classification 2908.
296-17A-3309	Classification 3309.
296-17A-3402	Classification 3402.
296-17A-3406	Classification 3406.
296-17A-3414	Classification 3414.
296-17A-3512	Classification 3512.
296-17A-4801	Classification 4801.
296-17A-4803	Classification 4803.
296-17A-4902	Classification 4902.
296-17A-4904	Classification 4904.
296-17A-5001	Classification 5001.
296-17A-5109	Classification 5109.
296-17A-5300	Classification 5300.
296-17A-5307	Classification 5307.
296-17A-5308	Classification 5308.
296-17A-6301	Classification 6301.
296-17A-6409	Classification 6409.
296-17A-6510	Classification 6510.
296-17A-6511	Classification 6511.
296-17A-6614	Classification 6614.
296-17A-6615	Classification 6615.
296-17A-6616	Classification 6616.
296-17A-6617	Classification 6617.
296-17A-6618	Classification 6618.
296-17A-6622	Classification 6622.
296-17A-6623	Classification 6623.
296-17A-7201	Classification 7201.

WAC 296-17A-0307 Classification 0307.

0307-01 Furnaces and heating systems: Installation, service or repair

Applies to contractors engaged in the installation, service, or repair of furnaces and heating systems, including duct work, in all types of residential and commercial settings. These services are generally performed by furnace contractors, heating and ventilation contractors, or sheet metal contractors. Work contemplated by this classification includes the fabrication, erection, installation and duct work performed at the job site. Materials include, but are not limited to, gas or electric furnace units, heater units, heat pumps, air purification systems, fireplace inserts or units, hot water tanks, thermostats, flat sheets of metal, vents, preformed or

bent venting duct and pipe, vent collars and reels, fittings, galvanized pipe, insulation wrap, concrete pads and gas logs. Contractors who operate a sheet metal fabrication shop or who prefabricate the duct systems in a shop away from the construction site are to be assigned classification 3404 for the shop fabrication work. When a contractor's business is assigned classification 3404 for shop operations, then classification 5206, "Permanent yard or shop," is no longer applicable to the contractor's business for the storage of materials or repair to equipment.

This classification excludes sheet metal fabrication shops which are to be reported separately in classification 3404; duct cleaning work which is to be reported separately in classification 1105; installation or repair of ventilation, air conditioning and refrigeration systems which is to be reported separately in classification 0307-04; or the installation of wood stoves which is to be reported separately in classification 0307-05.

Special note: This classification includes the installation of display areas or showrooms which provide prospective customers an opportunity to inspect the quality of workmanship and products carried by the contractor. Generally, displays or showrooms are installed where the contractors store their materials. It is common for contractors subject to this classification to sell furnace and heating system materials and accessories, but the intent of these areas is not to sell products to walk-in customers. Sales of these products by a furnace and heating systems contractor are included in classification 0307. Classification 2009, 6309, or similar store classifications, are not to be assigned to a contracting business. Employees engaged exclusively in showing the display areas or showrooms to customers are to be assigned classification 6303 provided the conditions of the standard exception general reporting rule have been met.

0307-04 Ventilating, air conditioning and refrigeration systems: Installation, service or repair, N.O.C.

Applies to contractors engaged in the installation, service, or repair of ventilating, air conditioning and refrigeration systems not covered by another classification (N.O.C.), including duct work at the job site in all types of residential and commercial settings. These services are generally performed by heating and ventilation contractors, refrigeration contractors, or sheet metal contractors. Work contemplated by this classification includes the fabrication, erection, installation and duct work performed at the job site. Materials include, but are not limited to, air conditioning units, refrigeration systems, air purification systems, hoods and protective metal covers, hot water tanks, flat sheets of metal, vents, preformed or bent duct portions, vent collars and reels, thermostats, fittings, galvanized pipe, insulation wrap, and concrete pads. This classification includes the installation or repair of built-in vacuum systems and air (pneumatic) tube systems, such as those at drive-up teller windows. Contractors who operate a sheet metal fabrication shop or who prefabricate the duct systems in a shop away from the construction site are to be assigned classification 3404 for the shop fabrication work. When a contractor's business is assigned classification 3404 for shop operations, then classification 5206 "Permanent yard or shop" is no longer applicable to the contractor's business for the storage of materials or repair to equipment.

This classification excludes sheet metal fabrication shops which are to be reported separately in classification 3402; installation or repair of furnace or heating systems which is to be reported separately in classification 0307-01; and the installation of wood stoves which is to be reported separately in classification 0307-05.

Special note: This classification includes the installation of display areas or showrooms which provide prospective customers an opportunity to inspect the quality of workmanship and products carried by the contractor. Generally, displays or showrooms are installed where the contractors store their materials. It is common for contractors subject to this classification to sell ventilating and air conditioning equipment and materials, but the intent of these areas is not to sell products to walk-in customers. Sales of these products by a ventilating and air conditioning contractor are included in classification 0307. Classification 2009, 6309, or similar store classifications, are not to be assigned to a contracting business. Employees engaged exclusively in showing the display areas or showrooms to customers are to be assigned classification 6303 provided the conditions of the standard exception general reporting rule have been met.

0307-05 Wood, pellet, or gas stove: Installation, service or repair

Applies to contractors engaged in the installation, service or repair of wood, pellet or gas stoves in all types of residential and commercial settings. Work contemplated by this classification includes the fabrication, installation and duct work performed at the job site. Materials include, but are not limited to, wood, gas or pellet stoves, inserts, heater units, protective metal covers or hoods, gas fireplace logs, preformed or bent venting duct and pipe, or vents and vent collars. Contractors who operate a sheet metal fabrication shop or who prefabricate the duct systems in a shop away from the installation site are to be assigned classification 3402 for the shop fabrication work. When a contractor's business is assigned classification 3402 for the shop operations, then classification 5206, "Permanent yard or shop," is no longer applicable to the contractor's business for the storage of materials or repair to equipment.

This classification excludes wood stove and accessory stores which are to be reported separately in classification 6309; stove manufacturing which is to be reported separately in classification 3402; sheet metal fabrication shops which are to be reported separately in classification 3404; brick or masonry work which is to be reported separately in classification 0302; and the installation or repair of furnace or heating systems which is to be reported separately in classification 0307-01.

Special note: This classification includes the installation of display areas or showrooms which provide prospective customers an opportunity to inspect the quality of workmanship and products carried by the contractor. Generally, displays or showrooms are installed where the contractors store their materials. It is common for contractors subject to this classification to sell wood stove installation materials and accessories, but the intent of these areas is not to sell products to walk-in customers. Sales of these products by a wood stove installation contractor are included in classification 0307. Classifications 2009, 6309, or similar store classi-

fications, are not to be assigned to a contracting business. Employees engaged exclusively in showing the display areas or showrooms to customers are to be assigned classification 6303 provided the conditions of the standard exception general reporting rule have been met.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-0307, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-0307, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035, 51.16.100. 06-12-075, § 296-17-513, filed 6/6/06, effective 1/1/07. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-513, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-513, filed 5/31/96, effective 7/1/96; 85-24-032 (Order 85-33), § 296-17-513, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-513, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-513, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-0508 Classification 0508.

0508-00 Radio, television, cellular or water towers, poles and towers, N.O.C.: Construction or erection, dismantling, maintenance or repair

Applies to contractors engaged in the construction or erection, dismantling, maintenance or repair of iron, steel, or wood radio, television, cellular or water towers, poles, towers and those towers which are not covered by another classification (N.O.C.). Work contemplated by this classification includes, but is not limited to, clearing of land (if done by the foundation/excavation contractor), excavating for the foundation, the placement of forms, installation of reinforcing steel, pouring and finishing the foundation, on-site fabrication and assembly of parts, erecting the frame, installation of scaffolding, raising structural members by crane and welding or bolting them into place, and the installation, removal, service and/or repair of antennas, dish units and/or other transmitting/receiving apparatus to the structure. This classification also includes the delivery of material and supplies to the job site when done by employees of an employer having operations subject to this classification.

This classification excludes the felling of timber which is to be reported separately in the applicable logging classification; the preliminary clearing of land by a contractor who is not also excavating for the foundation which is to be reported separately in classification 0101; delivery of material to the site by employees of a material supplier or a common carrier which is to be reported separately in the applicable classification; and the construction of a control building or installation of a modular control building which is to be reported separately in the applicable construction classification.

Special note: This classification does not allow the separate reporting of excavation or foundation work irrespective of who performs the work. This classification includes specialty contractors who install, remove, service or repair antennas, dish units and/or other transmitting/receiving apparatus to a structure covered by this classification.

0508-01 Smokestack: Construction or erection, dismantling, maintenance or repair

Applies to contractors engaged in the construction or erection, dismantling, maintenance or repair of iron, steel or concrete smokestacks. These structures are part of an industrial complex and facilitate the discharge of combustion vapors, gases, or smoke. Work contemplated by this classification includes, but is not limited to, clearing of land (if done by the excavation contractor), excavating for the foundation,

the placement of forms, installation of reinforcing steel, pouring and finishing the foundation, on-site fabrication and assembly of parts, installation of scaffolding, raising segments into place with a crane and welding or bolting them into place. This classification includes the delivery of material and supplies to the job site and installation of any apparatus onto a structure covered by this classification when done by employees of an employer having operations subject to this classification.

This classification excludes the felling of timber which is to be reported separately in the applicable logging classification; the installation of machinery which is to be reported separately in classification 0603; preliminary clearing of land by a contractor who is not also excavating the foundation which is to be reported separately in classification 0101; delivery of material to the site by employees of a material supplier or a common carrier which is to be reported separately in the applicable classification; and the construction of a control building or installation of a modular control building which is to be reported separately in the applicable construction classification.

Special note: This classification does not allow separate reporting of excavation or foundation work irrespective of who performs the work.

0508-02 Windmill and silo: Construction or erection, dismantling, maintenance or repair

Applies to contractors engaged in the construction or erection, dismantling, maintenance or repair of iron, concrete, steel, or wood windmills or silos. Windmills use the force of wind passing around the rotor blades to turn turbines and produce electric power. These may be built individually or in groups known as "wind farms." Additional apparatus and storage batteries are housed in separate buildings nearby. Silos are large cylindrical structures used to store grain or fodder (silage). They are filled through the top by means of a conveyor. Within the structure, augers and pumps can move the grain to blend, aerate, or feed it out the chute. Work contemplated by this classification includes, but is not limited to, clearing of land (if done by the excavation contractor), excavating for the foundation, the placement of forms, installation of reinforcing steel, pouring and finishing the foundation, on-site fabrication and assembly of parts, erecting the frame, installation of scaffolding, raising structural members by crane and welding or bolting them into place. This classification includes the delivery of material and supplies to the job site and the installation of apparatus onto a structure covered by this classification when done by employees of an employer having operations subject to this classification.

This classification excludes the felling of timber which is to be reported separately in the applicable logging classification; the installation of machinery which is to be reported separately in classification 0603; the preliminary clearing of land by a contractor who is not also excavating for the foundation which is to be reported separately in classification 0101; delivery of material to the site by employees of a material supplier or a common carrier which is to be reported separately in the applicable classification; and the construction of a control building or installation of a modular control building which is to be reported separately in the applicable construction classification.

Special note: This classification does not allow the separate reporting of excavation or foundation work irrespective of who performs the work.

0508-03 Oil still or refinery: Construction or erection, dismantling, maintenance or repair

Applies to contractors engaged in the construction or erection, dismantling, maintenance or repair of oil stills or refineries. These facilities are basically composed of multi-story storage tanks, chimneys, pipelines, separating apparatus and steam generating systems. They receive unprocessed petroleum (crude oil) and convert it into usable products such as gasoline, kerosene, wax, grease and chemical feed stocks. Work contemplated by this classification includes, but is not limited to, clearing of land (if done by the excavation contractor), excavating for the foundation, the placement of forms, installation of reinforcing steel, pouring and finishing the foundation and other concrete, on-site fabrication and assembly of parts, erecting framework, installation of scaffolding, raising structural members by crane and welding or bolting them into place. This classification includes the delivery of material and supplies to the job site and the installation of apparatus in an oil still or refinery when done by employees of an employer having operations subject to this classification.

This classification excludes the felling of timber which is to be reported separately in the applicable logging classification; the installation of machinery or apparatus by a specialty contractor which is to be reported separately in classification 0603; plant maintenance contract work as described in classification 0603; preliminary clearing of land by a contractor who is not also excavating for the foundation which is to be reported separately in classification 0101; delivery of material to the site by employees of a material supplier or a common carrier which is to be reported separately in the applicable classification; and the construction of control or pump houses and other buildings not part of the main processing plant which is to be reported separately in the applicable construction classification.

Special note: This classification does not allow separate reporting of excavation or foundation work irrespective of who performs the work.

0508-04 Blast furnace and metal burners: Construction or erection, dismantling, maintenance or repair

Applies to contractors engaged in the construction or erection, dismantling, maintenance or repair of blast furnaces and metal burners. These are tall, very heavy gauge, cylindrical steel structures in which heated air and combustible fuels are combined to produce the heat necessary to separate the usable material in metal ores from the waste products. Work contemplated by this classification includes, but is not limited to, clearing of land (if done by the excavation contractor), excavating for the foundation, the placement of forms, installation of reinforcing steel, pouring and finishing the foundation, on-site fabrication and assembly of parts, erecting the frame, installation of scaffolding, installation of a brick lining, raising structural members by crane and welding or bolting into place. This classification includes the delivery of material and supplies to the job site and the installation of apparatus onto a structure covered by this classification when

done by employees of an employer having operations subject to this classification.

This classification excludes the felling of timber which is to be reported separately in the applicable logging classification; the installation of machinery which is to be reported separately in classification 0603; the preliminary clearing of land by a contractor who is not also excavating for the foundation which is to be reported separately in classification 0101; delivery of material to the site by employees of a material supplier or a common carrier which is to be reported separately in the applicable classification; and the construction of additional buildings as part of an ore reduction or metal producing facility which is to be reported separately in the applicable construction classification.

Special note: This classification does not allow separate reporting of excavation or foundation contractors irrespective of who performs the work.

0508-08 Elevated railway, tram, lift or similar conveyances: Construction or erection, dismantling, maintenance or repair

Applies to contractors engaged in the construction or erection, dismantling, maintenance or repair of elevated railways, trams, lifts or similar conveyances. An elevated railway can be a full scale railroad or a smaller scale system such as a recreational monorail. For the purposes of this classification, trams are overhead cable cars, and lifts are similar to the typical ski lift. Work contemplated by this classification includes, but is not limited to, clearing of land (if done by the excavation contractor), excavating for the foundation, the placement of forms, installation of reinforcing steel, pouring and finishing the foundation, on-site fabrication and assembly of parts, erecting frames and supports (metal or concrete), installation of scaffolding, raising structural members by crane and welding or bolting them into place, and installing and securing tracks, cables or pulley systems. This classification includes the delivery of material and supplies to the job site and the installation of apparatus onto a structure covered by this classification when done by employees of an employer having operations subject to this classification.

This classification excludes the felling of timber which is to be reported separately in the applicable logging classification; the installation of machinery which is to be reported separately in classification 0603; the preliminary clearing of land by a contractor who is not also excavating for the foundation which is to be reported separately in classification 0101; delivery of material to the site by employees of a material supplier or a common carrier which is to be reported separately in the applicable classification; or the construction of a control building or installation of a modular control building which is to be reported separately in the applicable construction classification.

Special note: This classification does not allow separate reporting of excavation or foundation contractors irrespective of who performs the work.

0508-09 Exterior tanks, N.O.C.: Construction or erection, dismantling, maintenance or repair

Applies to contractors engaged in the construction or erection, dismantling, maintenance or repair of all types of exterior tanks not covered by another classification (N.O.C.). These tanks may be part of water storage and distribution systems,

chemical or petroleum processing and storage operations, or other industrial applications. This classification includes the erection or construction of tanks that are elevated on structural piers and those that rest on the ground. These tanks may be constructed singly or in groups known as "tank farms" which are common to the petroleum industry. Work contemplated by this classification includes, but is not limited to, clearing of land (if done by the excavation contractor), excavating for the foundation, the placement of forms, installation of reinforcing steel, pouring and finishing the foundation, on-site fabrication and assembly of parts, erecting the frame, installation of scaffolding, and raising structural members by crane and welding or bolting them into place. This classification includes the delivery of material and supplies to the job site and installation of apparatus onto a structure covered by this classification when done by employees of an employer having operations subject to this classification.

This classification excludes the felling of timber which is to be reported separately in the applicable logging classification; the installation of machinery which is to be reported separately in classification 0603; the preliminary clearing of land by a contractor who is not also excavating for the foundation which is to be reported separately in classification 0101; delivery of material to the site by employees of a material supplier or a common carrier which is to be reported separately in the applicable classification; and the construction of a control building or installation of a modular control building which is to be reported separately in the applicable construction classification.

Special note: This classification does not allow separate reporting of excavation or foundation contractors irrespective of who performs the work.

0508-11 Crane or derrick: Installation, construction or erection, dismantling, maintenance or repair

Applies to contractors engaged in the installation, construction or erection, dismantling, maintenance or repair of nonmobile cranes and derricks for commerce and industrial use. Cranes and derricks can be very similar in that they are both defined as machines for hoisting and moving heavy objects through the use of stationary or movable booms equipped with cables. An object, sometimes weighing many tons, can be secured to the cables and moved into position along the length of a stationary boom or to another location within the reach of a movable boom. A derrick, however, can also be a permanent framework over an opening, such as an oil-drilling operation, to support boring equipment. The cranes included in this classification are those that are permanently installed at a marine port, cargo handling facility or an industrial facility to move supplies, cargo containers, or heavy objects (vertically or horizontally) that are being assembled and must pass through the length of a building to complete the process. Work contemplated by this classification includes, but is not limited to, the placement of forms and reinforcing steel for a foundation (in the case of some structures described above, the additional reinforcing required to support the crane is usually contemplated in the plan for the building's foundation where the crane is being anchored), on-site fabrication and assembly of parts, erecting the frame, installation of scaffolding, raising structural mem-

bers by hoist and welding or bolting them into place. This classification includes the delivery of material and supplies to the job site and installation of apparatus onto a structure covered by this classification when done by employees of an employer having operations subject to this classification.

This classification excludes the operation of mobile cranes which is to be reported in classification 3506, the installation of machinery which is to be reported separately in classification 0603; the preliminary clearing of land by a contractor who is not also excavating for the foundation which is to be reported separately in classification 0101; and delivery of material to the site by employees of a material supplier or a common carrier which is to be reported separately in the applicable classification.

Special note: This classification does not allow separate reporting of excavation or foundation contractors irrespective of who performs the work.

0508-12 Water cooling towers or structures - metal or wood: Construction or erection, dismantling, maintenance or repair

Applies to contractors engaged in the construction or erection, dismantling, maintenance or repair of metal or wood water cooling towers or vertical structures. These structures are usually part of an industrial complex in which water is used as a cooling element in a manufacturing process. The water, which absorbs heat from the machinery being cooled, can be circulated and reused after it has been channeled through a cooling tower to be chilled sufficiently. A common design allows the hot water to tumble down numerous open louvers or steps to lower its temperature. These towers are often composed of prefabricated parts which are delivered to the site and then assembled by bolting or welding together, then the necessary motors, pipes, fans and pumps are installed. Work contemplated by this classification includes, but is not limited to, clearing of land (if done by the excavation contractor), excavating for the foundation, the placement of forms, installation of reinforcing steel, pouring and finishing the foundation, on-site fabrication and assembly of parts, erecting the frame, installation of scaffolding, raising structural members by crane and welding, bolting or otherwise fastening them into place. This classification includes the delivery of material and supplies to the job site and installation of apparatus onto a structure covered by this classification when done by employees of an employer having operations subject to this classification.

This classification excludes the felling of timber which is to be reported separately in the applicable logging classification; the installation of machinery which is to be reported separately in classification 0603; the preliminary clearing of land by a contractor who is not also excavating for the foundation which is to be reported separately in classification 0101; delivery of material to the site by employees of a material supplier or a common carrier which is to be reported separately in the applicable classification; and the construction of other related buildings at the project site which is to be reported separately in the applicable construction classification.

Special notes: This classification does not allow separate reporting of excavation or foundation irrespective of who performs the work. Construction of a water cooling structure

that uses a horizontal rather than tower-like design is to be reported separately in classification 0518.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-0508, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-0508, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035, 51.16.100. 06-12-075, § 296-17-521, filed 6/6/06, effective 7/7/06. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.12.120. 03-23-025, § 296-17-521, filed 11/12/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 51.04.020. 00-14-052, § 296-17-521, filed 7/1/00, effective 7/1/00. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-521, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-521, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-521, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-521, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-521, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-521, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-521, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-521, filed 11/30/76; Order 75-38, § 296-17-521, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-521, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-521, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-0510 Classification 0510.

0510-00 Wood frame building: Construction or alterations, N.O.C.

Applies to contractors engaged in wood frame building construction or alterations not covered by another classification (N.O.C.). For the purposes of this classification, wood frame building construction means buildings erected exclusively of wood or wood products. This classification includes all building framing activities done in connection with wood frame building construction including the placement of roof trusses, sheathing roofs, installation of exterior building siding, and the installation of exterior doors and door frames. This classification also includes the installation of windows, window frames, and skylights when performed by framing workers as part of the framing contract on a wood frame building. This classification also includes the erection of log home shells at customer's location. The manufacturing of log homes in a permanent yard which includes peeling the logs, notching the logs with chainsaws, and assembly is to be reported in classification 1003-06.

This classification excludes all other phases of wood frame building construction not listed as part of the framing activities above such as, but not limited to, site preparation and excavation (0101); overhead or underground utilities, asphalt work, or concrete work which is to be reported separately in the applicable classification; new landscape work (0301); brick work (0302); stucco work (0303); plumbing work (0306); HVAC work (0307); carpet and tile work (0502); exterior painting (0504); roof work (0507); insulation work (0512); interior finish carpentry - interior doors, cabinets, fixtures or molding (0513); installation of garage doors (0514); installation of sheet metal siding, gutters, and non-structural sheet metal patio covers/carports (0519); interior painting (0521); electrical work (0601) or wallboard installation, taping or texturing which are to be reported separately in the applicable classifications. For a more thorough description of the activities included and excluded from wood frame building construction, review the Construction Industry Guide.

Special note: Classification 0510 also includes wood frame building alterations or remodel work when the activity

involves building new additions. The term "new additions" is defined as adding on to an existing wood frame building (upwards or outwards) in which the use of structural supports and main bearing beams is required. This is distinguishable from classification 0516 - building repair or carpentry work that typically does not require the placement of structural supports or main bearing beams. The purpose of classification 0516 is to build or rebuild with nonstructural or bearing beams, or to replace an existing portion (including existing structural and bearing beams) of a wood frame building for appearances or as a result of deterioration to make it appear new again. Care should be exercised as the terminology to build, rebuild, remodel, construct or reconstruct is irrelevant to assignment of classification which should recognize what the project actually involves.

Guidelines:

Constructing a new wood frame building that never existed - 0510

Altering all or part of an existing wood frame building by adding on new additions - 0510

Remodeling all or part of an existing wood frame building *without* adding on new additions - 0516

Installation of wood or vinyl siding on a new or existing wood frame building - 0510

Constructing a new wood garage that never existed - 0510

Altering all or part of an existing wood garage by adding on new additions - 0510

Remodeling all or part of an existing wood garage without adding on new additions - 0516

Constructing a new wood carport or wood shed that never existed - 0510

Rebuilding an existing wood carport or wood shed (all or part) with or without new additions - 0516

Construction of a new wood deck by the framing contractor when a new wood house is being built - 0510

Constructing or replacing a wood deck on an existing wood house - 0516

Constructing or replacing a wood deck for any type of nonwood building - 0516

Altering the existing interior of a wood frame building by adding exterior additions - 0510

Remodeling the existing interior of a wood frame building without adding exterior additions - 0516

Constructing, altering, or remodeling the interiors of nonwood frame buildings - 0516

Installation of windows, window frames, and skylights when performed by framing workers as part of the framing contract of a wood frame building - 0510.

0510-99 Wood frame building: Construction or alteration, N.O.C. (only to be assigned by the wood framing specialist)

Applies to framing contractors, who consider themselves to be independent contractors, have no employees, and have not elected owner coverage for themselves.

The purpose of assigning this classification is to allow the independent contractor the opportunity to be checked for

"account in good standing" status for prime contractor liability.

Special note: Any contractor who hires employees or elects owner coverage is required to report in the applicable construction classification.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-0510, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-0510, filed 12/8/06, effective 12/8/06. Statutory Authority: 2004 c 243, RCW 51.04.020 and 51.16.035. 04-20-023, § 296-17-52102, filed 9/28/04, effective 11/1/04. Statutory Authority: RCW 51.16.035, 51.04.020. 00-14-052, § 296-17-52102, filed 7/1/00, effective 7/1/00. Statutory Authority: RCW 51.16.035. 99-18-068, § 296-17-52102, filed 8/31/99, effective 10/1/99; 98-18-042, § 296-17-52102, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-52102, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-52102, filed 5/31/88, effective 7/1/88; 87-12-032 (Order 87-12), § 296-17-52102, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-52102, filed 11/27/85, effective 1/1/86.]

WAC 296-17A-1002 Classification 1002.

1002-00 Sawmills: Operation and maintenance

Applies to establishments engaged in the operation and maintenance of a sawmill. Sawmills receive raw logs which they usually store temporarily in their yard before cutting them into rough and finished lumber. This classification includes operations such as, but not limited to, loading raw logs onto the conveyor or log slip; sawing logs with a variety of head, cut-off, circular or band saws; grading and sorting lumber; drying green (wet) lumber; and the stacking and storing of lumber. The raw logs are cut into rough lumber, such as cants and blocks, or into finished lumber, such as posts, planks or boards.

This classification excludes all operations conducted in the woods, such as logging or use of a portable sawmill, which is to be reported separately in classification 5001, and establishments engaged *only* in the manufacturing of wood, veneer, veneer products, or lumber remanufacturing which is to be reported separately in the classification applicable to the manufacturing being performed.

1002-08 Shake and shingle mills - automated process (to be assigned by classifications underwriter)

Applies to establishments operating an automated shake and shingle mill which manufacture shakes, shingles and/or ridge caps using automated processes. For purposes of this classification, automated processes refers to shake and shingle mills equipped with automatic feeders on all saws, adjustable packing and cutting stations, and fully automatic systems for conveying material to work stations. All equipment must be equipped with automatic shut off switches. Within a shingle mill the operation of a trim saw must be performed by an individual as a separate function from that of the shingle saw operator (shingle sawyer is not to perform both functions). Shake splitters must be equipped with a gauge control mechanism which permits the operator to automatically set the thickness of the cut. Conveyor systems must have dual controls to allow the deck man and sawyer the ability to control incoming material to the work station.

Block mills must be equipped with an automated pallet dump to eliminate the handling of material to the sawyer work station or an adjustable scissor lift adjacent to the shingle saw or shake splitter. Blocked wood purchased by mills must be contained in pallets prior to entering the mill yard or

premises. Log mills must be equipped with a fully mechanized log slip (used to move logs into the deck area), log levelers, stabilizers, and lifters must be present in the deck area, automatic deck cut-off saw, live deck for moving material from the deck to the splitting area and overhead mounted splitters. Trim saws, also referred to as clipper saws, must be equipped with a laser guide or quartz light. This lighting reveals to the operator where its saw blade is in relationship to the material being processed.

For purposes of this classification, the following terms or words shall be given the meanings below:

Automatic deck or cut-off saw: A large saw, usually circular, used to trim logs to a specified length (rounds) before they enter a manufacturing plant.

Clipper saw: A machine used to make shingle edges parallel.

Shingle: Roofing or siding material having sawn faces and backs, are of a standard thickness at the butt end and tapered finish at the other end.

Shake: Roofing or siding material having at least one surface with a natural grain textured split surface.

Live deck: A chain driven platform located in the same proximity as the deck saw and is used to convey cut rounds from the cutting area to the splitting area.

Log stabilizer: A levered device adjacent to the deck saw used to hold the log steady while it is being cut.

Log slip: A chain driven conveyor used to move logs into the deck area.

Laser or quartz guide light: An overhead mounted light above a saw that illuminates that portion of a work surface where the saw blade will pass or make a cut.

Log leveler: A levered device adjacent to the deck saw used to level a log automatically.

Overhead splitter: A ceiling mounted hydraulic, air, or electrically operated apparatus with wedge shaped end that is used to split log rounds into block wood when activated by the splitterman.

Shingle saw: A machine used to make shingles.

Shake splitter: A machine used to split blocks into shake blanks.

Shake saw: A machine used to saw shake blanks into a finished wedged shaped product.

This classification excludes all operations conducted in the woods, such as logging or the cutting and splitting of shake or shingle bolts, which are to be reported separately in classification 5001.

Special notes: Shake and shingle mills not meeting all the conditions as set forth above shall be reported separately in classification 1005 "shake and shingle mills, N.O.C."

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-1002, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-1002, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-534, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-534, filed 5/31/96, effective 7/1/96. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-01-013 (Order 89-21), § 296-17-534, filed 12/8/89, effective 1/8/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-534, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-534, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-534, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-534, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-534, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-534, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-534, filed 11/30/76; Order 73-22, § 296-17-534, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-1003 Classification 1003.

1003-02 Dry kiln operations

Applies to establishments engaged in kiln drying of wood as a service for customers in the wood products industry. They may also purchase and dry wood themselves for later sale to a wood product manufacturer. Operations contemplated by this classification include, but are not limited to, receiving green lumber or logs, peeling (mechanized or manual), any incidental machining or turning, layering on a trolley (with spacers in between to allow for air circulation), drying in the heated kiln, and the incidental application of preservative, fire retardant, or insecticide treatments, storing, and delivery. Preservatives may be oil or water based and may be applied through a heated, pressurized vacuum process in an autoclave, by surface application (spraying, brushing, dipping) or by soaking in tanks. Machinery and equipment includes, but is not limited to, log handling and trimming machinery, kilns, boilers that heat the kilns, autoclaves, storage tanks, trolley cars, fork lifts, hand tools and delivery trucks.

This classification excludes dry kiln operations that are part of a wood, veneer or lumber product manufacturing or remanufacturing operation which are to be reported separately in the classification applicable for the operation being performed; all operations conducted in the woods, such as the felling of timber, which are to be reported separately in the applicable logging classification, and work conducted away from the shop or yard, except delivery, which is to be reported separately in the classification applicable for the work being performed.

1003-03 Creosote works; pile and pole treating

Applies to establishments engaged in treating wood poles with creosote or other chemicals to inhibit deterioration. Poles produced by this type of business are intended for use as utility line poles, supports for bridges and trestles, or piles to be driven into the ground as part of the support for a pier or other structure. Operations contemplated by this classification include, but are not limited to, receiving logs, storing, seasoning (either by air or kiln drying), peeling (mechanized or manual), any incidental machining and turning (which may include cutting material into ties or cross arms), the application of creosote or other chemical preservative, and pick up and delivery. Preservative may be applied to seasoned wood through a heated, pressurized vacuum process in an autoclave, by surface application (spraying, brushing, dipping), or soaking in tanks. Machinery and equipment includes, but is not limited to, log handling/trimming/cutting machinery, kilns, boilers that heat the kiln, autoclaves, storage tanks, trolley cars for use in the kiln, fork lifts, hand tools, and trucks.

This classification excludes all operations conducted in the woods, such as the felling of timber, which are to be reported separately in the applicable logging classification, and work conducted away from the shop or yard, except delivery, which is to be reported separately in the classification applicable for the work being performed.

1003-04 Pole yards

Applies to establishments engaged in producing wood poles to a customer's specifications or for their own resale.

These poles are intended for a variety of uses and are finished to varying requirements. Work contemplated by this classification includes, but is not limited to, receiving logs, storing, seasoning (either by air or kiln drying), peeling (mechanized or manual), incidental machining or turning (which may include cutting some material into cross arms, cutting and boring), the application of creosote or other chemical preservative, and pick up and delivery. Preservative may be applied to seasoned wood through a heated, pressurized vacuum process in an autoclave, by surface application (spraying, brushing, dipping), or soaking in tanks. Machinery and equipment includes, but is not limited to, log handling/trimming/cutting machinery, kilns, boilers that heat the kiln, autoclaves, storage tanks, trolley cars for use in the kiln, fork lifts, hand tools, and trucks.

This classification excludes all operations conducted in the woods, such as the felling of timber, which are to be reported separately in the applicable logging classification, and work conducted away from the shop or yard, except delivery, which is to be reported separately in the classification applicable for the work being performed.

1003-05 Masts and spars yards

Applies to establishments engaged in producing wood masts and spars. Masts and spars are the main and secondary supports, respectively, for sails and running rigging on sailing vessels. These businesses may also produce poles for other uses which may need to be more precisely shaped and finished than those produced in 1003-04. Work contemplated by this classification includes, but is not limited to, receiving logs, storing, seasoning (either by air or kiln drying), peeling the logs (mechanized or manual), machining and turning to size (which may include cutting and boring holes), application of chemical preservative, sanding if necessary, and pick up and delivery. The application of wood finish is also included when performed by employees of an employer having operations subject to this classification. Preservative may be applied to seasoned wood through a heated, pressurized vacuum process in an autoclave, by surface application (spraying, brushing, dipping), or soaking in tanks. Machinery and equipment includes, but is not limited to, log handling/trimming/cutting machinery, kilns, boilers that heat the kiln, autoclaves, storage tanks, trolley cars for use in the kiln, fork lifts, wood finishing equipment, hand tools, and trucks. This classification includes the production of finished logs that will be used in the manufacture of log houses or cabins.

This classification excludes all operations conducted in the woods, such as the felling of timber, which are to be reported separately in the applicable logging classification, and work conducted away from the shop or yard, except delivery, which is to be reported separately in the classification applicable for the work being performed.

1003-06 Log home manufacturing

Applies to establishments that receive logs either peeled or unpeeled. Work contemplated by this classification includes the use of hand tools such as, but not limited to, planers, grinders, skids, drawn knives, and slicks to peel or bring back the new appearance of the logs. Chainsaws and chisels are used to notch out the logs to assemble them together. Equipment such as loaders, forklifts, or cranes are used to maneuver the logs around the yard or to help in the

assembly of the log home. Once the shell is assembled, it is numbered. The shell is then unassembled and is shipped to the customer's site to be erected. The erection of the log home shell at the customer's site is to be reported in 0510-00. This classification excludes all other phases of construction which will be reported in the applicable construction classifications.

Log home manufacturing performed in a sawmill environment using dimensional lumber is to be reported in 2903-12.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-1003, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-1003, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-535, filed 8/28/98, effective 10/1/98; 85-24-032 (Order 85-33), § 296-17-535, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-535, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-535, filed 11/30/77, effective 1/1/78; Order 74-40, § 296-17-535, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-535, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-1101 Classification 1101.

1101-04 Automobile delivery or repossessing

Applies to establishments engaged in delivering or repossessing individual automobiles for others. Generally, a client will contact the service company and arrange for a car to be delivered to a specific destination or request that a car of which they (client) is the legal owner, be repossessed and delivered to a specific location. In either case, a driver, not a motorized transportation service, does the delivery. Duties of employees subject to this classification are generally limited to unlocking vehicles and driving. It is common on long distance deliveries for the service company to use more than one driver. This classification also applies to drivers of sound trucks.

This classification excludes operation of tractor/trailer combinations to transport vehicles which is to be reported separately in classification 1102 and the use of a tow truck which is to be reported separately in classification 1109.

1101-06 Delivery by retail and wholesale stores and distributors, N.O.C.

Applies to employees of retail and wholesale stores engaged in inter-store delivery, customer merchandise delivery when excluded from the store classification, and delivery not covered by another classification (N.O.C.). Employees subject to this classification are generally involved in loading and unloading delivery vans or trucks and driving from store to store, or from a store to a customer's location. Drivers may or may not have designated routes or delivery areas. This classification is not applicable to establishments engaged in general trucking services which are to be reported separately in classification 1102. Classification 1101 is distinguishable from delivery operations reported in classification 1102 in that businesses covered by classification 1102 generally do not own the merchandise they are transporting.

1101-09 Parcel delivery companies for delivery of small parcels

Applies to establishments engaged in the delivery of small parcels for others. Establishments subject to this classification may offer overnight express services, but usually do not deliver packages that exceed 150 pounds. Work contemplated by this classification includes, but is not limited to,

driving, loading and unloading delivery vehicles. This classification also applies to contract mail delivery route drivers and contract hauling of mail between post offices.

This classification excludes the delivery of bulk freight such as that delivered by trucking companies which are to be reported separately in classification 1102.

1101-14 News agents or distributors of magazines, periodicals and telephone books - no retail dealers

Applies to establishments engaged in the distribution of newspapers, periodicals, and telephone books. Work contemplated by this classification includes, but is not limited to, driving, loading and unloading the vehicles, stocking shelves, and removing old periodicals from shelves.

1101-17 Driver delivery sales, N.O.C.

Applies to establishments engaged in route sales of a wide variety of merchandise not covered by another classification (N.O.C.), including, but not limited to, hand tools, automotive supply, and household items. Sales personnel deliver products, show samples and solicit further orders. They may also call on new customers along their route. The classification also applies to establishments or employees known as merchandisers who deliver products to their customer's place of business then perform related merchandising functions such as taking inventory of goods on hand, restocking, reordering, removing outdated or damaged merchandise from shelves or the premises, and/or assembling temporary displays which are usually made of lightweight material such as cardboard or plastic and used for promotional or seasonal goods. These merchandisers often deal in products such as, but not limited to, greeting cards, over-the-counter medications, and grooming products.

This classification excludes employees of establishments who provide merchandising services, but who do not deliver products to the customer's place of business, who may be reported separately in classification 0607; and establishments engaged in the set up or removal of advertising or merchandise displays that involve more than incidental assembly of seasonal or promotional exhibits which are to be reported separately in classification 0607.

Special note: The distinguishing factor between merchandising employees who are to be reported in classification 1101-17 and those who may be reported in classification 0607 is the delivery of products to the customer's place of business. Any employee who delivers merchandise to the customer's place of business is to be reported in classification 1101.

1101-19 Route food services

Applies to establishments engaged in route food services where prepackaged, prepared food is sold, or where food may be prepared in the mobile unit for immediate sale by employees of the route food service. Duties include, but are not limited to, driving, food preparation, loading and unloading the vehicle, and cashiering. Typical route food services include, but are not limited to, traveling coaches that sell beverages and prepared pastries or snack items at various locations during a given work day, ice cream wagons, refrigerated trucks that sell specialty prepackaged foods to route customers, or mobile "short-order" food services that sell fast foods at spe-

cial events or at locations where hot food may not be available.

This classification excludes food preparation at a fixed location for the route food vehicles which may be reported separately in classification 3905 or as applicable, food vendors operating from a push cart or mobile stand and food vendors who operate from a truck or van but who do not move from place to place throughout the day who are to be reported separately in classification 3905.

1101-20 Computer tape or accounting records delivery service

Applies to establishments engaged in picking up and delivering computer tape, accounting records, or similar financial records to or from storage centers to customer locations. Delivery drivers in this classification often work in metropolitan areas and drive small cars or bicycles.

1101-21 Errand service

Applies to establishments engaged in providing errand services for others. Types of errands include, but are not limited to, shopping services, delivery of food, beverages or other commodities, and delivery of body fluid samples to laboratories. Vehicles used by these services are typically small cars or bicycles. This classification also applies to the distribution of sample merchandise by vehicle.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-1101, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-1101, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035, 51.16.100. 06-12-075, § 296-17-536, filed 6/6/06, effective 7/7/06. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.12.120. 03-23-025, § 296-17-536, filed 11/12/03, effective 1/1/04. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-536, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-536, filed 5/31/96, effective 7/1/96. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-536, filed 5/30/94, effective 6/30/94; 89-24-051 (Order 89-22), § 296-17-536, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-536, filed 5/31/88, effective 7/1/88; 86-12-041 (Order 86-18), § 296-17-536, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-536, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-536, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-536, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-536, filed 11/30/81, effective 1/1/82; Order 77-27, § 296-17-536, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-536, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-536, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-536, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-1105 Classification 1105.

1105-00 Septic tank pumping

Applies to establishments engaged in septic tank pumping services. Operations contemplated by this classification include driving, locating the septic tank and digging as necessary to uncover it, connecting the pumping hose to the septic tank, pumping out the sludge, and disposing of the waste products.

This classification excludes installation and repair of septic tanks or systems which are to be reported separately in classification 0108, and cleaning of sewage treatment tanks which is to be reported separately in classification 0504.

1105-01 Street sweeping; parking lot sweeping; dust control; and portable chemical toilet servicing

Applies to establishments that perform street sweeping and parking lot sweeping services for others. Trucks used for sweeping are equipped with rotating or nonrotating brushes

and vacuum/suction devices. In addition to driving duties, the drivers may adjust/unclog the brushes, and clean the holding tanks contained on the sweeping or pumping vehicle. This classification also includes snow removal by plowing, delivery of portable toilets and the related servicing and disposal of waste products which are recovered by establishments subject to this classification. This classification also includes trucks that spray water on roads and other surfaces for dust control.

1105-02 Vacuum truck services

Applies to establishments engaged in vacuum truck services for others. Services include, but are not limited to, cleaning of duct work, picking up waste oils, lubricants, anti-freeze, bilge water, and similar waste products. Establishments subject to this classification may offer a regular service, one-time or occasional pick-up service. The driver has kits for testing the materials and, if there is a question, a sample is taken to a laboratory for further analysis. If the waste material is acceptable, it is pumped into the tanker truck. The waste material may be consolidated with similar products and "bulked" in storage tanks, then taken to appropriate treatment or disposal facilities, or it may be taken directly to appropriate facilities. If it is to be "bulked" with other products, it will be filtered as it is pumped into the storage tanks and allowed to sit for a few days for any water to settle to the bottom of the tank and be drained off. Bulked materials may be hauled away by the establishment's own trucks or by common carrier. Establishments subject to this classification may pick up containers of used oil filters and bring them into their plant where they are sorted into crushed and uncrushed filters, and gaskets removed. This activity is included within the scope of this classification if it is an incidental service. This classification includes the related disposal of waste products which are recovered by establishments subject to this classification.

This classification excludes septic tank pumping which is to be reported separately in classification 1105-00.

[Statutory Authority: RCW 51.16.035 and 51.16.100, 07-12-047, § 296-17A-1105, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-1105, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035, 99-18-068, § 296-17-53802, filed 8/31/99, effective 10/1/99; 98-18-042, § 296-17-53802, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-53802, filed 5/31/96, effective 7/1/96.]

WAC 296-17A-1108 Classification 1108.

1108-02 Glass tempering

Applies to establishments engaged in glass tempering services for others. Operations contemplated by this classification include glass cutting, bending, grinding, beveling, and silvering. Tools and equipment include metal and wood cutting tools and machinery, grinders, sanders, drills, saws, knives, suction cups, putty, caulking, cleaning solvents, forklifts, packing materials, delivery and service vehicles and tempering ovens. The process of glass tempering consists of taking auto or sheet glass which has been purchased from a glass manufacturer or distributor and placing it in a tempering oven. The oven heat realigns the molecular structure of the glass creating added strength, however, the appearance of the glass remains unchanged. This classification includes the sale of accessories for flat glass such as sealants, screening,

aluminum frames for storm windows and doors, mirror backings, frames and glass cleaners.

This classification excludes establishments engaged in the installation of glass, mirrors, aluminum or wood window sashes or similar products away from the shop which are to be reported separately in classification 0511; establishments engaged in the manufacture of glass which is to be reported separately in classification 3503; merchants who specialize in selling or installing auto glass which is to be reported separately in classification 1108-04; glass merchants engaged exclusively in flat glass sales which are to be reported separately in classification 1108-03; and combined auto/flat glass merchants with no tempering which are to be reported separately in classification 1108-05.

1108-03 Flat glass merchants - no tempering

Applies to establishments engaged in receiving, storing and selling all types of fabricated glass and plexiglas. Glass products include, but are not limited to, window glass, plate glass, safety glass for automobiles, and mirrors. Work contemplated by this classification includes cutting of glass to customers specified dimensions, beveling, buffing, grinding, polishing, silvering of plate glass, and the installation of glass into frames within the shop or adjacent yard. Some dealers may specialize in cutting, selling or installing fabricated flat glass or they may also sell and install plate, laminated, window, cathedral, stained, bullet proof, opalescent flat, picture, skylight and tempered glass. Most glass dealers will cut glass to order. Tools and equipment include metal and wood cutting tools and machinery, grinders, sanders, drills, saws, knives, suction cups, putty, caulking, cleaning solvents, forklifts, packing materials, delivery and service vehicles. This classification includes the sale of accessories for flat glass such as sealants, screening, aluminum frames for storm windows and doors, mirror backings, frames and glass cleaners.

This classification excludes establishments engaged in the installation of glass, mirrors, aluminum or wood window sashes or similar products away from the shop which are to be reported separately in classification 0511; manufacturing of glass which is to be reported separately in classification 3503; glass merchants who perform glass tempering which are to be reported separately in classification 1108-02; and merchants who specialize in selling or installing auto glass which are to be reported separately in classification 1108-04.

1108-04 Auto glass merchants

Applies to establishments engaged in selling and installing automobile glass in vehicles. In addition to selling and installing new or replacement auto glass, merchants typically repair auto windshield cracks, scratches, bullseyes and breaks. Tools and equipment include metal and wood cutting tools, grinders, sanders, drills, saws, knives, windshield sticks, suction cups, putty, caulking, cleaning solvents, delivery and service vehicles. Solar tinting of auto glass with film to reduce heat and glare may also be performed, as well as selling and installing sun roofs. Auto glass merchants may offer 24-hour emergency service or pickup and delivery. Installation of auto glass, truck glass or boat tops performed in or away from the shop is included within the scope of this classification.

This classification excludes establishments engaged in the manufacturing of glass which are to be reported separately in classification 3503.

rately in classification 3503; tinting or the application of tinted plastic film to auto glass by an auto detailer which is to be reported separately in classification 3406; repairing auto windshield cracks, bullseyes and chips by an auto detailer which is to be reported in 3406; glass merchants who perform glass tempering which are to be reported separately in classification 1108-02; glass merchants exclusively dealing in flat glass which are to be reported in classification 1108-03; and combined auto/flat glass merchants with no tempering which are to be reported in classification 1108-05.

1108-05 Combined auto and flat glass merchants - no tempering

Applies to establishments engaged in receiving, storing and selling all types of fabricated glass and plexiglas as window glass, plate glass, safety glass for automobiles, mirrors and other types of glass at a permanent shop location or adjacent yard. Work contemplated by this classification includes cutting of glass to customers' specified dimensions, beveling, buffing, grinding, polishing, silvering of plate glass and the installation of glass into frames. Tools and equipment include metal and wood cutting tools and machinery, grinders, sanders, drills, saws, knives, suction cups, windshield sticks, putty, caulking, cleaning solvents, forklifts, packing materials, and delivery and service vehicles. A glass merchant performing the installation of glass in automobiles is also included within the scope of this classification; as are related services such as, but not limited to, repair of auto windshield cracks, scratches, bullseyes and breaks; in vehicle tinting of auto glass to reduce heat and glare; and installing sun roofs. Other dealers may specialize in cutting, selling or installing fabricated flat glass or they may also sell and install plate, laminated, window, cathedral, stained, bullet proof, opalescent flat, picture, skylight and tempered glass. Included within the scope of this classification is the sale of accessories for flat glass such as sealants, screening, aluminum frames for storm windows and doors, mirror backings, frames and glass cleaners.

This classification excludes establishments engaged in the installation of glass, aluminum or wood window sashes or similar products away from the shop which are to be reported separately in classification 0511; manufacturing of glass which is to be reported separately in classification 3503; tinting or the application of tinted plastic film to auto glass by an auto detailer which is to be reported separately in classification 3406; repairing auto windshield cracks, bullseyes and chips by an auto detailer which is to be reported in 3406; glass merchants who perform glass tempering which are to be reported separately in classification 1108-02; and flat glass merchants who do not sell or install auto glass which are to be reported separately in classification 1108-03.

1108-06 Glass frosting, etching, beveling or grinding

Applies to establishments engaged in shaping and finishing solid glass by cutting, frosting, etching, beveling, grinding, sandblasting, carving, glue chipping, decorating or grooving. Custom items manufactured in this classification include, but are not limited to, video game tops, glass signs, glass used in the assembly of electrical appliances such as microwave ovens, electronically controlled cabinets and display panels, and mirrors of all sizes. Machinery includes diamond or glass cutting saws, diamond or glass grinding

wheels and discs, drills, polishing laps, etching tools and other hand tools. In the manufacture of mirrors, metallic solutions (usually silver), shellacs or varnishes, paints, and plate glass are received from outside sources. The glass is cut to size, ground, smoothed, and the edges may be beveled. Hole drilling, chemical etching, drying, buffing and polishing may be performed. Reflective surfaces are generally produced by pouring or spraying metallic solutions over prepared glass. Heavier coats are obtained by successive applications of the plating solution. After applying the plating solution, the mirrors are sprayed or hand brushed with shellac or varnish, then with paint. Frames, handles or similar finishings may be attached. Production manufacturing of insulated glass by sealing together two or more sheets of glass with an air space between them is also included when performed by employees of an employer subject to this classification.

This classification excludes the mining, digging or quarrying of raw materials which is to be reported separately in the applicable classification; glass merchants who do incidental grinding, beveling, silvering and cutting of glass who are to be reported separately in the classification applicable to the type of glass they specialize in; establishments manufacturing optical goods or telescopes, or perform precision grinding of blank or rough lenses which are to be reported separately in classification 6604; and establishments engaged in manufacturing stained or leaded glassware, or in melting or blowing glass which are to be reported separately in classification 3503.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-1108, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-1108, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035. 99-18-068, § 296-17-53805, filed 8/31/99, effective 10/1/99; 98-18-042, § 296-17-53805, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-53805, filed 5/31/96, effective 7/1/96; 86-12-041 (Order 86-18), § 296-17-53805, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-53805, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-53805, filed 2/28/85, effective 4/1/85; 82-24-047 (Order 82-38), § 296-17-53805, filed 11/29/82, effective 1/1/83.]

WAC 296-17A-1109 Classification 1109.

1109-00 Automobile or truck towing services, N.O.C.

Applies to establishments engaged in providing towing services to others which are not covered by another classification (N.O.C.). Operations contemplated by this classification are limited to tow truck drivers and their assistants who are engaged in towing services for hire. For purposes of this classification "towing services for hire" means, but is not limited to, the towing of disabled vehicles to a shop (that is unrelated to the towing service) for repair; the recovery of repossessed vehicles for others by tow truck; roadside assistance during snow, ice or flooding to recover or free stuck vehicles; and the towing in of disabled vehicles to a secured yard for insurance or law enforcement agencies. It is common for towing companies to also operate a vehicle repair garage or service center in conjunction with the towing service. Auto service centers and repair garages, auto body shops and wrecking yard operations are to be reported separately in the applicable service or repair classification provided that the conditions of the general reporting rules covering the operation of a secondary business and the division of worker hours have been met. Tow truck dispatchers who have no other duties may be reported separately in classification 4904 pro-

vided that the conditions of the standard exception general reporting rules have been met.

Special note: Towing is common to many classifications. Employers offering towing services should be contacted to verify whether the towing service they provide is only in connection with their auto repair, auto body or wrecking yard (*towing service not for hire*), or provided as a general service unrelated to their repair garage (*towing services for hire*). Only towing services for hire are to be assigned to classification 1109. If a business provides both towing services for hire and not for hire, worker hours for drivers and their assistants may be divided between this classification and the applicable repair garage classification provided that the conditions of the general reporting rule covering the division of worker hours has been met. Otherwise, all driver and assistant hours are to be assigned to the highest rated classification applicable to the business.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-1109, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-1109, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-53806, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-53806, filed 5/31/96, effective 7/1/96; 87-12-032 (Order 87-12), § 296-17-53806, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-53806, filed 11/27/85, effective 1/1/86.]

WAC 296-17A-1407 Classification 1407.

1407-00 Bus companies

Applies to establishments engaged in providing transportation services such as, but not limited to, charter and tour bus, contract school bus, shuttle van, and nonmunicipal, scheduled bus systems. Work contemplated by this classification includes operation of the vehicle and related loading/unloading duties, cleaning, maintenance and ordinary repair of all facilities, equipment, and vehicles, all bus terminal employment except for office personnel. Ticket sellers and dispatchers may be reported separately in classification 4904 provided that they do not handle baggage and that all of the conditions of the standard exception general reporting rules have been met.

This classification excludes: Municipal transit and bus service provided by a county or taxing district which is to be reported separately in classification 1501; municipal transit and bus service provided by a city or town which is to be reported separately in classification 0803; taxicab companies which are to be reported separately in classification 1401; cabulance and paratransit companies which are to be reported separately in classification 1404; and drivers employed by a limousine company who are to be reported separately in classification 6301.

Special note: Establishments subject to this classification are to report actual hours worked for each driver. However, the hours are to be capped at 520 hours per driver per quarter.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-1407, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-1407, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035, 51.04.020. 00-14-052, § 296-17-54403, filed 7/1/00, effective 7/1/00.]

WAC 296-17A-1501 Classification 1501.

1501-00 Counties and taxing districts, N.O.C. - all other employees

Applies to employees of counties and taxing districts, not covered by another classification (N.O.C.), who perform manual labor, or who supervise a work crew performing manual labor such as custodial or maintenance, and machinery or equipment operators including transit bus drivers. This classification includes administrative personnel such as engineers, safety inspectors, and biologists who have field exposure, and internal inventory and supply clerks. For purposes of this classification, field exposure is defined as any exposure other than the normal travel to or from a work assignment.

This classification excludes electric light and power public utility districts which are to be reported separately in classification 1301; privately owned and operated bus or transit systems which are to be reported separately in classification 1407; water distribution or purification system public utility districts which are to be reported separately in classification 1507; irrigation system public utility districts which are to be reported separately in classification 1507; port districts which are to be reported separately in classification 4201; school districts, library districts or museum districts which are to be reported separately in classifications 6103 or 6104; hospital districts which are to be reported separately in classification 6105; fire fighters who are to be reported separately in classification 6904; law enforcement officers who are to be reported separately in classification 6905 and 6906, as appropriate; clerical office and administrative employees who are to be reported separately in classification 5306, and volunteers who are to be reported separately in classifications 6901 or 6906, as appropriate.

1501-01 Housing authorities, N.O.C. - all other employees

Applies to employees of housing authorities, not covered by another classification, who perform manual labor, or who supervise a work crew performing manual labor such as custodial or maintenance, and machinery or equipment operators. This classification includes all functional operations of a housing authority such as inspection, maintenance and repairs, including minor structural repairs, janitorial service, and building and grounds maintenance. Also included in this classification are meter readers, security personnel, other than those with law enforcement powers, administrative personnel such as engineers and safety inspectors who have field exposure, and internal inventory and supply clerks. For purposes of this classification, housing authorities are defined as nonprofit, public and political entities which serve the needs of a specific city, county or Indian tribe. The nature and objectives of some of the projects undertaken by housing authorities include providing decent, safe and sanitary living accommodations for low income persons, or providing group homes or halfway houses to serve developmentally or otherwise disabled persons or juveniles released from correctional facilities. A housing authority has the power to prepare, carry out, lease and operate housing facilities; to provide for the construction, reconstruction, improvement, alteration or repair of any housing project; to sell or rent dwellings forming part of the project to or for persons of low income; to acquire, lease, rent or sell or otherwise dispose of any com-

mercial space located in buildings or structures containing a housing project; to arrange or contract for the furnishing of the units; and to investigate into the means and methods of improving such conditions where there is a shortage of suitable, safe and sanitary dwelling accommodations for persons of low income.

This classification excludes new construction or major alteration activities which are to be reported separately in the appropriate construction classifications; clerical office and administrative employees who are to be reported separately in classification 5306; security personnel with law enforcement powers who are to be reported separately in classification 6905; and volunteers who are to be reported separately in classifications 6901 or 6906, as appropriate.

1501-08 Native American tribal councils - all other employees

Applies to employees of Native American tribal councils who perform manual labor, or who supervise a work crew performing manual labor such as custodial or maintenance, and machinery or equipment operators. This classification includes administrative personnel such as engineers, safety inspectors, and biologists who have field exposure, and internal inventory and supply clerks of the tribal council. For purposes of this classification, field exposure is defined as any exposure other than the normal travel to and from a work assignment.

This classification excludes electric light and power public utility districts which are to be reported separately in classification 1301; water distribution or purification system public utility districts which are to be reported separately in classification 1507; irrigation system public utility districts which are to be reported separately in classification 1507; school districts, library districts or museum districts which are to be reported separately in classifications 6103 or 6104; hospital districts which are to be reported separately in classification 6105; fire fighters who are to be reported separately in classification 6904; law enforcement officers who are to be reported separately in classifications 6905 and 6906; new construction or reconstruction activities which are to be reported separately in the appropriate construction classification; clerical office and administrative employees who are to be reported separately in classification 5306.

Special notes: Housing authorities operating under the name of, and for the benefit of, a particular tribe are not exempt from mandatory coverage. These housing authorities are federally funded and are not owned or controlled by a tribe.

Only those tribal operations which are also provided by county governments are subject to classification 1501. The following activities, such as but not limited to, visiting nurses and home health care, grounds keepers, building maintenance, park maintenance, road maintenance, and garbage and sewer works, are considered to be normal operations to be included in this classification. All other tribal council operations which are not normally performed by a county government shall be assigned the appropriate classification for the activities being performed. The following operations, such as but not limited to, meals on wheels, bingo parlors, casinos, liquor stores, tobacco stores, grocery stores, food banks, gift shops, restaurants, motels/hotels, Head Start programs, fish/

shellfish hatcheries, logging, and tree planting/reforestation are outside the scope of classification 1501 and are to be reported separately in the applicable classifications.

1501-09 Military base maintenance, N.O.C.

Applies to establishments, not covered by another classification (N.O.C.), engaged in providing all support operations and services on a military base on a contract basis. Such services include, but are not limited to, data processing, photography, mail delivery (on post and to other military facilities), hotel/motel services, mess halls, recreational facilities, grounds and building maintenance, vehicle maintenance, and may also include the maintenance of such facilities as water works, sewer treatment plants and roads.

This classification excludes new construction or construction repair projects which are to be reported separately in the applicable construction classification for the work being performed; contracts for specific activities on a military base such as, but not limited to, building maintenance, club or mess hall operations, or vehicle maintenance, which are to be reported separately in the applicable classification for the work being performed; firefighters who are to be reported separately in classification 6904; law enforcement officers who are to be reported separately in classification 6905; and clerical office and administrative employees who are to be reported separately in classification 5306.

Special note: Classification 1501-09 is to be assigned to an establishment only when *all* support services on a military base are being provided by the contractor. Care should be taken when assigning classification 1501-09 to firms whose military support services include loading, unloading, repair or construction of vessels, or the repair of buildings or structures used for such activities as that firm may be subject to federal maritime law.

1501-20 Community action organizations - all other employees N.O.C.

Applies to organizations performing an array of services to support the local community and citizens in need. The services provided by community action organizations may include, but are not limited to: Child care; after school care; alternative schools; in home chore services; employment or independence training, counseling and assistance; drug and alcohol recovery programs; decent, safe and sanitary living accommodations for low-income or needy citizens; transitional or emergency housing; weatherization; food and clothing banks; meals; or medical services.

This classification applies to employees of community action organizations N.O.C. (not otherwise classified) who perform manual-type labor, or who supervise a work crew performing manual labor. Work in this classification includes, but is not limited to: Cooks, food banks, drivers, chore workers/home service workers, janitorial or maintenance and repair work, or weatherization services.

Excluded from this risk classification is new construction or major alteration activities which are to be reported separately in the appropriate construction classifications; office employees who work exclusively in an administrative office environment who are to be reported in classification 4904-20; professional or administrative employees who may also have duties outside of the office who are to be reported in classification 5308-20; housing authorities which are to be

reported in 1501-01 and 5306-26; welfare special works programs which are to be reported in 6505; work activity centers which are to be reported in 7309; and volunteers who are to be reported in classification 6901.

See classifications 5308-20 and 4904-20 for other community action operations.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-1501, filed 12/1/07, effective 1/1/09. Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-1501, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-1501, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035, 51.04.020. 00-14-052, § 296-17-545, filed 7/1/00, effective 7/1/00. Statutory Authority: RCW 51.16.035, 99-18-068, § 296-17-545, filed 8/31/99, effective 10/1/99; 98-18-042, § 296-17-545, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-545, filed 5/31/96, effective 7/1/96. Statutory Authority: RCW 51.04.020(1) and 54.16.035. 93-12-093, § 296-17-545, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-545, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-545, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-545, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-545, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-545, filed 12/1/77; Order 73-22, § 296-17-545, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-2903 Classification 2903.

2903-00 Wood chip, hog fuel, bark, bark flour, fire log and lath: Manufacturing

Applies to establishments engaged in the production of products such as, but not limited to, wood chips, hog fuel, bark, bark flour, fire logs, kindling, excelsior, particleboard, and similar wood by-products.

Wood chips are small pieces of wood, generally uniform in size and larger and coarser than sawdust, commonly used to make pulp, particleboard, stuffing for products such as animal bedding, and as smoker/barbecue fuel;

Hog fuel is made by grinding waste wood in a hog machine, is larger and coarser than wood chips, and is used to fire boilers or furnaces, often at the mill or plant at which the fuel was processed;

Bark is the outermost covering of a tree which is chopped into pieces of varying sizes, and is commonly used for landscaping;

Bark flour is finely ground bark used as a filler or extender in adhesives;

Fire logs are made by forming sawdust into a log about 15 inches long and are used for fuel;

Lath is a narrow strip of wood commonly used to support shingle, slate or tile roofing, and as a fencing material;

Excelsior is the curled shreds of wood used as a packing and stuffing material, or as a raw material in making various board products;

Particleboard is a panel made from discrete particles of wood which are mixed with resins and formed into a solid board under heat and pressure.

The degree of manual labor required to make these products varies depending upon the size of the operation and sophistication of the equipment. Raw materials include, but are not limited to, logs, mill waste, bark, sawdust, or chips. Machinery includes, but is not limited to, rip saws, cut-off saws, loaders, debarkers, hog chippers, hammer mills, conveyors, sorting screens, and storage bunkers. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having oper-

ations subject to this classification. The operation of portable chipping or debarking mills is included in this classification.

This classification excludes all activities away from the shop or plant which are to be reported separately in the classification applicable to the work being performed; veneer manufacturing which is to be reported separately in classification 2904; and sawmill operations which are to be reported separately in classification 1002.

2903-06 Wood furniture stock: Manufacturing

Applies to establishments engaged in the manufacture of wood furniture stock such as, but not limited to, tabletops, table or chair legs, chair backs or seats, panels for beds, turning squares (bolts of wood which are shaped on lathes into furniture legs) and furniture squares (standard sized - usually 2" x 2" - pieces of wood used in constructing frames of upholstered furniture). Stock may be mass produced or custom. Raw material includes dimensional lumber from hardwoods such as, but not limited to, ash or alder. If the lumber is not presurfaced, it is sanded and/or planed. It is cut to desired width and thickness with a rip saw; and cut to desired length with a cut-off saw. Pieces may be beveled with a table saw, bored with a horizontal boring machine, molded or shaped, and joints formed using a mortise, tenon or jointer. Finished stock is banded and/or palletized and usually shipped unfinished and unassembled to furniture manufacturing plants. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant which are to be reported separately in the classification applicable to the work being performed; manufacture of wood furniture and caskets which is to be reported separately in classification 2905; lumber remanufacturing which is to be reported separately in classification 2903-26; veneer manufacturing which is to be reported separately in classification 2904; and sawmill operations which are to be reported separately in classification 1002.

2903-08 Wood door, jamb, window, sash, stair, molding and miscellaneous millwork: Manufacturing, prehang-ing or assembly

Applies to establishments engaged in the manufacture, prehanging or assembly of wooden doors, door components, jambs, windows, sashes, stairs, mantels, moldings, turnings, and miscellaneous millwork such as, but not limited to, shutters, door and window grilles, skylights, pillars, wainscot, and similar architectural ornaments. Doors manufactured in this classification may be for residential or commercial use, such as, but not limited to, garage, closet, warehouse, interior and exterior; they may be odd-size or standard, panel, solid, louver, hollow core, sliding, bifold and overhead. Component parts for stairs include, but are not limited to, risers, tread, balusters, hand rails, and newel posts. Fireplace mantels include both the shelf and the complete ornamental facing surrounding the firebox. Moldings include, but are not limited to, picture moldings, chair rails, quarter round, coves, and architectural molding and base. Raw materials include, but are not limited to, cut stock lumber, plywood, veneer, particleboard, cardboard, plastic laminates, glue, hardware, glass, and metal. Cutting and fitting of glass and metal components for doors and windows is an integral phase of the

manufacturing process and is included within the scope of this classification. Machinery includes, but is not limited to, various types of saws (table, panel, rip, cut-off, radial arm, trim, circular, band, jig, and miter), molders, shapers, routers, planers, finger jointers, mortises, tenons, lathes, presses, various types of sanders, drill presses, hand drills, boring machines, pneumatic nail, screw and staple guns, spray guns, chisels, air compressors, glue spreaders, drying ovens, overhead vacuum lifts, conveyor systems, fork lifts, and pallet jacks. Some door manufacturers have "door machines" which route impressions in jambs and blanks for hinge placement, and bores holes in the blank for knobs and locks; some have computerized overhead vacuum lights, electronic gluers, hydraulic lift pits, or electronically controlled saws. Prehanging doors involves boring holes in door blanks for knobs and locks, routing impressions into the blanks and jambs for hinge replacement, mounting hinges, trimming door and jamb replacements to exact size. Finishing the products with stain, paint, oil, or lacquer is included in this classification when done by employees of employers subject to this classification. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant which are to be reported separately in the classification applicable to the work being performed; the manufacture of wood furniture and caskets which is to be reported separately in classification 2905; the manufacture of wood cabinets, countertops, and fixtures which is to be reported separately in classification 2907; lumber remanufacturing which is to be reported separately in classification 2903-26; veneer manufacturing which is to be reported separately in classification 2904; the manufacture of metal doors, jambs, windows, and sashes which is to be reported separately in classification 3402; and sawmill operations which are to be reported separately in classification 1002.

Special note: Lumber yards and building materials centers subject to classification 2009 are to be assigned classification 2903-08 in addition to their basic classification if they prehang door blanks.

2903-10 Wood box, shook, pallet, bin: Manufacturing, assembly, or repair

Wood pallet dealer/recycle operations: Including repairs of pallets

Applies to establishments engaged in the manufacture, assembly, or repair of wood pallets, boxes, bins, shook, shipping crates, and storage containers. A shook is a set of unassembled sawn wood components for assembling a packing box or barrel. Shooks are usually sold to box assembly plants. Pallets may be constructed out of vertical and horizontal runners of dimensional lumber to form a slatted pallet or by attaching three evenly spaced rows of wooden blocks between two sheets of solid plywood to form a lid-block pallet. Usually, the manufacturer subject to this classification picks up pallets, boxes or shipping crates from the customer, brings them to the plant for repair, reconditioning, or rebuilding, then returns them to the customer. However, the *assembly or repair* of bins is often done at the customer's location, which is still to be reported in classification 2903-10 when performed by employees of the bin manufacturer. Raw mate-

rials include, but are not limited to, dimensional lumber, plywood, nails, staples, screws, glue, and paint. Machinery includes, but is not limited to, a variety of saws (table, rip, radial arms, cut-off, band or trim), planers, molders, drills, boring machines, notchers, nailing machines, pneumatic stapler, screw and nail guns, conveyors, roll cases, sorting tables, pallet jacks, and fork lifts. Incoming lumber is cut to specified lengths, widths, and thicknesses with saws, then planed, bored, tongued, and grooved. Pieces are nailed, stapled or glued together to form finished products. Cut ends of pallets, bins, and boxes may be painted for design or for color identification purposes. Customer's name may be imprinted on the product using stencils and paint or wood burning tools. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes lumber remanufacturing which is to be reported separately in classification 2903-26; and sawmill operations which are to be reported separately in classification 1002. Nonwood pallet/bin dealers are to be reported in the appropriate metal, fiberglass, or plastics classification.

2903-12 Wood products, N.O.C.: Manufacturing or assembly

Applies to establishments engaged in the manufacture or assembly of miscellaneous wood products which are not covered by another classification (N.O.C.), including, but not limited to, ladders, utility pole crossarms, beams, barricades, cable spools, slugs or ends for paper rolls, attic vents, prefabricated wall panels, gazebos, saunas, solariums, lattice panels, mall and park furnishings, playground equipment, docks and floats, parade floats, boat trailer bunks, cattle feeders, tree spreaders, tack strip, exhibit booths, weaving looms, and pottery wheels. Finishing of the product with stains or other lacquers is included in this classification when done by employees of employers subject to this classification. Raw materials include, but are not limited to, dimensional lumber, plywood, particleboard, lath, logs, glue, staples, screws, nails, stains, paints, oils, and lacquers. Operations require substantial amounts of machine work, as well as hand assembly. Machinery includes, but is not limited to, saws (table, panel, cut-off, band, jig, miter, or chain), sanders, planers, routers, shapers, molders, jointers, drill presses, boring machines, hydraulic presses, pneumatic nail, screw and staple guns. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification also includes log home manufacturers who use a sawmill type operation using dimensional lumber to construct the shell of the home. Log home manufacturers constructing log home shells in a permanent yard using the traditional method of peeling the logs, using chainsaws to notch logs, and assembling the logs together, are to be reported in classification 1003-06.

This classification excludes all activities away from the shop or plant which are to be reported separately in the classification applicable to the work being performed; the manufacture of wood household and sporting goods which is to be reported separately in classification 2909; the manufacture of

wood furniture and caskets which is to be reported separately in classification 2905; the manufacture of wood cabinets, countertops and fixtures which is to be reported separately in classification 2907; lumber remanufacturing which is to be reported separately in classification 2903-26; veneer manufacturing which is to be reported separately in classification 2904; and sawmill operations which are to be reported separately in classification 1002.

2903-13 Veneer products: Manufacturing

Applies to establishments engaged in the manufacture of veneer products by laminating rough veneer to plywood or particleboard and applying plastic or polyester overlays. Laminated veneer sheets are generally sold to other manufacturers and used in the construction of items such as, but not limited to, cabinets, countertops, furniture, wall board, flooring, and shelving. Veneer products generally require no pre-finishing with paint, stain or lacquer. Raw materials include, but are not limited to, plywood, particleboard, polyester, paper, polyethylene, fiberglass, plastic laminates and glue. To make veneer products, sheets of rough veneer are individually fed through glue spreader machines which apply glue to both sides. Veneer sheets may be laminated to other veneer or to plywood or particleboard, cut to size with saws, then plastic or polyester overlays applied. Laminated sheets are fed through either hydraulic cold or hot presses to be bonded and cured. More sophisticated presses automatically feed the sheets through, and shear the laminated panels to standard 4' x 8' or 4' x 10' dimensions, or to specified lengths and widths for custom orders. Forklifts are used to move materials. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes activities away from the shop or plant which are to be reported separately in the classification applicable to the work being performed; the manufacture of household and sporting goods wooden ware which is to be reported separately in classification 2909; the manufacture of wood products not covered by another classification (N.O.C.) which is to be reported separately in classification 2903-12; the manufacture of wood furniture and caskets which is to be reported separately in classification 2905; the manufacture of wood cabinets, countertops and fixtures which is to be reported separately in classification 2907; the manufacture of rough veneer which is to be reported separately in classification 2904-00; lumber remanufacturing which is to be reported separately in classification 2903-26; and sawmill operations which are to be reported separately in classification 1002.

2903-20 Wood sign: Manufacturing

Applies to establishments engaged in the manufacture of interior or exterior signs made of wood or wood products. Raw materials include, but are not limited to, dimensional lumber, plywood, molding, acrylic, paint, stain, lacquer and hardware. When additional sizing is required, saws, such as table, panel, cut-off, or radial arm, are used to cut material to desired dimensions. Pieces may be further sized, shaped, and smoothed with routers, saws, planers, or sanders. Stain, paint, or other finishes may be applied as background colors, borders or designs, with pneumatic spray guns, airbrushes, or by hand. Lettering or designs can be painted directly on the sign,

cut from separate stock and glued or screwed on, or carved, routed or sandblasted. Computer-cut vinyl lettering may also be applied. Sign painting and lettering is included in this classification when done by employees of the sign manufacturer. Hand drills or drill presses are used to mount wood lettering or designs, bore holes and attach hardware used in the subsequent installation of the sign. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes the installation or removal of signs outside of buildings which is to be reported separately in classification 0403; the installation or removal of signs inside of buildings which is to be reported separately in classification 0513; sign painting or lettering on the inside of buildings which is to be reported separately in classification 4109; establishments that paint on or apply lettering to sign "backings" that are manufactured by others which is to be reported separately in classification 4109; the manufacture of metal or plastic signs which is to be reported separately in the classification applicable to the manufacturing process; and sawmill operations which are to be reported separately in classification 1002.

Special note: The majority of sign manufacturers also install their signs. Installation and removal of signs is to be reported separately.

2903-21 Wood truss: Manufacturing

Applies to establishments engaged in the manufacture of structural roof trusses, and/or ceiling and floor joists from wood or wood products. These products usually do not require a high degree of finishing work. Raw materials include, but are not limited to, dimensional lumber (usually 2" x 4", 2" x 6", and 2" x 8", which is kiln dried, machine stressed, and presurfaced), plywood, metal gussets, and hardware. Dimensional lumber is cut with gang, table, resaw, or radial arm saws. Cut stock is placed in a hydraulic jig assembly which holds the unassembled components in the properly aligned configuration. Pneumatic nailers are used to embed the nail clips which connect each joint of the truss. A gantry, which is an overhead crane traveling along a bridge-like frame, is used to relocate the truss along the assembly line. The assembled truss is placed in a stationary or moveable press which attaches reinforcing triangular shaped metal plates called gussets at each joint or angle. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all installation activities away from the shop or plant which are to be reported separately in the classification applicable to the work being performed; the manufacture of door jambs, windows, sashes, stairs, molding and miscellaneous millwork which is to be reported separately in classification 2903-08; lumber remanufacturing which is to be reported separately in classification 2903-26; and sawmill operations which are to be reported separately in classification 1002.

Special note: Truss manufacturers, whose primary customers are building contractors and building supply dealers, usually deliver their product. Delivery to the construction site often entails placing trusses onto the roof top, using boom

lifts mounted on the delivery truck, which is included in this classification when performed by employees of employers subject to this classification.

2903-26 Lumber: Remanufacturing

Applies to establishments engaged in lumber remanufacturing, which is the process of converting cants, plywood, or lumber into a more specialized or higher grade product. Cants are large slabs of wood, usually having one or more rounded edges, which have been cut from logs. The incoming stock is generally green, rough-cut, and may be owned by the customer or by the remanufacturer. Machinery includes, but is not limited to, a variety of saws, (chop, resaw, trim, rip, table, radial arm, and cut-off), planers, surfacers, sanders, molders, groovers, finger jointers, tenoners, gluers, kiln dryers, fork lifts, and trolley cars. Stock is kiln dried, resawed, planed, grooved, or otherwise treated, according to customer specification if the customer owns it, or to standard cuts if it is for resale. Remanufacturers sell lumber to construction contractors or manufacturers that use it in the construction of products such as, but not limited to, paneling, countertops, framing studs, siding, decking, fencing, railroad ties, or molding. Remanufacturers generally do not finish the material with stain, paint, or lacquer. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant which are to be reported separately in the classification applicable to the work being performed; the manufacture of roof trusses and ceiling and floor joints which is to be reported separately in classification 2903-21; veneer manufacturing which is to be reported separately in classification 2904; establishments that exclusively kiln dry and/or treat lumber with preservatives, fire retardants, or insecticides, and that do not perform any remanufacturing operations which are to be reported separately in classification 1003; and sawmill operations which are to be reported separately in classification 1002.

2903-27 Ridge cap and/or shim: Manufacturing

Applies to establishments engaged in the production of shims and ridge caps. Shims are thin wedges of wood used for filling spaces or leveling. Ridge caps are shingles which are used as a covering for roof peaks. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant which are to be reported separately in the classification applicable to the work being performed; veneer manufacturing which is to be reported separately in classification 2904; and sawmill operations which are to be reported separately in classification 1002.

Special note: This classification must be assigned only by Classification Services after a field inspection of the business has been performed. If a classification must be assigned prior to the field inspection, assign classification 1005-02.

2903-28 Wood boat: Manufacturing, repair, or refinish

Applies to establishments engaged in manufacturing, repairing, or refinishing wooden boats. Raw materials include, but are not limited to, dimensional lumber, plywood, glue, staples, screws, nails, stains, paints, oils, and lacquers. Machinery includes, but is not limited to, band saws, lathes, drill presses, jointers, planers and sanders. Other than pleasure craft, very few wooden boats have been manufactured over the last fifty years. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes the manufacture of fiberglass boats which is to be reported separately in classification 3511, and the manufacture of metal boats which is to be reported separately in the classification applicable to the materials used and work being performed.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-2903, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-2903, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035, 51.16.100. 06-12-075, § 296-17-568, filed 6/6/06, effective 1/1/07; 05-12-031, § 296-17-568, filed 5/24/05, effective 7/1/05. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-568, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-568, filed 5/31/96, effective 7/1/96. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-568, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-568, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-568, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-568, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-568, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-568, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-568, filed 11/30/81, effective 1/1/82; Order 76-36, § 296-17-568, filed 11/30/76; Order 75-38, § 296-17-568, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-568, filed 8/29/75, effective 10/1/75; Order 73-22, § 296-17-568, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-2908 Classification 2908.

2908-00 Factory built housing: Manufacturing or assembly

Applies to establishments engaged in the assembly line production of factory built (manufactured) housing such as wood prefab and modular homes, mobile homes and prefab cedar homes when manufactured at a shop or adjacent yard. Sections vary in size up to 80 feet long and 28 or more feet wide. Manufactured homes are built on an assembly line with materials such as plywood, rolls of aluminum, steel I beams, insulation, electric wire, particleboard, lumber, pipes, plumbing fixtures, electrical fixtures, appliances, carpeting, paint and hardware. Assembly may be single line or on a side by side line. After the chassis is built, it is placed on a conveyor where workers lay joists and heating and plumbing lines. Floors are then installed, interior walls are raised and cabinets are installed. Preassembled exterior walls are fastened, the roof is placed, covered, and tie down straps are attached. These homes may be sided with aluminum, vinyl, hardwood fiberboard or natural wood. While the chassis and some other steel parts are welded, the majority of the work is performed with stamping and forming equipment, hand and air tools, joiners, jig clamps, planers, hoists, forklifts and rail conveyors. Other parts may be nailed, riveted, stapled or glued. Furniture and blinds or curtains may then be installed and specialty items such as fireplaces may be added. Units are inspected, then moved to the yard until sold or delivered.

Individual work stations may include a mill room, cabinet mill room, sheet metal department or paint and finish departments. Some plants may also have sewing departments where they make curtains, blinds and drapes. This classification includes transporting of the factory built home to the customer's site or a dealer's sales lot when performed by employees of an employer subject to this classification, but excludes set up which is to be reported separately in classification 0517.

This classification excludes establishments engaged in the manufacture of campers and travel trailers which are to be reported separately in classification 2908-02; establishments engaged exclusively in the manufacture of truck canopies which are to be reported separately in classification 2908-03; establishments engaged in the manufacture of fiberglass canopies which are to be reported separately in classification 3511; and delivery and set up performed by an independent contractor which is to be reported separately in classification 0517.

2908-02 Campers and travel trailers: Manufacturing

Applies to establishments engaged in the manufacture of factory built campers or travel trailers which are generally not more than 35 feet long and 8 feet wide. This process includes cutting steel I-beams, placing them on a jig and welding the pieces together. Hitches, running gear, and side frames are installed. Subflooring is assembled on a jig and fastened with lag bolts to the frame. Shears, stamping equipment, drill presses and jig clamps are used to perform the work as the pieces are moved by conveyor. Interior and exterior metal panels and trim are spray painted in spray booths or dipped in tanks, using enamel and then hardened by using drying ovens or heat lamps. All electrical wiring, flooring, carpets, heating units, and plumbing fixtures are installed with the use of electrical hand tools, pneumatic wrenches, staplers, and air compressors. Partition walls are then nailed in place with nail guns. Side walls are framed up on a jig and placed on the trailer. Afterwards, the ceiling is nailed in place and the insulation and cabinets are put in place. Sheet metal sides are stapled on and the top is installed. All systems are checked and the trailer or camper is delivered to the distributor's lot. The process of manufacturing a camper is similar except there are no frame rails, axles or hitch involved as a camper has no chassis. Campers are mounted on pickup trucks; travel trailers are fitted with a hitch for towing behind a motor vehicle.

This classification excludes establishments engaged in the manufacture of factory built housing which are to be reported separately in classification 2908-00; establishments engaged in the manufacture of truck canopies which are to be reported separately in classification 2908-03; establishments engaged in fiberglass canopy manufacturing which are to be reported separately in classification 3511; and camper and travel trailer rental/sales agencies which are to be reported separately in classification 3411.

2908-03 Wood or metal truck canopy: Manufacturing

Applies to establishments engaged in the manufacture of wood or metal truck canopies. After the framework is assembled, insulation is cut to size and inserted, electrical wiring is strung, exterior aluminum sheeting or "skin" is cut to size and attached, interior paneling and decorative trim is fitted, doors and windows are installed and electrical clearance lights are

attached. Machinery includes, but is not limited to, saws, electrical hand tools, metal cutting and welding equipment, shears, stamping equipment, drill presses, jig clamps, spray booths, pneumatic wrenches, staple and nail guns, air compressors and miscellaneous hand tools. Direct sales to retail consumers or to wholesale dealers by a canopy manufacturer are included in this classification.

This classification excludes dealers who sell and/or install canopies who are reported separately in classification 1106; establishments engaged in the manufacture of campers and travel trailers which are to be reported separately in classification 2908-02; establishments engaged in the manufacture of factory built housing which are to be reported in classification 2908-00; and establishments engaged in the manufacture of fiberglass canopies which are to be reported separately in classification 3511.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-2908, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-2908, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-57002, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-57002, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-57002, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-57002, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-57002, filed 11/29/82, effective 1/1/83.]

WAC 296-17A-3309 Classification 3309.

3309-02 Golf cart sales/rental agencies

Applies to establishments engaged in the sale and/or rental of new, used golf carts and go carts, and related items such as, but not limited to, golf cart trailers, canopies, protective outerwear, helmets, and replacement parts for the above products. The sale of boats and canoes can be included in this classification if they are incidental to the sale of golf carts and go carts. This classification includes outside lots, and full product line parts and service departments. Regional service representatives who provide factory training to local dealer shop mechanics are included in this classification.

This classification excludes establishments primarily engaged in the sale of boats, boat trailers and motors, which are to be reported separately in classification 3414, and the repair of lawn and garden equipment and small engines which is to be reported separately in classification 3402.

3309-03 Motorcycle, moped, motor scooter, snowmobile, jet ski, all-terrain vehicles sales/rental agencies

Applies to establishments engaged in the sale of new and used motorcycles, mopeds, motor scooters, snowmobiles, jet skis, three wheel and four wheel all-terrain vehicles. These establishments may also sell related items such as, but not limited to, portable generators, lawn and garden equipment, chain saws, water pumps, snow blowers, small gasoline engines, boat motors, protective outerwear, helmets, and replacement parts for the above products. The sale of boats and canoes can be included in this classification if they are incidental to the sale of motorcycles, mopeds, or other primary merchandise. This classification includes service managers and service personnel, parts department personnel who have shop exposure, and lot personnel. Also included are motorcycle service and repair shops, motorcycle dismantlers (wrecking yards), regional service representatives who pro-

vide factory training to local dealer shop mechanics, and establishments engaged in the sale/rental *and service (repair)* of motorized mobility aids, such as motorized wheelchairs and 3-wheel scooters.

This classification excludes establishments primarily engaged in the sale of boats, boat trailers and motors, which are to be reported separately in classification 3414; establishments primarily engaged in the sale of lawn and garden equipment which is reported separately in classification 6309; and the repair of lawn and garden equipment and small engines which is to be reported separately in classification 3402.

Special note: While most businesses assigned to this classification have an inventory of parts which they use in the service and repair of customer vehicles, some employers have full line parts stores. Care should be taken when considering assignment of classification 6309 for part sales. Only those businesses that have a full line parts store which is physically separated from the repair shop and whose sales of parts are primarily for off-premises repair (do it yourself repair) should be considered for classification 6309.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-3309, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-3309, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-578, filed 8/28/98, effective 10/1/98; 87-12-032 (Order 87-12), § 296-17-578, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-578, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-578, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-578, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-3402 Classification 3402.

3402-00 Air compressor: Manufacturing or assembly

Applies to establishments engaged in the manufacture or assembly of air compressors. This includes air or gas compressors used for paint sprayers, air tools, tire inflation, and general industrial purposes. Operations contemplated include, but are not limited to, welding, machining, general mechanical and electrical work. Machinery and equipment includes, but is not limited to, hand and air tools, welders, punches, shears, and compression equipment. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant.

3402-01 Printing or bookbinding machinery: Manufacturing or assembly

Applies to establishments engaged in the manufacture or assembly of printing or bookbinding machinery. The outside casings of the machines may be made of plate metal that varies between 1" to 2 1/2" in thickness. The machines used to make the presses and binding machinery may include both Computer Numeric Controlled (CNC) and manual mills and lathes. Other machinery used in the manufacturing process includes, but is not limited to, welders or cutters, grinders, and drill presses. This classification includes the repair of

items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant; and the set up, installation and repair of printing or bookbinding machinery which is to be reported separately in classification 0603.

3402-02 Pump, safe, scale, auto jack, and water meter: Manufacturing or assembly

Applies to establishments engaged in the manufacture or assembly of pumps, safes, scales, auto jacks, and water meters. Materials range from brass screws and rubber washers used to rebuild water meters to plate metal and steel castings used for safe and pump manufacturing. Machinery includes, but is not limited to, hand tools used for repairs, lathes, welders, and pressure testers. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant; the installation and repair of safes which is to be reported separately in classification 0607; and the installation of pumps which is to be reported separately in the applicable classification.

3402-03 Shoe or textile machinery: Manufacturing or assembly

Applies to establishments engaged in the manufacture or assembly of shoe machinery or textile machinery. Metal materials used vary in size, shape and dimension. Machinery includes, but is not limited to, drills, mills, lathes, saws, and welders. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant and the installation and repair of shoe or textile machinery which is to be reported separately in classification 0603.

3402-04 Confectioners or food processing machinery: Manufacturing or assembly

Applies to establishments engaged in the manufacture or assembly of food processing or confectioners machinery. Metal materials used vary in size, shape and weight. These establishments often have an assembly line operation and a separate electronic assembly area. This classification includes the repair of items being manufactured or assembled

when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant and the installation and repair of confectioners and food processing machinery which is to be reported separately in classification 0603.

3402-05 Machine shops, N.O.C.

Applies to establishments engaged in general machine shop operations not covered by another classification (N.O.C.), tool sharpening, and mobile welding shops. Many of the establishments in this classification are "job shops." Size and shape of materials vary with steel and aluminum being the most common. Plastics, light weight aluminum, and alloyed metals are becoming increasingly popular in the manufacture of equipment for some industries. These establishments often have welding shops along with machine shops. Machinery and equipment includes, but is not limited to, mills, lathes, grinders, saws, welding equipment, inspection equipment, and material handling equipment. Machinery is both manual and Computer Numeric Controlled (CNC). This classification also includes "mobile shops" which are used *exclusively* to repair machinery or equipment. A "mobile shop" in this classification usually means a van or pick up pulling a utility trailer equipped with hand tools, specialty tools, air tools, a compressor, and a portable welding unit. The machinery or equipment is usually repaired at the customer's location, however, sometimes the broken part is removed and taken back to the shop for repair.

This classification excludes repairs to buildings and structures which are to be reported separately in the appropriate construction classification, and mechanical repairs which are to be reported separately in the classification applicable to the work being performed.

Special note: The term "job shop" is an industry term that means the shop will produce products to customer specifications.

3402-06 Power saw, lawn and garden equipment, small motor, N.O.C.: Repair

Applies to establishments engaged in repairing small power tools, small motors powered by gas or diesel, outboard marine engines, and lawn and garden equipment not covered by another classification (N.O.C.). The largest piece of equipment repaired in this classification is generally a riding lawn mower. Classification 3402-06 is assigned in conjunction with a store classification for establishments that have a store operation and also repair the type of items they sell. Classification 3402-06 may also be assigned to a manufacturer's representative who performs warranty repairs. Tools used in this type of repair are mainly hand and air tools. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant and the repair of electrical motors which is to be reported separately in classification 5201.

3402-07 Gear: Manufacturing or grinding

Applies to establishments engaged in the manufacture or grinding of gears. Establishments in this classification may also cut key slots and broaches. Establishments that cut stock to manufacture the gear are often not the same ones that perform the final grinding process. Gears may go through two, three, or four different grinding, slotting, and/or keying establishments and then go to another establishment for electroplating or galvanizing before they are ready for sale or use. Precision machine shops may grind gears to the ten thousandths of an inch. Materials used are usually stainless steel, aluminum, or plastic. Machinery includes, but is not limited to, gear shapers, drill presses, mill, hobbers, grinders, some of which might be Computer Numeric Controlled (CNC). This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant.

3402-08 Elevator: Manufacturing

Applies to establishments engaged in the manufacture of elevators and associated electronic components. Machinery includes, but is not limited to, mills, drills, lathes, saws, and grinders. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant and the installation, service, and repair of elevators which is to be reported separately in classification 0602.

3402-11 Metal goods: Manufacturing and shop services (temporary classification)

Applies temporarily to all establishments assigned any classification within WAC 296-17-580. When the metal goods study is complete, the establishments within this classification will be assigned to the appropriate classifications. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation.

This classification excludes all activities away from the shop or plant.

3402-12 Multimedia blasting

Applies to establishments engaged in multimedia (such as, but not limited to, glass, plastic and sand) blasting operations which strip paint or other coatings from metal or fiberglass. Most of the blasting operations in this classification are done on automobiles, but it also applies to establishments that perform blasting on items such as, but not limited to, barbe-

cue grills, and cast iron pieces. Multimedia blasting processes in this classification are performed in a shop, use less air pressure and media with softer finishes than other blasting operations. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant and sandblasting of buildings or structures which is to be reported separately in classification 0504.

3402-14 Furnace, heater, radiator, wood, propane, or pellet stoves: Manufacturing

Applies to establishments engaged in the manufacture of furnaces, radiators, wood, propane, or pellet burning stoves or similar heating fixtures. Materials include, but are not limited to, metal cast parts, sheet metal, plate metal, aluminum, or stainless steel. Machinery includes, but is not limited to, hand tools, solder guns, punches, lathes, and saws. Establishments in this classification may have separate areas for electronic assembly and/or painting. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant; establishments engaged in the manufacture of radiators for automobiles or trucks which are to be reported separately in classification 3402-48; and establishments engaged in the manufacture of baseboard heaters which are to be reported separately in classification 3404.

3402-16 Die casting

Applies to establishments engaged in the manufacture of products by die casting. Die casting is a manufacturing process for producing accurately-dimensioned, sharply-defined metal products which are referred to as "die castings." "Dies" are the steel molds used to mass produce the product. The process begins when ingots of various metal alloys are melted in die casting machines. The machine forces the metal into the die under hydraulic or pneumatic pressure. The casting quickly solidifies in the die, and is automatically ejected by the machine, and the cycle starts again. The castings are cleaned by grinding or sanding, which also removes any excess metal "flash." Many die casting manufacturers maintain their own machine shop for making the dies. Die making, when done as a part of die casting operations, is included within the scope of this classification. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant; and establishments engaged in making dies for others which are to be reported separately in classification 3402-74.

3402-26 Saw blade: Manufacturing, assembly, or sharpening

Applies to establishments engaged in the manufacture, assembly, or sharpening of saw blades such as, but not limited to, those used in circular saws, band saws, rip saws, key-hole saws, and handsaws such as hacksaws or meat saws. This classification also includes sharpening services for items such as, but not limited to, tools, scissors, and knives. Materials include, but are not limited to, high tensile steel and carbide tipped blades. Machinery includes, but is not limited to, saws, mills, drills, and hand tools. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant; establishments engaged in the repair or sharpening of chain saws which are to be reported separately in classification 3402-06; and establishments engaged in the manufacture or repair of electrical saws which are to be reported separately in classification 5201.

3402-28 Heat treating metal

Applies to establishments engaged in heat treating metal. The heat treating process may use computer numeric controlled ovens or furnaces. The oven may heat up to 1200 degrees Fahrenheit and a furnace may heat up to 2000 degrees Fahrenheit. The metal(s) is placed on a platform; the platform is hydraulically moved into the first chamber and the door is automatically closed. At this time, the oxygen is burned from the chamber. Then the second chamber door is opened and the metal enters the oven/furnace. Depending upon the specifications, the heat treating process usually takes six to sixteen hours. When the metal is finished in the heating chamber it returns automatically to the first chamber. Then the platform lowers and the metals are dipped into a cooling agent. Once the metals are cooled to room temperature the platform rises, the door opens, and the materials are removed. The process is essentially the same using noncomputer numeric controlled heat treating equipment except that, rather than being hydraulically operated, the machine operators move the metals through the system. Many establishments do not produce a product, but heat treat a variety of products to customer specifications. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant.

**3402-29 Nut, bolt, screw, nail, tack, rivet, eyelet spike, needle, N.O.C.: Manufacturing
Sprinkler head, speedometer, carburetor: Manufacturing or assembly**

Applies to establishments engaged in the manufacture of nuts, bolts, screws, nails, tacks, rivets, eyelets, spikes, and needles not covered by another classification (N.O.C.). This classification also applies to establishments engaged in the manufacture or assembly of sprinkler heads, speedometers,

or carburetors. Materials include, but are not limited to, steel or iron rods which may be pressed or formed, and small component parts. Machinery includes, but is not limited to, saws, shears, presses, chucks, threading and tapping machines, some of which may be Computer Numeric Controlled (CNC). Establishments may have separate areas for deburring, inspecting, packing and shipping. The carburetor rebuilding may be performed on vehicles that are driven or towed into the shop, or on carburetors that have been already removed from the vehicles. In either case the repairs are made exclusively with hand and air tools and sometimes a diagnostic scope and a drill press. A speedometer is usually embodied with a mileage recording mechanism. The central feature of the device is a permanent magnet. There are gears, spindles, and a drive shaft present in most speedometers. There is also a unit counting disc and a spiral spring calibrator. Hand tools are used almost exclusively in the repair of this kind of speedometer. Today many speedometers are computer controlled. Basically, if this kind of speedometer is in need of repair, a computer chip(s) is replaced, using hand tools. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant and establishments engaged in the manufacture of hardware that is not covered under another classification, such as handles, latches, and hinges which are to be reported separately in classification 3404, and the repair of speedometers or carburetors in a vehicle which is to be reported separately in the appropriate vehicle repair classification.

3402-32 Abrasive wheel: Manufacturing

Applies to establishments engaged in the manufacture of abrasive wheels. Manufacturing operations often include a laboratory where carbon and other materials are mixed together to form the abrasive edge of the mainly high tensile steel wheels. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant.

3402-40 Welding or cutting, N.O.C. (*mobile operations limited to repair of equipment and machinery*)

Applies to establishments engaged in welding or cutting operations not covered by another classification (N.O.C.) either in the shop or at the customer's site. Steel is the predominant material along with some aluminum alloys. Machinery is predominantly welding equipment, but may include tools such as, but not limited to, grinders, saws, drills, and material handling equipment. This classification also includes "mobile shops" which are used *exclusively* to repair

machinery or equipment. A "mobile shop" in this classification usually means a van or pick up pulling a utility trailer equipped with hand tools, specialty tools, air tools, a compressor, and a portable welding unit. The machinery or equipment is usually repaired at the customer's location, sometimes with the use of the customer's equipment; however, broken parts may be removed and taken back to the shop for repair.

This classification excludes welding construction and repairs to buildings or structures which are to be reported separately in the appropriate construction classification and mechanical repairs which are to be reported separately in the classification applicable to the work being performed.

3402-48 Automobile or truck, radiator and heater core: Manufacturing and repair shops

Applies to establishments engaged in the manufacture and/or repair of automobile or truck radiator and heater cores. Manufacturers in this classification may have a die casting area and a separate electronic assembly area. Tools and equipment include, but are not limited to, hand tools, solder guns, and punches. Shops that repair radiators may work on the radiators in the vehicles, but usually the radiators have been removed from the vehicle. The radiator is examined and the core may be removed. Next the radiator is cleaned, air pressurized, and dipped in a water tank to check it for leaks. Once the leaks are found they can generally be repaired by welding the holes shut. The radiator is dipped again to ensure the repair has been made properly. Cleaning the radiator may be done by sandblasting, ultra sound baths or by "rodding" the radiator to remove corrosion. Repair equipment includes, but is not limited to, welders, air and hand tools, dipping tanks, hoists, and forklifts. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant.

3402-60 Office machinery, N.O.C.: Manufacturing or assembly; Cash register or sewing machines: Manufacturing or assembly

Applies to establishments engaged in the manufacture or assembly of cash registers, sewing machines and office machinery not covered by another classification (N.O.C.) such as, but not limited to, copiers, collators, mail/postage machines, calculators and automatic letter openers. Component parts may be metal, plastic, or wood. Operations include, but are not limited to, cutting, shaping, forming, drilling, riveting, clamping, and bolting; there may be a separate electronic assembly area. Machinery and tools vary within this classification; some establishments use hand and air tools only, others use additional equipment such as, but not limited to, saws, lathes, mills, drills, or water jets, some of which may be Computer Numeric Controlled (CNC). This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is

done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant.

3402-61 Small arms: Manufacturing, assembly, or rebuild

Applies to establishments engaged in the manufacture, assembly, or rebuild of small arms. For the purpose of this classification, small arms means .50 caliber or less, such as pistols, rifles, shotguns, and light machine guns. Operations include, but are not limited to, metal stamping of casings, machining, assembling, and a high proportion of inspecting. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant; establishments engaged in the manufacture of ammunition which is to be reported separately in classification 4601; the manufacture or repair of heavy arms which is to be reported separately in classification 5109; and gun stores which are to be reported separately in classification 6309.

3402-74 Tool: Manufacturing, not hot forming or stamping; Die: Manufacturing - ferrous

Applies to establishments engaged in tool manufacturing or die manufacturing, for others, from ferrous materials. Tools manufactured in this classification are usually cutting tools used in lathes, mills, rotors, and saws. Machinery includes, but is not limited to, sharpeners, grinders, lathes and mills, which are both manual or Computer Numeric Controlled (CNC). The die manufacturing included in this classification includes those made exclusively of ferrous materials including, but not limited to, jigs, fixtures, and dies for metal work in general. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant and establishments engaged in the manufacture of machine-finished tools which are to be reported separately in classification 3402-83.

3402-77 Auto, truck, semi-trailer and bus body: Manufacturing;

Travel trailer body: Manufacturing or repair

Applies to establishments engaged in the manufacture of auto, truck, and bus bodies, and in the manufacture or repair of travel trailer bodies or cargo containers. Repairs are usu-

ally made with the use of welders or cutting torches and air or hand tools. These establishments will also repair or replace hydraulic units. Material used in the manufacture of goods in this classification is usually steel and aluminum, varying in thickness from 16 gauge to plate metal up to one inch thick. Shapes include, but are not limited to, sheet metal, tubes, solid rod or I-beams. Equipment includes, but is not limited to, shears, breaks, hydraulic presses, iron workers, drill presses, grinders, welders, hoist, cranes, and forklifts. Shops may have a finish sanding area as well as a paint area where the vehicle bodies are sprayed with primer, a body bonding material, or a finish coat of paint. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant.

3402-83 Tool: Manufacturing and machine finishing

Applies to establishments engaged in manufacturing and machine finishing tools. Tools manufactured in this classification are usually hand held instruments such as, but not limited to, wrenches, screw drivers, hammers, torque wrenches, pliers, and sockets. Machinery includes, but is not limited to, air and hand tools, polishers, grinders, inspection equipment, mills, lathes, shapers, and drill presses, some of which may be Computer Numeric Control (CNC). Establishments may have a galvanizing and/or electroplating area for the finish work which is included when performed by employees of employers subject to this classification. Other establishments in this classification send the finish work out. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant; establishments engaged in the manufacture of tools from ferrous materials which are to be reported separately in classification 3402-74; and establishments engaged in tool forging which are to be reported separately in classification 5106.

3402-85 Auto or truck parts: Machining or rebuild not in vehicle

Applies to establishments engaged in machining or rebuilding auto or truck parts such as, but not limited to, water pumps, fuel pumps, transmissions, heads, brake drums, ball joints, and rear ends, which are not in the vehicle. Work contemplated in this classification may also include manufacturing sockets, pulleys, shafts, fittings, flywheels, and/or bearings. Machinery includes, but is not limited to, mills, lathes, grinders, sanders, presses, welders, and balancing equipment. This is a shop or plant only classification; it includes work being performed in an adjacent yard when

operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant and establishments engaged in manufacturing or rebuilding auto, truck, or aircraft engines which are to be reported separately in classification 3402-86.

3402-86 Auto, truck or aircraft engine, N.O.C.: Manufacturing or rebuilding

Applies to establishments engaged in manufacturing or rebuilding auto, truck, or aircraft engines not covered by another classification (N.O.C.), including manufacturing the component parts. Establishments in this classification often specialize in the type of engines they make or rebuild. The basic difference between automobile, truck, and aircraft engines is the size and weight of the parts being worked on. Engine rebuild shops use many specialized machines and air tools to tear the core down to an engine block; then rebuild the engine. After the engine is stripped down to the engine block, it is placed in a machine called a baker which heats to approximately 600 degrees and bakes away the grease. After baking, the engine block is placed in a sand blaster where the surface is cleaned with very fine steel shot. The engine block is then placed in a large pressure washer which removes the steel shot. Next, the crank and cam shafts are ground and turned on machinery similar to lathes. There is usually a separate room or area which is called the "head shop" where the heads and valves are machined on valve grinders, valve facers, and head grinders. Engine rebuild shops that do not have the equipment to grind the crank and cam shafts will contract work out to other shops, or buy new crank shafts and cam shafts. Other machinery includes, but is not limited to, boring bars and hones to polish cylinder walls, small pressure washers for oil pans and other smaller parts, solvent tanks, and hoists or forklifts for lifting the engines or engine parts. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant and establishments engaged in machining or rebuilding auto or truck parts, other than engines, which are to be reported separately in classification 3402-85.

3402-91 Bed spring or wire mattress: Manufacturing

Applies to establishments engaged in the manufacture of bed springs or wire mattresses. The wire stock is coiled and cut to length on a coiling machine, then tempered in an oven to produce the spring. The coils are fastened to the frame either by hand or by machine. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant and establishments engaged in the manufacture of stuffed mattresses which are to be reported separately in classification 3708.

3402-93 Valve: Manufacturing

Applies to establishments engaged in the manufacture of valves. Valves regulate the flow of air, gases, liquids, or loose material through structures by opening, closing, or obstructing passageways. They are operated manually, electrically, with compressed air, or hydraulic pressure. Valves are usually cut from aluminum, steel, or stainless steel either by a Computer Numeric Controlled machine (CNC) or water jet machine. Depending upon the complexity of the valve, they are assembled in one or several stages. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant and establishments engaged in the manufacture of valves made in a die mold which are to be reported separately in classification 3402-74.

3402-94 Precision machined parts, N.O.C.: Manufacturing

Applies to establishments engaged in manufacturing precision machined parts not covered by another classification (N.O.C.). Most of these establishments are "job shops." Job shops make component parts for other businesses according to customer specifications, rather than manufacturing a specific product. Many establishments in this classification manufacture precision parts for the aerospace industry. Machining usually begins with solid blocks of material such as, but not limited to, steel, aluminum, titanium, inconel, or plastic, although some hollow tube, flat bar, and angle stock may also be used. The "rough cuts" are often made on manual machines, and the finish cuts on Computer Numeric Controlled (CNC) machines. Depending on the establishment and the job specifications, a specific part may be sent to one or more additional shops to be tempered, milled, or inspected before the original establishment is through with the manufacturing process. Some parts are so sensitive that climate controlled conditions are necessary. Both manual and CNC mills and lathes are the most common types of machines used. Others include, but are not limited to, saws, drills, and grinding machines. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant.

3402-95 Storage battery: Manufacturing, assembly or repair

Applies to establishments engaged in the manufacture, assembly, or repair of storage batteries. Lead ingots, weighing 20-25 pounds, are melted and poured into a mold or casting machine. After the grids are cooled lead oxide is then pumped onto each side of a grid and cured by baking in an oven of about 300 - 400 degrees F. The plates are then assembled by placing a negative separator (zinc) between a positive separator (copper), and so forth until there are enough of these cells to form the battery. Next, they are sent to a burning machine that cures the paste and plates. After the burning process, the plates are placed into a plastic or hard rubber box-like container and cured for two or three days. The plates are welded together and the top is attached to the body of the battery case with an epoxy glue. Diluted sulfuric acid is added to the battery and then it is put on a charger. The battery is then cleaned and packed for shipping. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant; establishments engaged in the manufacture of dry cell (flashlight type) batteries which are to be reported separately in classification 3602; and establishments engaged in battery sales and installation which are to be reported separately in the applicable automotive services classification.

3402-96 Automobile or motorcycle: Manufacturing or assembly

Applies to establishments engaged in the manufacture or assembly of automobiles or motorcycles. Most of the manufacturing operations, such as cutting, milling, and turning, are performed with Computer Numerically Controlled (CNC) machinery. Most of the assembly operations are performed with air and hand tools. Other machinery includes but is not limited to saws, grinders, and drill presses. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant and establishments engaged only in the manufacture of auto bodies which are to be reported separately in classification 3402-77.

3402-98 Machinery, N.O.C.: Manufacturing or assembly

Applies to establishments engaged in the manufacture or assembly of machinery not covered by another classification (N.O.C.). For purposes of this classification, machinery means any combination of mechanical parts constructed primarily with metal. Finished products vary widely and range from hand held machines to those weighing thousands of

pounds; products include, but are not limited to, grinding machines, boring machines, conveyer systems, and wood chippers. Machinery used to manufacture these items includes, but is not limited to, lathes, mills, press, breaks, shears, and welders, some of which may be Computer Numerically Controlled (CNC). This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant.

3402-99 Photo processing machinery: Manufacturing or assembly

Applies to establishments engaged in the manufacture or assembly of photo processing machinery such as, but not limited to, photo processors or film enlargers. This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations subject to this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation. This is a shop or plant only classification; it includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

This classification excludes all activities away from the shop or plant.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-3402, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-3402, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035 and 51.16.100. 06-24-055, § 296-17-580, filed 12/1/06, effective 1/1/07; 06-12-075, § 296-17-580, filed 6/6/06, effective 1/1/07. Statutory Authority: RCW 51.16.035. 99-18-068, § 296-17-580, filed 8/31/99, effective 10/1/99; 98-18-042, § 296-17-580, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-580, filed 5/31/96, effective 7/1/96. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-580, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-580, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-580, filed 5/31/88, effective 7/1/88; 85-24-032 (Order 85-33), § 296-17-580, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-580, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-580, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-580, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-580, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-580, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-580, filed 11/30/76; Order 75-38, § 296-17-580, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-580, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-3406 Classification 3406.**3406-00 Automotive or truck gas service stations, N.O.C.: Lube and oil change specialists, and mobile lube and oil services**

Applies to establishments operating full service gasoline or diesel service stations not covered by another classification (N.O.C.). Full service includes, but is not limited to, pumping gas for customers, replacing wiper blades, checking and/or filling the fluid levels (oil, transmission, wiper wash and antifreeze), and adding air to the tires. The repairs included in this classification are oil and filter changes, tune-

ups, replacement of brakes, front end alignments and the repair or replacement of tires. This classification includes cashiers.

This also applies to establishments engaged exclusively in preventive automotive maintenance, such as, but not limited to, changing oil and oil filters, lubing chassis, checking and/or filling fluid levels, replacing wiper blades, adding air to tires, and checking and/or replacing belts, hoses, and filters.

This classification excludes portable automobile or truck car washes which are to be reported separately in classification 6602; establishments engaged in automobile or truck repair services and tune up specialists which are to be reported separately in classification 3411; establishments engaged in the service or repair of machinery or equipment N.O.C. which are to be reported separately in classification 6409; self-service gas stations which are to be reported separately in classification 3409; and convenience grocery stores or mini-markets with self-service gasoline operations which are to be reported separately in classification 3410.

3406-01 Automobile or truck storage garages

Applies to establishments operating automobile or truck storage garages. Generally, these types of storage garages consist of an enclosed structure and usually with more than one level of parking. Storage garages may provide additional incidental services such as, but not limited to, gasoline, tune-ups, washing and waxing services, as well as cashiers and full time attendants or security personnel.

This classification excludes portable automobile or truck car washes which are to be reported separately in classification 6602; establishments providing parking lot services which are to be reported separately in classification 6704; automobile or truck repair services which are to be reported separately in classification 3411; establishments engaged in the service or repair of machinery or equipment N.O.C. which are to be reported separately in classification 6409; self-service gas stations which are to be reported separately in classification 3409; and full service gas station services which are to be reported separately in classification 3406-00.

Special note: Storage garages applicable to this classification are distinguishable from parking lots in classification 6704 in that parking lots usually are not an enclosed structure, and they do not provide service to automobiles.

3406-04 Automobile or truck - detailing by contractor; glass tinting; windshield repair

Applies to establishments engaged in providing automobile or truck detailing services and to establishments engaged solely in tinting glass in automobiles or repairing cracks, chips or bullseyes in windshields. Detailing services involve complete, in-depth cleaning of exteriors and interiors such as, but not limited to, washing, waxing, polishing, buffing, vacuuming or otherwise cleaning the auto bodies, chrome work, tires, hub caps, windows, mirrors, carpets and seats and may also involve tinting glass. This classification includes cashiers.

This classification excludes portable automobile or truck car washes which are to be reported separately in classification 6602; tinting of automobile or truck window glass performed by a glass dealer which is to be reported separately in classification 1108; glass tinting or the application of tinted

plastic film to glass windows and doors in buildings which are to be reported separately in classification 0511; detailing performed in connection with automobile or truck dealers, service centers or repair garages which are to be reported separately in classification 3411; detailing performed in connection with automobile or truck body and fender repair shops which are to be reported separately in classification 3412; detailing performed in connection with establishments engaged in the service or repair of machinery or equipment, N.O.C. which is to be reported separately in classification 6409; and detailing performed in connection with full service gas stations which are to be reported separately in classification 3406-00.

3406-05 Automobile or truck car washes

Applies to establishments providing automobile or truck washing services. This classification includes the exterior washing, waxing, polishing or buffing, cleaning of chrome and tires, and the interior cleaning of windows, carpets, dash and seats. These services may be performed at a coin operated self-service unit, or at a full service automatic unit where the vehicle is conveyed through the line assisted by attendants. This classification includes cashiers and the sale of accessory items such as, but not limited to, bottled car care products, air fresheners, floor mats, beverages and snack foods.

This classification excludes portable automobile or truck car washes which are to be reported separately in classification 6602; washing services performed in connection with automobile or truck dealers, service centers or repair garages which are to be reported separately in classification 3411; washing services performed in connection with automobile or truck body and fender repair shops which are to be reported separately in classification 3412; washing services performed in connection with establishments engaged in the service or repair of machinery or equipment, N.O.C. which are to be reported separately in classification 6409; washing services performed in connection with full service gas stations which are to be reported separately in classification 3406; washing services performed in connection with self-service gasoline operations which are to be reported separately in classification 3409; and washing services performed in connection with convenience stores that have self-service gasoline operations which are to be reported separately in classification 3410.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-3406, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-3406, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.12.120. 03-23-025, § 296-17-583, filed 11/12/03, effective 1/1/04. Statutory Authority: RCW 51.16.035, 51.04.020. 00-14-052, § 296-17-583, filed 7/1/00, effective 7/1/00. Statutory Authority: RCW 51.16.035. 99-18-068, § 296-17-583, filed 8/31/99, effective 10/1/99; 98-18-042, § 296-17-583, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-583, filed 5/31/96, effective 7/1/96; 85-24-032 (Order 85-33), § 296-17-583, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-583, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-583, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-583, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-583, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-583, filed 11/30/79, effective 1/1/80; Order 73-22, § 296-17-583, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-3414 Classification 3414.**3414-00 Boat dealers**

Applies to establishments engaged in the sales, service, and/or repair of boats. Work contemplated by this classification includes, but is not limited to, mechanical and electrical system repairs, vinyl and glass repairs, engine rebuilding and reconditioning, detailing boats, reconditioning seat pads and other accessories, sales and installation of boat accessories, and sales of boat trailers, specialty apparel and fishing gear when performed by employees of an employer subject to this classification. This classification also includes parts department employees, sales employees who also assist in duties described in this classification, and lot personnel.

This classification excludes boat sales personnel who may be reported separately in classification 6301 provided all the conditions of the general reporting rule covering standard exception employees have been met; repairs done in connection with manufacturing operations which are to be reported separately as applicable; and establishments engaged in the repair of fiberglass or sheet metal boat bodies which are to be reported separately in classification 3412 and the repair of wooden boats which is to be reported separately in classification 2903.

3414-01 Marinas and boat house operations: Boat storage facilities

Applies to establishments engaged in providing a variety of boat-related services and facilities, and to service or repair centers. Boat storage facilities may be located in waterways adjacent to the marina or on dry land and may be operated by a marina or by a separate business. Both types of storage facilities are included within the scope of this classification. Work contemplated by this classification includes, but is not limited to, fuel service, mechanical and electrical repair service, parts departments, boat storage, moorage, sales of fishing gear, wearing apparel, groceries and bait, boat rentals and sales, and boat launching facilities when performed by employees of an employer assigned to this classification. This classification also includes other incidental services and facilities such as, but not limited to, self-service laundry facilities, public showers, holding tank pump out stations, passenger car or truck parking, and dockside electricity.

This classification excludes repairs done in connection with manufacturing operations which are to be reported separately as applicable; establishments engaged in the repair of fiberglass or sheet metal boat bodies which are to be reported separately in classification 3412; seafood or fish processing facilities operated in connection with a marina operation which are to be reported separately in classification 3304; and boat sales personnel who may be reported separately in classification 6301 provided all the conditions of the general reporting rule covering standard exception employees have been met. Overnight lodging facilities and restaurant services provided to customers by a marina operator may be reported separately provided all the conditions of the general reporting rule covering a secondary business have been met.

Special note: Some marina operators will offer boating instructions and charter boat services. Care should be taken in this area as certain boating and charter fishing excursions are not covered by state workers' compensation coverage.

[Statutory Authority: RCW 51.16.035 and 51.16.100, 07-12-047, § 296-17A-3414, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-3414, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-58506, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-58506, filed 5/31/96, effective 7/1/96.]

WAC 296-17A-3512 Classification 3512.**3512-02 Plastic goods: Manufacturing - cutting, milling or bending**

Applies to establishments engaged in the manufacture of a variety of plastic goods from premanufactured components such as sheets, rods, or tubes by cutting, milling, or bending. Products include, but are not limited to, display stands, racks, dispensers for snack food items, vinyl windows and sashes, fiberglass panels used for aircraft or recreational vehicle interiors, and signs. Essentially anything that can be done with wood can be done with plastic, so shops in this classification usually resemble a cabinet or woodworking shop. They use the same type of tools such as, but not limited to, saws, routers, planers, and grinders, to cut or mill the plastic goods. To bend plastic material, it is first heated in an oven or with a torch, then bent to shape. Buffers are used for polishing, or the pieces may be flame polished (heated with a gas torch). Products may be formed by joining pieces with glue, hardware or other fasteners.

This classification excludes establishments engaged in the manufacture of plastic items by blow molding, extrusion, vacuum forming, foam, rotary, or liquid molding, or injection molding, and establishments engaged in the manufacture of artificial marble items or graphite composite goods, which are to be reported separately in classification 3510; establishments engaged in the manufacture of fiberglass goods which are to be reported separately in classification 3511; and sign manufacturers that purchase pre-cut plastic backings from others, then paint lettering or designs or attach vinyl lettering to them in their own shops which are to be reported separately in classification 4109.

Special note: The cutting, milling, or bending of plastic goods incidental to the manufacturing process for products made from wood, metal or other materials is included in the classification applicable to those manufacturing processes.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324, 07-24-045, § 296-17A-3512, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-3512, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-59204, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020(1) and 51.16.035, 91-12-014, § 296-17-59204, filed 5/31/91, effective 7/1/91.]

WAC 296-17A-4801 Classification 4801.**4801-00 Geoduck harvesting by divers**

(to be assigned only by the maritime specialist)

Applies to establishments engaged in diving operations to harvest wild geoduck clams from natural areas. Work contemplated by this classification includes subaqueous harvesting of geoduck clams, sea cucumbers or similar marine life. This classification includes workers tending to such divers. The employees of the divers and tenders shall be subject to this classification whether or not such work is performed from a vessel.

Special note: Many diving operations and activities occur on or adjacent to navigable waters (a harbor, river, canal, dam, lake) which is defined as those which form a continuous highway for interstate or international commerce. Workers who perform diving activities (to include divers, deck hands, or "diving tenders" who are support personnel such as line handlers and pump persons) from on board a vessel could be subject to the Jones Act or Admiralty Law which recognize such work crews and workers as masters or members of a vessel, and subject to federal law known as the Jones Act. Every person on board a vessel is deemed a seaman if connected with the operation while on navigable water. The term vessel has been interpreted by the courts to include any type of man-made floating object such as a floating derrick or dredge, a boat or ship, a barge, or type of pontoon (which is a flat bottom boat) or portable float. Workers who perform diving activities (to include divers, deck hands, or "diving tenders" or other support personnel such as line handlers and pump persons) from the shoreline or from adjacent areas such as an existing dock, pier or bridge may or may not be subject to federal law covered under the (U.S.) Longshore and Harbor Workers Compensation Act (LHWCA). Care should be exercised prior to assignment of this classification as the workers could be subject to either or both state fund or federal jurisdiction. The criteria used in determining federal law and coverage is based on the most current federal court decisions and case law.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-4801, filed 12/1/07, effective 1/1/08.]

WAC 296-17A-4803 Classification 4803.

4803-02 Farms: Orchards - fruit tree crops

Applies to establishments engaged in operating fruit orchards of all types. Work contemplated by this classification includes, but is not limited to, preparing soil for new trees, planting trees, fertilizing, spraying, fumigating, weeding, pruning, harvesting tree fruit, and maintaining or installing sprinkler or irrigation systems when performed by employees of an employer subject to this classification. This classification includes roadside stands operated at or near the farm and farm store operations where a small stock of products not produced by the operation subject to this classification may also be offered for sale. Farms operating multiple retail locations, such as those found in parking lots of shopping centers or at farmer's markets, may qualify to have those activities reported separately provided all the conditions of the general reporting rules covering the operation of a secondary business are met.

This classification excludes fresh fruit packing operations which are to be reported separately in classification 2104; fruit cannery or freezer operations which are to be reported separately in classification 3902; winery operations which are to be reported separately in classification 3702; and contractors hired by a farm operator to install, repair or build any farm equipment or structures who are to be reported separately in the classification applicable to the work being performed.

Special note: Prune harvesting is often accomplished by a person laying a canvas cover around the base and surrounding area of the tree. The tree is then shaken by hand causing

the fruit to dislodge and fall to the canvas cover where it is picked by hand. Harvesting done by this method is subject to classification 4806 provided that the conditions set forth in classification 4806 have been met. The term "farm labor contractor" applies to specialty contractors who supply laborers to a farm operation for specified services such as weeding, planting, irrigating and fertilizing. Generally the work involves manual labor tasks as opposed to machine operations. These farm labor contractors are to be reported in the classification that applies to the farm they are contracting with. Contractors who provide both equipment or machinery and the machine operators are to be reported in classification 4808 "custom farm services" as the process involved in operating machinery is the same irrespective of the type of farm they are providing service to or the type of crop involved.

4803-04 Farms: Orchards - nut tree crops

Applies to establishments engaged in operating nut producing orchards of all types. Work contemplated by this classification includes, but is not limited to, preparing soil for new trees, planting trees, fertilizing, spraying, fumigating, weeding, pruning, machine harvesting of nuts, and maintaining or installing sprinkler or irrigation systems when performed by employees of an employer subject to this classification. This classification includes the incidental sale of bulk or packaged nuts at roadside stands operated at or near the farm and farm store operations where a small stock of products not produced by the operation subject to this classification may also be offered for sale. Farms operating multiple retail locations, such as those found in parking lots of shopping centers or at farmer's markets, may qualify to have those activities reported separately provided all the conditions of the general reporting rules covering the operation of a secondary business are met.

This classification excludes nut shelling and packaging operations which are to be reported separately in classification 3902; ground hand picking of nuts which is to be reported separately in classification 4806; and contractors hired by a farm operator to install, repair or build any farm equipment or structures who are to be reported separately in the classification applicable to the work being performed.

Special note: Nut harvesting is often accomplished by a person laying a canvas cover around the base and surrounding area of the tree. The tree is then shaken by hand causing the nuts to dislodge and fall to the canvas cover where they are picked by hand. Harvesting done by this method is subject to classification 4806 provided that the conditions set forth in classification 4806 have been met. The term "farm labor contractor" applies to specialty contractors who supply laborers to a farm operation for specified services such as weeding, planting, irrigating and fertilizing. Generally the work involves manual labor tasks as opposed to machine operations. These farm labor contractors are to be reported in the classification that applies to the farm they are contracting with. Contractors who provide both equipment or machinery and the machine operators are to be reported in classification 4808 "custom farm services" as the process involved in operating machinery is the same irrespective of the type of farm they are providing service to or the type of crop involved.

4803-16 Farms, N.O.C.

Applies to establishments engaged in operating farms not covered by another classification (N.O.C.). Establishments in this classification include holly farms and the raising of sheep, goats, alpacas and llamas. Work contemplated by this classification is of a custodial nature that includes, but is not limited to, pruning and otherwise maintaining trees, tending and feeding animals, raising crops for feed, erecting or mending fences, breeding animals, transporting animals to market, and maintaining or installing sprinkler or irrigation systems when performed by employees of an employer subject to this classification. This classification includes the manufacturing of products made on the farm from animals on the farm such as, but not limited to bottled milk, cheese, yogurt, butter, and soap; spinning wool, woven fabrics, and craft items made from wool or fleeces. This classification also covers artificial insemination and veterinary care when performed by employees of an employer subject to this classification.

This classification excludes businesses primarily engaged in holly packing or wreath making who are to be reported separately in classification 6404 (florists), and contractors hired by a farm operator to install, repair or build any farm equipment or structures who are to be reported separately in the classification applicable to the work being performed.

Special note: The term "farm labor contractor" applies to specialty contractors who supply laborers to a farm operation for specified services such as weeding, planting, irrigating and fertilizing. Generally the work involves manual labor tasks as opposed to machine operations. These farm labor contractors are to be reported in the classification that applies to the farm they are contracting with. Contractors who provide both equipment or machinery and the machine operators are to be reported in classification 4808 "custom farm services" as the process involved in operating machinery is the same irrespective of the type of farm they are providing service to or the type of crop involved.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-4803, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-4803, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-644, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-644, filed 5/31/96, effective 7/1/96; 87-24-060 (Order 87-26), § 296-17-644, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-644, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-644, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-644, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-644, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-644, filed 11/30/81, effective 1/1/82; Order 75-38, § 296-17-644, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-644, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-644, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-4902 Classification 4902.**4902-00 State government clerical and administrative office personnel**

Applies to state employees who are assigned to work in an office environment in a clerical or administrative capacity, with no travel or field duties. The work performed in this classification normally includes working with telephones, correspondence, creating financial, employment, personnel or payroll records, research, composing informational material at a computer, creating or maintaining computer soft-

ware, or library work, but may include other administrative work performed in an office location. For the purpose of this classification, employees reported in 4902 would have no required field work or travel outside of the office to perform the duties of their job, other than a trip to the bank or post office, occasional errands or meetings, attendance at training or a conference in support of their normal duties. This classification may include, but is not limited to, jobs such as office support, secretary, administrative assistant, customer service representative, accountant, fiscal analyst, information systems, when normal job duties do not require travel and are completed in an office environment.

This classification excludes: Employees whose duties include field exposure, employees who provide interaction to direct, control, manage, or restrain individuals or participate in recreational activities in state hospitals, schools, homes, detention or correctional facilities, who are to be reported separately in the appropriate classification (5307, 7103, or 7201); administrative field employees who are to be reported separately in risk classification 5300; law enforcement officers in any capacity who are to be reported separately in risk classification 7103; employees who provide patient or health care at state-operated mental health or acute care hospitals with a fully implemented safe patient handling program who are to be reported in classification 7200; employees who provide patient or health care at state-operated mental health or acute care hospitals that do not have a fully implemented safe patient handling program who are to be reported separately in classification 7400; employees who provide care and treatment for patients or residents and work in state hospitals, homes, schools, detention or correctional facilities who are not otherwise classified who are to be reported separately in risk classification 7201. Volunteers are to be reported in classification 6901, and law enforcement volunteers in classification 6906.

This classification may be assigned to all departments, agencies, boards, commissions and committees of either the executive, legislative or judicial branches of state government.

Special notes: A division of hours is not permitted between classification 4902 and any other classification. For purposes of this classification the term "clerical and administrative office personnel" shall have the same meaning as "clerical office employees" defined in the standard exception provision of the general reporting rule.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-4902, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-4902, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035 and 51.16.100. 06-23-127, § 296-17-651, filed 11/21/06, effective 1/1/07; 06-12-075, § 296-17-651, filed 6/6/06, effective 1/1/07. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-651, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-651, filed 5/31/96, effective 7/1/96; 85-24-032 (Order 85-33), § 296-17-651, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-651, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-651, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-651, filed 11/30/79, effective 1/1/80; Order 73-22, § 296-17-651, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-4904 Classification 4904.**4904-00 Clerical office, N.O.C.**

Applies to those employees whose job duties and work environment meet *all* the conditions of the general reporting rules covering clerical office standard exception employees who are not covered by another classification (N.O.C.) assigned to their employer's account. Duties of clerical office personnel contemplated by this classification are limited to answering telephones, handling correspondence, creating or maintaining financial, employment, personnel or payroll records, composing informational material on a computer, creating or maintaining computer software, and technical drafting.

Special note: When considering this classification, care must be taken to look beyond titles of employees. Employees with occupational titles such as, but not limited to, cashiers, clerks, or ticket sellers, may or may not qualify for this classification. This is a restrictive classification; the qualifying factor is that all the conditions of the general reporting rules covering standard exception employees have been met.

4904-13 Clerical office: Insurance companies, agents or brokers

Applies to clerical office employees of insurance companies, including insurance agents or brokers who perform duties exclusively of clerical nature and without an interchange of labor between clerical and nonclerical duties. This classification is limited to duties defined as responding to telephone inquiries, assisting walk-in customers, handling correspondence such as the preparation of insurance policies and billing, receiving and processing payments and invoices, maintaining personnel and payroll records, and performing the necessary computer work.

Special note: Individuals performing duties as an agent, broker, or solicitor (and hold a license as issued by the office of the insurance commissioner) are exempt from coverage as specified in RCW 51.12.020(11) and 48.17.010, 48.17.020, and 48.17.030. To elect voluntary coverage these individuals must submit a completed optional coverage form to the department. In addition, care should be exercised to determine if the insurance company employs individuals such as receptionists, bookkeepers, or claims clerks who perform clerical duties which may include the incidental taking of insurance applications and receiving premiums in the office of an agent or broker. Such individuals may or may not hold a license as issued by the office of the insurance commissioner, and are not deemed to be a solicitor, agent or broker when compensation is not related to the volume of such applications, insurance, or premiums. In these instances, the clerical individuals fall under mandatory workers' compensation coverage, and do not meet the requirements to be exempt from coverage as specified in RCW 51.12.020(11).

4904-17 Clerical office: Employee leasing companies

Applies to clerical office employees of employee leasing companies. This classification requires that clerical office employees perform duties exclusively of a clerical nature, without an interchange of labor between clerical and nonclerical duties, and that these duties be performed in an area or areas separated from the operative hazards of the business. This classification is limited to duties defined as responding

to telephone inquiries, receptionist and administrative duties, handling correspondence such as preparing and processing billing statements and forms, maintaining personnel and payroll records, and performing the necessary computer entry work.

Special note: This is a standard exception classification and is not to be assigned unless all the conditions of the general reporting rule covering clerical office standard exception employees have been met.

4904-20 Community action organizations - Clerical office employees

Applies to organizations performing an array of services to support the local community and citizens in need. The services provided by community action organizations include: Child care; after school care; alternative schools; in-home chore services; employment or independence training, counseling and assistance; drug and alcohol recovery programs; decent, safe and sanitary living accommodations for low-income or needy citizens; transitional or emergency housing; weatherization; food and clothing banks; meals; medical services.

This classification includes employees whose work duties include administrative office work such as answering phones, completing correspondence and forms, reception work, computer work, maintaining financial, personnel and payroll records, conducting meetings, providing counseling services within the offices of the organization. All work is performed exclusively in an office environment where no other types of work are conducted, and the office is separated from any other work activity by walls, partitions, or other physical barriers. Work performed outside of the office is limited to banking or post office type duties performed by workers who qualify for this classification. A worker's reported hours may not be divided between this classification and any other risk classifications.

Excluded from this risk classification are all other employees including: Medical, dental or nursing professionals, and administrative employees whose duties are not performed exclusively in an administrative office, who are to be reported in risk classification 5308-20; employees who perform labor such as cooking, cleaning and chore services, food bank operations, driving, weatherization, janitorial, property management, maintenance and repair work which are to be reported in risk classification 1501-20; housing authorities which are to be reported in 1501-01 and 5306-26; welfare special works programs which are to be reported in 6505; work activity centers which are to be reported in 7309; and volunteers who are to be reported separately in classification 6901.

See classifications 1501-20 and 5308-20 for other community action operations.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-4904, filed 12/1/07, effective 1/1/09. 07-01-014, recodified as § 296-17A-4904, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035. 99-18-068, § 296-17-653, filed 8/31/99, effective 10/1/99; 98-18-042, § 296-17-653, filed 8/28/98, effective 10/1/98; 85-24-032 (Order 85-33), § 296-17-653, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-653, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-653, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-653, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-5001 Classification 5001.**5001-03 Logging, N.O.C.**

Applies to establishments engaged in various logging operations not covered by another classification (N.O.C.). Typical work contemplated by this classification includes, but is not limited to, high lead or tower logging, ground logging, and team logging with horses. For purposes of this rule, logging is the complete operation of felling, skidding, yarding, delimiting, and bucking of trees into logs or block wood and loading them onto trucks or rail cars.

Definitions:

High Lead or Tower Logging - usually occurs in steep terrain where a metal tower is set-up on a hilltop with a system of heavy cables running down the hillside and fastened to a stump or tree and has other smaller cables with chokers hanging from it. A choker is wrapped around each fallen tree and pulled back to the landing site.

Helicopter logging - includes ground crews that work with the use of helicopters to hoist fallen trees or bucked log lengths to the landing side.

Chokers - chains or cables which are attached to the fallen trees for skidding to the landing site.

Ground logging - usually occurs on relatively flat land; fallen trees are moved to a landing by a skidder, cat or shovel.

Bucking - stripping or delimiting tree of branches and cutting the tree to desired log lengths.

Skidding - process of dragging the fallen logs to the landing site.

Landing - place where the fallen logs are brought for sorting and loading onto log trucks.

Yarding - usually performed at the landing site with use of a log loader to sort the logs by species, length and diameter, prior to loading onto log trucks.

This classification excludes flight crews of helicopters used in helicopter logging which are to be reported separately in classification 6803; log hauling which is to be reported separately in classification 5003; logging road construction which is to be reported separately in classification 6902; logging machine operators which are to be reported separately in classification 0101; and mechanical or mechanized logging operations which are to be reported separately in classification 5005 provided the classification has been approved by the classification services section.

5001-04 Shake, shingle bolt, and post cutting

Applies to establishments engaged in the cutting of shakes, shingle bolts (blocks), and fence posts in the woods. For the purposes of this rule, this classification includes all operations performed in the woods such as, but not limited to, the felling of trees, stripping or delimiting of branches, and all further cutting or splitting of trees/logs to produce shakes, shingle bolts or fence posts. This classification includes all transporting of shakes, shingle bolts or fence posts from the cutting site when conducted by employees of employers subject to this classification.

5001-05 Firewood cutting

Applies to establishments engaged in the cutting of firewood in the woods. For the purposes of this rule, this classification includes all operations performed in the woods such as, but not limited to, the felling of trees, stripping or delimiting

of branches, and all further cutting or splitting of trees/logs to produce firewood. This classification includes all transporting of log lengths, rounds or split wood from the cutting site when conducted by employees of employers subject to this classification.

5001-06 Sawmill operations conducted in the woods in connection with logging operations

Applies to establishments operating a temporary or portable sawmill operation in the woods. This type of work is usually performed on privately owned land. A portable sawmill and saw tables, similar to those at a permanent sawmill location, are transported directly to the logging site. Log lengths are fed through a circular saw that is capable of producing various sized rough cut timber, blocks, boards and planks. This classification includes all transporting of rough cut timber, blocks, boards and planks from the cutting and/or sawing site when conducted by employees of employers subject to this classification.

This classification excludes sawmill operations which are not conducted in the woods in connection with a logging operation which is to be reported separately in the applicable sawmill classification.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-5001, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-5001, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.12.120. 03-23-025, § 296-17-659, filed 11/12/03, effective 1/1/04. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-659, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-659, filed 5/31/96, effective 7/1/96; 86-12-041 (Order 86-18), § 296-17-659, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-659, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-659, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-659, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-659, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-659, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-659, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-659, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-659, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-5109 Classification 5109.**5109-46 Heavy machinery & equipment including locomotive engines: Manufacture or repair; Press roller recoating/resurfacing**

Applies to establishments engaged in the manufacture, assembly, and repair of heavy equipment. Machinery and equipment subject to this classification are usually made of steel and steel/iron castings and include, but are not limited to, bulldozers, dump trucks, graders, skidders, forklifts and logging towers. The component parts may weigh several hundred to thousands of pounds. Overhead cranes are commonly used in the assembly process. Machinery used in the manufacturing, assembly, and repair includes, but is not limited to, boring mills, lathes, iron workers, welders/cutters, cut saws, and drills. Some establishments use CNC (computer numeric controlled) machinery; however, most establishments in this classification primarily use manual machinery and conventional welders/cutters. Other common operations covered by this classification include paint, welding, and electronic assembly areas. This classification also includes establishments that repair, recoat or resurface press rollers such as, but not limited to, the type rollers used by printing and paper making mills. Operations include repairing the interior shafts

of the rollers, then grinding fiberglass or ceramic finishes until they are smooth. For rubber-coated surfaces, they remove the old rubber from the metal surface, sandblast the roller, then recoat it with new rubber. Most establishments that recoat the surface with rubber will mix and extrude their own rubber which is included in this classification when performed by employees of employers subject to this classification.

This classification excludes the manufacture of nonpassenger type vehicles such as semi-trucks which are to be reported in classification 3605; auto or passenger vehicle manufacturing which is to be reported in 3402. Semi-truck repair and service centers are to be reported separately in classification 6409.

Special note: Field work as well as shop work is contemplated as an integral part of this classification. A vehicle may be equipped with welding equipment and other tools used for field repair. The broken part may be replaced in the field or returned to the shop, repaired if feasible, or a new part is ordered. The part is then loaded onto the field vehicle taken to the job site and reconnected. Some establishments perform this type of field work almost exclusively.

5109-47 Heavy arms: Manufacturing or repair

Applies to establishments engaged in the manufacture or repair of heavy arms including large munitions. This classification applies to all types of guns 20 MM and larger including, but not limited to, aircraft guns, tank guns, naval guns, torpedoes and aircraft gun turrets.

Special note: Field work as well as shop work is contemplated as an integral part of this classification. A vehicle may be equipped with welding equipment and other tools used for field repair. The broken part may be replaced in the field or returned to the shop, repaired if feasible, or a new part is ordered. The part is then loaded onto the field vehicle taken to the job site and reconnected. Some establishments perform this type of field work almost exclusively.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-5109, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-5109, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035 and 51.16.100. 06-24-055, § 296-17-66901, filed 12/1/06, effective 1/1/07.]

WAC 296-17A-5300 Classification 5300.

5300-00 State government - administrative field personnel

Applies to state employees whose duties may require them to travel to an alternative work location but their work assignment is administrative in nature. Travel is an expectation for these workers in order to perform their job duties which involves travel to meetings or appointments with clients, customers, or businesses. Travel to perform work at an alternate location may be required on a regular, sporadic or as needed basis. Typical work includes, but is not limited to, field auditor, collector, social worker, attorney, public relations or consulting staff with no hazardous exposures. Supervisors who occasionally travel to accompany field staff for purposes such as observation or information gathering, but who do not typically perform any work other than administrative, are also included in this classification. Employees in this classification may also have follow-up work that is com-

pleted in the office such as writing reports, correspondence, etc.

This classification excludes employees with duties outside of the office which are more than administrative in nature such as, but not limited to, engineers, inspectors, and biologists who may have some field exposure, and are to be reported in 5307. For purposes of this classification, field exposure is defined as any work period, other than the normal travel to or from a work environment, which involves "hands on" work.

This classification excludes: Employees whose duties include field or hazardous exposure, employees who provide interaction to direct, control or manage activities of inmates, residents, patients or potentially violent persons in state hospitals, schools, homes, detention or correctional facilities which may involve security, recreation, or staff whose duties include restraining individuals, who are to be reported separately in the appropriate classification (5307, 7103, 7201); clerical and administrative office personnel who are to be reported separately in classification 4902; law enforcement officers in any capacity who are to be reported separately in classification 7103; employees who provide patient or health care at state-operated mental health or acute care hospitals with a fully implemented safe patient handling program who are to be reported in classification 7200; employees who provide patient or health care at state-operated mental health or acute care hospitals that do not have a fully implemented safe patient handling program who are to be reported in classification 7400; and employees who provide care and treatment for patients or residents and work in state hospitals, homes, schools, detention or correctional facilities who are not otherwise classified who are to be reported separately in classification 7201. Volunteers are to be reported in classification 6901, and law enforcement volunteers in classification 6906.

This classification may be assigned to all departments, agencies, boards, commissions and committees of either the executive, legislative or judicial branches of state government.

Special notes: A division of hours is not permitted between classification 5300 and any other classification.

For purposes of this classification, the term "administrative field personnel" shall have the same meaning as "sales personnel" defined in the standard exception provision of the general reporting rule.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-5300, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-5300, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035 and 51.16.100. 06-23-127, § 296-17-67603, filed 11/21/06, effective 1/1/07; 06-12-075, § 296-17-67603, filed 6/6/06, effective 1/1/07.]

WAC 296-17A-5307 Classification 5307.

5307-00 State government employees - N.O.C.

Applies to state government employees not covered by another classification (N.O.C. - not otherwise classified). This is the basic state agency classification which covers employees who have duties that support the mission of the agency and have field or hazardous exposure. For purposes of this classification field or hazardous exposure is defined as any work which involves "hands on" work. Employees reported in this classification may have jobs that include, but are not limited to, performing manual labor or supervising a

work crew performing manual labor, work in the trades, construction-type work or maintenance/repair work, operating machinery or equipment, stores/stock clerks, warehouse, supplies, deliveries, food services, facilities, recreational, or general security staff with no law enforcement duties. This classification also includes, but is not limited to, personnel such as engineers, inspectors, and biologists, who have field exposure. This classification includes supervisors who work at a field site and perform supervision duties in the field. This classification includes nonpatient care employees in state operated homes, schools, detention or correctional facilities not described in another classification.

This classification excludes: Employees who have law enforcement power in any capacity, who are to be reported separately in classification 7103; employees who work in state hospitals, homes, schools, detention or correctional facilities who are not otherwise classified and provide care and treatment for patients or residents who are to be reported separately in classification 7201; employees who provide patient or health care at state-operated mental health or acute care hospitals with a fully implemented safe patient handling program who are to be reported in classification 7200; employees who provide patient or health care at state-operated mental health or acute care hospitals that do not have a fully implemented safe patient handling program who are to be reported in classification 7400; administrative field employees, who are to be reported separately in classification 5300; and clerical and administrative office personnel, who are to be reported separately in classification 4902. Volunteers are to be reported in classification 6901, and law enforcement volunteers in classification 6906.

This classification may be assigned to all departments, agencies, boards, commissions and committees of either the executive, legislative or judicial branches of state government.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-5307, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-5307, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035 and 51.16.100. 06-23-127, § 296-17-67901, filed 11/21/06, effective 1/1/07; 06-12-075, § 296-17-67901, filed 6/6/06, effective 1/1/07. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-67901, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-67901, filed 5/31/96, effective 7/1/96; 85-24-032 (Order 85-33), § 296-17-67901, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-67901, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-67901, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-67901, filed 11/30/79, effective 1/1/80.]

WAC 296-17A-5308 Classification 5308.

5308-20 Community action organizations - Professional services and administrative employees

Applies to organizations performing an array of services to support the local community and citizens in need. The services provided by community action organizations include: Child care; after school care; alternative schools; in-home chore services; employment or independence training, counseling and assistance; drug and alcohol recovery programs; decent, safe and sanitary living accommodations for low-income or needy citizens; transitional or emergency housing; weatherization; food and clothing banks; meals; medical services.

This classification applies to professional services and administrative employees. Work duties in this classification are not performed exclusively in an administrative office environment. Travel may be necessary to perform work at an alternate work site for appointments with clients, patients, meetings, presentations, agency promotions, or other required out-of-office administrative type work. Work performed in this classification may include, but is not limited to, counselors or educators for various programs, medical, dental and nursing services; child care professionals or teachers, program coordinators and directors. Also included are estimators and project managers who do not supervise a work crew or perform any type of labor.

Excluded from this risk classification is any manual labor or supervision of a work crew that performs manual labor, construction or maintenance work, work in a food bank, delivery, cooking, cleaning, chore services, or other similar work which is to be reported in risk classification 1501-20; office employees who work exclusively in an administrative office environment who are to be reported in risk classification 4904-20; housing authorities which are to be reported in 1501-01 and 5306-26; welfare special works programs which are to be reported in 6505; work activity centers which are to be reported in 7309; and volunteers who are to be reported in risk classification 6901.

See classifications 1501-20 and 4904-20 for other community action operations.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-5308, filed 12/1/07, effective 1/1/09.]

WAC 296-17A-6301 Classification 6301.

6301-00 Sales personnel: Vehicles and marine pleasure craft

Applies to sales employees of establishments engaged in selling and/or leasing new and/or used automobiles, trucks, campers, recreational vehicles, mobile homes, motorcycles or other all-terrain vehicles, or boats and other marine pleasure craft and who are not covered by another classification assigned to the employer's account. Duties contemplated by this classification are limited to sales training, test driving, showing and demonstrating vehicles, completing paper work, and arranging for delivery of purchased vehicles.

Special note: This is a restrictive classification; the qualifying factor is that all the conditions of the general reporting rules covering standard exception employees have been met.

6301-06 Instructors of driving schools

Applies to instructors of driving schools. Instructors duties include, but are not limited to, demonstrating driving techniques, and observing student drivers.

This classification excludes administrative staff and classroom instructors of driving schools who are to be reported separately in classification 6103; vehicle repair or maintenance staff who are to be reported separately in classification 3411; and high school driving instructors who are to be reported separately in classification 6104.

Special note: This is a restrictive classification; the qualifying factor is that all the conditions of the general reporting rules covering standard exception employees have been met.

6301-07 Limousine drivers

Applies to drivers of establishments engaged in providing limousine services to others. Limousine services provide luxury transportation for special occasions such as, but not limited to, birthday parties, weddings, dances, sporting events, concerts, and corporate business functions. Clients usually travel in groups from two to ten. Drivers are professionally trained chauffeurs; they generally provide services by appointment from specific locations to set destinations, and often wait with the vehicle while clients attend events. Depending on the occasion, the limousine service may also provide beverages, snacks, balloons, or flowers. Since the service is intended for luxury as opposed to meeting deadlines, the hazards of driving differ from most other professional drivers.

This classification excludes employees who repair and/or service the company's limousines who are to be reported separately in classification 3411.

Special note: This is a restrictive classification; the qualifying factor is that all the conditions of the general reporting rules covering standard exception employees have been met.

Special note: Clerical office employees may be reported separately in classification 4904 provided all the conditions of the general reporting rule covering standard exception employees have been met.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-6301, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-6301, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-696, filed 8/28/98, effective 10/1/98; 85-24-032 (Order 85-33), § 296-17-696, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-696, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-696, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-696, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-696, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-6409 Classification 6409.**6409-00 Dealers: Machinery/equipment, N.O.C.;****Service/repair garages: Machinery/equipment, N.O.C.**

Applies to establishments engaged in the sale, lease, rental, service, and/or repair of new or used machinery and equipment not covered by another classification (N.O.C.). For purposes of this classification the terms machinery or equipment includes, but are not limited to, semi trucks, diesel tractors, buses, construction equipment, concrete barriers and other flagging equipment used in construction projects, logging equipment, transportation equipment, freight hauling equipment, well drilling equipment, power generators, and industrial or manufacturing machinery. Operations of dealers include, but are not limited to, the sale, lease, rental, demonstration, service, or repair of their equipment, either on their premises or at the customer's site, and delivery to customer. The variety of merchandise carried by a machinery and equipment dealer varies with the needs of the geographical area and may be displayed in inside showrooms and/or outside yards. Operations of service centers include diagnostic services, all phases of mechanical service such as, but not limited to, tuning, overhauling and/or rebuilding engines, motors, or transmissions, resurfacing heads, repairing carburetors or fuel injection systems and grinding valves or brakes on equipment or machinery owned by others. In addition to

parts for the machinery and equipment, establishments in this classification may carry some automobile parts, hardware items, and supplies such as oil, filters, and belts. This classification includes lot sales and lot personnel, service managers and employees, parts department employees who have exposure to the service/repair shop or duties related to the sale of machinery/equipment, towing service for in-shop repairs, and regional sales and/or service representatives who provide factory service or training to local dealers and other customers. Parts department employees who are not exposed to any hazards of the service/repair shop or have no duties related to the sale of machinery/equipment may be reported separately in classification 6309. This classification also includes the rental and installation of temporary fences.

This classification excludes farm machinery and equipment dealers who are to be reported separately in classification 6408; store operations of dairy equipment and supply dealers which is to be reported separately in classification 6407; the installation of industrial plant equipment which is to be reported separately in classification 0603; the installation, service, or repair of dairy machinery or equipment which is to be reported separately in classification 0603; all field installation, service, or repair work of wind machine dealers which is to be reported separately in classification 0603; and the manufacture or structural repair of heavy machinery or equipment which is to be reported separately in classification 5109.

Special note: Care needs to be taken when considering the assignment of classification 6309 for the sale of parts. Most businesses assigned to classification 6409-00 have an inventory of parts or accessories which they use in the service or repair of machinery or equipment, or maintain as a convenience to their customers. *Only* those businesses that maintain a complete line of replacement parts that is physically separated from the service/repair shop should be considered for classification 6309.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-6409, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-6409, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035, 51.16.100. 06-12-075, § 296-17-713, filed 6/6/06, effective 7/7/06. Statutory Authority: RCW 51.16.035, 51.04.020. 00-14-052, § 296-17-713, filed 7/1/00, effective 7/1/00. Statutory Authority: RCW 51.16.035. 99-18-068, § 296-17-713, filed 8/31/99, effective 10/1/99; 98-18-042, § 296-17-713, filed 8/28/98, effective 10/1/98; 85-24-032 (Order 85-33), § 296-17-713, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-713, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-713, filed 11/13/80, effective 1/1/81; Order 74-40, § 296-17-713, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-713, filed 11/9/73, effective 1/1/74.]

WAC 296-17A-6510 Classification 6510.**6510-00 Domestic servants/home care assistants employed in or about the private residence of a home owner**

Applies to individuals employed by a home owner to provide domestic services/home care assistants in or about the home owner's private residence. This classification includes services such as, but not limited to, cooking, house-keeping, caring for children, caring for the elderly and handicapped including personal care such as bathing, body care, dressing and help with ambulating, as well as companionship, running errands, shopping, gardening, caretaker at

homeowner's residence, and transporting members of the household by vehicle to appointments, after school activities, or similar activities. This classification also includes the care of animals not used for a business at the homeowner's residence.

This classification is subject to the provisions of RCW 51.12.020 - Employments excluded - which states in part: "The following are the only employments which shall not be included within the mandatory coverage of this title:

(1) Any person employed as a domestic servant in a private home by an employer who has less than two employees regularly employed forty or more hours a week in such employment.

(2) Any person employed to do gardening, maintenance, or repair, in or about the private home of the employer...." This classification is also subject to the provisions of RCW 51.12.110 which allows the employer to elect optional coverage for domestic servants and caretakers.

This classification excludes entities whose nature of business is to provide chore services which are to be reported separately in classification 6511; domestic (residential) cleaning or janitorial services which are to be reported separately in classification 6602; lawn and yard maintenance services which are to be reported separately in classification 0308; skilled or semiskilled nursing care which is to be reported separately in classification 6110; and new construction which would be reported in the classification appropriate for that phase of construction.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-6510, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-6510, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.12.120. 03-23-025, § 296-17-72201, filed 11/12/03, effective 1/1/04. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-72201, filed 8/28/98, effective 10/1/98.]

WAC 296-17A-6511 Classification 6511.

6511-00 Chore services/home care assistants

Applies to establishments engaged in providing chore services/home care assistants to private individuals. Chore services performed by the chore workers/home care assistants include, but are not limited to, general household chores, meal planning and preparation, shopping and errands either with or without the client, personal care such as bathing, body care, dressing, and help with ambulating, as well as companionship. Frequently the recipients of service are funded by DSHS or some other community service agency; however, the services are also available to those who pay privately. This classification also applies to supported living, tenant support, and intensive tenant support services.

This classification excludes individuals working under a welfare special works training program who are to be reported separately in classification 6505; domestic (residential) cleaning or janitorial services which are to be reported separately in classification 6602; and skilled or semiskilled nursing care which is to be reported separately in classification 6110. This classification also excludes home care providers covered under the home care quality authority who are to be reported separately under classification 6512.

[Statutory Authority: RCW 51.16.035 and 51.16.100. 07-12-047, § 296-17A-6511, filed 5/31/07, effective 7/1/07. 07-01-014, recodified as § 296-17A-6511, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW

51.16.035, 51.16.100. 06-12-075, § 296-17-72202, filed 6/6/06, effective 1/1/07. Statutory Authority: RCW 51.04.020 and 51.16.035. 04-18-025, § 296-17-72202, filed 8/24/04, effective 10/1/04. Statutory Authority: RCW 51.04.020, 51.16.035, and 51.12.120. 03-23-025, § 296-17-72202, filed 11/12/03, effective 1/1/04. Statutory Authority: RCW 51.16.035. 99-18-068, § 296-17-72202, filed 8/31/99, effective 10/1/99; 98-18-042, § 296-17-72202, filed 8/28/98, effective 10/1/98.]

WAC 296-17A-6614 Classification 6614.

6614-00 Parimutuel horse racing: All employees, except grooms and exercise riders N.O.C. - major tracks (to be assigned only by the horse racing underwriter)

Applies to licensed employees of licensed horse trainers at a major parimutuel horse racing track such as Emerald Downs in Auburn. This classification applies to on and off track employees such as assistant trainers and pony riders. Coverage provided in this classification is funded by premiums collected at the time of licensing and is valid from the time of licensing through the end of the calendar year. Trainers' premiums are collected on a per license basis.

This classification excludes the following employees:

(1) Licensed grooms working at major tracks are reported separately in classification 6615;

(2) Licensed assistant trainers and pony riders working at a nonprofit track are reported separately in classification 6616;

(3) Licensed exercise riders working at a major track are reported separately in classification 6622;

(4) Licensed exercise riders at a nonprofit track are reported separately in classification 6623; and

(5) Unlicensed employees who work on a farm or ranch are reported in classification 7302.

Special note: All employees whether working at a major track or employed off track must be licensed by the Washington state horse racing commission to be covered under this section.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-6614, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-6614, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035 and 51.16.100. 06-23-092, § 296-17-73105, filed 11/14/06, effective 1/1/07. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-73105, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020(1). 89-16-001 (Order 89-07), § 296-17-73105, filed 7/20/89, effective 8/20/89.]

WAC 296-17A-6615 Classification 6615.

6615-00 Parimutuel horse racing: Grooms - major tracks (to be assigned only by the horse racing underwriter)

Applies to licensed grooms performing services for licensed horse trainers at a major parimutuel horse racing track such as Emerald Downs in Auburn. This classification includes all on or off track duties of a licensed groom such as, but not limited to, cleaning or mucking horses stalls, feeding, and bathing the horses. For workers' compensation purposes, a groom is considered to be an employee of the trainer when the groom is hired by the trainer or when the trainer notifies the commission of the trainer's intent to hire the groom. Coverage provided in this classification is funded by the premiums collected from the trainer at the time of licensing and is valid from the time of licensing through the end of the calendar year.

This classification excludes the following:

- (1) Licensed grooms working at a nonprofit track are reported separately in classification 6617;
- (2) Licensed assistant trainers and pony riders working at major tracks are to be reported separately in classification 6614;
- (3) Licensed assistant trainers and pony riders working at nonprofit tracks are reported separately in classification 6616;
- (4) Licensed exercise riders working at a major track are reported separately in classification 6622;
- (5) Licensed exercise riders working at a nonprofit track are reported separately in classification 6623;
- (6) Unlicensed employees who work on a farm or ranch are reported separately in classification 7302.

Special note: All grooms whether working at a major track or employed off track must be licensed by the Washington state horse racing commission to be covered under this section.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-6615, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-6615, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-73106, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020(1), 89-16-001 (Order 89-07), § 296-17-73106, filed 7/20/89, effective 8/20/89.]

WAC 296-17A-6616 Classification 6616.

6616-00 Parimutuel horse racing: All employees except grooms and exercise riders, N.O.C. - nonprofit tracks (to be assigned only by the horse racing underwriter)

Applies to licensed employees of licensed horse trainers at a nonprofit track. This classification applies to on or off track employees such as assistant trainers and pony riders. Coverage provided in this classification is funded by premiums collected at the time of licensing and is valid from the time of licensing through the end of the calendar year. Trainer's premiums are collected on a per license basis.

This classification excludes the following:

1. Licensed assistant trainers and pony riders working at a major track are reported separately in classification 6614;
2. Licensed grooms working at a major track are reported separately in classification 6615;
3. Licensed grooms working at a nonprofit track are reported separately in classification 6617;
4. Licensed exercise riders working at a major track are reported in classification 6622;
5. Licensed exercise riders at a nonprofit track are reported in classification 6623;
6. Unlicensed employees who work on a farm or ranch are reported separately in classification 7302.

Special note: All employees whether working at a nonprofit track or employed off track must be licensed by the Washington state horse racing commission to be covered under this section.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-6616, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-6616, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035 and 51.16.100. 06-23-092, § 296-17-73107, filed 11/14/06, effective 1/1/07. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-73107, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020(1), 89-16-001 (Order 89-07), § 296-17-73107, filed 7/20/89, effective 8/20/89.]

WAC 296-17A-6617 Classification 6617.

6617-00 Parimutuel horse racing: Grooms - nonprofit tracks

(to be assigned only by the horse racing underwriter)

Applies to licensed grooms performing services for licensed horse trainers at a nonprofit track. This classification includes all on or off track duties of a licensed groom such as, but not limited to, cleaning or mucking horse stalls, feeding, and bathing the horses. For workers' compensation purposes, a groom is considered to be an employee of the trainer when the groom is hired by the trainer or when the trainer notifies the commission of the trainer's intent to hire the groom. Coverage provided in this classification is funded by the premiums collected from the trainer at the time of licensing and is valid from the time of licensing through the end of the calendar year.

This classification excludes the following:

- (1) Licensed grooms working at a major track are reported separately in classification 6615;
- (2) Licensed assistant trainers and pony riders working at major tracks are reported separately in classification 6614;
- (3) Licensed assistant trainers and pony riders working at nonprofit tracks are reported separately in classification 6616;
- (4) Licensed exercise riders working at a major track are reported separately in classification 6622;
- (5) Licensed exercise riders working at a nonprofit track are reported separately in classification 6623; and
- (6) Unlicensed employees who work on a farm or ranch are reported separately in classification 7302.

Special note: All grooms whether working at a nonprofit track or employed off track must be licensed by the Washington state horse racing commission to be covered by this section.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-6617, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-6617, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-73108, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020(1), 89-16-001 (Order 89-07), § 296-17-73108, filed 7/20/89, effective 8/20/89.]

WAC 296-17A-6618 Classification 6618.

6618-00 Parimutuel horse racing: Special horse racing account

(used only by horse racing underwriter)

This classification may *not* be assigned to any account and *no* claims may be charged to it. This classification is *solely* for the collection of fees assessed on horse owner licenses. The horse racing commission collects the fees from horse owners and deposits the money into the special horse racing account to help fund workers' compensation coverage for injured workers. (Payment of this fee is mandatory, but does not extend coverage to owners. Owners may apply for individual coverage.) The owners' fees are based on the percentage of a horse or horses they own, up to a maximum of \$150.00.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-6618, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-6618, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-73109, filed 8/28/98, effective 10/1/98.]

WAC 296-17A-6622 Classification 6622.**6622-00 Parimutuel horse racing: Exercise riders - major tracks****(to be assigned only by the horse racing underwriter)**

Applies to licensed exercise riders of licensed horse trainers at a major parimutuel horse racing track such as Emerald Downs. This classification applies to on and off track employment of licensed exercise riders. Jockeys are considered exercise riders when validly licensed as exercise riders and performing exercise rider duties while employed by a licensed trainer. Coverage provided in this classification is funded by premiums collected at the time of licensing and is valid from the time of licensing through the end of the calendar year. Trainers' premiums are collected on a per license basis.

This classification excludes the following:

- (1) Licensed grooms at major tracks are reported separately in classification 6615;
- (2) Licensed grooms working at nonprofit tracks are reported separately in 6617;
- (3) Licensed assistant trainers and pony riders working at a major track are reported separately in classification 6614;
- (4) Licensed assistant trainers and pony riders working at a nonprofit track are reported separately in 6616;
- (5) Licensed exercise riders at a nonprofit track are reported separately in 6623; and
- (6) Unlicensed employees who work on a farm or ranch are reported separately in classification 7302.

Special note: All exercise riders whether working at a major track or employed off track must be licensed by the Washington state horse racing commission to be covered by this section.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-6622, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-6622, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035 and 51.16.100. 06-23-092, § 296-17-73201, filed 11/14/06, effective 1/1/07.]

WAC 296-17A-6623 Classification 6623.**6623-00 Parimutuel horse racing: Exercise riders - nonprofit tracks****(to be assigned only by the horse racing underwriter)**

Applies to licensed exercise riders of licensed horse trainers at a nonprofit track. This classification applies to on or off track employment of exercise riders. Jockeys will be considered exercise riders when validly licensed as exercise riders and performing exercise rider duties while employed by a licensed trainer. Coverage provided in this classification is funded by premiums collected at the time of licensing and is valid from the time of licensing through the end of the calendar year. Trainer premiums are collected on a per license basis.

This classification excludes the following:

- (1) Licensed assistant trainers and pony riders working at a major track are reported separately in classification 6614;
- (2) Licensed assistant trainers and pony riders working at a nonprofit track are reported separately in 6616;
- (3) Licensed grooms working at a major track are reported separately in classification 6615;

(4) Licensed grooms working at a nonprofit track are reported separately in classification 6617;

(5) Licensed exercise riders working at a major track are reported separately in 6622; and

(6) Unlicensed employees who work on a farm or ranch are reported separately in classification 7302.

Special note: All exercise riders whether working at a nonprofit track or employed off track must be licensed by the Washington state horse racing commission to be covered by this section.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-6623, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-6623, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035 and 51.16.100. 06-23-092, § 296-17-73203, filed 11/14/06, effective 1/1/07.]

WAC 296-17A-7201 Classification 7201.**7201-00 State government - patient, resident, or health care personnel, N.O.C.****(to be assigned only by the hospital underwriter)**

Applies to state employees who are not otherwise classified who provide patient or health care at state-operated hospitals, schools, homes, camps, detention or correctional facilities, that are not operated as mental health or acute care hospitals as defined in WAC 296-17-35203(7) and that do not have routine patient lifting and moving exposure. All employees who have responsibility for physical or mental health care of patients or residents in these facilities are included in this classification. Types of employment contemplated by this classification include, but are not limited to, doctors, nurses, therapists, attendants, or training and counseling staff who provide care and treatment for patients or residents and are required to restrain or attend to patients who are potentially aggressive or violent.

This classification excludes: Employees who provide patient or health care at state-operated mental health or acute care hospitals with a fully implemented safe patient handling program who are to be reported separately in classification 7200; employees who provide patient or health care at state-operated mental health or acute care hospitals that do not have a fully implemented safe patient handling program who are to be reported separately in classification 7400; law enforcement officers in any capacity who are to be separately reported in classification 7103; employees who work in state hospitals, schools or correctional facilities, who do not work in patient or resident care such as food service, laundry, and janitorial, who are to be separately reported in classification 5307; administrative field employees who are to be separately reported in classification 5300; or clerical and administrative office personnel who are to be separately reported in classification 4902. Volunteers are to be reported in classification 6901, and law enforcement volunteers in classification 6906.

[Statutory Authority: RCW 51.16.035, 51.16.100, and 2007 c 324. 07-24-045, § 296-17A-7201, filed 12/1/07, effective 1/1/08. 07-01-014, recodified as § 296-17A-7201, filed 12/8/06, effective 12/8/06. Statutory Authority: RCW 51.16.035 and 51.16.100. 06-23-127, § 296-17-763, filed 11/21/06, effective 1/1/07; 06-12-075, § 296-17-763, filed 6/6/06, effective 1/1/07. Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-763, filed 8/28/98, effective 10/1/98; 96-12-039, § 296-17-763, filed 5/31/96, effective 7/1/96; 85-24-032 (Order 85-33), § 296-17-763, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-763, filed 2/28/85, effective

4/1/85; 83-24-017 (Order 83-36), § 296-17-763, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-763, filed 11/30/79, effective 1/1/80.]

Chapter 296-19A WAC

VOCATIONAL REHABILITATION

(Formerly chapter 296-18A WAC)

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

- 296-19A-280 What criteria does the department use to evaluate a vocational rehabilitation provider's performance? [Statutory Authority: RCW 51.04.020, 51.04.030, 51.32.095, 51.36.100, 51.36.110. 00-18-078, § 296-19A-280, filed 9/1/00, effective 6/1/01.] Repealed by 07-04-009, filed 1/25/07, effective 2/28/07. Statutory Authority: RCW 51.04.010.
- 296-19A-290 How does the department incorporate performance measurement into making referrals to providers? [Statutory Authority: RCW 51.04.020, 51.04.030, 51.32.095, 51.36.100, 51.36.110. 00-18-078, § 296-19A-290, filed 9/1/00, effective 6/1/01.] Repealed by 07-04-009, filed 1/25/07, effective 2/28/07. Statutory Authority: RCW 51.04.010.
- 296-19A-300 How does the department evaluate performance when a vocational rehabilitation provider does not have either a performance rating with the department or previous experience delivering services to Washington injured workers? [Statutory Authority: RCW 51.04.020, 51.04.030, 51.32.095, 51.36.100, 51.36.110. 03-11-009, § 296-19A-300, filed 5/12/03, effective 2/1/04; 00-18-078, § 296-19A-300, filed 9/1/00, effective 6/1/01.] Repealed by 07-04-009, filed 1/25/07, effective 2/28/07. Statutory Authority: RCW 51.04.010.

Chapter 296-20 WAC

MEDICAL AID RULES

WAC

- 296-20-010 General information.
- 296-20-0100 Industrial insurance chiropractic advisory committee.
- 296-20-01001 Industrial insurance medical advisory committee.
- 296-20-01002 Definitions.
- 296-20-02704 What criteria does the director or director's designee use to make medical coverage decisions?
- 296-20-02705 What are treatment and diagnostic guidelines and how are they related to medical coverage decisions?
- 296-20-03011 What general limitations are in place for medications?
- 296-20-124 Rejected and closed claims.
- 296-20-125 Billing procedures.
- 296-20-135 Conversion factors.
- 296-20-170 Pharmacy—Acceptance of rules and fees.
- 296-20-17001 Allowance and payment for medication.
- 296-20-17004 Billing and payment for initial prescription drugs.

WAC 296-20-010 General information. (1) The following rules are promulgated pursuant to RCW 51.04.020 and 51.04.030. The department or self-insurer may purchase necessary physician and other provider services according to the fee schedules. The fee schedules shall be established in consultation with interested persons and updated at times determined by the department in consultation with those interested persons. Prior to the establishment or amendment of the fee schedules, the department will give at least thirty calendar days notice by mail to interested persons who have made timely request for advance notice of the establishment or amendment of the fee schedules. To request advance notice of the establishment or amendment of the fee schedules, interested persons must contact the department at the following address:

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Department of Labor and Industries
Health Services Analysis
Interested Person's Mailing List for the Fee Schedules
P.O. Box 44322
Olympia, WA 98504-4322

As an alternative, interested persons may subscribe to the L&I medical provider news listserv. To subscribe, go to the department's web site at www.lni.wa.gov and click on the link "Provider billing & payment." Look for the icon that says "Get E-mail Updates" and click on it.

The department or self-insurer will require the current version of the federal Health Care Common Procedure Coding System (HCPCS) Level I (or CPT) and II codes on January 1, of each new year. CPT refers to the American Medical Association's Physicians' Current Procedural Terminology codes.

The adoption of these codes on an annual basis is designed to reduce the administrative burden on providers and lead to more accurate reporting of services. However, the inclusion of a service, product or supply within these new codes does not necessarily imply coverage, reimbursement or endorsement, by the department or self-insurer. The department will make coverage and reimbursement decisions for these new codes on an individual basis.

If there are any services, procedures or narrative text contained in the new HCPCS Level I and II codes that conflict with the medical aid rules or fee schedules, the department's rules and policies take precedence.

Copies of the HCPCS Level I and II codes are available for public inspection. These documents are available in each of the department's service locations.

Copies of the HCPCS Level II codes may be purchased from:

The Superintendent of Documents
United States Government Printing Office
Washington, DC 20402
(202) 783-3238

Copies of the Level I (or CPT) codes may be purchased from:

The American Medical Association
Chicago, Illinois 60601
(800) 621-8335

In addition to the sources listed above, both the Level I and II codes may be purchased from a variety of private sources.

(2) The fee schedules are intended to cover all services for accepted industrial insurance claims. All fees listed are the maximum fees allowable. Practitioners shall bill their usual and customary fee for services. **If a usual and customary fee for any particular service is lower to the general public than listed in the fee schedules, the practitioner shall bill the department or self-insurer at the lower rate.** The department or self-insurer will pay the lesser of the billed charge or the fee schedules' maximum allowable.

(3) The rules contained in the introductory section pertain to *all* practitioners regardless of specialty area or limitation of practice. Additional rules pertaining to specialty areas

will be found in the appropriate section of the medical aid rules.

(4) The methodology for making conversion factor cost of living adjustments is listed in WAC 296-20-132. The conversion factors are listed in WAC 296-20-135.

(5) No fee is payable for missed appointments unless the appointment is for an examination arranged by the department or self-insurer.

(6) When a claim has been accepted by the department or self-insurer, no provider or his/her representative may bill the worker for the difference between the allowable fee and the usual and customary charge. Nor can the worker be charged a fee, either for interest or completion of forms, related to services rendered for the industrial injury or condition. Refer to chapter 51.04 RCW.

(7) Practitioners must maintain documentation in claimant medical or health care service records adequate to verify the level, type, and extent of services provided to claimants. A health care practitioner's bill for services, appointment book, accounting records, or other similar methodology do not qualify as appropriate documentation for services rendered. Refer to chapter 296-20 WAC and department policy for reporting requirements.

(8) Except as provided in WAC 296-20-055 (Limitation of treatment and temporary treatment of unrelated conditions when retarding recovery), practitioners shall bill, and the department or self-insurer shall pay, only for proper and necessary medical care required for the diagnosis and curative or rehabilitative treatment of the accepted condition.

(9) When a worker is being treated concurrently for an unrelated condition the fee allowable for the service(s) rendered must be shared proportionally between the payors.

(10) Correspondence: Correspondence pertaining to state fund and department of energy claims should be sent to: Department of Labor and Industries, Claims Administration, P.O. Box 44291, Olympia, Washington 98504-4291.

Accident reports should be sent to: Department of Labor and Industries, P.O. Box 44299, Olympia, Washington 98504-4299.

Send all provider bills and adjustments to: Department of Labor and Industries, P.O. Box 44269, Olympia, Washington 98504-4269.

State fund claims have six digit numbers or a letter and five digits preceded by a letter other than "S," "T," or "W."

All correspondence and billings pertaining to *crime victims* claims should be sent to Crime Victims Division, Department of Labor and Industries, P.O. Box 44520, Olympia, Washington 98504-4520.

Crime victim claims have six digit numbers preceded by a "V" or five digit numbers preceded by "VA," "VB," "VC," "VH," "VJ," or "VK."

All correspondence and billings pertaining to self-insured claims should be sent directly to the employer or the service representative as the case may be.

Self-insured claims are six digit numbers or a letter and five digits preceded by an "S," "T," or "W."

Communications to the department or self-insurer must show the patient's full name and claim number. If the claim number is unavailable, providers should contact the department or self-insurer for the number, indicating the patient's name, Social Security number, the date and the nature of the

injury, and the employer's name. A communication should refer to one claim only. Correspondence must be legible and reproducible, as department records are microfilmed. Correspondence regarding specific claim matters should be sent directly to the department in Olympia or self-insurer in order to avoid rehandling by the service location.

(11) The department's various local service locations should be utilized by providers to obtain information, supplies, or assistance in dealing with matters pertaining to industrial injuries.

[Statutory Authority: RCW 51.04.020, 51.36.080, 7.68.030, 7.68.080. 07-08-088, § 296-20-010, filed 4/3/07, effective 5/23/07. Statutory Authority: RCW 51.04.020, 05-09-063, § 296-20-010, filed 4/19/05, effective 7/1/05; 03-21-069, § 296-20-010, filed 10/14/03, effective 12/1/03. Statutory Authority: RCW 51.04.020(4) and 51.04.030, 96-10-086, § 296-20-010, filed 5/1/96, effective 7/1/96. Statutory Authority: RCW 51.04.020, 51.04.-030 and 1993 c 159, 94-14-044, § 296-20-010, filed 6/29/94, effective 7/30/94; 93-16-072, § 296-20-010, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030, 92-24-066, § 296-20-010, filed 12/1/92, effective 1/1/93; 90-04-057, § 296-20-010, filed 2/2/90, effective 3/5/90; 87-24-050 (Order 87-23), § 296-20-010, filed 11/30/87, effective 1/1/88; 86-20-074 (Order 86-36), § 296-20-010, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-20-010, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-20-010, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3), 81-24-041 (Order 81-28), § 296-20-010, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-010, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-010, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-010, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-010, filed 1/30/74; Order 70-12, § 296-20-010, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-010, filed 11/27/68, effective 1/1/69.]

WAC 296-20-0100 Industrial insurance chiropractic advisory committee. (1)(a) The director shall appoint an industrial insurance chiropractic advisory committee (committee) composed of up to nine members licensed to practice chiropractic in Washington from the nominations provided by statewide associations.

(b) At least two of the total nine members must be chiropractors who are recognized for expertise in evidence-based practice or occupational health, or both.

(c) To the extent possible, all members shall have experience or knowledge of treating injured workers or evidence-based practice, or both.

(d) The director may, at his or her discretion, exclude or remove any nominee, committee member, or hired expert if the person does not meet a condition of appointment, including but not limited to:

(i) Having, or failing to disclose, a conflict of interest;

(ii) Breaching a statute, rule, or the committee's bylaws, including a quality of care concern or professional related action alleged by a government agency; or

(iii) If the committee or committee chair recommends removal for good cause shown.

(e) Appointments to the committee shall be up to three year terms, which the department may renew.

(2)(a) The committee will function as an advisor to the department with respect to the provision of safe, effective, and cost-effective health care for injured workers, including but not limited to, policy development regarding chiropractic care for injured workers, the development of practice guidelines and coverage criteria, review of coverage decisions and technology assessments, review of chiropractic programs, and review of rules pertaining to health care issues.

(b) The committee may provide peer review and advise and assist the department in the resolution of controversies, disputes, and issues between the department and the providers of chiropractic care.

(c) After approval by the department, the committee may consult with experts, services, and form ad hoc groups, committees, or subcommittees for the purpose of advising the department on specific topics to fulfill the purposes of the committee. Such experts or ad hoc groups will develop recommendations for the committee's approval.

(d) The committee's function may include, but is not limited to, the following:

(i) Advising the department on coverage decisions from technology assessments based on the best available scientific evidence, from which the department may use the committee's advice for making coverage decisions and for making proper and necessary industrial insurance claim decisions for covered services (see WAC 296-20-02704 for coverage decision criteria);

(ii) Advising the department on treatment guidelines for covered services based on proper and necessary standards, the best available scientific evidence, and the expert opinion of the industrial insurance chiropractic advisory committee. The department may use the committee's advice for provider education, for criteria for the department's utilization review program, and for making proper and necessary industrial insurance claim decisions;

(iii) Advising the department on criteria related to definitions of quality of care and patterns of harmful care;

(iv) Advising the department on issues related to emerging medical conditions and the scientific evidence related to them; and

(v) Advice to the department in (d)(i) through (iv) of this subsection shall not pertain to nor include the review of a specific individual claim.

(e) Committee approval regarding advice to the department shall be based on a consensus of the members present. If after all reasonable efforts a consensus cannot be reached, the committee shall vote using the procedure described in the bylaws. A quorum, which shall be half plus one of the appointed members, must be present to vote and provide approval regarding advice to the department. Implementation of the committee's advice by the department is discretionary and solely the responsibility of the department.

(3) The members of the committee, including hired experts and any ad hoc group or subcommittee:

(a) Are immune from civil liability for any official acts performed in good faith to further the purposes of the industrial insurance chiropractic advisory committee; and

(b) May be compensated for participation in the work of the industrial insurance chiropractic advisory committee in accordance with a personal services contract to be executed after appointment and before commencement of activities related to the work of the industrial insurance chiropractic advisory committee.

(4) The committee shall coordinate with the state health technology assessment program and the state prescription drug program. With regard to issues in which the committee's opinion may differ with findings of the state health technology assessment program or the state prescription drug program, the department must give greater weight to the findings

of the state's health technology assessment program and the state's prescription program.

(5) The committee shall operate under conditions set out in bylaws as approved by the department and ratified by the committee.

(6)(a) The committee and ad hoc group or subcommittee shall meet on a schedule as set by the department.

(b) The department shall collaborate with the committee to prepare the agenda for each meeting, including prioritization of issues to be addressed, with the final approval of the agenda given to the department.

(c) All meetings of the committee or ad hoc subcommittee(s) are subject to chapter 42.30 RCW, the Open Public Meetings Act. Notice as to the date, time, location and agenda or topics shall be published on the department's web site, and in the *Washington State Register*. Additional notification via electronic communication shall be provided to committee members and other interested parties. Publication of the committee meeting shall occur with enough notice to ensure committee members or members of the public who have disabilities have an equal opportunity to participate.

[Statutory Authority: 2007 c 282, RCW 51.04.02 [51.04.020], 51.04.030. 08-02-020, § 296-20-0100, filed 12/21/07, effective 1/21/08. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 88-24-011 (Order 88-28), § 296-20-0100, filed 12/1/88, effective 1/1/89.]

WAC 296-20-01001 Industrial insurance medical advisory committee. (1)(a) The director shall appoint an industrial insurance medical advisory committee (committee) composed of up to fourteen members.

(b) The appointments shall include twelve members from the nominations provided by statewide clinical groups, specialties, and associations and shall be consistent with the specialty types required by law.

(c) At least two of the total fourteen members must be physicians who are recognized for expertise in evidence-based medicine.

(d) The director may choose up to two of the fourteen members, not necessarily from the nominations submitted, who have expertise in occupational medicine.

(e) To the extent possible, members shall be chosen from nominees with experience or knowledge of treating injured workers or evidence-based medicine, or both.

(f) The director may, at his or her discretion, exclude or remove any nominee, committee member, or hired expert if the person does not meet a condition of appointment, including but not limited to:

(i) Having, or failing to disclose, a conflict of interest;

(ii) Breaching a statute, rule, or the committee's bylaws, including a quality of care concern or professional related action alleged by a government agency; or

(iii) If the committee or committee chair recommends removal for good cause shown.

(g) Appointments to the committee shall be up to three year terms, which the department may renew.

(2)(a) The committee will function as an advisor to the department with respect to the provision of safe, effective, and cost-effective health care for injured workers, including but not limited to the development of practice guidelines, and coverage criteria, review of coverage decisions and technol-

ogy assessments, review of medical programs, and review of rules pertaining to health care issues.

(b) The committee may provide peer review and advise and assist the department in the resolution of controversies, disputes, and issues between the department and the providers of medical care.

(c) After approval by the department, the committee may consult with experts, services, and form ad hoc groups, committees, or subcommittees for the purpose of advising the department on specific topics to fulfill the purposes of the committee. Such experts or ad hoc groups will develop recommendations for the committee's approval.

(d) The committee's function may include but is not limited to the following:

(i) Advising the department on coverage decisions from technology assessments based on the best available scientific evidence, from which the department may use the committee's advice for making coverage decisions and for making proper and necessary industrial insurance claim decisions for covered services (see WAC 296-20-02704 for medical coverage decision criteria);

(ii) Advising the department on treatment guidelines for covered services based on proper and necessary standards, the best available scientific evidence, and the expert opinion of the medical advisory committee. The department may use the committee's advice for provider education, for criteria for the department's utilization review program, and for making proper and necessary industrial insurance claim decisions;

(iii) Advising the department on criteria related to definitions of quality of care and patterns of harmful care;

(iv) Advising the department on issues related to emerging medical conditions and the scientific evidence related to them; and

(v) Advice to the department in (d)(i) through (iv) of this subsection shall not pertain to nor include the review of a specific individual claim.

(e) Committee approval regarding advice to the department shall be based on a consensus of the members present. If after all reasonable efforts a consensus cannot be reached, the committee shall vote using the procedure described in the bylaws. A quorum, which shall be half plus one of the appointed members, must be present to vote and provide approval regarding advice to the department. Implementation of the committee's advice by the department is discretionary and solely the responsibility of the department.

(3) The members of the committee, including hired experts and any ad hoc group or subcommittee:

(a) Are immune from civil liability for any official acts performed in good faith to further the purposes of the industrial insurance medical advisory committee; and

(b) May be compensated for participation in the work of the industrial insurance medical advisory committee in accordance with a personal services contract to be executed after appointment and before commencement of activities related to the work of the industrial insurance medical advisory committee.

(4) The committee shall coordinate with the state health technology assessment program and the state prescription drug program. With regard to issues in which the committee's opinion may differ with findings of the state health technology assessment program or the state prescription drug pro-

gram, the department must give greater weight to the findings of the state's health technology assessment program and the state's prescription program.

(5) The committee shall operate under conditions set out in bylaws as approved by the department and ratified by the committee.

(6)(a) The committee and ad hoc group or subcommittee shall meet on a schedule as set by the department.

(b) The department shall collaborate with the committee to prepare the agenda for each meeting, including prioritization of issues to be addressed, with the final approval of the agenda given to the department.

(c) All meetings of the committee or ad hoc subcommittee(s) are subject to chapter 42.30 RCW, the Open Public Meetings Act. Notice as to the date, time, location and agenda or topics shall be published on the department's web site, and in the *Washington State Register*. Additional notification via electronic communication shall be provided to committee members and other interested parties. Publication of the committee meeting shall occur with enough notice to ensure committee members or members of the public who have disabilities have an equal opportunity to participate.

[Statutory Authority: 2007 c 282, RCW 51.04.02 [51.04.020], 51.04.030. 08-02-019, § 296-20-01001, filed 12/21/07, effective 1/21/08; Order 77-27, § 296-20-01001, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-20-01001, filed 12/1/77; Emergency Order 77-16, § 296-20-01001, filed 9/6/77; Order 76-34, § 296-20-01001, filed 11/24/76, effective 1/1/77.]

WAC 296-20-01002 Definitions. 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).

Appointing authority: For the evidence-based prescription drug program of the participating agencies in the state purchased health care programs, appointing authority shall mean the following persons acting jointly: The administrator of the health care authority, the secretary of the department of social and health services, and the director of the department of labor and industries.

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 certify time loss compensation except as provided in WAC 296-20-01502, When can a physician assistant have sole signature on the report of accident or physician's initial report? and WAC 296-23-241, Can advanced registered nurse practitioners independently perform the functions of an attending physician?

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 workers health or treatment outcome.

Endorsing practitioner: A practitioner who has reviewed the preferred drug list and has notified the health care authority that he or she has agreed to allow therapeutic interchange of a preferred drug for any nonpreferred drug in a given therapeutic class.

Fatal: When the attending doctor has reason to believe a worker has died as a result of an industrial injury or exposure, the doctor should notify the nearest department service location or the self-insurer immediately. Often an autopsy is required by the department or self-insurer. If so, it will be authorized by the service location manager or the self-insurer. Benefits payable include burial stipend and monthly payments to the surviving spouse and/or dependents.

Fee schedules or maximum fee schedule(s): The fee schedules consist of, but are not limited to, the following:

(a) Health Care 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.

Initial prescription drugs: Any drug prescribed for an alleged industrial injury or occupational disease during the initial visit.

Initial visit: The first visit to a healthcare provider during which the *Report of Industrial Injury or Occupational Disease* is completed and the worker files a claim for workers compensation.

Medical aid rules: The Washington Administrative Codes (WACs) that contain the administrative rules for medical and other services rendered to workers.

Modified work status: The worker is not able to return to their previous work, but is physically capable of carrying out work of a lighter nature. Workers should be urged to return to modified work as soon as reasonable as such work is frequently beneficial for body conditioning and regaining self confidence.

Under RCW 51.32.090, when the employer has modified work available for the worker, the employer must furnish the doctor and the worker with a statement describing the available work in terms that will enable the doctor to relate the physical activities of the job to the worker's physical limitations and capabilities. The doctor shall then determine whether the worker is physically able to perform the work described. The employer may not increase the physical requirements of the job without requesting the opinion of the doctor as to the worker's ability to perform such additional work. If after a trial period of reemployment the worker is unable to continue with such work, the worker's time loss compensation will be resumed upon certification by the attending doctor.

If the employer has no modified work available, the department should be notified immediately, so vocational assessment can be conducted to determine whether the worker will require assistance in returning to work.

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.

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.

Preferred drug list: The list of drugs selected by the appointing authority to be used by applicable state agencies as the basis for the purchase of drugs in state purchased health care programs.

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 presence 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.

Refill: The continuation of therapy with the same drug (including the renewal of a previous prescription or adjustments in dosage) when a prescription is for an antipsychotic, antidepressant, chemotherapy, antiretroviral or immunosuppressive drug, or for the refill of an immunomodulator/antiviral treatment for hepatitis C for which an established, fixed duration of therapy is prescribed for at least twenty-four weeks but no more than forty-eight weeks.

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.

Therapeutic alternative: Drug products of different chemical structure within the same pharmacologic or therapeutic class and that are expected to have similar therapeutic effects and safety profiles when administered in therapeutically equivalent doses.

Therapeutic interchange: To dispense with the endorsing practitioner's authorization, a therapeutic alternative to the prescribed drug.

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 and 2007 c 134. 08-02-021, § 296-20-01002, filed 12/21/07, effective 1/21/08. Statutory Authority: RCW 51.04.020, 51.04.030. 07-17-167, § 296-20-01002, filed 8/22/07,

effective 9/22/07. Statutory Authority: 2004 c 65 and 2004 c 163. 04-22-085, § 296-20-01002, filed 11/2/04, effective 12/15/04. Statutory Authority: RCW 51.04.020, 70.14.050, 04-08-040, § 296-20-01002, filed 3/30/04, effective 5/1/04. Statutory Authority: RCW 51.04.020, 03-21-069, § 296-20-01002, filed 10/14/03, effective 12/1/03. Statutory Authority: RCW 51.04.010, 51.04.020, 51.04.030, 51.32.080, 51.32.110, 51.32.112, 51.36.060, 02-21-105, § 296-20-01002, filed 10/22/02, effective 12/1/02. 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 296-20-02704 What criteria does the director or director's designee use to make medical coverage decisions?

(1) In making medical coverage decisions, the director or the director's designee considers information from a variety of sources. These sources include, but are not limited to:

- Scientific evidence;
- National and community-based opinions;
- Informal syntheses of provider opinion;
- Experience of the department and other entities;
- Regulatory status.

Because of the unique nature of each health care service, the type, quantity and quality of the information available for review may vary. The director or director's designee weighs the quality of the available evidence in making medical coverage decisions.

(2) Scientific evidence.

(a) "Scientific evidence" includes reports and studies published in peer-reviewed scientific and clinical literature. The director or the director's designee will consider the nature and quality of the study, its methodology and rigorosity of design, as well as the quality of the journal in which the study was published.

- For treatment services, studies addressing safety, efficacy, and effectiveness of the treatment or procedure for its intended use will be considered.
- For diagnostic devices or procedures, studies addressing safety, technical capacity, accuracy or utility of the device or procedure for its intended use will be considered.

(b) The greatest weight will be given to the most rigorously designed studies and on those well-designed studies that are reproducible. The strength of the design will depend on such scientifically accepted methodological principles as randomization, blinding, appropriateness of outcomes, spectrum of cases and controls, appropriate power to detect differences, magnitude and significance of effect. Additional consideration will be given to those studies that focus on sustained health and functional outcomes of workers with occupational conditions rather than unsustained clinical improvements.

(3) National and community-based opinion.

(a) "National opinion" includes, but is not limited to, syntheses of clinical issues that may take the form of published reports in the scientific literature, national consensus documents, formalized documents addressing standards of practice, practice parameters from professional societies or commissions, and technology assessments produced by independent evidence-based practice centers.

The director or the director's designee will consider the nature and quality of the process used to reach consensus or produce the synthesis of expert opinion. This consideration will include, but may not be limited to, the qualifications of participants, potential biases of sponsoring organizations, the inclusion of graded scientific information in the deliberations, the explicit nature of the document, and the processes used for broader review.

(b) "Community-based opinion" refers to advice and recommendations of formal committees made up of clinical providers within the state of Washington. As appropriate to the subject matter, this may include recommendations from the department's formal advisory committees:

- The industrial insurance medical advisory committee;
- The industrial insurance chiropractic advisory committee.
- The Washington state pharmacy and therapeutics committee.
- The Washington state health technology assessment clinical committee.

(4) "Informal syntheses of provider opinion" includes, but is not limited to, professional opinion surveys.

(5) Experience of the department and other entities.

The director or director's designee may consider data from a variety of sources including the department, other state agencies, federal agencies and other insurers regarding studies, experience and practice with past coverage. Examples of these include, but are not limited to, formal outcome studies, cost-benefit analyses, and adverse event, morbidity or mortality data.

(6) Regulatory status.

The director or director's designee will consider related licensing and approval processes of other state and federal regulatory agencies. This includes, but is not limited to:

- The federal food and drug administration's (FDA) regulation of drugs and medical devices (21 U.S.C. 301 et seq. and 21 CFR Chapter 1, Subchapters C, D, & H consistent with the purposes of this chapter, and as now or hereafter amended); and
- The Washington state department of health's regulation of scope of practice and standards of practice for licensed health care professionals regulated under Title 18 RCW.

[Statutory Authority: 2007 c 282, RCW 51.04.02 [51.04.020], 51.04.030. 08-02-020, § 296-20-02704, filed 12/21/07, effective 1/21/08. Statutory Authority: RCW 51.04.020, 70.14.050, 04-08-040, § 296-20-02704, filed 3/30/04, effective 5/1/04. Statutory Authority: RCW 51.04.020 and 51.04.-030. 00-01-037, § 296-20-02704, filed 12/7/99, effective 1/8/00.]

WAC 296-20-02705 What are treatment and diagnostic guidelines and how are they related to medical coverage decisions?

(1) Treatment and diagnostic guidelines are recommendations for the diagnosis or treatment of accepted conditions. These guidelines are intended to guide providers

through the range of the many treatment or diagnostic options available for a particular medical condition. Treatment and diagnostic guidelines are a combination of the best available scientific evidence and a consensus of expert opinion.

(2) The department may develop treatment or diagnostic guidelines to improve outcomes for workers receiving covered health services. As appropriate to the subject matter, the department may develop these guidelines in collaboration with the department's formal advisory committees:

- The industrial insurance medical advisory committee;
- The industrial insurance chiropractic advisory committee.
- The Washington state pharmacy and therapeutics committee.
- The Washington state health technology assessment clinical committee.

(3) In the process of implementing these guidelines, the department may find it necessary to make a formal medical coverage decision on one or more of the treatment or diagnostic options. The department, not the advisory committees, is responsible for implementing treatment guidelines and for making coverage decisions that result from such implementation.

[Statutory Authority: 2007 c 282, RCW 51.04.02 [51.04.020], 51.04.030, 08-02-020, § 296-20-02705, filed 12/21/07, effective 1/21/08. Statutory Authority: RCW 51.04.020, 70.14.050, 04-08-040, § 296-20-02705, filed 3/30/04, effective 5/1/04. Statutory Authority: RCW 51.04.020 and 51.04-030. 00-01-037, § 296-20-02705, filed 12/7/99, effective 1/8/00.]

WAC 296-20-03011 What general limitations are in place for medications? (1) **Amount dispensed.** The department or self-insurer will pay for no more than a thirty-day supply of a medication dispensed at any one time.

(2) **Over-the-counter drugs.** Prescriptions for over-the-counter items may be paid. Special compounding fees for over-the-counter items are not payable.

(3) **Generic drugs.** Prescriptions are to be written for generic drugs unless the attending physician specifically indicates that substitution is not permitted. For example: The patient cannot tolerate substitution. Pharmacists are instructed to fill with generic drugs unless the attending physician specifically indicates substitution is not permitted.

(4) **Evidence-based prescription drug program.** In accordance with RCW 70.14.050, the department in cooperation with other state agencies may develop a preferred drug list. Any pharmacist filling a prescription under state purchased health care programs as defined in RCW 41.05.011(2) shall substitute, where identified, a preferred drug for any nonpreferred drug in a given therapeutic class, unless the endorsing practitioner has indicated on the prescription that the nonpreferred drug must be dispensed as written, or the prescription is for a refill of an antipsychotic, antidepressant, chemotherapy, antiretroviral, or immunosuppressive drug (see RCW 69.41.190), or for the refill of an immunomodulator/antiviral treatment for hepatitis C for which an established, fixed duration of therapy is prescribed for at least twenty-four weeks but no more than forty-eight weeks or the nonendorsing practitioner has received prior authorization from the department to fill the prescription as written, in which case the pharmacist shall dispense the prescribed nonpreferred drug.

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(5) Prescriptions for unrelated medical conditions.

The department or self-insurer may consider temporary coverage of prescriptions for conditions not related to the industrial injury when such conditions are retarding recovery. Any treatment for such conditions must have prior authorization per WAC 296-20-055. This would apply to any prescription for such conditions even when the endorsing practitioner indicates "dispense as written."

(6) **Pension cases.** Once the worker is placed on a pension, the department or self-insurer may pay for only those drugs and medications authorized for continued medical treatment for conditions previously accepted by the department. Authorization for continued medical and surgical treatment is at the sole discretion of the supervisor of industrial insurance and must be authorized before the treatment is rendered. In such pension cases, the department or self-insurer cannot pay for scheduled drugs used to treat continuing pain resulting from an industrial injury or occupational disease.

[Statutory Authority: RCW 51.04.020, 51.04.030, 07-17-167, § 296-20-03011, filed 8/22/07, effective 9/22/07. Statutory Authority: RCW 51.04-020, 70.14.050, 04-08-040, § 296-20-03011, filed 3/30/04, effective 5/1/04. Statutory Authority: RCW 51.04.020 and 51.04.030, 00-01-040, § 296-20-03011, filed 12/7/99, effective 1/20/00.]

WAC 296-20-124 Rejected and closed claims. (1) No payment will be made for treatment or medication on rejected claims except:

- (a) Services which were carried out at the specific request of the department or the self-insurer; or
- (b) Examination or diagnostic services which served as a basis for the adjudication decision; or
- (c) Initial prescription drugs prescribed during the initial visit for state fund claims.

(2) No payment will be made for services rendered after the date of claim closure. Following the date of the order and notice of claim closure, the department or self-insurer will be responsible only for those services specifically requested or those examinations, and diagnostic services necessary to complete and file a reopening application.

(3) Periodic medical surveillance examinations will be covered by the department or self-insurer for workers with closed claims for asbestos-related disease, to include chest X-ray abnormalities, without the necessity of filing a reopening application when such examinations are recommended by accepted medical protocol.

(4) Replacement of prosthetics, orthotics, and special equipment can be provided on closed claims after prior authorization. See WAC 296-20-1102 for further information.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 2007 c 134, 08-02-021, § 296-20-124, filed 12/21/07, effective 1/21/08. Statutory Authority: Chapters 34.04 [34.05], 51.04, 51.32 and 51.36 RCW, 90-04-007, § 296-20-124, filed 1/26/90, effective 2/26/90. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3), 81-01-100 (Order 80-29), § 296-20-124, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-124, filed 11/24/76, effective 1/1/77.]

WAC 296-20-125 Billing procedures. All services rendered must be in accordance with the medical aid rules, fee schedules, and department policy. The department or self-insurer may reject bills for services rendered in violation of

these rules. Workers may not be billed for services rendered in violation of these rules.

(1) Bills must be itemized on department or self-insurer forms or other forms which have been approved by the department or self-insurer. Bills may also be transmitted electronically using department file format specifications. Providers using any of the electronic transfer options must follow department instructions for electronic billing. Physicians, osteopaths, advanced registered nurse practitioners, chiropractors, naturopaths, podiatrists, psychologists, and registered physical therapists use the current national standard Health Insurance Claim Form (as defined by the National Uniform Claim Committee) with the bar code placed 2/10 of an inch from the top and 1 1/2 inches from the left side of the form. Hospitals use the current National Uniform Billing Form (as defined by the National Uniform Billing Committee) for institution services and the current national standard Health Insurance Claim Form (as defined by the National Uniform Claim Committee) with the bar code placed 2/10 of an inch from the top and 1 1/2 inches from the left side of the form for professional services. Hospitals should refer to chapter 296-23A WAC for billing rules pertaining to institution, or facilities, charges. Pharmacies use the department's statement for pharmacy services. Dentists, equipment suppliers, transportation services, vocational services, and massage therapists use the department's statement for miscellaneous services. When billing the department for home health services, providers should use the "statement for home nursing services." Providers may obtain billing forms from the department's local service locations.

(2) Bills must specify the date and type of service, the appropriate procedure code, the condition treated, and the charges for each service.

(3) Bills submitted to the department must be completed to include the following:

- (a) Worker's name and address;
- (b) Worker's claim number;
- (c) Date of injury;
- (d) Referring doctor's name and L & I provider account number;
- (e) Area of body treated, including ICD-9-CM code(s), identification of right or left, as appropriate;
- (f) Dates of service;
- (g) Place of service;
- (h) Type of service;
- (i) Appropriate procedure code, hospital revenue code, or national drug code;
- (j) Description of service;
- (k) Charge;
- (l) Units of service;
- (m) Tooth number(s);
- (n) Total bill charge;
- (o) The name and address of the practitioner rendering the services and the provider account number assigned by the department;
- (p) Date of billing;
- (q) Submission of supporting documentation required under subsection (6) of this section.

(4) Responsibility for the completeness and accuracy of the description of services and charges billed rests with the

practitioner rendering the service, regardless of who actually completes the bill form;

(5) Vendors are urged to bill on a monthly basis. Bills must be received within one year of the date of service to be considered for payment.

(6) The following supporting documentation is required when billing for services:

- (a) Laboratory and pathology reports;
 - (b) X-ray findings;
 - (c) Operative reports;
 - (d) Office notes;
 - (e) Consultation reports;
 - (f) Special diagnostic study reports;
 - (g) For BR procedures - see chapter 296-20 WAC for requirements; and
 - (h) Special or closing exam reports.
- (7) The claim number must be placed on each bill and on each page of reports and other correspondence in the upper right-hand corner.

(8) The following considerations apply to rebills.
 (a) If you do not receive payment or notification from the department within one hundred twenty days, services may be rebilled.

(b) Rebills must be submitted for services denied if a claim is closed or rejected and subsequently reopened or allowed. In these instances, the rebills must be received within one year of the date the final order is issued which subsequently reopens or allows the claim.

(c) Rebills should be identical to the original bill: Same charges, codes, and billing date.

(d) In cases where vendors rebill, please indicate "REBILL" on the bill.

(9) The department or self-insurer will adjust payment of charges when appropriate. The department or self-insurer must provide the health care provider or supplier with a written explanation as to why a billing or line item of a bill was adjusted at the time the adjustment is made. A written explanation is not required if the adjustment was made solely to conform with the maximum allowable fees as set by the department. Any inquiries regarding adjustment of charges must be received in the required format within ninety days from the date of payment to be considered. Refer to the medical aid rules for additional information.

[Statutory Authority: RCW 51.04.020, 51.36.080, 7.68.030, 7.68.080, 07-08-088, § 296-20-125, filed 4/3/07, effective 5/23/07. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159, 93-16-072, § 296-20-125, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030, 87-16-004 (Order 87-18), § 296-20-125, filed 7/23/87; 86-20-074 (Order 86-36), § 296-20-125, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-20-125, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-20-125, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3), 81-01-100 (Order 80-29), § 296-20-125, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-20-125, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-20-125, filed 12/1/77; Emergency Order 77-16, § 296-20-125, filed 9/6/77; Order 75-39, § 296-20-125, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-20-125, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-20-125, filed 1/30/74; Order 71-6, § 296-20-125, filed 6/1/71; Order 70-12, § 296-20-125, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-125, filed 11/27/68, effective 1/1/69.]

WAC 296-20-135 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 \$56.38. 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 \$3.08 per minute, which is equivalent to \$46.20 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. 07-10-082, § 296-20-135, filed 5/1/07, effective 7/1/07; 06-09-071, § 296-20-135, filed 4/18/06, effective 7/1/06; 05-09-062, § 296-20-135, filed 4/19/05, effective 7/1/05; 04-09-100, § 296-20-135, filed 4/20/04, effective 7/1/04; 03-14-043, § 296-20-135, filed 6/24/03, effective 8/1/03; 02-10-129, § 296-20-135, filed 5/1/02, effective 7/1/02; 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.]

WAC 296-20-170 Pharmacy—Acceptance of rules and fees. (1) Acceptance and filling of a prescription for a worker entitled to benefits under the industrial insurance law, constitutes acceptance of the department's rules and fees.

(2) When there is questionable eligibility, (i.e., no claim number, prescription is for medication other than usually prescribed for industrial injury; or pharmacist has reason to believe claim is closed or rejected), the pharmacist may require the worker to pay for the prescription.

(a) The pharmacist must furnish the worker with a signed receipt and a nonnegotiable copy of the prescription including national drug code and quantity or a completed department pharmacy bill form signed in the appropriate areas verifying worker has paid for the prescribed item(s) in order for the worker to bill the department or self-insurer for reimbursement.

(b) The worker may not be charged more than the amount allowable by the department or self-insurer.

(c) The worker must submit such reimbursement request within one year of the date of service.

See WAC 296-20-020 for details on providing a refund.

(3) Pharmacies may bill the department for initial prescription drugs prior to claim acceptance upon the presentation to the pharmacy of a state fund identification card or a

copy of the *Report of Industrial Injury or Occupational Disease*.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 2007 c 134. 08-02-021, § 296-20-170, filed 12/21/07, effective 1/21/08. Statutory Authority: RCW 51.04.020. 03-21-069, § 296-20-170, filed 10/14/03, effective 12/1/03. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-170, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-170, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.-030, and 51.16.120(3). 80-18-033 (Order 80-24), § 296-20-170, filed 12/1/80, effective 1/1/81; Order 76-34, § 296-20-170, filed 11/24/76, effective 1/1/77.]

WAC 296-20-17001 Allowance and payment for medication. (1) The department or self-insurer will pay for medications or supplies dispensed for the treatment of conditions resulting from an industrial injury and/or conditions which are retarding the recovery from the industrial injury, for which the department or self-insurer has accepted temporary responsibility.

(2) Approved generic are to be substituted for brand name pharmaceuticals in all cases unless the worker's condition will not tolerate a generic preparation and the prescribing physician indicates no substitution is permitted. A list of approved generics and their base cost will be published periodically by the department.

(3) Items not normally paid include: Syringes, injectables, heating pads, vibrators, personal appliances, oral nutritional supplements, anorexiant, and medications normally prescribed for systemic conditions. These items may be authorized to certain individuals in unusual circumstances; prior approval from the department or self-insurer is mandatory.

(4) Rental or purchase of medical equipment must be prior authorized by the department or self-insurer.

(5) No payment will be made for medication dispensed after the date of the order and notice of claim closure or rejection or for conditions unrelated to the industrial injury or occupational disease except for initial prescription drugs prescribed during the initial visit for state fund claims.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 2007 c 134. 08-02-021, § 296-20-17001, filed 12/21/07, effective 1/21/08. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-17001, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-20-17001, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.-020(4), 51.04.030, and 51.16.120(3). 80-18-033 (Order 80-24), § 296-20-17001, filed 12/1/80, effective 1/1/81; Order 76-34, § 296-20-17001, filed 11/24/76, effective 1/1/77.]

WAC 296-20-17004 Billing and payment for initial prescription drugs. (1) Pharmacies may bill the department for initial prescription drugs prior to claim acceptance upon the presentation to the pharmacy of a state fund identification card or a copy of the *Report of Industrial Injury or Occupational Disease* with a valid claim number.

(2) The department will pay pharmacies or reimburse the worker for initial prescription drugs prescribed during the initial visit except when the prescription is:

(a) A second or subsequent filling of the initial prescription drugs prescribed for the same industrial injury or occupational disease prior to claim acceptance; or

(b) Associated with a self-insurer claim.

(3) Payment for initial prescription drugs shall be in accordance with the department's fee schedule including, but not limited to screening for drug utilization review (DUR) criteria, the preferred drug list (PDL) provision and formulary status.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 2007 c 134, 08-02-021, § 296-20-17004, filed 12/21/07, effective 1/21/08.]

Chapter 296-23 WAC

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

WAC

296-23-220
296-23-230

Physical therapy rules.
Occupational therapy rules.

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. In addition, physician assistants may order physical therapy under these rules for the attending doctor. 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 \$113.84 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, 07-10-082, § 296-23-220, filed 5/1/07, effective 7/1/07; 06-09-071, § 296-23-220, filed 4/18/06, effective 7/1/06. Statutory Authority: RCW 51.04.020 and 51.04.-030, 05-18-030, § 296-23-220, filed 8/30/05, effective 10/1/05. Statutory Authority: RCW 51.04.020(1) and 51.04.030, 05-09-062, § 296-23-220, filed 4/19/05, effective 7/1/05; 04-09-100, § 296-23-220, filed 4/20/04, effective 7/1/04; 03-14-043, § 296-23-220, filed 6/24/03, effective 8/1/03; 02-10-129, § 296-23-220, filed 5/1/02, effective 7/1/02; 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 assistant serving under the direction of a licensed occupational therapist. In addition, physician assistants may order occupational therapy under these rules for the attending doctor. 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 or by the physician assistant.

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 \$113.84 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. 07-10-082, § 296-23-230, filed 5/1/07, effective 7/1/07; 06-09-071, § 296-23-230, filed 4/18/06, effective 7/1/06. Statutory Authority: RCW 51.04.020 and 51.04.030. 05-18-030, § 296-23-230, filed 8/30/05, effective 10/1/05. Statutory Authority: RCW 51.04.020(1) and 51.04.030. 05-09-062, § 296-23-230, filed 4/19/05, effective 7/1/05; 04-09-100, § 296-23-230, filed 4/20/04,

effective 7/1/04; 03-14-043, § 296-23-230, filed 6/24/03, effective 8/1/03; 02-10-129, § 296-23-230, filed 5/1/02, effective 7/1/02; 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.]

**Chapter 296-23A WAC
HOSPITALS**

WAC

- 296-23A-0160 How must hospitals submit charges for ambulance and professional services?
- 296-23A-0230 How does the department or self-insurer pay out-of-state hospitals for hospital services?

WAC 296-23A-0160 How must hospitals submit charges for ambulance and professional services? Hospitals must submit charges for ambulance services and professional services provided by hospital staff physicians on the current Health Insurance Claim Form (as defined by the National Uniform Claim Committee), using the provider account number(s) assigned by the department for these services. Hospitals using any of the electronic transfer options must follow department instructions for electronic billing.

[Statutory Authority: RCW 51.04.020, 51.36.080, 7.68.030, 7.68.080. 07-08-088, § 296-23A-0160, filed 4/3/07, effective 5/23/07. Statutory Authority: RCW 51.04.020, 51.04.030 and 51.36.080. 97-06-066, § 296-23A-0160, filed 2/28/97, effective 4/1/97.]

WAC 296-23A-0230 How does the department or self-insurer pay out-of-state hospitals for hospital services? The department or self-insurer pays out-of-state hospitals for hospital services using a percent of allowed charges (POAC) factor or department fee schedule. The POAC factor may differ for services performed in inpatient and outpatient settings. Payment rates to hospitals located outside of Washington state are calculated by multiplying the out-of-state percent of allowed charges factor (POAC) by the allowed charges.

Amount paid = (out-of-state POAC Factor) X (Allowed Charges).

Out-of-state hospital providers should bill and the department or self-insurer will pay out-of-state hospitals services according to the following table:

<i>Hospital Professional and Ambulance Services</i>	<i>Hospital Outpatient Services</i>	<i>Hospital Inpatient Services</i>
Professional and ambulance services should be billed with CPT and HCPCS codes on current Health Insurance Claim Forms (as defined by the National Uniform Claim Committee) under separate provider numbers. These services will be paid using the fee schedule rates and payment policies stated in the <i>Washington Medical Aid Rules and Fee Schedules</i> .	All hospital outpatient services should be billed on UB forms under the hospital provider number with revenue codes. These services will be paid at the out-of-state percent of allowed charges (POAC) factor as stated in the <i>Washington Medical Aid Rules and Fee Schedules</i> .	All hospital inpatient services should be billed on UB forms under the hospital provider number using revenue codes. These services will be paid at the out-of-state percent of allowed charges (POAC) factor as stated in the <i>Washington Medical Aid Rules and Fee Schedules</i> .

<i>Hospital Professional and Ambulance Services</i>	<i>Hospital Outpatient Services</i>	<i>Hospital Inpatient Services</i>
Military and veteran's administration professional and ambulance services should be billed on current Health Insurance Claim Forms (as defined by the National Uniform Claim Committee) and will be paid at 100% of allowed charges.	Military, veteran's administration, health maintenance organization, children's, and state-run psychiatric hospitals will be paid at 100% of allowed charges for outpatient hospital services.	Military, veteran's administration, health maintenance organization, children's, and state-run psychiatric hospitals will be paid at 100% of allowed charges for inpatient hospital services.

[Statutory Authority: RCW 51.04.020, 51.36.080, 7.68.030, 7.68.080, 07-08-088, § 296-23A-0230, filed 4/3/07, effective 5/23/07. Statutory Authority: RCW 51.04.020, 51.04.030, 51.36.080, 00-09-078, § 296-23A-0230, filed 4/18/00, effective 7/1/00; 97-06-066, § 296-23A-0230, filed 2/28/97, effective 4/1/97.]

Chapter 296-24 WAC

GENERAL SAFETY AND HEALTH STANDARDS

WAC

296-24-23503 General requirements.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-24-217 Servicing multipiece and single-piece rim wheels. [Statutory Authority: RCW 49.17.040 and 49.17.050, 84-17-099 (Order 84-18), § 296-24-217, filed 8/21/84. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW, 80-17-014 (Order 80-20), § 296-24-217, filed 11/13/80.] Repealed by 07-03-163, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.

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 chapter 296-900 WAC, Administrative rules, for information on applying for a variance.)

(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, 49.17.050, 49.17.060, 07-03-163, § 296-24-23503, filed 1/24/07, effective 4/1/07. 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.]

Chapter 296-27 WAC

RECORDKEEPING AND REPORTING

WAC

- 296-27-00103 Partial exemption for employers with ten or fewer employees.
- 296-27-01107 General recording criteria.
- 296-27-01113 Recording criteria for cases involving occupational hearing loss.
- 296-27-01119 Forms.

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 296-27-031, 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, 49.17.050, 49.17.060, 07-03-163, § 296-27-00103, filed 1/24/07, effective 4/1/07. 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 296-27-01107 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 296-800-32005.

(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.

(ii) **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, 49.17.050, 49.17.060, 07-03-163, § 296-27-01107, filed 1/24/07, effective 4/1/07. 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 296-27-01113 Recording criteria for cases involving occupational hearing loss. (1) Basic requirement. You must record a hearing loss case on the OSHA Log if an employee's hearing test (audiogram) reveals that a recordable threshold shift (RTS) in one or both ears has occurred.

(2) Implementation.

(a) How do I evaluate the current audiogram to determine whether a recordable threshold shift has occurred?

(i) If the employee has never previously experienced a recorded hearing loss, you must compare the employee's current audiogram with that employee's baseline audiogram. If the employee has previously experienced a recorded hearing loss, you must compare the employee's current audiogram with the employee's revised baseline audiogram (the audiogram reflecting the employee's previously recorded hearing loss case.)

(ii) The employee has a recordable threshold shift when:

- There is a change in the hearing threshold, relative to the baseline audiogram for that employee, of an average of 10 decibels (dB) or greater at 2000, 3000, and 4000 hertz (Hz) in one or both ears.

AND

- The employee's overall hearing loss (threshold) is 25 dB or greater (averaged at 2000, 3000, and 4000 Hz) in the same ear as the change.

Note: Audiometric test results reflect the employee's overall hearing ability in comparison to audiometric zero.

(b) May I adjust the current audiogram to reflect the effects of aging on hearing? Yes. When you are determining whether an RTS has occurred, you may age adjust the employee's current audiogram results by using Tables A-1 or A-2, as appropriate, in Appendix A of this chapter. You may not use an age adjustment when determining whether the employee's total hearing level is 25 dB or more above audiometric zero.

(c) 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. If subsequent audiometric testing indicates that an RTS is not persistent, you may erase or line-out the recorded entry.

(d) Are there any special rules for determining whether a hearing loss case is work-related? No. You must use the rules in WAC 296-27-01103 to determine if the hearing loss is work-related. If an event or exposure in the

work environment either caused or contributed to the hearing loss, or significantly aggravated a preexisting hearing loss, you must consider the case to be work-related.

(e) 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? No. 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.

(f) How do I complete the OSHA 300 Log for hearing loss? When you enter a recordable hearing loss case on the OSHA 300 Log, you must check the 300 Log column for hearing loss.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-27-01113, filed 1/24/07, effective 4/1/07; 03-24-085, § 296-27-01113, filed 12/2/03, effective 1/1/04; 02-22-029, § 296-27-01113, filed 10/28/02, effective 1/1/03. 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 296-27-01119 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 if the employee independently and voluntarily requests that his or her name not be entered on the log.

(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 chapter 296-900 WAC, Administrative rules.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-27-01119, filed 1/24/07, effective 4/1/07; 03-24-085, § 296-27-01119, filed 12/2/03, effective 1/1/04; 02-22-029, § 296-27-01119, filed 10/28/02, effective 1/1/03. 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.]

Chapter 296-31 WAC

CRIME VICTIMS COMPENSATION MENTAL HEALTH TREATMENT RULES AND FEES

WAC

296-31-080

How do providers bill for services?

WAC 296-31-080 How do providers bill for services?

(1) Neither the department nor the claimant is required to pay for provider services which violate the mental health treatment rules, fee schedule or department policy.

(2) All fees listed are the maximum fees allowable. Providers must bill their usual and customary fee for each service. If this is less than our fee schedule rate, you must bill us at the lesser rate. The department will pay the lesser of the billed charge or the fee schedule's maximum allowable.

The provider is prohibited from charging the claimant for any difference between the provider's charge and our allowable amount.

(3) Regardless of who completes the bill form, you are responsible for the completeness and accuracy of the description of services and of the charges billed.

(4) All bills submitted to the department must:

(a) Be itemized on forms approved by us.

For example: Physicians, psychologists, advanced registered nurse practitioners and master level mental health counselors may use our form or the current Health Insurance Claim Form (as defined by the National Uniform Claim Committee). Hospitals use the current National Uniform Billing Form (as defined by the National Uniform Billing Committee) for institution services and the current Health Insurance Claim Form (as defined by the National Uniform Claim Committee) for professional services.

(b) Refer to the crime victims compensation program mental health billing instructions for detailed billing information. Billings must be submitted in accordance with these instructions. Procedure codes and fees are available on the crime victims compensation web site or by contacting the crime victims program.

(5) The following supporting documentation must be maintained and, if applicable, submitted when billing for services:

- (a) Intake evaluation;
- (b) Progress reports;
- (c) Consultation reports;
- (d) Special or diagnostic study reports;
- (e) Independent assessment or closing exam reports;
- (f) BR (by report) describing why a service or procedure is too unusual, variable, or complex to be assigned a value unit;

(g) The claimant's or patient's (if patient is other than claimant) private or public insurance information;

For example: When services provided are for survivors of homicide victims.

(6) The claim number must appear in the appropriate field on each bill form. Reports and other correspondence must have the claim number in the upper right hand corner of each page.

(7) You may rebill us if your bill is not reported on your remittance advice within sixty days. Unless the information on the original bill was incorrect, a rebill should be identical. Rebills must be submitted for services denied if a claim is closed or rejected and subsequently reopened or allowed.

(8) We will adjust charges when appropriate. We must provide you with a written explanation as to why a billing was adjusted. A written explanation is not required if the adjustment was made solely to conform to our maximum allowable fees. Any inquiries regarding adjustment of charges must be received in the required format within ninety days from the date of payment.

[Statutory Authority: RCW 51.04.020, 51.36.080, 7.68.030, 7.68.080, 07-08-088, § 296-31-080, filed 4/3/07, effective 5/23/07. Statutory Authority: RCW 7.68.030, 7.68.080, 7.68.120, 51.36.010, 51.04.020 (1) and (4) and 51.04.030, 99-07-004, § 296-31-080, filed 3/4/99, effective 4/4/99; 97-02-090, § 296-31-080, filed 12/31/96, effective 1/31/97. Statutory Authority: RCW 7.68.030, 51.04.020(1) and 51.04.030, 95-15-004, § 296-31-080, filed 7/5/95, effective 8/5/95. Statutory Authority: Chapter 7.68 RCW, 94-02-015, § 296-31-080, filed 12/23/93, effective 1/24/94. Statutory Authority: RCW 43.22.050, 92-23-033, § 296-31-080, filed 11/13/92, effective 12/14/92.]

Chapter 296-32 WAC
SAFETY STANDARDS FOR
TELECOMMUNICATIONS

WAC

296-32-200
296-32-220

Scope and application.
General.

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 296-900-11005.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-32-200, filed 1/24/07, effective 4/1/07. 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 296-800-310.

(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 splattering.

(c) Facilities for quick drenching or flushing of the eyes and body shall be provided unless the storage batteries are of the enclosed type and equipped with explosion proof vents, in which case sealed water rinse or neutralizing packs may be substituted for the quick drenching or flushing facilities.

(d) Employees assigned to work with storage batteries shall be instructed in emergency procedures such as dealing with accidental acid spills.

(e) Electrolyte (acid or base, and distilled water) for battery cells shall be mixed in a well ventilated room. Acid or base shall be poured gradually, while stirring, into the water. Water shall never be poured into concentrated (greater than 75 percent) acid solutions. Electrolyte shall never be placed in metal containers nor stirred with metal objects.

(f) When taking specific gravity readings, the open end of the hydrometer shall be covered with an acid resistant material while moving it from cell to cell to avoid splashing or throwing the electrolyte.

(g) Ventilation, shall be provided to ensure diffusion of the gasses from the battery to prevent the accumulation of an explosive type mixture.

(h) Racks and trays shall be substantial and treated to be resistant to the electrolyte.

(i) Floors shall be of acid resistant construction or be protected from acid accumulation.

(7) Hazardous materials.

(a) Highway mobile vehicles and trailers stored in garages in accordance with WAC 296-24-47513 (4)(b) may be equipped to carry more than one LP-gas container, but the total capacity of LP-gas containers per work vehicle stored in garages shall not exceed 100 pounds of LP-gas.

(b) All container valves shall be closed when not in use.

(8) Compressed gas.

(a) When using or transporting nitrogen cylinders, special compartments, racks, or blocking shall be provided to prevent cylinder movement.

(b) Regulators shall be removed or guarded before a cylinder is transported.

(9) Support structures.

(a) No employee, or any material or equipment, shall be supported or permitted to be supported on any portion of a pole structure, platform, ladder, walkway or other elevated structure or aerial device unless the employer ensures that the support structure is first inspected by a competent person and it is determined to be strong, in good working condition and properly secured in place.

(b) Workers shall not throw anything from pole to ground, from pole to pole or from ground to pole.

(10) Power exposures.

(a) The employer shall ensure that no employee approaches or takes any conductive object closer to any electrically energized overhead power lines and parts than prescribed in Table 1 unless:

(i) The employee is insulated or guarded from the energized parts (insulating gloves rated for the voltage involved shall be considered adequate insulation), or

(ii) The energized parts are insulated or guarded from the employee and any other conductive object at a different potential, or

(iii) The power conductors and equipment are deenergized and grounded.

(b) While handling communication wires, metal sheaths, or communication equipment, contact shall be avoided with street lamp brackets, trolley span wires, power guys, transformer cases and any other power equipment that may be energized. The safest possible working position shall be assumed before starting work.

(c) Communication employees shall never work in the pole space on jointly used poles between normal primary and secondary attachments.

(d) Where a hazard of a power contact exists, due to use of long handled tools, proper rubber equipment shall be used.

TABLE 1

APPROACH DISTANCES TO EXPOSED ENERGIZED OVERHEAD POWER LINES AND PARTS

Voltage Range (phase to phase, RMS)	Approach Distance (inches)
300 V and less	(1)
Over 300 V, not over 750 V	12
Over 750 V not over 2 kV	18
Over 2 kV, not over 15 kV	24
Over 15 kV, not over 37 kV	36
Over 37 kV, not over 87.5 kV	42
Over 87.5 kV, not over 121 kV	48
Over 121 kV, not over 140 kV	54

(1) Avoid contact.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-32-220, filed 1/24/07, effective 4/1/07. 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.]

Chapter 296-37 WAC

STANDARDS FOR COMMERCIAL DIVING OPERATIONS

WAC

296-37-575

Recordkeeping requirements.

WAC 296-37-575 Recordkeeping requirements. (1) Recording and reporting.

(a) The employer shall comply with the requirements of chapters 296-27, 296-800, and 296-900 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

chapter 296-802 WAC. 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 chapter 296-802 WAC.

(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, 49.17.050, 49.17.060, 07-03-163, § 296-37-575, filed 1/24/07, effective 4/1/07; 04-10-026, § 296-37-575, filed 4/27/04, effective 8/1/04. 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
 296-45-025 Variances.

WAC 296-45-025 Variances. Under certain circumstances, an employer may obtain a variance from the director of the department of labor and industries or an authorized representative. Until such time as a variance is granted, the employer and employees must comply with the mandatory provisions of this chapter. The procedure and requirements for variances are found in chapter 296-900 WAC, Administrative rules.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-45-025, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060, 98-07-009, § 296-45-025, filed 3/6/98, effective 5/6/98.]

Chapter 296-46B WAC
ELECTRICAL SAFETY STANDARDS, ADMINISTRATION, AND INSTALLATION

WAC
 296-46B-905 Temporary fees—Inspection fees.

WAC 296-46B-905 Temporary fees—Inspection fees. Valid from January 1, 2007, through December 31, 2008, or until modified in rule, whichever comes first. 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) of this section, PROGRESS INSPECTIONS.

The amount of the fee due is calculated based on the fee effective at the date of a department assessed fee (e.g., plan review or fee due) or when the electrical permit is purchased.

- (1) **Residential.**
 - (a) **Single- and two-family residential (New Construction).**

Notes:

 - (1) 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.)
 - (2) "Inspected with the service" means that a separate service inspection fee is included on the same electrical work permit.
 - (3) "Inspected at the same time" means all wiring is to be ready for inspection during the initial inspection trip.
 - (4) 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. \$69.00
 - Each additional 500 sq. ft. or portion of \$22.00
 - (ii) Each outbuilding or detached garage - inspected at the same time as a dwelling unit on the property \$29.00
 - (iii) Each outbuilding or detached garage - inspected separately \$46.00
 - (iv) Each swimming pool - inspected with the service \$46.00
 - (v) Each swimming pool - inspected separately \$69.00
 - (vi) Each hot tub, spa, or sauna - inspected with the service \$29.50
 - (vii) Each hot tub, spa, or sauna - inspected separately \$46.00
 - (viii) Each septic pumping system - inspected with the service \$29.50
 - (ix) Each septic pumping system - inspected separately \$46.00

(b) Multifamily residential and miscellaneous residential structures, services/feeders (New Construction).

Each service/feeder	Ampacity	Service/Feeder	Additional Feeder
	0 to 200	\$75.00	\$22.00
	201 to 400	\$91.00	\$46.00
	401 to 600	\$128.00	\$64.00
	601 to 800	\$164.00	\$87.00
	801 and over	\$233.00	\$175.00

(c) Single or multifamily altered services/feeders including circuits.

(i) Each altered service/altered feeder

Ampacity	Service or Feeder
0 to 200	\$64.00
201 to 600	\$91.00
601 and over	\$140.00

(ii) Maintenance or repair of a meter or mast (no alterations to the service or feeder) \$34.00

(d) Single or multifamily 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) of this section.
- (i) 1 to 4 circuits (see note above) \$46.00
 - (ii) Each additional circuit (see note above) \$5.00

(e) Mobile homes, modular homes, mobile home parks, and RV parks.

- (i) Mobile home or modular home service or feeder only \$46.00
- (ii) Mobile home service and feeder \$75.00

(f) Mobile home park sites and RV park sites.

- Note:**
 For master service installations, see subsection (2) COMMERCIAL/INDUSTRIAL of this section.
- (i) First site service or site feeder \$46.00
 - (ii) Each additional site service; or additional site feeder inspected at the same time as the first service or feeder \$29.00

(2) Commercial/industrial.

(a) New service/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) of this section. 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 of this section.

Service/feeders

Ampacity	Service/Feeder	Additional Feeder
0 to 100	\$75.00	\$46.00
101 to 200	\$91.00	\$58.00
201 to 400	\$175.00	\$69.00
401 to 600	\$204.00	\$82.00
601 to 800	\$264.00	\$111.00
801 to 1000	\$322.00	\$134.00
1001 and over	\$351.00	\$187.00

(b) Altered services or feeders (no circuits).

(i) Service/feeders

Ampacity	Service/Feeder
0 to 200	\$75.00
201 to 600	\$175.00
601 to 1000	\$264.00
1001 and over	\$239.00

(ii) Maintenance or repair of a meter or mast (no alterations to the service or feeder) \$64.00

(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 (2)(a)(i)(table) above.

- (i) First 5 circuits per branch circuit panel \$58.00
- (ii) Each additional circuit per branch circuit panel \$5.00
- (d) **Over 600 volts surcharge per permit.** \$58.00

(3) Temporary service(s).

Note:

(1) See WAC 296-46B-527 for information about temporary installations.
 (2) 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 this subsection or the portal-to-portal fee.

Temporary services, temporary stage or concert productions.

Ampacity	Service/Feeder	Additional Feeder
0 to 60	\$40.00	\$21.00
61 to 100	\$46.00	\$22.00
101 to 200	\$58.00	\$29.00
201 to 400	\$69.00	\$35.00
401 to 600	\$93.00	\$46.00
601 and over	\$105.00	\$53.00

(4) Irrigation machines, pumps, and equipment.

Irrigation machines.

- (a) Each tower - when inspected at the same time as a service and feeder from (2) COMMERCIAL/INDUSTRIAL \$5.00
- (b) Towers - when not inspected at the same time as a service and feeders - 1 to 6 towers \$69.00
- (c) Each additional tower \$5.00

(5) Miscellaneous - commercial/industrial and residential.

(a) **A Class 2 low-voltage thermostat** and its associated cable controlling a single piece of utilization equipment or a single furnace and air conditioner combination.

- (i) First thermostat \$35.00
- (ii) Each additional thermostat inspected at the same time as the first \$11.00

(b) **Class 2 or 3 low-voltage systems and telecommunications systems.** Includes all telecommunications installations, fire alarm, nurse call, energy management control systems, industrial and automation control systems, lighting control systems, and similar Class 2 or 3 low-energy circuits and equipment not included in WAC 296-46B-900 for Class B work.

- (i) First 2500 sq. ft. or less \$40.00
- (ii) Each additional 2500 sq. ft. or portion thereof \$11.00

(c) Signs and outline lighting.

- (i) First sign (no service included) \$35.00
- (ii) Each additional sign inspected at the same time on the same building or structure \$16.00

(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 \$46.00
- (ii) Each additional berth inspected at the same time \$29.00
- (e) Yard pole, pedestal, or other meter loops only
- (i) Yard pole, pedestal, or other meter loops only \$46.00
- (ii) Meters installed remote from the service equipment and inspected at the same time as a service, temporary service or other installations \$11.00

(f) Emergency inspections requested outside of normal working hours.

Regular fee plus surcharge of: \$87.00

(g) Generators.

Note:

Permanently installed generators: Refer to the appropriate residential or commercial new/altered service or feeder section.
 Portable generators: Permanently installed transfer equipment for portable generators \$64.00

(h) Electrical - annual permit fee.

Note:

See WAC 296-46B-900(14).

For commercial/industrial location employing full-time electrical maintenance staff or having a yearly maintenance contract with a licensed electrical contractor. Note, all yearly maintenance contracts must detail the number of contractor electricians necessary to complete the work required under the contract. This number will be used as a basis for calculating the appropriate fee. Each inspection is based on a 2-hour maximum.

	Inspections	Fee
1 to 3 plant electricians	12	\$1,677.00
4 to 6 plant electricians	24	\$3,356.00
7 to 12 plant electricians	36	\$5,034.00
13 to 25 plant electricians	52	\$6,713.00
More than 25 plant electricians	52	\$8,392.00

(i) Telecommunications - annual permit fee.

Note:

(1) See WAC 296-46B-900(13).

(2) 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.

For commercial/industrial location employing full-time telecommunications maintenance staff or having a yearly maintenance contract with a licensed electrical/telecommunications contractor.

2-hour minimum \$139.00
 Each additional hour, or portion thereof, of portal-to-portal inspection time \$69.00

(j) Permit requiring ditch cover inspection only.

Each 1/2 hour, or portion thereof \$35.00

(k) Cover inspection for elevator/conveyance installation. This item is only available to a licensed/registered elevator contractor.

(6) Carnival inspections.

(a) First carnival field inspection each calendar year.

- (i) Each ride and generator truck \$16.00
- (ii) Each remote distribution equipment, concession, or gaming show \$5.00
- (iii) If the calculated fee for first carnival field inspection above is less than \$89.00, the minimum inspection fee shall be: \$87.00

(b) Subsequent carnival inspections.

- (i) First ten rides, concessions, generators, remote distribution equipment, or gaming show \$87.00
- (ii) Each additional ride, concession, generator, remote distribution equipment, or gaming show \$5.00

(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 \$69.00
- (ii) Subsequent inspection of a single concession or ride, not part of a carnival \$46.00

(7) Trip fees.

(a) Requests by property owners to inspect existing installations. (This fee includes a maximum of one hour of inspection time. All inspection time exceeding one hour will be charged at the rate for progressive inspections.) \$69.00

(b) Submitter notifies the department that work is ready for inspection when it is not ready. \$35.00

(c) Additional inspection required because submitter has provided the wrong address or incomplete, improper or illegible directions for the site of the inspection. \$35.00

(d) More than one additional inspection required to inspect corrections; or for repeated neglect, carelessness, or improperly installed electrical work. \$35.00

(e) Each trip necessary to remove a noncompliance notice. \$35.00

(f) Corrections that have not been made in the prescribed time, unless an exception has been requested and granted. \$35.00

(g) Installations that are covered or concealed before inspection. \$35.00

(8) Progress inspections.

Note:

The fees calculated in subsections (1) through (6) of this section will apply to all electrical work. This section will 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 subsections (1) through (6) of this section.

On partial or progress inspections, each 1/2 hour. \$35.00

(9) Plan review.

Fee is thirty-five percent of the electrical work permit fee as determined by WAC 296-46B-905, plus a plan review submission and shipping/handling fee of: \$58.00

(a) Supplemental submissions of plans per hour or fraction of an hour of review time.	\$69.00
(b) Plan review shipping and handling fee.	\$16.00
(10) Out-of-state inspections.	
(a) Permit fees will be charged according to the fees listed in this section.	
(b) Travel expenses: 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. Inspections not covered by above inspection fees must be charged portal-to-portal per hour:	\$69.00
(12) Refund processing fee. All requests for permit fee refunds will be assessed a processing fee. (Refund processing fees will not be charged for electrical contractors, using the contractor deposit system, who request less than twenty-four refunds during a rolling calendar year.)	\$11.00
(13) Variance request processing fee. Variance request processing fee. This fee is nonrefundable once the transaction has been validated.	\$69.00
(14) Marking of industrial utilization equipment.	
(a) Standard(s) letter review (per hour of review time).	\$69.00
(b) Equipment marking - charged portal-to-portal per hour: (c) All travel expenses and per diem for in/out-of-state review and/or equipment marking 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 (b) of this subsection.	\$69.00
(15) Class B basic electrical work labels.	
(a) Block of twenty Class B basic electrical work labels (not refundable).	\$200.00
(b) Reinspection of Class B basic electrical work to assure that corrections have been made (per 1/2 hour timed from leaving the previous inspection until the reinspection is completed). See WAC 296-46B-900.	\$36.40
(c) Reinspection of Class B basic electrical work because of a failed inspection of another Class B label (per 1/2 hour from previous inspection until the reinspection is completed). See WAC 296-46B-900.	\$36.40
(16) Provisional electrical work permit labels.	
(a) Block of twenty provisional electrical work permit labels.	\$200.00

[Statutory Authority: Chapter 19.28 RCW. 07-19-091, § 296-46B-905, filed 9/18/07, effective 11/1/07. Statutory Authority: RCW 19.28.006, 19.28.010, 19.28.031, 19.28.041, 19.28.061, 19.28.101, 19.28.131, 19.28.161, 19.28.171, 19.28.191, 19.28.201, 19.28.211, 19.28.241, 19.28.251, 19.28.281, 19.28.311, 19.28.321, 19.28.400, 19.28.420, 19.28.490, 19.28.551. 06-24-041, § 296-46B-905, filed 11/30/06, effective 12/31/06; 06-05-028, § 296-46B-905, filed 2/7/06, effective 5/1/06; 05-22-025, § 296-46B-905, filed 10/25/05, effective 11/25/05. Statutory Authority: Chapter 19.28 RCW. 04-21-086, § 296-46B-905, filed 10/20/04, effective 11/22/04. Statutory Authority: RCW 19.28.006, 19.28.010, 19.28.031, 19.28.041, 19.28.061, 19.28.101, 19.28.131, 19.28.161, 19.28.171, 19.28.191, 19.28.201, 19.28.211, 19.28.241, 19.28.251, 19.28.271, 19.28.311, 19.28.321, 19.28.400, 19.28.420, 19.28.490, 19.28.551, 2003 c 399, 2003 c 211, 2003 c 78, and 2003 c 242. 04-12-049, § 296-46B-905, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 19.28.006, 19.28.010, 19.28.031, 19.28.041, 19.28.061, 19.28.101, 19.28.131, 19.28.161, 19.28.171, 19.28.191, 19.28.201, 19.28.211, 19.28.241, 19.28.251, 19.28.271, 19.28.311, 19.28.321, 19.28.400, 19.28.420, 19.28.490, 19.28.551, and chapter 19.28 RCW. 03-18-089, § 296-46B-905, filed 9/2/03, effective 10/3/03. Statutory Authority: RCW 19.28.006, 19.28.010, 19.28.031, 19.28.041, 19.28.061, 19.28.101, 19.28.131, 19.28.161, 19.28.171, 19.28.191, 19.28.201, 19.28.211, 19.28.241, 19.28.251, 19.28.271, 19.28.311, 19.28.321, 19.28.400, 19.28.420, 19.28.490, 19.28.551, 2002 c 249, chapters 34.05 and 19.28 RCW. 03-09-111, § 296-46B-905, filed 4/22/03, effective 4/22/03.]

Chapter 296-54 WAC

SAFETY STANDARDS—LOGGING OPERATIONS

WAC

296-54-535	Hand and portable powered tools.
296-54-707	Labor camps.

WAC 296-54-535 Hand and portable powered tools.

(1) Each hand and portable powered tool, including any tool provided by an employee, must be maintained in serviceable condition.

(2) Each tool, including any tool provided by an employee, must be inspected before initial use during each workshift. The inspection must include at least the following:

(a) Handles and guards, to ensure that they are sound and tight-fitting, (properly shaped, free of splinters and sharp edges, and in place);

(b) Controls, to ensure proper function;

(c) Chain saw chains, to ensure proper adjustment;

(d) Chain saw mufflers, to ensure that they are operational and in place;

(e) Chain brakes and/or nose shielding devices, to ensure that they are in place and function properly;

(f) Heads of shock, impact-driven and driving tools, to ensure that there is no mushrooming.

(3) Each tool must be used and maintained according to the following requirements:

(a) Each tool is used only for purposes for which it was designed.

(b) Any shock, impact-driven or driving tool is repaired or removed from service when the head begins to chip.

(c) The cutting edge of each tool is sharpened according to manufacturer's specifications whenever it becomes dull during the workshift.

(d) Each tool is stored in the provided location when not being used at a worksite.

Note: See chapter 296-807 WAC, Portable power tools, for rules on the use and maintenance of tools and other equipment not covered by this chapter.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-54-535, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050. 99-17-117, amended and recodified as § 296-54-535, filed 8/18/99, effective 12/1/99. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 96-22-013, § 296-54-523, filed 10/28/96, effective 1/1/97. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-523, filed 9/21/79.]

WAC 296-54-707 Labor camps. Temporary labor camps for logging operations must meet the requirements of chapter 296-833 WAC, Temporary housing for workers.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-54-707, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050. 99-17-117, § 296-54-707, filed 8/18/99, effective 12/1/99.]

Chapter 296-56 WAC

SAFETY STANDARDS—LONGSHORE, STEVEDORE AND RELATED WATERFRONT OPERATIONS

WAC

296-56-60003	Variance and procedure.
296-56-60009	Accident prevention program.
296-56-60010	Emergency action plans.
296-56-60081	Multipiece and single-piece rim wheels.

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 chapter 296-900 WAC, 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, 49.17.050, 49.17.060. 07-03-163, § 296-56-60003, filed 1/24/07, effective 4/1/07. 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.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-56-60009, filed 1/24/07, effective 4/1/07. 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 296-56-60010 Emergency action plans. (1) Scope and application. This section requires all employers to develop and implement an emergency action plan. The emergency action plan shall be in writing (except as provided in subsection (5)(d) of this section) and shall cover those designated actions employers and employees must take to ensure employee safety from fire and other emergencies.

Note: When an employer directs his or her employees to respond to an emergency that is beyond the scope of the emergency action plan developed in accordance with this section, then chapter 296-824 WAC shall apply.

(2) **Elements.** The following elements, at a minimum, shall be included in the plan:

(a) Emergency escape procedures and emergency escape route assignments;

(b) Procedures to be followed by employees who remain to operate critical plant operations before they evacuate;

(c) Procedures to account for all employees after emergency evacuation has been completed;

(d) Rescue and medical duties for those employees who are to perform them;

(e) The preferred means of reporting fires and other emergencies; and

(f) Names or regular job titles of persons or departments that can be contacted for further information or explanation of duties under the plan.

(3) **Alarm system.** The employer shall establish an employee alarm system that provides warning for necessary emergency action and for reaction time for safe escape of employees from the workplace or the immediate work area.

(4) **Evacuation.** The employer shall establish the types of evacuation to be used in emergency circumstances.

(5) **Training.**

(a) 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.

(b) The employer shall review the plan with each employee covered by the plan at the following times:

(i) Initially when the plan is developed;

(ii) Whenever the employee's responsibilities or designated actions under the plan change; and

(iii) Whenever the plan is changed.

(c) The employer shall review with each employee upon initial assignment those parts of the plan that the employee must know to protect the employee in the event of an emergency. The written plan shall be kept at the workplace and be made available for employee review.

(d) Employers with ten or fewer employees may communicate the plan orally to employees and need not maintain a written plan.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-56-60010, filed 1/24/07, effective 4/1/07.]

WAC 296-56-60081 Multipiece and single-piece rim wheels. Servicing of multipiece and single-piece rim wheels in marine terminal and other maritime work locations on large vehicles is regulated by requirements of chapter 296-864 WAC, Split (multipiece) rim and single-piece rim wheels.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-56-60081, filed 1/24/07, effective 4/1/07. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-56-60081, filed 7/6/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-56-60081, filed 1/17/86; 85-10-004 (Order 85-09), § 296-56-60081, filed 4/19/85; 85-01-022 (Order 84-24), § 296-56-60081, filed 12/11/84.]

Chapter 296-59 WAC

SAFETY STANDARDS FOR SKI AREA FACILITIES AND OPERATIONS

WAC

296-59-001	Foreword.
296-59-003	Scope and application.

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, 296-360, 296-800, and 296-900 WAC.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-59-001, filed 1/24/07, effective 4/1/07. 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 296-59-003 Scope and application. (1) The rules of this chapter are applicable to all persons, firms, corporations, or others engaged in the operation of organized ski areas and facilities within the jurisdiction of the department of labor and industries. These rules shall augment the WAC general horizontal standards, specifically referenced WAC vertical standards, and specifically referenced national standards or manuals.

(2) In the event that specific provisions of this chapter may conflict with any other WAC chapter, national standard, or manual, the provisions of this chapter shall prevail.

(3) The rules of this chapter shall not be applied to rescue crews during the time that rescue procedures are in process provided that reasonably prudent methods, equipment, and processes are employed. Personnel directly engaged in rescue operations shall not be subjected to the immediate restraint provisions of RCW 49.17.130.

(4) Nothing herein contained shall prevent the use of existing ski lift and tow equipment during its lifetime unless specific requirements of this chapter require retrofitting or modifications, provided that it shall be in conformance with applicable national or state code requirements at the time of manufacture and be maintained in good condition to conform with safety factors for the materials and method of manufacture used.

(5) Severability. If any provision of this chapter, or its application to any person, firm, corporation, or circumstance is held invalid under state (RCW) or national (Public Law) laws, the remainder of this chapter, or the application of the provision to other persons or circumstances is not affected.

(6) Variance and procedure. Recognizing that conditions may exist which do not exactly meet the literal requirements of this or other applicable Title 296 WAC standards, pursuant to RCW 49.17.080 and 49.17.090, the director of the department of labor and industries or his/her authorized representative may permit a variance when other means of providing an equivalent measure of protection are afforded. The specific requirements and procedures for variance application are contained in chapter 296-900 WAC, Administrative rules. Application forms may be obtained from the assistant director for safety and health or from regional departmental offices.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-59-003, filed 1/24/07, effective 4/1/07. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-59-003, filed 7/6/88.]

Chapter 296-62 WAC

GENERAL OCCUPATIONAL HEALTH STANDARDS

WAC

296-62-020	Definitions applicable to all sections of this chapter.
296-62-050	Application for waiver or variances.
296-62-07329	Vinyl chloride.
296-62-07336	Acrylonitrile.
296-62-07342	1,2-Dibromo-3-chloropropane.
296-62-07373	Communication of EtO hazards to employees.
296-62-07413	Respirator protection.
296-62-07425	Communication of cadmium hazards to employees.
296-62-07460	Butadiene.
296-62-07470	Methylene chloride.
296-62-07521	Lead.
296-62-07615	Respiratory protection.
296-62-07621	Communication of hazards to employees.
296-62-07715	Respiratory protection.
296-62-135	Oxygen deficient atmospheres.
296-62-136	Ventilation.
296-62-13605	Definition.
296-62-13610	Ventilation guide.
296-62-13615	Adequate system.
296-62-13620	Exhaust.
296-62-13625	Make-up air quantity.
296-62-13630	Design and operation.
296-62-13635	Compatibility of systems.
296-62-14533	Cotton dust.
296-62-20011	Respiratory protection.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-62-051	Ergonomics. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-12-024, § 296-62-051, filed 5/26/00, effective 7/1/02.] Repealed by 07-03-163, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-62-07354	Appendices—Inorganic arsenic. [Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050. 99-17-094, § 296-62-07354, filed 8/17/99, effective 12/1/99; 98-02-030, § 296-62-07354, filed 12/31/97, effective 1/31/98. Statutory Authority: Chapter 49.17 RCW. 90-20-091 (Order 90-14), § 296-62-07354, filed 10/1/90, effective 11/15/90.] Repealed by 07-03-153, filed 1/23/07, effective 6/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-62-07525	Appendix A substance safety data sheet—Benzene. [Statutory Authority: Chapter 49.17 RCW. 88-21-002 (Order 88-23), § 296-62-07525, filed 10/6/88, effective 11/7/88.] Repealed by 07-03-153, filed 1/23/07, effective 6/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.

296-62-07527	Appendix B substance technical guidelines—Benzene. [Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050, 02-12-098, § 296-62-07527, filed 6/5/02, effective 8/1/02. Statutory Authority: Chapter 49.17 RCW. 88-21-002 (Order 88-23), § 296-62-07527, filed 10/6/88, effective 11/7/88.] Repealed by 07-03-153, filed 1/23/07, effective 6/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-62-07529	Appendix C medical surveillance guidelines for benzene. [Statutory Authority: Chapter 49.17 RCW. 88-21-002 (Order 88-23), § 296-62-07529, filed 10/6/88, effective 11/7/88.] Repealed by 07-03-153, filed 1/23/07, effective 6/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-62-100	Oxygen deficient atmospheres. [Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-62-100, 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), § 296-62-100, filed 7/27/81; Order 73-3, § 296-62-100, filed 5/7/73; Order 70-8, § 296-62-100, filed 7/31/70, effective 9/1/70; Rule 10.010, effective 8/1/63.] Repealed by 07-05-062, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. Later promulgation, see WAC 296-62-135.
296-62-110	Ventilation. [Order 73-3, § 296-62-110, filed 5/7/73; Order 70-8, § 296-62-110, filed 7/31/70, effective 9/1/70; Rules 11.010-11.030, effective 8/1/63.] Repealed by 07-05-062, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. Later promulgation, see WAC 296-62-136.
296-62-11001	Definition. [Statutory Authority: Chapter 49.17 RCW. 95-04-007, § 296-62-11001, filed 1/18/95, effective 3/1/95. 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), § 296-62-11001, filed 11/13/80; Order 73-3, § 296-62-11001, filed 5/7/73.] Repealed by 07-05-062, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-62-11003	Ventilation guide. [Order 73-3, § 296-62-11003, filed 5/7/73.] Repealed by 07-05-062, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-62-11005	Adequate system. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-62-11005, filed 1/24/07, effective 4/1/07; Order 73-3, § 296-62-11005, filed 5/7/73.] Repealed by 07-05-062, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-62-11007	Exhaust. [Order 73-3, § 296-62-11007, filed 5/7/73.] Repealed by 07-05-062, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-62-11009	Make-up air quantity. [Order 73-3, § 296-62-11009, filed 5/7/73.] Repealed by 07-05-062, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-62-11011	Design and operation. [Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-62-11011, filed 5/20/91, effective 6/20/91; Order 73-3, § 296-62-11011, filed 5/7/73.] Repealed by 07-05-062, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-62-11013	Compatibility of systems. [Order 73-3, § 296-62-11013, filed 5/7/73.] Repealed by 07-05-062, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-62-11017	Grinding, polishing, and buffing operations. [Order 73-3, § 296-62-11017 and diagrams, filed 5/7/73.] Repealed by 07-05-062, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.

WAC 296-62-020 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) "Adequate" or "effective" means compliance with terms and intent of these standards.

(2) "Appendix" means references or recommendations to be used as guides in applying the provisions of this chapter.

(3) "Approved" means approved by the director of the department of labor and industries or his 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).

(4) "Authorized person" means a person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the job site.

(5) "Coal tar pitch volatiles" as used in WAC 296-62-07515, Table I, include the fused polycyclic hydrocarbons which volatilize from the distillation residues of coal, petroleum, (excluding asphalt), wood, and other organic matter. Asphalt (CAS 8052-42-4, and CAS 64742-93-4) is not covered under the "coal tar pitch volatiles" standard.

(6) "Competent person" means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective action to eliminate them.

(7) "Department" means the department of labor and industries.

(8) "Director" means the director of the department of labor and industries, or his designated representative.

(9) "Employer" means any person, firm, corporation, partnership, business trust, legal representative, or other business entity which engages in any business, industry, profession, or activity in this state and employs one or more employees or who contracts with one or more persons, the essence of which is the personal labor of such person or persons and includes the state, counties, cities, and all municipal corporations, public corporations, political subdivisions of the state, and charitable organizations: Provided, That any persons, partnership, or business entity not having employees, and who is covered by the industrial insurance act shall be considered both an employer and an employee.

(10) "Hazard" means that condition, potential or inherent, which can cause injury, death, or occupational disease.

(11) "Occupational disease" means such disease or infection as arises naturally and proximately out of employment.

(12) "Qualified" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated ability to solve or resolve problems relating to the subject matter, the work, or the project.

(13) "Shall" or "must" means mandatory.

(14) "Should" or "may" means recommended.

(15) "Suitable" means that which fits, or has the qualities or qualifications to meet a given purpose, occasion, condition, function, or circumstance.

(16) "Worker," "personnel," "person," "employee," and other terms of like meaning, unless the context of the provision containing such term indicates otherwise, mean an employee of an employer who is employed in the business of their 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 whether by manual labor or otherwise.

(17) "Work place" means any plant, yard, premises, room, or other place where an employee or employees are employed for the performance of labor or service over which the employer has the right of access or control. This includes, but is not limited to, all work places covered by industrial insurance under Title 51 RCW, as now or hereafter amended.

(18) Abbreviations used in this chapter:

(a) "ANSI" means American National Standards Institute.

(b) "ASHRE" means American Society of Heating and Refrigeration Engineers.

(c) "BTU" means British thermal unit.

(d) "BTUH" means British thermal unit per hour.

(e) "CFM" means cubic feet per minute.

(f) "CFR" means Code of Federal Register.

(g) "CGA" means Compressed Gas Association.

(h) "ID" means inside diameter.

(i) "MCA" means Manufacturing Chemist Association or Chemical Manufacturer Association (CMA).

(j) "NEMA" means National Electrical Manufacturing Association.

(k) "NFPA" means National Fire Protection Association.

(l) "OD" means outside diameter.

(m) "WAC" means Washington Administrative Code.

(n) "WISHA" means Washington Industrial Safety and Health Act (chapter 80, Laws of 1973).

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-62-020, filed 1/24/07, effective 4/1/07. Statutory Authority: Chapter 49.17 RCW, 94-15-096 (Order 94-07), § 296-62-020, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050, 83-24-013 (Order 83-34), § 296-62-020, filed 11/30/83. 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), § 296-62-020, filed 11/13/80; Order 73-3, § 296-62-020, filed 5/7/73; Order 70-8, § 296-62-020, filed 7/31/70, effective 9/1/70; Section II, effective 8/1/63.]

WAC 296-62-050 Application for waiver or variances. See WAC 296-900-11005, Applying for a variance.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-62-050, filed 1/24/07, effective 4/1/07. 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 296-62-07329 Vinyl chloride. (1) Scope and application.

(a) This section includes requirements for the control of employee exposure to vinyl chloride (chloroethene), Chemical Abstracts Service Registry No. 75014.

(b) This section applies to the manufacture, reaction, packaging, repackaging, storage, handling or use of vinyl chloride or polyvinyl chloride, but does not apply to the handling or use of fabricated products made of polyvinyl chloride.

(c) This section applies to the transportation of vinyl chloride or polyvinyl chloride except to the extent that the department of transportation may regulate the hazards covered by this section.

(2) Definitions.

(a) "Action level" means a concentration of vinyl chloride of 0.5 ppm averaged over an eight-hour work day.

(b) "Authorized person" means any person specifically authorized by the employer whose duties require him/her to enter a regulated area or any person entering such an area as a designated representative of employees for the purpose of exercising an opportunity to observe monitoring and measuring procedures.

(c) "Director" means the director of department of labor and industries or his/her designated representative.

(d) "Emergency" means any occurrence such as, but not limited to, equipment failure, or operation of a relief device which is likely to, or does, result in massive release of vinyl chloride.

(e) "Fabricated product" means a product made wholly or partly from polyvinyl chloride, and which does not require further processing at temperatures, and for times, sufficient to cause mass melting of the polyvinyl chloride resulting in the release of vinyl chloride.

(f) "Hazardous operation" means any operation, procedure, or activity where a release of either vinyl chloride liquid or gas might be expected as a consequence of the operation or because of an accident in the operation, which would result in an employee exposure in excess of the permissible exposure limit.

(g) "Polyvinyl chloride" means polyvinyl chloride homopolymer or copolymer before such is converted to a fabricated product.

(h) "Vinyl chloride" means vinyl chloride monomer.

(3) Permissible exposure limit.

(a) No employee may be exposed to vinyl chloride at concentrations greater than 1 ppm averaged over any 8-hour period, and

(b) No employee may be exposed to vinyl chloride at concentrations greater than 5 ppm averaged over any period not exceeding 15 minutes.

(c) No employee may be exposed to vinyl chloride by direct contact with liquid vinyl chloride.

(4) Monitoring.

(a) A program of initial monitoring and measurement shall be undertaken in each establishment to determine if there is any employee exposed, without regard to the use of respirators, in excess of the action level.

(b) Where a determination conducted under subdivision (a) of this subsection shows any employee exposures without regard to the use of respirators, in excess of the action level, a program for determining exposures for each such employee shall be established. Such a program:

(i) Shall be repeated at least monthly where any employee is exposed, without regard to the use of respirators, in excess of the permissible exposure limit.

(ii) Shall be repeated not less than quarterly where any employee is exposed, without regard to the use of respirators, in excess of the action level.

(iii) May be discontinued for any employee only when at least two consecutive monitoring determinations, made not less than five working days apart, show exposures for that employee at or below the action level.

(c) Whenever there has been a production, process or control change which may result in an increase in the release

of vinyl chloride, or the employer has any other reason to suspect that any employee may be exposed in excess of the action level, a determination of employee exposure under subdivision (a) of this subsection shall be performed.

(d) The method of monitoring and measurement shall have an accuracy (with a confidence level of 95 percent) of not less than plus or minus fifty percent from 0.25 through 0.5 ppm, plus or minus thirty-five percent from over 0.5 ppm through 1.0 ppm, plus or minus twenty-five percent over 1.0 ppm, (methods meeting these accuracy requirements are available from the director).

(e) Employees or their designated representatives shall be afforded reasonable opportunity to observe the monitoring and measuring required by this subsection.

(5) Regulated area.

(a) A regulated area shall be established where:

(i) Vinyl chloride or polyvinyl chloride is manufactured, reacted, repackaged, stored, handled or used; and

(ii) Vinyl chloride concentrations are in excess of the permissible exposure limit.

(b) Access to regulated areas shall be limited to authorized persons.

(6) Methods of compliance. Employee exposures to vinyl chloride shall be controlled to at or below the permissible exposure limit provided in subsection (3) of this section by engineering, work practice, and personal protective controls as follows:

(a) Feasible engineering and work practice controls shall immediately be used to reduce exposures to at or below the permissible exposure limit.

(b) Wherever feasible engineering and work practice controls which can be instituted immediately are not sufficient to reduce exposures to at or below the permissible exposure limit, they shall nonetheless be used to reduce exposures to the lowest practicable level, and shall be supplemented by respiratory protection in accordance with subsection (7) of this section. A program shall be established and implemented to reduce exposures to at or below the permissible exposure limit, or to the greatest extent feasible, solely by means of engineering and work practice controls, as soon as feasible.

(c) Written plans for such a program shall be developed and furnished upon request for examination and copying to the director. Such plans shall be updated at least every six months.

(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 section.

(b) Respirator program. The employer must develop, implement, and maintain a respiratory protection program as required in chapter 296-842 WAC, Respirators, except for the requirements in WAC 296-842-13005 that address change out of vapor or gas respirator cartridges or canisters.

(c) Respirator selection. The employer must:

(i) Select and provide to employees appropriate respirators as specified in this section and WAC 296-842-13005 in the respirator rule.

(ii) Provide organic vapor cartridges that have a service life of at least one hour when employees use air-purifying respirators in vinyl chloride concentrations up to 10 parts per million (ppm).

(ii) Make sure the following respirators, when selected, are equipped with a canister with a service life of at least four hours when used in vinyl chloride concentrations up to 25 ppm:

(A) Helmet, hood, or full-facepiece PAPRs

OR

(B) Gas masks with a front- or back-mounted canister.

(d) Where air-purifying respirators are used:

(i) Air-purifying canisters or cartridges must be replaced prior to the expiration of their service life or the end of the shift in which they are first used, whichever occurs first, and

(ii) A continuous monitoring and alarm system must be provided when concentrations of vinyl chloride could reasonably exceed the allowable concentrations for the devices in use. Such system shall be used to alert employees when vinyl chloride concentrations exceed the allowable concentrations for the devices in use, and

(iii) Respirators specified for higher concentrations may be used for lower concentration.

(8) Hazardous operations.

(a) Employees engaged in hazardous operations, including entry of vessels to clean polyvinyl chloride residue from vessel walls, shall be provided and required to wear and use:

(i) Respiratory protection in accordance with subsections (3) and (7) of this section; and

(ii) Protective garments to prevent skin contact with liquid vinyl chloride or with polyvinyl chloride residue from vessel walls. The protective garments shall be selected for the operation and its possible exposure conditions.

(b) Protective garments shall be provided clean and dry for each use.

(c) Emergency situations. A written operational plan for emergency situations shall be developed for each facility storing, handling, or otherwise using vinyl chloride as a liquid or compressed gas. Appropriate portions of the plan shall be implemented in the event of an emergency. The plan shall specifically provide that:

(i) Employees engaged in hazardous operations or correcting situations of existing hazardous releases shall be equipped as required in subdivisions (a) and (b) of this subsection;

(ii) Other employees not so equipped shall evacuate the area and not return until conditions are controlled by the methods required in subsection (6) of this section and the emergency is abated.

(9) Training. Each employee engaged in vinyl chloride or polyvinyl chloride operations shall be provided training in a program relating to the hazards of vinyl chloride and precautions for its safe use.

(a) The program shall include:

(i) The nature of the health hazard from chronic exposure to vinyl chloride including specifically the carcinogenic hazard;

(ii) The specific nature of operations which could result in exposure to vinyl chloride in excess of the permissible limit and necessary protective steps;

(iii) The purpose for, proper use, and limitations of respiratory protective devices;

(iv) The fire hazard and acute toxicity of vinyl chloride, and the necessary protective steps;

(v) The purpose for and a description of the monitoring program;

(vi) The purpose for and a description of, the medical surveillance program;

(vii) Emergency procedures:

(A) Specific information to aid the employee in recognition of conditions which may result in the release of vinyl chloride; and

(B) A review of this standard at the employee's first training and indoctrination program, and annually thereafter.

(b) All materials relating to the program shall be provided upon request to the director.

(10) Medical surveillance. A program of medical surveillance shall be instituted for each employee exposed, without regard to the use of respirators, to vinyl chloride in excess of the action level. The program shall provide each such employee with an opportunity for 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.

(a) At the time of initial assignment, or upon institution of medical surveillance;

(i) A general physical examination shall be performed with specific attention to detecting enlargement of liver, spleen or kidneys, or dysfunction in these organs, and for abnormalities in skin, connective tissues and the pulmonary system (see Appendix A).

(ii) A medical history shall be taken, including the following topics:

(A) Alcohol intake,

(B) Past history of hepatitis,

(C) Work history and past exposure to potential hepatotoxic agents, including drugs and chemicals,

(D) Past history of blood transfusions, and

(E) Past history of hospitalizations.

(iii) A serum specimen shall be obtained and determinations made of:

(A) Total bilirubin,

(B) Alkaline phosphatase,

(C) Serum glutamic oxalacetic transaminase (SGOT),

(D) Serum glutamic pyruvic transaminase (SGPT), and

(E) Gamma glutamyl transpeptidase.

(b) Examinations provided in accordance with this subdivision shall be performed at least:

(i) Every six months for each employee who has been employed in vinyl chloride or polyvinyl chloride manufacturing for ten years or longer; and

(ii) Annually for all other employees.

(c) Each employee exposed to an emergency shall be afforded appropriate medical surveillance.

(d) A statement of each employee's suitability for continued exposure to vinyl chloride including use of protective equipment and respirators, shall be obtained from the examining physician promptly after any examination. A copy of the physician's statement shall be provided each employee.

(e) If any employee's health would be materially impaired by continued exposure, such employee shall be withdrawn from possible contact with vinyl chloride.

(f) Laboratory analyses for all biological specimens included in medical examinations shall be performed in laboratories licensed under 42 CFR Part 74.

(g) If the examining physician determines that alternative medical examinations to those required by subdivision (a) of this subsection will provide at least equal assurance of detecting medical conditions pertinent to the exposure to vinyl chloride, the employer may accept such alternative examinations as meeting the requirements of subdivision (a) of this subsection, if the employer obtains a statement from the examining physician setting forth the alternative examinations and the rationale for substitution. This statement shall be available upon request for examination and copying to authorized representatives of the director.

(11) Signs and labels.

(a) Entrances to regulated areas shall be posted with legible signs bearing the legend:

CANCER-SUSPECT AGENT AREA
AUTHORIZED PERSONNEL ONLY

(b) Areas containing hazardous operations or where an emergency currently exists shall be posted with legible signs bearing the legend:

CANCER-SUSPECT AGENT IN THIS AREA PROTECTIVE
EQUIPMENT REQUIRED AUTHORIZED PERSONNEL ONLY

(c) Containers of polyvinyl chloride resin waste from reactors or other waste contaminated with vinyl chloride shall be legibly labeled:

CONTAMINATED WITH VINYL CHLORIDE
CANCER-SUSPECT AGENT

(d) Containers of polyvinyl chloride shall be legibly labeled:

POLYVINYL CHLORIDE (OR TRADE NAME)
CONTAINS VINYL CHLORIDE VINYL CHLORIDE
IS A CANCER-SUSPECT AGENT

(e) Containers of vinyl chloride shall be legibly labeled either:

VINYL CHLORIDE EXTREMELY FLAMMABLE GAS
UNDER PRESSURE CANCER-SUSPECT AGENT

(or)

(f) In accordance with 49 CFR Part 173, Subpart H, with the additional legends:

CANCER-SUSPECT AGENT

Applied near the label or placard.

(g) No statement shall appear on or near any required sign, label or instruction which contradicts or detracts from the effect of any required warning, information or instruction.

(12) Records.

(a) All records maintained in accordance with this section shall include the name and Social Security number of each employee where relevant.

(b) Records of required monitoring and measuring and medical records shall be provided upon request to employees, designated representatives, and the director in accordance with chapter 296-802 WAC. These records shall be provided upon request to the director. Authorized personnel rosters shall also be provided upon request to the director.

(i) Monitoring and measuring records shall:

(A) State the date of such monitoring and measuring and the concentrations determined and identify the instruments and methods used;

(B) Include any additional information necessary to determine individual employee exposures where such exposures are determined by means other than individual monitoring of employees; and

(C) Be maintained for not less than 30 years.

(ii) Medical records shall be maintained for the duration of the employment of each employee plus 20 years, or 30 years, whichever is longer.

(c) In the event that the employer ceases to do business and there is no successor to receive and retain his/her records for the prescribed period, these records shall be transmitted by registered mail to the director, and each employee individually notified in writing of this transfer. The employer shall also comply with any additional requirements set forth in chapter 296-802 WAC.

(d) Employees or their designated representatives shall be provided access to examine and copy records of required monitoring and measuring.

(e) Former employees shall be provided access to examine and copy required monitoring and measuring records reflecting their own exposures.

(f) Upon written request of any employee, a copy of the medical record of that employee shall be furnished to any physician designated by the employee.

(13) Reports.

(a) Not later than 1 month after the establishment of a regulated area, the following information shall be reported to the director. Any changes to such information shall be reported within fifteen days.

(i) The address and location of each establishment which has one or more regulated areas; and

(ii) The number of employees in each regulated area during normal operations, including maintenance.

(b) Emergencies and the facts obtainable at that time, shall be reported within twenty-four hours 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 similar nature.

(c) Within ten working days following any monitoring and measuring which discloses that any employee has been exposed, without regard to the use of respirators, in excess of the permissible exposure limit, each such employee shall be notified in writing of the results of the exposure measurement and the steps being taken to reduce the exposure to within the permissible exposure limit.

(14) Appendix A supplementary medical information.

When required tests under subsection (10)(a) of this section show abnormalities, the tests should be repeated as soon as practicable, preferably within three to four weeks. If tests remain abnormal, consideration should be given to with-

drawal of the employee from contact with vinyl chloride, while a more comprehensive examination is made.

Additional tests which may be useful:

(A) For kidney dysfunction: Urine examination for albumin, red blood cells, and exfoliative abnormal cells.

(B) Pulmonary system: Forced vital capacity, forced expiratory volume at one second, and chest roentgenogram (posterior-anterior, 14 x 17 inches).

(C) Additional serum tests: Lactic acid dehydrogenase, lactic acid dehydrogenase isoenzyme, protein determination, and protein electrophoresis.

(D) For a more comprehensive examination on repeated abnormal serum tests: Hepatitis B antigen, and liver scanning.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 05-05-072, § 296-62-07329, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-62-07329, filed 1/18/05, effective 3/1/05; 04-10-026, § 296-62-07329, filed 4/27/04, effective 8/1/04. Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050, 99-10-071, § 296-62-07329, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-62-07329, filed 7/20/94, effective 9/20/94; 91-03-044 (Order 90-18), § 296-62-07329, filed 1/10/91, effective 2/12/91. Statutory Authority: RCW 49.17.040 and 49.17.050, 86-16-009 (Order 86-28), § 296-62-07329, filed 7/25/86; 82-13-045 (Order 82-22), § 296-62-07329, filed 6/11/82. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240, 81-18-029 (Order 81-21), § 296-62-07329, filed 8/27/81; 81-16-015 (Order 81-20), § 296-62-07329, filed 7/27/81; Order 75-41, § 296-62-07329, filed 12/19/75.]

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 CH₂=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 twenty-four 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 ninety-five percent, to within plus or minus twenty-five percent for concentrations of AN at or above the permissible exposure limits, and plus or minus thirty-five

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.

(ii) 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.

Employers must develop, implement and maintain a respiratory protection program in accordance with chapter 296-842 WAC, Respirators.

(c) Respirator selection. The employer must:

(i) Select and provide to employees appropriate respirators by following the requirements in this section and WAC 296-842-13005 in the respirator rule.

(ii) Provide to employees, for escape, any organic vapor, air-purifying respirator or any self-contained breathing apparatus (SCBA) that meets the selection requirements of WAC 296-842-13005 in the respirator rule.

(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 accor-

dance 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 effi-

ciency 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.

(ii) 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 296-800-230 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 296-800-230.

(b) Showers.

(i) The employer shall provide shower facilities in accordance with WAC 296-800-230.

(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 forty 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.

(ii) 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 chapter 296-802 WAC. 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 chapter 296-802 WAC.

(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, 49.17.050, 49.17.060, 07-05-072, § 296-62-07336, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-62-07336, filed 1/18/05, effective 3/1/05; 04-10-026, § 296-62-07336, filed 4/27/04, effective 8/1/04; 03-18-090, § 296-62-07336, filed 9/2/03, effective 11/1/03. 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 296-62-07342 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 one 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 five parts DBCP per billion parts of air (ppb) as averaged over any fifteen 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 ninety-five percent, to within plus or minus twenty-five percent for con-

centrations 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 296-842 WAC, Respirators.

(c) Respirator selection. The employer must:

(i) Select and provide to employees appropriate respirators according to this chapter and WAC 296-842-13005 in the respirator rule.

(ii) Provide employees with one of the following respirator options to use for entry into, or escape from, unknown DBCP concentrations:

(A) A combination respirator that includes a full-facepiece air-line respirator operated in a pressure-demand or other positive-pressure mode or continuous-flow mode and an auxiliary self-contained breathing apparatus (SCBA) operated in a pressure-demand or positive-pressure mode;

OR

(B) A full-facepiece SCBA operated in a pressure-demand or other positive-pressure 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 296-800-230.

(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.

(ii) 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 chapter 296-802 WAC.

(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 chapter 296-802 WAC.

(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, 49.17.050, 49.17.060, 07-05-072, § 296-62-07342, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-62-07342, filed 1/18/05, effective 3/1/05; 04-10-026, § 296-62-07342, filed 4/27/04, effective 8/1/04; 03-18-090, § 296-62-07342, filed 9/2/03, effective 11/1/03. 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 296-62-07373 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 chapter 296-839 WAC, Content and distribution of material safety data sheets (MSDSs) and label information, and WAC 296-800-170 of the safety and health core rules. Labels 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, 49.17.050, 49.17.060, 07-03-163, § 296-62-07373, filed 1/24/07, effective 4/1/07. 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 296-62-07413 Respirator protection. (1) 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:

(a) Periods necessary to install or implement feasible engineering and work-practice controls when employee exposure levels exceed the PEL;

(b) Maintenance and repair activities, and brief or intermittent operations, where employee exposures exceed the PEL and engineering and work-practice controls are not feasible or are not required;

(c) Activities in regulated areas as specified in WAC 296-62-07409;

(d) Work operations for which the employer has implemented all feasible engineering and work-practice controls and such controls are not sufficient to reduce employee exposures to or below the PEL;

(e) Work operations for which an employee who is exposed to cadmium at or above the action level, and the employee requests a respirator;

(f) Work operations for which an employee is exposed above the PEL and engineering controls are not required by WAC 296-62-07411 (1)(b); and

(g) Emergencies.

(2) Respirator program.

(a) The employer must develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators.

(b) No employees must use a respirator if, based on their recent medical examination, the examining physician determines that they will be unable to continue to function normally while using a respirator. If the physician determines that the employee must be limited in, or removed from, their current job because of their inability to use a respirator, the limitation or removal must be in accordance with WAC 296-62-07423 (11) and (12).

(c) 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 WAC 296-62-07423 (6)(b) to determine if the employee can use a respirator while performing the required duties.

(3) Respirator selection. The employer must:

(a) Select and provide the appropriate respirator as specified in this section and WAC 296-842-13005, found in the respirator rule.

(i) Provide employees with full-facepiece respirators when they experience eye irritation.

(ii) Make sure high-efficiency particulate air (HEPA) filters or N-, R-, or P-100 series filters are provided for powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators.

(b) Provide an employee with a powered, air-purifying respirator (PAPR) instead of a negative-pressure respirator when an employee who is entitled to a respirator chooses to use this type of respirator and such a respirator provides adequate protection to the employee.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-62-07413, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-62-07413, filed 1/18/05, effective 3/1/05. Statutory Authority: RCW 49.17-010, [49.17].040 and [49.17].050, 99-10-071, § 296-62-07413, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW, 93-21-075 (Order 93-06), § 296-62-07413, filed 10/20/93, effective 12/1/93; 93-07-044 (Order 93-01), § 296-62-07413, 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 296-800-170 and chapter 296-802 WAC; 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, 49.17.050, 49.17.060, 07-03-163, § 296-62-07425, filed 1/24/07, effective 4/1/07. 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 following: 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-hour 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-hour 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 different 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. The initial monitoring required under this subitem shall be completed within sixty days of the introduction of BD into the workplace.

(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-hour 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 wherever occupational exposures to airborne concentrations of BD exceed or can reasonably be expected to exceed the per-

missible exposure limits, either the 8-hour 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 296-842 WAC, except WAC 296-842-13005 and 296-842-14005.

(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.

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 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.
Greater than 1,000 ppm	(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. (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.
Escape from IDLH Conditions	(a) Any positive pressure self-contained breathing apparatus with an appropriate service life. (b) Any air-purifying full facepiece respirator equipped with a front or back mounted BD or organic vapor canister.

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, hazard-

ous 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 employees 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 chapter 296-842 WAC.

(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 chapter 296-802 WAC.

(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 chapter 296-802 WAC.

(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 chapter 296-802 WAC.

(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 chapter 296-802 WAC.

(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 (Non-Mandatory)

(1) Substance Identification.

(a) Substance: 1,3-Butadiene (CH₂=CH-CH=CH₂).

(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 reentering 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 regulations (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 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; bdivinyl; 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-hour TWA or STEL monitoring required.
+*	—	—	No STEL monitoring required. Monitor 8-hr TWA annually.
+	—	—	No STEL monitoring required. Periodic monitoring 8-hour TWA, in accordance with (4)(c)(iii).**
+	+	+	Periodic monitoring 8-hour 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-hour 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-hour 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 min-

imum), 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 296-800-220 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 phlebotomy 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; vinylethylene.

(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 determined 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 +/- 12.7%. This value includes an additional +/- 5% for sampling error. The overall

procedure must provide results at the target concentrations that are +/- 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 +/- 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 ug 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

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-M1 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 Rienhold 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 _____
- 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.

6. 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: _____

7. Have any of your co-workers had similar symptoms or problems? yes no don't know

If yes, please describe: _____

8. Do you notice any irritation of your eyes, nose, throat, lungs, or skin when working with BD? yes no

9. Do you notice any blurred vision, coughing, drowsiness, nausea, or headache when working with BD? yes no

10. Do you take any medications (including birth control or over-the-counter)? yes no

If yes, please list: _____

11. Are you allergic to any medication, food, or chemicals? yes no

If yes, please list: _____

12. 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: _____

13. Did you understand all the questions? yes no

Signature _____

1,3-Butadiene (BD) Health Update 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.: () _____ - _____

1. Please describe any NEW duties that you have at your job. _____

2. Please describe any additional job duties you have:

_____	_____
_____	_____
_____	_____

Please circle your answer.

3. Are you exposed to any other chemicals in your work since the last time you were evaluated for exposure to BD? yes no

If yes, please list what they are: _____

4. Does your personal protective equipment and clothing fit you properly? yes no

5. Have you made changes in this equipment or clothing to make it fit better? yes no

6. Have you been exposed to BD when you were not wearing protective clothing or equipment? yes no

7. Are you exposed to any NEW chemicals at home or while working on hobbies? yes no

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?
yes no

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: _____

If yes, please list:

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

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, 49.17.050, 49.17.060, 07-03-163, § 296-62-07460, filed 1/24/07, effective 4/1/07; 05-03-093, § 296-62-07460, filed 1/18/05, effective 3/1/05; 04-10-026, § 296-62-07460, filed 4/27/04, effective 8/1/04; 03-18-090, § 296-62-07460, filed 9/2/03, effective 11/1/03. 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 subsection (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-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, CH₂Cl₂. 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 eight-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 eight-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) Eight-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 fifteen-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 ninety-five percent, and are:

(A) Within plus or minus twenty-five percent for airborne concentrations of MC above the eight-hour TWA PEL or the STEL; or

(B) Within plus or minus thirty-five percent for airborne concentrations of MC at or above the action level but at or below the eight-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 thirty 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

<u>Exposure scenario</u>	<u>Required monitoring activity</u>
Below the action level and at or below the STEL.	No eight-hour TWA or STEL monitoring required.
Below the action level and above the STEL.	No eight-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 eight-hour TWA exposures every six months.
At or above the action level, at or below the TWA, and above the STEL.	Monitor eight-hour TWA exposures every six months and monitor STEL exposures every three months.
Above the TWA and at or below the STEL.	Monitor eight-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 eight-hour TWAs PEL under subsection (3) of this section or the date by which they in fact achieve the eight-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.
Above the TWA and above the STEL.	Monitor both eight-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 two consecutive measurements taken at least seven days apart show exposures to be at or below the eight-hour TWA PEL. The employer may discontinue the periodic eight-hour TWA monitoring for employees where at least two consecutive measurements taken at least

seven 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 seven 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 fifteen 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 eight-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 eight-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 wherever an employee's exposure to airborne concentrations of MC exceeds or can reasonably be expected to exceed either the eight-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 person who enters a regulated area and shall require each affected employee to use that respirator whenever MC exposures are likely to exceed the eight-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 eight-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 multiemployer 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 eight-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 dem-

onstrates 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 develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators, except for the requirements in Table 5 of WAC 296-842-13005 that address gas or vapor cartridge change schedules and end-of-service-life indicators (ESLIs).

(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:

(i) Select and provide to employees appropriate respirators according to this section and WAC 296-842-13005, found in the respirator rule.

(ii) Make sure half-facepiece respirators are not selected or used for protection against MC. This is necessary to prevent eye irritation or damage from MC exposure.

(iii) Provide to employees, for emergency escape, one of the following respirator options:

(A) A self-contained breathing apparatus operated in the continuous-flow or pressure demand mode

OR

(B) A gas mask equipped with an organic vapor canister.

(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 prac-

tices), 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 thirty or more days per year, or above the eight-hour TWA PEL or the STEL on ten 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 twelve 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 forty-five years of age or older, within twelve months of the initial surveillance or any subsequent medical surveillance; and

(B) For employees younger than forty-five years of age, within thirty-six 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 thirty-six months for employees younger than forty-five 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 fifteen days of completion of the evaluation of medical and laboratory findings, but not more than thirty 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 eight-hour TWA PEL. If the physician or other licensed health care professional recommends removal for an employee exposed below the eight-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 eight-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 sixty 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 six-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 fifteen 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 fifteen 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 eight-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 retrain 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 multiemployer 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 twenty 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.

(ii) Where the employer has fewer than twenty 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 chapter 296-802 WAC.

(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 years, in accordance with chapter 296-802 WAC.

(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 chapter 296-802 WAC.

(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 chapter 296-802 WAC.

(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 chapter 296-802 WAC.

(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 twenty employees, no later than April 10, 2000.

(ii) For employers with fewer than one hundred fifty employees engaged in foam fabrication; for employers with fewer than fifty employees engaged in furniture refinishing, general aviation aircraft stripping, and product formulation; for employers with fewer than fifty employees using MC-based adhesives for boat building and repair, recreational

vehicle manufacture, van conversion, and upholstery; for employers with fewer than fifty 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 twenty 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 eight-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 one hundred fifty employees engaged in foam fabrication; for employers with fewer than fifty employees engaged in furniture refinishing, general aviation aircraft stripping, and product formulation; for employers with fewer than fifty employees using MC-based adhesives for boat building and repair, recreational vehicle manufacture, van conversion, and upholstery; for employers with fewer than fifty 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 twenty 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 ninety 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, 49.17.050, 49.17.060, 07-05-072, § 296-62-07470, filed 2/20/07, effective 4/1/07; 04-10-026, § 296-62-07470, filed 4/27/04, effective 8/1/04. 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 296-62-07521 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 296-307 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 µg/m³) 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:

$$\text{Maximum permissible limit (in } \mu\text{g/m}^3\text{)} = 400 \div \text{hours worked in the day.}$$

(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 1

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 develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators.

(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. The employer must:

(i) Select and provide to employees appropriate respirators according to this section and WAC 296-842-13005, found in the respirator rule.

(ii) Provide employees with a powered air-purifying respirator (PAPR) instead of a negative-pressure respirator selected when an employee chooses to use a PAPR and it provides adequate protection to the employee.

(iii) Provide employees with full-facepiece respirators instead of half-facepiece respirators for protection against lead aerosols that cause eye or skin irritation at the use concentration.

(iv) Provide HEPA filters or N-, R-, or P-100 filters for powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators.

(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 $\mu\text{g}/\text{m}^3$ 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 296-800-230.

(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 represen-

tative 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 µg/100g 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 µg/100g 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 µg/100g 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 µg/100g, or due to an average blood lead level at or above 50 µg/100g, when two consecutive blood sampling

tests indicate that the employee's blood lead level is at or below 40 µg/100 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 chapter 296-802 WAC. 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 chapter 296-802 WAC.

(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 one hundred twenty 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 µg/100g). The blood lead levels of workers (both male and female workers) who intend to have children should be maintained below 30 µg/100g 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 µg%. 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 296-842 WAC.

(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 pro-

viding 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 several 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 absorp-

tion 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 thirty 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 one hundred eighty 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 protection 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 examination 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, (Ca Na₂EDTA), 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 of 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 µg/100g or above you must be removed from any exposure where your air lead level without a respirator would be 100 µg/m³ 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 µg/100g. These criteria for removal and return will change according to the following schedule:

TABLE 1

Effective Date	Removal Blood Level (µg/100g)	Air Lead (µg/m ³)	Return Blood Lead (µg/100g)
9/6/81	At or above 70	50 or above	At or below 50
	above 60		At or below 40
9/6/82	At or above 50	30 or above	At or below 40
	above 50		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 forty years, or for at least twenty 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 enti-

tled 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., Nonferrous 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 40 µg/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 con-

ducted at any time during the preceding twelve months indicated a blood lead level at or above 40 µg/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 impair-

ment 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.				
2. Last blood lead level between 40 µg/100g and level requiring medical removal (see A above)	Every 2 months.				
3. Employees removed from exposure to lead because of an elevated blood lead level	Every 1 month.				

TABLE 10

	EFFECTIVE DATE				
	Sept. 6, 1980	Sept. 6, 1981	Sept. 6, 1982	Sept. 6, 1983	Sept. 6, 1984
C. Permissible airborne exposure limit for workers removed from work due to an elevated blood lead level (without regard to respirator protection).	100 $\mu\text{g}/\text{m}^3$ 8 hr TWA	50 $\mu\text{g}/\text{m}^3$ 8 hr TWA	30 $\mu\text{g}/\text{m}^3$ 8 hr TWA	30 $\mu\text{g}/\text{m}^3$ 8 hr TWA	30 $\mu\text{g}/\text{m}^3$ 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 $\mu\text{g}/100\text{g}$	50 $\mu\text{g}/100\text{g}$	40 $\mu\text{g}/100\text{g}$	40 $\mu\text{g}/100\text{g}$	40 $\mu\text{g}/100\text{g}$

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 $\mu\text{g}/\text{m}^3$ or more whenever either of the following circumstances apply. (I) a blood lead level of 60 $\mu\text{g}/100\text{g}$ 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 $\mu\text{g}/100\text{g}$, unless the last blood sample indicates a blood lead level at or below 40 $\mu\text{g}/100\text{g}$, in which case the employee need not be removed. Medical removal is to continue until two consecutive blood lead levels are 40 $\mu\text{g}/100\text{g}$ 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 $\mu\text{g}/100\text{g}$. 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 $\mu\text{g}/\text{m}^3$. Workers so removed are to be returned to work when their blood lead levels are at or below 60 $\mu\text{g}/100\text{g}$ of whole blood. From March 1, 1980, to March 1, 1981, the blood lead level requiring medical removal is 70 $\mu\text{g}/100\text{g}$. During this period workers need only be removed from jobs having a daily eight hour TWA exposure to lead at or above 50 $\mu\text{g}/\text{m}^3$ and are to be returned to work when a level of 50 $\mu\text{g}/100\text{g}$ is achieved. Beginning March 1, 1981, return depends on the worker's blood lead level declining to 40 $\mu\text{g}/100\text{g}$ 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 $\mu\text{g}/100\text{g}$. 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 second 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 pro-

visions 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 one hundred 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 µg/100g 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 µg/100g.

(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 µg/100g and hypospermia and asthenospermia at 41 µg/100g. 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 twelve-fourteen 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 µg/100g in children can cause significant neurobehavioral impairments, and there is evidence of hyperactivity at blood levels as low as 25 µg/100g. 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 µg/100g with a population mean of 15 µg/100g. Blood lead levels in the fetus and newborn likewise should not exceed 30 µg/100g.

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 µg/100g maximum permissible blood lead level in both males and females who wish to bear children.

(VI) 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 one twenty 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 particularly 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 twenty-four-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 ninety 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 twenty-four 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 reach 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 one hundred twenty 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 twenty-four 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 µg/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 µg/m³ 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, 49.17.050, 49.17.060, 07-05-072, § 296-62-07521, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-62-07521, filed 1/18/05, effective 3/1/05; 04-10-026, § 296-62-07521, filed 4/27/04, effective 8/1/04; 03-18-090, § 296-62-07521, filed 9/2/03, effective 11/1/03. 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 296-62-07615 Respiratory protection. (1) 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:

(a) Periods necessary to install or implement feasible engineering and work-practice controls;

(b) Work operations for which the employer establishes that 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 exposure to or below the PEL;

(d) Emergencies.

(2) Respirator program. The employer must develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators.

(3) Respirator selection.

(a) The employer must select and provide to employees appropriate respirators as specified in this section and WAC 296-842-13005 in the respirator rule.

(b) Any employee who cannot use a negative-pressure respirator must be given the option of using a positive-pressure respirator, or a supplied-air respirator operated in the continuous-flow or pressure-demand mode.

(c) Provide HEPA filters or N-, R-, or P-100 filters for powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators.

(d) Provide to employees, for escape, one of the following respirator options:

(i) Any self-contained breathing apparatus with a full-facepiece or hood, operated in the positive-pressure or continuous-flow mode

OR

(ii) A full-facepiece air-purifying respirator.

(e) Provide a combination HEPA filter (or N-, R-, or P-100 filter) and organic vapor canister or cartridge with air-purifying respirators when MDA is in liquid form or used as part of a process requiring heat.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-072, § 296-62-07615, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-62-07615, filed 1/18/05, effective 3/1/05. Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050. 99-10-071, § 296-62-07615, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 93-04-111 (Order 92-15), § 296-62-07615, 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 chapter 296-839 WAC, Content and distribution of material safety data sheets (MSDSs) and label information, and WAC 296-800-170 of the safety and health core rules, and the labels 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, 49.17.050, 49.17.060. 07-03-163, § 296-62-07621, filed 1/24/07, effective 4/1/07. 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 296-62-07715 Respiratory protection. (1) General. For employees who use respirators required by WAC 296-62-077 through 296-62-07747, the employer must provide respirators that comply with the requirements of this section. 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, 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 permissible exposure limits;

(d) Emergencies;

(e) Work operations in all regulated areas, except for construction activities which follow requirements set forth in WAC 296-62-07715 (1)(g);

(f) Work operations whenever employee exposure exceeds the permissible exposure limits;

(g) The following construction activities:

(i) Class I asbestos work;

(ii) Class II work where the ACM is not removed in a substantially intact state;

(iii) Class II and Class III work which is not performed using wet methods, except for removal of ACM from sloped roofs when a negative-exposure assessment has been made and the ACM is removed in an intact state;

(iv) Class II and Class III asbestos work for which a negative-exposure assessment has not been conducted;

(v) Class III work when TSI or surfacing ACM or PACM is being disturbed;

(vi) Class IV work performed within regulated areas where employees who are performing other work are required to wear respirators.

(2) Respirator program.

(a) The employer must develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators.

(b) Employers must provide an employee with a tight-fitting, powered, air-purifying respirator (PAPR) instead of a negative-pressure respirator selected when an employee chooses to use a PAPR and the respirator provides the required protection to the employee.

(c) The employer must inform any employee required to wear a respirator under this section that the employee may require the employer to provide a tight-fitting, powered, air-purifying respirator (PAPR) instead of a negative-pressure respirator.

(d) No employee must be assigned to tasks requiring the use of respirators if, based on their most recent medical examination, the examining physician determines that the employee will be unable to function normally using a respirator, or that the safety or health of the employee or other employees will be impaired by the use of a respirator. Such employees must be assigned to another job or given the opportunity to transfer to a different position, the duties of which they can perform. If such a transfer position is available, the position must be with the same employer, in the same geographical area, and with the same seniority, status, and rate of pay the employee had just prior to such transfer.

(3) Respirator selection. The employer must:

(a) Select and provide to employees appropriate respirators as specified in this section, and in WAC 296-842-13005, in the respirator rule.

Make sure filtering facepiece respirators are not selected or used for protection against asbestos fibers.

(b) Provide employees with an air-purifying, half-facepiece respirator, other than a filtering-facepiece respirator, that is equipped with a HEPA filter or an N-, R-, or P-100 series filter whenever the employee performs:

(i) Class II and III asbestos work for which no negative-exposure assessment is available;

(ii) Class III asbestos work involving disturbances of TSI or surfacing ACM or PACM.

(c) Equip any powered air-purifying respirator (PAPR) or negative pressure air-purifying respirator with HEPA filters or N-, R-, or P-100 series filters.

(4) Special respiratory protection requirements.

(a) Unless specifically identified in this subsection, respirator selection for asbestos removal, demolition, and renovation operations shall be in accordance with the selection specifications of this section and the general selection requirements in WAC 296-842-13005, found in the respirator rule. The employer must provide and require to be worn, at no cost to the employee, a full facepiece supplied-air respirator operated in the pressure demand mode equipped with either an auxiliary positive pressure self-contained breathing apparatus or a HEPA filter egress cartridge, to employees engaged in the following asbestos operations:

(i) Inside negative pressure enclosures used for removal, demolition, and renovation of friable asbestos from walls, ceilings, vessels, ventilation ducts, elevator shafts, and other structural members, but does not include pipes or piping systems; or

(ii) Any dry removal of asbestos.

(b) For all Class I work excluded or not specified in (a)(i) and (ii) of this subsection, when a negative-exposure assessment is not available, and the exposure assessment indicates the exposure level will be at or below 1 f/cc as an 8-hour time weighted average, employers must provide employees with one of the following respirators:

(i) A tight-fitting, powered, air-purifying respirator equipped with high-efficiency filters;

(ii) A full-facepiece supplied-air respirator operated in the pressure-demand mode equipped with either HEPA egress cartridges; or

(iii) An auxiliary positive-pressure, self-contained breathing apparatus.

(c) Whenever the employees are in a regulated area performing Class I asbestos work for which a negative exposure assessment is not available, and an exposure assessment indicates that the exposure level will be above 1 f/cc as an 8-hour TWA, employers must provide a full facepiece supplied-air respirator operated in the pressure-demand mode equipped with an auxiliary positive-pressure self-contained breathing apparatus.

EXCEPTION: In lieu of the supplied-air respirator required by subsection (4) of this section, an employer may provide and require to be worn, at no cost to the employee, a full facepiece supplied-air respirator operated in the continuous flow mode equipped with either an auxil-

inary positive pressure self-contained breathing apparatus or a back-up HEPA filter egress cartridge where daily and historical monitoring data indicates the concentration of asbestos fibers is not reasonably expected to exceed 10 f/cc. The continuous flow respirator shall be operated at a minimum air flow rate of six cubic feet per minute at the facepiece using respirable air supplied as required by chapter 296-842 WAC, Respirators.

(5) **Respirator fit testing.**

(a) For each employee wearing negative pressure respirators, employers shall perform either quantitative or qualitative face fit tests at the time of initial fitting and at least annually thereafter. The qualitative fit tests may be used only for testing the fit of half-mask respirators where they are permitted to be worn.

(b) Any supplied-air respirator facepiece equipped with a back-up HEPA filter egress cartridge shall be quantitatively fit tested (see WAC 296-62-07160 through 296-62-07162 and 296-62-07201 through 296-62-07248).

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-072, § 296-62-07715, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050. 99-10-071, § 296-62-07715, filed 5/4/99, effective 9/1/99. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 97-19-014, § 296-62-07715, filed 9/5/97, effective 11/5/97; 97-01-079, § 296-62-07715, filed 12/17/96, effective 3/1/97. Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-62-07715, filed 1/10/91, effective 2/12/91; 89-11-035 (Order 89-03), § 296-62-07715, filed 5/15/89, effective 6/30/89; 87-24-051 (Order 87-24), § 296-62-07715, filed 11/30/87. Statutory Authority: RCW 49.17.050(2) and 49.17.040. 87-10-008 (Order 87-06), § 296-62-07715, filed 4/27/87.]

WAC 296-62-135 Oxygen deficient atmospheres. (1)

Definition. A lack of sufficient oxygen is deemed to exist if the atmosphere at sea level has less than 19.5% oxygen by volume or has a partial pressure of oxygen of 148 millimeters of mercury (mm Hg) or less. This may deviate when working at higher elevations and should be determined for an individual location. Factors such as acclimatization, physical conditions of the persons involved, etc., must be considered for such circumstances and conditions.

(2) **Entering areas with possible oxygen deficient atmospheres.** Workers entering any area where a lack of sufficient oxygen is probable shall be supplied with and shall use approved equipment (for specific requirements see applicable provisions of chapters 296-62, 296-307 (Part-U3), 296-809 and 296-841 WAC) capable of providing safe respirable air, or prior to entry and at all times when workers are in such areas a sufficient supply of safe, respirable air shall be provided. All workers so exposed shall be under constant observation. If the oxygen content is unknown or may change during occupation, tests shall be required prior to and during occupation of questionable areas.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-23-072, § 296-62-135, filed 11/19/07, effective 1/2/08.]

WAC 296-62-136 Ventilation.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-23-072, § 296-62-136, filed 11/19/07, effective 1/2/08.]

WAC 296-62-13605 Definition. Ventilation shall mean the provision, circulation or exhausting of air into or from an area or space.

(1) **"Local exhaust ventilation"** shall mean the mechanical removal of contaminated air from the point where the contaminant is being generated or liberated.

(2) **"Dilution ventilation"** means inducing and mixing uncontaminated air with contaminated air in such quantities that the resultant mixture in the breathing zone will not exceed the permissible exposure limit (PEL) specified for any contaminant.

(3) **"Exhaust ventilation"** means the general movement of air out of the area or permit-required confined space by mechanical or natural means.

(4) **"Tempered make-up air"** means air which has been conditioned by changing its heat content to obtain a specific desired temperature.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-23-072, § 296-62-13605, filed 11/19/07, effective 1/2/08.]

WAC 296-62-13610 Ventilation guide. In addition to those mandatory controls as set forth in WAC 296-62-11019, chapter 296-818 WAC, Abrasive blasting, chapter 296-835 WAC, Dipping and coating operations (dip tanks), the *Industrial Ventilation Manual of Recommended Practices* as compiled and approved by the American Conference of Governmental Industrial Hygienists, applicable ANSI Standard or other National Consensus Standards recommended by the federal government, should be used as a guide for ventilation requirements.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-23-072, § 296-62-13610, filed 11/19/07, effective 1/2/08.]

WAC 296-62-13615 Adequate system. Adequate ventilation systems shall be installed as needed to control concentrations of airborne contaminants below applicable threshold limit values.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-23-072, § 296-62-13615, filed 11/19/07, effective 1/2/08.]

WAC 296-62-13620 Exhaust. Exhaust from ventilation systems shall discharge in such a manner that the contaminated air being exhausted will not present a health hazard to any workman or reenter buildings in harmful amounts.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-23-072, § 296-62-13620, filed 11/19/07, effective 1/2/08.]

WAC 296-62-13625 Make-up air quantity. Make-up air shall be of ample quantity to replace the exhausted air and shall be tempered when necessary.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-23-072, § 296-62-13625, filed 11/19/07, effective 1/2/08.]

WAC 296-62-13630 Design and operation. Ventilation systems shall be designed and operated in such a manner that employees will not be subjected to excessive air velocities.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-23-072, § 296-62-13630, filed 11/19/07, effective 1/2/08.]

WAC 296-62-13635 Compatibility of systems. Make-up air systems shall be designed and operated in such a man-

ner that they will not interfere with the effectiveness of the exhaust air system.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-23-072, § 296-62-13635, filed 11/19/07, effective 1/2/08.]

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 employees 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 by-products 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 fifteen 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 develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators.

(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. The employer must:

(i) Select and provide to employees the appropriate respirators by following requirements in this section and WAC 296-842-13005, found in the respirator rule.

(ii) Provide employees with a powered air-purifying respirator (PAPR) when the employee chooses to use a PAPR instead of a negative-pressure air-purifying respirator, and the PAPR will provide adequate protection.

(iii) Limit the use of filtering facepiece respirators for protection against cotton dust to concentrations less than or equal to five times (5x) the PEL.

(iv) Provide high-efficiency particulate air (HEPA) filters or N-, R-, or P-100 series filters for powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators when used in cotton dust concentrations greater than ten times (10x) the PEL.

(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 cot-

ton 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 296-842 WAC (see WAC 296-842-11005, 296-842-16005 and 296-842-19005);

(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 chapter 296-802 WAC.

(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 chapter 296-802 WAC.

(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 pretwetted 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, 49.17.050, 49.17.060, 07-05-072, § 296-62-14533, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-62-14533, filed 1/18/05, effective 3/1/05; 04-10-026, § 296-62-14533, filed 4/27/04, effective 8/1/04. 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 296-62-20011 Respiratory protection. (1) General.

For employees who use respirators required by this section, the employer must provide respirators that comply with the requirements of this section. Compliance with the permissible exposure limit may not be achieved by the use of respirators except during:

(a) Periods necessary to install or implement feasible engineering and work-practice controls;

(b) Work operations, such as maintenance and repair activity, for which engineering and work-practice controls are technologically 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 permissible exposure limit;

(d) Emergencies.

(2) Respirator program. The employer must develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators.

(3) Respirator selection. The employer must select and provide to employees appropriate respirators as specified in this section and WAC 296-842-13005, found in the respirator rule.

Although filtering facepiece respirators may be used for protection from coke oven particulate emissions, these respirators are not appropriate for use against gas or vapor contaminants that present an exposure hazard.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-62-20011, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-62-20011, filed 1/18/05, effective 3/1/05. Statutory Authority: RCW 49.17.-010, [49.17].040 and [49.17].050. 99-10-071, § 296-62-20011, filed 5/4/99, effective 9/1/99. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-009 (Order 86-28), § 296-62-20011, filed 7/25/86. Statutory Authority: 49.17.040, 49.17.050, and 49.17.240. 81-16-015 (Order 81-20), § 296-62-20011, filed 7/27/81; Order 77-14, § 296-62-20011, filed 7/25/77.]

Chapter 296-65 WAC

ASBESTOS REMOVAL AND ENCAPSULATION

WAC

296-65-005	Asbestos worker training course content.
296-65-007	Asbestos supervisor training course content.
296-65-010	Asbestos worker certification.
296-65-012	Asbestos supervisor certification.
296-65-017	Contractor certification.

WAC 296-65-005 Asbestos worker training course content. An approved asbestos worker training course shall consist of four days of training with a minimum of thirty-two hours. This initial training course shall provide, at a minimum, information on the following topics:

(1) The physical characteristics of asbestos including types, fiber size, aerodynamic characteristics and physical appearance.

(2) Examples of different types of asbestos and asbestos-containing materials. Real asbestos shall be used only for observation by trainees and shall be enclosed in sealed unbreakable containers.

(3) The health hazards of asbestos including the nature of asbestos related diseases, routes of exposure, dose-response relationships, synergism between cigarette smoking and asbestos exposure, latency period of diseases, hazards to immediate family, and the health basis for asbestos standards.

(4) Employee personal protective equipment including the classes and characteristics of respirator types, limitations of respirators, proper selection, inspection, donning, use, maintenance and storage procedure, methods for field checking of the facepiece-to-face seal (positive and negative-pressure checks), qualitative and quantitative fit testing procedures, variability between field and laboratory protection factors, factors that alter respirator fit (e.g., eye glasses and

facial hair), the components of a proper respiratory protection program, respirator program administrator, requirements on oil lubricated reciprocating piston compressors for breathing air, and selection and use of personal protective clothing. Qualitative or quantitative fit testing shall be performed on at least one student for demonstration purposes and in accordance with WAC 296-62-07715 and 296-62-07739.

(5) Use, storage and handling of launderable clothing, nonslip footwear, gloves, eye protection and hard hats.

(6) Medical monitoring procedures and requirements, including the provisions of chapter 296-842 WAC, any additional recommended procedures and tests, benefits of medical monitoring and employee access to records.

(7) Air monitoring procedures and requirements specified in WAC 296-62-07709, including a description of equipment, sampling methods and strategies, reasons for air monitoring, types of samples, including area, personal and clearance samples, current standards with proposed changes if any, employee observation and notification, recordkeeping and employee access to records, interpretation of air monitoring results, and analytical methods for bulk and air samples.

(8) State-of-the-art work practices for asbestos removal and encapsulation activities including purpose, proper construction and maintenance of barriers and decontamination enclosure systems, posting of warning signs, electrical and ventilation system lock-out, proper working techniques and tools with vacuum attachments for minimizing fiber release, use of wet methods and surfactants, use of negative-pressure ventilation equipment for minimizing employee exposure to asbestos fibers and contamination prevention, scoring and breaking techniques for rigid asbestos products, glove bag techniques, recommended and prohibited work practices, potential exposure situations, emergency procedures for sudden releases, use of HEPA vacuums and proper clean-up and disposal procedures. Work practice requirements for removal, encapsulation, enclosure, repair, and waste transportation shall be discussed individually. Appropriate work practices for both indoor and outdoor asbestos projects shall be included.

(9) Personal hygiene including entry and exit procedures for the work area, use of showers and prohibition of eating, drinking, smoking and chewing (gum or tobacco) in the work area. Potential exposures, such as family exposure shall also be included.

(10) Additional safety hazards that may be encountered during asbestos removal and encapsulation activities and hazard abatement, including electrical hazards, scaffold and ladder hazards, slips, trips and falls, confined spaces, noise, and heat stress.

(11) The requirements, procedures and standards established by:

(a) The Environmental Protection Agency, 40 CFR Part 61, Subparts A and M, and 40 CFR Part 763.

(b) Washington state department of ecology.

(c) Local air pollution control agencies.

(d) Washington state department of labor and industries, division of industrial safety and health, chapter 49.17 RCW (Washington Industrial Safety and Health Act), chapter 49.26 RCW (Health and safety—Asbestos), and ensuing regulations.

(12) Actual worksite considerations.

(13) The instruction required by this section shall include, at a minimum fourteen hours of hands-on training for the following:

(a) Glove bag techniques;

(b) The opportunity to don respirators including half facepiece and full facepiece air purifying respirators, powered air purifying respirators (PAPR), and Type-C supplied-air respirators;

(c) Removal of sprayed-on or troweled-on material, and pipe lagging;

(d) Basic construction of a decontamination unit, and proper entry and exit;

(e) Suit-up in protective clothing consisting of coveralls, foot coverings and head coverings.

(14) Course review, a review of the key aspects of the training course.

(15) Asbestos-containing materials shall not be used for hands-on training.

(16) In recognition that asbestos abatement is an evolving industry, the department reserves the right to require additional subjects to be taught and to specify the amount of time which shall be allotted to adequately cover required subjects. To assure adequate coverage of required material, each sponsor shall be provided and required to incorporate into the training course, a detailed outline of subject matter developed by the department.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-65-005, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-05-056, § 296-65-005, filed 2/16/96, effective 4/1/96. Statutory Authority: Chapter 49.17 RCW. 89-21-018 (Order 89-10), § 296-65-005, filed 10/10/89, effective 11/24/89; 87-24-051 (Order 87-24), § 296-65-005, filed 11/30/87. Statutory Authority: RCW 49.17.050(2) and 49.17.040. 87-10-008 (Order 87-06), § 296-65-005, filed 4/27/87. Statutory Authority: SSB 4209, 1985 c 387. 85-21-080 (Order 85-30), § 296-65-005, filed 10/22/85.]

WAC 296-65-007 Asbestos supervisor training course content. An approved asbestos supervisor training course shall consist of at least five days of training. This initial training course shall include lectures, demonstrations, at least fourteen hours of hands-on training, course review and a written examination. Audio-visual materials, where appropriate, are recommended to complement lectures. The training course shall provide, at a minimum, information on the following topics:

(1) The physical characteristics of asbestos and asbestos-containing materials including identification of asbestos, aerodynamic characteristics, typical uses, physical appearance, hazard assessment considerations, and a summary of abatement control options.

(2) Health effects related to asbestos exposure including the nature of asbestos related diseases, routes of exposure, dose-response relationships and the lack of a safe level of exposure, synergism between asbestos exposure and cigarette smoking, latency period, hazards to the immediate family and the health basis for the standard.

(3) Employee personal protective equipment including the classes and characteristics of respirator types, limitations of respirators, proper selection, inspection, donning, use, maintenance, and storage procedures, methods for field checking of the facepiece-to-face seal (positive and negative pressure checks), variability between field and laboratory

protection factors, quantitative and qualitative fit test requirements, factors that alter respirator fit (facial hair, scars, etc.), the components of a proper respirator program, requirements for oil lubricated reciprocating compressors, maintenance of Type-C systems, standards for breathing air, selection and use of personal protective clothing, use, storage, and handling of nondisposable clothing, and regulations covering personal protective equipment.

(4) State-of-the-art work practices for asbestos removal and encapsulation activities including purpose, proper construction and maintenance of barriers and decontamination enclosure systems, posting of warning signs, electrical and ventilation system lock-out, proper working techniques and tools with vacuum attachments for minimizing fiber release, use of wet methods and surfactants, use of negative-pressure ventilation equipment for minimizing employee exposure to asbestos fibers and contamination prevention, scoring and breaking techniques for rigid asbestos products, glove bag techniques, recommended and prohibited work practices, potential exposure situations, emergency procedures for sudden releases, use of HEPA vacuums and proper clean-up and disposal procedures. Work practice requirements for removal, encapsulation, and repair shall be discussed separately. Appropriate work practices for both indoor and outdoor asbestos projects shall be included.

(5) Personal hygiene including entry and exit procedures for the work area, use of showers and prohibition of eating, drinking, smoking, and chewing (gum and tobacco) in the work area. Potential exposures, such as family exposure shall also be included.

(6) Additional safety hazards that may be encountered during asbestos abatement activities and how to deal with them, including electrical hazards, heat stress, air contaminants other than asbestos, fire and explosion hazards, scaffold and ladder hazards, slips, trips, and falls, confined space entry requirements, and noise hazards.

(7) Medical monitoring procedures and requirements, including the provisions of chapter 296-842 WAC, any additional recommended procedures and tests, benefits of medical monitoring and recordkeeping requirements.

(8) Air monitoring procedures and requirements specified in WAC 296-62-07709, including a description of equipment, sampling methods and strategies, reasons for air monitoring, types of samples, including area, personal and clearance samples, a description of aggressive sampling, current standards with proposed changes if any, employee observation and notification, recordkeeping, interpretation of air monitoring results, specifically from analyses performed by polarized light, phase contrast, and electron microscopy.

(9) The requirements, procedures, and standards established by:

(a) The Environmental Protection Agency, 40 CFR Part 61, Subparts A and M, and 40 CFR Part 763.

(b) The Washington state department of ecology.

(c) Local air pollution control agencies.

(d) Washington state department of labor and industries, division of industrial safety and health, chapter 49.17 RCW (Washington Industrial Safety and Health Act), chapter 49.26 RCW (Health and safety—Asbestos), and ensuing regulations.

(10) Actual worksite considerations.

(11) Insurance and liability issues including contractor issues, industrial insurance coverage and exclusions, third party liabilities and defenses, private insurance coverage and exclusions, recordkeeping recommended for legal and insurance purposes.

(12) Supervisory techniques for asbestos abatement projects including supervisory practices to enforce and reinforce the required work practices and discourage unsafe work practices.

(13) Contract specifications including a discussion of the key elements to be included in contract specifications.

(14) A minimum of fourteen hours of hands-on training for the following:

(a) Calibration of air-sampling equipment;

(b) Routine maintenance of air-purifying and air-supplied respirators;

(c) Setup of a decontamination unit including calculating the number of negative air machines needed as well as proper placement of the machines within the enclosure; and

(d) Quantitative and qualitative fit-testing protocols.

(15) Course review, a review of the key aspects of the training course.

(16) In recognition that asbestos abatement is an evolving industry, the department reserves the right to require additional subjects to be taught and to specify the amount of time which shall be allotted to adequately cover required subjects. To assure adequate coverage of required material, each sponsor shall be provided and required to incorporate into their training course, a detailed outline of subject matter developed by the department.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-65-007, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-05-056, § 296-65-007, filed 2/16/96, effective 4/1/96. Statutory Authority: Chapter 49.17 RCW. 89-21-018 (Order 89-10), § 296-65-007, filed 10/10/89, effective 11/24/89.]

WAC 296-65-010 Asbestos worker certification. (1)

For the purposes of this section "individual" means any natural person.

(2) To qualify for an asbestos worker certificate, an individual must do the following:

(a) Successfully complete an approved asbestos worker training course;

(b) Achieve a score of at least seventy percent on a one hundred question multiple choice closed book examination approved by the department but administered by the training course sponsor. If an individual does not pass the examination, then another examination (meeting the above criteria) may be given after a sufficient period of study. The new examination must not duplicate more than fifty percent of the questions used on prior examinations;

(c) Submit to the department a timely application validated by an approved training course sponsor. To be considered timely, an application must be received by the department no later than sixty days after the completion of the course. In the event that an application is not timely, the individual will be required to pass, with a score of at least seventy percent, an examination administered by the department. A nonrefundable fifty-dollar fee will be assessed when the application is submitted to the department; and

(d) Pay the fee prescribed in WAC 296-65-025.

(3) Individuals must not perform any asbestos project work prior to issuance of the certificate.

(4) Certificates will be issued and mailed to the individual applicants and will be valid for one year from the date of issuance.

(5) Certified asbestos workers shall attend an eight-hour worker refresher course prior to certificate renewal.

(a) The course shall, at a minimum, adequately review the subjects required by WAC 296-65-005, update information on state-of-the-art procedures and equipment, and review regulatory changes and interpretations. The department may require specific subjects.

(b) An application for renewal of the certificate must be validated by the refresher training course instructor.

(c) The refresher course must be taken prior to expiration of the certificate.

(d) The department must receive the certificate renewal application no later than the expiration date of the current certificate. Applicants missing this renewal deadline will be required to pass, with a score of seventy percent, an examination administered by the department. A nonrefundable fifty-dollar fee will be charged to take this examination.

(e) Individuals whose certificates have been expired for more than six months will be required to retake the entire basic worker course.

(6) The initial TSCA Title II worker accreditation certificate and the current worker certificate must be available for inspection at all times at the location of the asbestos project.

(7) The department may suspend or revoke a certificate as provided in WAC 296-65-050 and chapter 296-900 WAC.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-65-010, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.040, 49.17.050, 49.26.040 and 49.26.130. 99-17-026, § 296-65-010, filed 8/10/99, effective 11/10/99. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-05-056, § 296-65-010, filed 2/16/96, effective 4/1/96. Statutory Authority: Chapter 49.17 RCW. 89-21-018 (Order 89-10), § 296-65-010, filed 10/10/89, effective 11/24/89. Statutory Authority: SSB 4209, 1985 c 387. 85-21-080 (Order 85-30), § 296-65-010, filed 10/22/85.]

WAC 296-65-012 Asbestos supervisor certification.

(1) For the purposes of this section, "individual" means any natural person.

(2) To qualify for an asbestos supervisor certificate, an individual must meet the following criteria:

(a) Have at least 1600 hours of experience in one or more of the following disciplines:

- (i) Asbestos abatement;
- (ii) Asbestos project design;
- (iii) Consultation on asbestos abatement projects;
- (iv) Operations and maintenance program supervision;
- (v) Construction project supervision;

(b) Successfully complete an approved asbestos supervisor training course;

(c) Achieve a score of at least seventy percent on a one hundred question multiple choice closed book examination approved by the department but administered by the training course sponsor. If an individual does not pass the examination, then another examination (meeting the above criteria) may be given after a sufficient period of study. The new examination must not duplicate more than fifty percent of the questions used on prior examinations;

(d) Submit to the department a timely application validated by an approved training course sponsor. To be considered timely, an application must be received by the department no later than sixty days after the completion of the course. In the event that an application is not timely, the individual will be required to pass, with a score of at least seventy percent, an examination administered by the department. A nonrefundable fifty-dollar fee will be assessed when the application is submitted to the department; and

(e) Pay the fee prescribed in WAC 296-65-025.

(3) An individual must not supervise any asbestos project prior to issuance of the certificate.

(4) Certificates will be issued and mailed to the individual applicants and will be valid for one year from the date of issuance.

(5) A certified asbestos supervisor must attend an eight-hour supervisor refresher course prior to certificate renewal. It is not necessary to also take a worker refresher course.

(a) The course must, at a minimum, adequately review the subjects required by WAC 296-65-007, update information on state-of-the-art procedures and equipment, and review regulatory changes and interpretations. The department may require specific subjects.

(b) An application for renewal of the certificate must be validated by the refresher training course instructor.

(c) The refresher course must be taken prior to expiration of the certificate.

(d) The department must receive the certificate renewal application no later than the expiration date of the current certificate. Applicants missing this renewal deadline will be required to pass, with a score of seventy percent, an examination administered by the department. A nonrefundable fifty-dollar fee will be charged to take this examination.

(e) Individuals whose certificates have been expired for more than six months will be required to retake the entire basic supervisor course.

(6) The initial TSCA Title II supervisor accreditation certificate and the current supervisor certificate must be available for inspection at all times at the location of the asbestos project.

(7) The department may suspend or revoke a certificate as provided in WAC 296-65-050 and chapter 296-900 WAC.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-65-012, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.040, 49.17.050, 49.26.040 and 49.26.130. 99-17-026, § 296-65-012, filed 8/10/99, effective 11/10/99. Statutory Authority: RCW 49.17.040, [49.17.]050 and [49.17.]060. 96-05-056, § 296-65-012, filed 2/16/96, effective 4/1/96. Statutory Authority: Chapter 49.17 RCW. 89-21-018 (Order 89-10), § 296-65-012, filed 10/10/89, effective 11/24/89.]

WAC 296-65-017 Contractor certification. (1) In order to obtain certification, an asbestos contractor must submit an application to the department. The application shall provide the following information:

(a) A list of asbestos projects conducted by the contractor during the previous twelve months. Such list shall include for each project:

- (i) Project name;
- (ii) Location;
- (iii) Brief description;

(iv) Identity of any citations or enforcement actions issued for violations of asbestos regulations by any local,

state, or federal jurisdiction relative to each individual project; and

(v) Name of the on-site project manager or supervisor.

(b) A list of asbestos supervisors (include certification number) working for the company.

(c) A statement certifying that the contractor has read and understands all applicable Washington state rules and regulations regarding asbestos abatement and will comply with them.

(d) A statement certifying that the applicant contractor's asbestos license or accreditation issued by any other state or jurisdiction has not been revoked, suspended, or denied by that state or jurisdiction.

(2) Upon approval, the department will issue the contractor a certificate. Denial of approval shall be in writing.

(3) Certificates shall be valid for a period of twelve months. Certificates may be extended during department review of a renewal application.

Note: In circumstances where it is necessary to coordinate an expiration date with the date of expiration of a contractor registration issued under chapter 18.27 RCW, certificates may be valid for less than one year. In such circumstances, the certificate fee prescribed in WAC 296-65-025 shall be prorated accordingly for the initial application only.

(4) The application for certificate renewal shall contain the information specified in subsection (1) of this section.

(5) Applications for renewal must be received by the department not less than sixty days before the certificate expires.

(6) The department may suspend or revoke the certificate as provided in WAC 296-65-050 and chapter 296-900 WAC.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-65-017, filed 1/24/07, effective 4/1/07. Statutory Authority: Chapter 49.17 RCW. 89-21-018 (Order 89-10), § 296-65-017, filed 10/10/89, effective 11/24/89.]

Chapter 296-67 WAC

SAFETY STANDARDS FOR PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS

WAC

296-67-001 Process safety management of highly hazardous chemicals.

WAC 296-67-001 Process safety management of highly hazardous chemicals. (1) Purpose. This section contains requirements for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. These releases may result in toxic, fire, or explosion hazards.

(2) Application.

(a) This part applies to the following:

(i) A process which involves a chemical at or above the specified threshold quantities listed in WAC 296-67-285, Appendix A;

(ii) A process which involves a flammable liquid or gas (as defined in WAC 296-800-170) on site in one location, in a quantity of 10,000 pounds (4535.9 kg) or more except for:

(A) Hydrocarbon fuels used solely for workplace consumption as a fuel (e.g., propane used for comfort heating, gasoline for vehicle refueling), if such fuels are not a part of

a process containing another highly hazardous chemical covered by this standard;

(B) Flammable liquids stored in atmospheric tanks or transferred which are kept below their normal boiling point without benefit of chilling or refrigeration.

(b) This part does not apply to:

(i) Retail facilities;

(ii) Oil or gas well drilling or servicing operations; or

(iii) Normally unoccupied remote facilities.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-67-001, filed 1/24/07, effective 4/1/07. Statutory Authority: Chapter 49.17 RCW. 92-17-022 (Order 92-06), § 296-67-001, filed 8/10/92, effective 9/10/92.]

Chapter 296-78 WAC

SAFETY STANDARDS FOR SAWMILLS AND WOODWORKING OPERATIONS

WAC

296-78-500

296-78-71015

296-78-71019

296-78-730

296-78-835

Foreword.

Tanks and chemicals.

Exhaust systems.

Electrical service and equipment.

Vehicles.

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 296-900 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, 49.17.050, 49.17.060, 07-03-163, § 296-78-500, filed 1/24/07, effective 4/1/07. 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 296-78-71015 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 chapter 296-835 WAC, Dipping and coating operations (dip 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 296-62 WAC, Part H, and chapter 296-841 WAC, Airborne contaminants.

(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 WAC 296-800-160, and chapter 296-842 WAC, Respirators.

(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 chapter 296-835 WAC, Dipping and coating operations (dip tanks).

(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 chapter 296-835 WAC, Dipping and coating operations (dip tanks). 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, 49.17.050, 49.17.060, 07-05-062, § 296-78-71015, filed 2/20/07, effective 4/1/07; 05-20-055, § 296-78-71015, filed 10/3/05, effective 12/1/05; 05-03-093, § 296-78-71015, filed 1/18/05, effective 3/1/05. Statutory Authority: RCW 49.17.010, [49.17].-040, and [49.17].050, 02-15-102, § 296-78-71015, filed 7/17/02, effective 10/1/02; 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 296-78-71019 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 Z12.20 - 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 chapter 296-842 WAC, Respirators.

(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, 49.17.050, 49.17.060. 07-03-163, § 296-78-71019, filed 1/24/07, effective 4/1/07; 05-03-093, § 296-78-71019, filed 1/18/05, effective 3/1/05. 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 296-78-730 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 296-800-160 of the safety and health core rules.

(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, 49.17.050, 49.17.060. 07-03-163, § 296-78-730, filed 1/24/07, effective 4/1/07. 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 296-78-835 Vehicles. (1) Vehicles.

(a) Scope. Vehicles shall include all mobile equipment normally used in sawmill, planing mill, storage, shipping, and yard operations, including log sorting yards.

(b) Lift trucks. Lift truck shall be designed, constructed, maintained and operated in accordance with the requirements of WAC 296-24-230 through 296-24-23035 of the general safety and health standards.

(c) Carriers. Drive chains on lumber carriers shall be adequately guarded to prevent contact at the pinch points.

(d)(i) Lumber carriers shall be so designed and constructed that the operator's field of vision shall not be unnecessarily restricted.

(ii) Carriers shall be provided with ladders or equivalent means of access to the operator's platform or cab.

(e) Lumber hauling trucks.

(i) On trucks where the normal operating position is ahead of the load in the direction of travel, the cab shall be protected by a barrier at least as high as the cab. The barrier shall be capable of stopping the weight of the load capacity of the vehicle if the vehicle were to be stopped suddenly while traveling at its normal operating speed. The barrier shall be constructed in such a manner that individual pieces of a normal load will not go through openings in the barrier.

(ii) Stakes, stake pockets, racks, tighteners, and binders shall provide a positive means to secure the load against any movement during transit.

(iii) Where rollers are used, at least two shall be equipped with locks which shall be locked when supporting loads during transit.

(2) Warning signals and spark arrestors. All vehicles shall be equipped with audible warning signals and where practicable shall have spark arrestors.

(3) Flywheels, gears, sprockets and chains and other exposed parts that constitute a hazard to workers shall be enclosed in standard guards.

(4) All vehicles operated after dark or in any area of reduced visibility shall be equipped with head lights and backup lights which adequately illuminate the direction of travel for the normal operating speed of the vehicle. The vehicle shall also be equipped with tail lights which are visible enough to give sufficient warning to surrounding traffic at the normal traffic operating speed.

(5) All vehicles operated in areas where overhead hazards exist shall be equipped with an overhead guard for the protection of the operator.

(6) Where vehicles are so constructed and operated that there is a possibility of the operator being injured by backing into objects, a platform guard shall be provided and so arranged as not to hinder the exit of the driver.

(7) Trucks, lift trucks and carriers shall not be operated at excessive rates of speed. When operating on tramways or docks more than six feet above the ground or lower level they shall be limited to a speed of not more than twelve miles per hour. When approaching blind corners they shall be limited to four miles per hour.

(8) Vehicles shall not be routed across principal thoroughfares while employees are going to or from work unless pedestrian lanes are provided.

(a) Railroad tracks and other hazardous crossings shall be plainly posted.

(b) Restricted overhead clearance. All areas of restricted side or overhead clearance shall be plainly marked.

(c) Pickup and unloading points. Pickup and unloading points and paths for lumber packages on conveyors and transfers and other areas where accurate spotting is required, shall be plainly marked and wheel stops provided where necessary.

(d) Aisles, passageways, and roadways. Aisles, passageways, and roadways shall be sufficiently wide to provide safe side clearance. One-way aisles may be used for two-way traffic if suitable turnouts are provided.

(9) Where an operator's vision is impaired by the vehicle or load it is carrying, he shall move only on signal from someone so stationed as to have a clear view in the direction the vehicle is to travel.

(10) Reserved.

(11) Load limits. No vehicle shall be operated with loads exceeding its safe load capacity.

(12) Vehicles with internal combustion engines shall not be operated in enclosed buildings or buildings with ceilings less than sixteen feet high unless the buildings have ventilation adequate to maintain air quality as required by the general occupational health standard, chapter 296-62 WAC.

(13) Vehicles shall not be refueled while motor is running. Smoking or open flames shall not be allowed in the refueling area.

(14) No employee other than trained operators or mechanics shall start the motor of, or operate any log or lumber handling vehicle.

(15) All vehicles shall be equipped with brakes capable of holding and controlling the vehicle and capacity load upon any grade or incline over which they may operate.

(16) Unloading equipment and facilities.

(a) Machines used for hoisting, unloading, or lowering logs shall be equipped with brakes capable of controlling or holding the maximum load in midair.

(b) The lifting cylinders of all hydraulically operated log handling machines, or where the load is lifted by wire rope, shall be equipped with a positive device for preventing the uncontrolled lowering of the load or forks in case of a failure in the hydraulic system.

(c) A limit switch shall be installed on powered log handling machines to prevent the lift arms from traveling too far in the event the control switch is not released in time.

(d) When forklift-type machines are used to load trailers, a means of securing the loading attachment to the fork shall be installed and used.

(e) A-frames and similar log unloading devices shall have adequate height to provide safe clearance for swinging loads and to provide for adequate crotch lines and spreader bar devices.

(f) Log handling machines used to stack logs or lift loads above operator's head shall be equipped with overhead protection.

(g) Unloading devices shall be equipped with a horn or other plainly audible signaling device.

(h) Movement of unloading equipment shall be coordinated by audible or hand signals when operator's vision is impaired or operating in the vicinity of other employees.

Lift trucks regularly used for transporting peeler blocks or cores shall have tusks or a similar type hold down device to prevent the blocks or cores from rolling off the forks.

(17) Where spinners are used on steering wheels, they shall be of the automatic retracting type or shall be built into the wheel in such a manner as not to extend above the plane surface of the wheel. Vehicles equipped with positive anti-kickback steering are exempted from this requirement.

(18) Mechanical stackers and unstackers shall have all gears, sprockets and chains exposed to the contact of workers, fully enclosed by guards as required by WAC 296-78-710 of this chapter.

(19) Manually operated control switches shall be properly identified and so located as to be readily accessible to the operator. Main control switches shall be so designed that they can be locked in the open position.

(20) Employees shall not stand or walk under loads being lifted or moved. Means shall be provided to positively block the hoisting platform when employees must go beneath the stacker or unstacker hoist.

(21) No person shall ride any lift truck or lumber carrier unless a suitable seat is provided, except for training purposes.

(22) Unstacking machines shall be provided with a stopping device which shall at all times be accessible to at least one employee working on the machine.

(23) Floor of unstacker shall be kept free of broken stickers and other debris. A bin or frame shall be provided to allow for an orderly storage of stickers.

(24) Drags or other approved devices shall be provided to prevent lumber from running down on graders.

(25) Liquefied petroleum gas storage and handling. Storage and handling of liquefied petroleum gas shall be in accordance with the requirements of WAC 296-24-475 through 296-24-47517 of the general safety and health standards.

(26) Flammable liquids. Flammable liquids shall be stored and handled in accordance with WAC 296-24-330 through 296-24-33019 of the general safety and health standards.

(27) Guarding side openings. The hoistway side openings at the top level of the stacker and unstacker shall be protected by enclosures of standard railings.

(28) Guarding hoistway openings. When the hoist platform or top of the load is below the working platform, the hoistway openings shall be guarded.

(29) Guarding lower landing area. The lower landing area of stackers and unstackers shall be guarded by enclosures that prevent entrance to the area or pit below the hoist platform. Entrances should be protected by electrically interlocked gates which, when open, will disconnect the power and set the hoist brakes. When the interlock is not installed, other positive means of protecting the entrance shall be provided.

(30) Lumber lifting devices. Lumber lifting devices on all stackers shall be designed and arranged so as to minimize the possibility of lumber falling from such devices.

(31) Inspection. At the start of each work shift, equipment operators shall inspect the equipment they will use for evidence of failure or incipient failure. Equipment found to have defects which might affect the operating safety shall not be used until the defects are corrected.

(32) Cleaning pits. Safe means of entrance and exit shall be provided to permit cleaning of pits.

(33) Preventing entry to hazardous area. Where the return of trucks from unstacker to stacker is by mechanical power or gravity, adequate signs, warning devices, or barriers shall be erected to prevent entry into the hazardous area.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-78-835, filed 1/24/07, effective 4/1/07; 06-05-027, § 296-78-835, filed 2/7/06, effective 4/1/06; 03-06-076, § 296-78-835, filed 3/4/03, effective 8/1/03. Statutory Authority: Chapter 49.17 RCW, 96-17-056, § 296-78-835, 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), § 296-78-835, filed 8/27/81.]

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

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296-96-02570	How do we enforce hoistway ventilation?		
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296-96-02595	What are the general requirements for LULA elevators?		
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296-96-05020	What requirements apply to the construction and fire safety of hoistway enclosures?		
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296-96-07030	Does the department approve private residence elevator plans and specifications?		
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296-96-07150	What are the construction requirements for guide rails, track supports and fastenings?		
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296-96-13149	What are the structural requirements for counterweights, counterweight enclosures, and counterweight fastenings?		
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296-96-23100	Are keys required to be on-site?		
296-96-23116	What requirements apply to car numbers?		
296-96-23117	What requirements apply to top of car railings for traction elevators?	296-96-02277	How does the department enforce ASME requirements for sprinklers, smoke detectors, and heat detectors in hoistways and machine rooms? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02277, filed 5/28/04, effective 6/30/04. 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, § 296-96-02277, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-23118	What requirements apply to top of car railings for hydraulic elevators in unenclosed hoistways?		
296-96-23119	What signage requirements apply to traction elevators with minimal overhead clearance?		
296-96-23122	What type of lighting must be installed in machine rooms and machinery space?		
296-96-23132	What lighting requirements apply to pits?		
296-96-23316	What requirements apply to plunger stops?		
296-96-23450	What requirements apply to step tread lighting?		
296-96-23455	What requirements apply to comb and step distinction?		
296-96-23460	What requirements apply to safety zone?	296-96-02278	Are keys required to be on-site? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02278, filed 5/28/04, effective 6/30/04. 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, § 296-96-02278, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-23465	What requirements apply to landing access plates?		
296-96-23600	What is the scope of Part VI, Alterations, Repairs and Maintenance?		
296-96-23610	What requirements apply to routine periodic inspections and tests?		
296-96-23620	What requirements apply to alterations, repairs and maintenance?		
296-96-23630	What requirements apply to elevator equipment displaced by seismic activity?		

296-96-02280	Can pipes and ducts be installed above a machine room? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02280, filed 5/28/04, effective 6/30/04. 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, § 296-96-02280, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.	296-96-02317	When does the department require a local building official to sign off for the installation of LULAs, stair lifts, inclined wheelchair lifts and vertical wheelchair lifts? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02317, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02281	What is required for emergency escape hatches? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02281, filed 5/28/04, effective 6/30/04. 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, § 296-96-02281, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.	296-96-02318	What are the general requirements for LULA elevators? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02318, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02282	What is required for fire fighters' service? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02282, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.	296-96-02320	What is required for car controls? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02320, filed 5/28/04, effective 6/30/04. 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, § 296-96-02320, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02283	What is the minimum working space required in machine rooms? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02283, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.	296-96-02325	What are the location and operation requirements for car position indicators in the car? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02325, filed 5/28/04, effective 6/30/04. 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, § 296-96-02325, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02285	Are there exceptions for correction facility elevators? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02285, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.	296-96-02330	What is required for installation and operation of emergency communication systems? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02330, filed 5/28/04, effective 6/30/04. 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, § 296-96-02330, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02290	What are the requirements for underground hydraulic elevator pipes, fittings, and cylinders? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02290, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.	296-96-02340	What requirements apply to the size and location of car handrails? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02340, filed 5/28/04, effective 6/30/04. 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, § 296-96-02340, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02300	Are self-leveling devices required? [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, § 296-96-02300, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.	296-96-02350	What requirements apply to floor designations on elevator door jams? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02350, filed 5/28/04, effective 6/30/04. 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, § 296-96-02350, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02306	Is a door reopening device required on automatic-closing car doors? [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, § 296-96-02306, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.	296-96-02355	What are the installation and operation requirements for hall buttons? [Statutory Authority: Chapter 70.87 RCW. 04-15-104, § 296-96-02355, filed 7/20/04, effective 8/20/04. 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, § 296-96-02355, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02310	What is the minimum acceptable initial transfer time for an elevator door? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02310, filed 5/28/04, effective 6/30/04. 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, § 296-96-02310, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.	296-96-02360	What are the requirements for installation and operation of hall lanterns? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02360, filed 5/28/04, effective 6/30/04. 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, § 296-96-02360, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02315	What are the minimum cab size and other applicable requirements for car interiors? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02315, filed 5/28/04, effective 6/30/04. 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, § 296-96-02315, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.		

	026, § 296-96-02360, filed 12/22/00, effective 1/22/01.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.		Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02361	What are the requirements for electrical main line disconnects? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02361, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.	296-96-02366	What are the requirements for submersible pumps or sumps? [Statutory Authority: RCW 70.87.020, 70.87.-030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02366, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02362	What are the requirements associated with elevator machine rooms? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02362, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.	296-96-02367	What are the requirements for top of car lighting for freight and passenger elevators? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02367, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02363	What are the requirements for fire doors installed in front of hoistway doors? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02363, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.	296-96-02370	What is required for physically handicapped lifts? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.-034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02370, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.
296-96-02364	What are the requirements for accessing elevated elevator pit equipment? [Statutory Authority: RCW 70.87.-020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02364, filed 5/28/04, effective 6/30/04.]	296-96-02371	Are private residence inclined stairway chairlifts required to be permanently wired? [Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-02371, filed 5/28/04, effective 6/30/04.] Repealed by 07-24-041, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapter 70.87 RCW.

WAC 296-96-00650 Which National Elevator Codes and Supplements has the department adopted?

NATIONAL ELEVATOR CODES AND SUPPLEMENTS ADOPTED				
TYPE OF CONVEYANCE	NATIONAL CODE AND SUPPLEMENTS	DATE INSTALLED		COMMENTS
		FROM	TO	
Elevators, Dumbwaiters, Escalators	American Standard Safety Code (ASA) A17.1.13, 1962	11/1/1963	12/29/1967	Adopted Standard
Moving Walks	American Safety Association A17.1.13, 1962	11/1/1963	12/29/1967	Adopted Standard
Elevators, Dumbwaiters, Escalators, and Moving Walks	U.S.A. Standards (USAS) USAS A17.1, 1965; Supplements A17.1a, 1967; A17.1b, 1968; A17.1c, 1969;	12/30/1967	2/24/1972	Adopted Standard USAS 1965 includes revision and consolidation of A17.1-1, 1960, A17.1a, 1963, and A17.1-13, 1962. Adopted code and supplements, excluding Appendix E and ANSI 17.1d, 1970.
Elevators, Dumbwaiters, Escalators, and Moving Walks	American National Standard Institute ANSI A17.1, 1971	2/25/1972	6/30/1982	Adopted Standard as amended and revised through 1971.
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1, 1971; A17.1a, 1972	2/25/1972	6/30/1982	Adopted Supplement
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1, 1981	7/1/1982	1/9/1986	Adopted Standard
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1a, 1982	3/1/1984	1/9/1986	Adopted Supplement
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1b, 1983	12/1/1984	1/9/1986	Adopted Supplement, except portable escalators covered by Part VIII of A17.1b, 1983.
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1, 1984	1/10/1986	12/31/1988	Adopted Standard Except Part XIX. After 11/1/1988 Part II, Rule 211.3b was replaced by WAC 296-81-275.
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1a, 1985	1/10/1986	12/31/1988	Adopted Supplement
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1b, 1985; A17.1c, 1986; A17.1d, 1986; and A17.1e, 1987	12/6/1987	12/31/1988	Adopted Supplement
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1, 1987	1/1/1989	12/31/1992	Adopted Standard Except Part XIX and Part II, Rule 211.3b. WAC 296-81-275 replaced Part II, Rule 211.3b.

NATIONAL ELEVATOR CODES AND SUPPLEMENTS ADOPTED				
TYPE OF CONVEYANCE	NATIONAL CODE AND SUPPLEMENTS	DATE INSTALLED		COMMENTS
		FROM	TO	
Elevators, Dumbwaiters, Escalators, and Moving Walks	ASME A17.1, 1990	1/1/1993	2/28/1995	Adopted Standard Except Part XIX and Part V, Section 513. Chapter 296-94 WAC replaced Part V, Section 513.
Elevators, Dumbwaiters, Escalators, and Moving Walks	ASME A17.1, 1993	3/1/1995	6/30/1998	Adopted Standard Except Part XIX and Part V, Section 513. Chapter 296-94 WAC replaced Part V, Section 513.
Elevators, Dumbwaiters, Escalators, and Moving Walks	ASME A17.1, 1996	6/30/1998	6/30/2004	Adopted Standard Except Part V, Section 513.
Elevators, Dumbwaiters, Escalators, and Moving Walks	ASME A17.1, 2000; A17.1a, 2002; A17.1b, 2003	7/1/2004	1/1/2008	Adopted Standards and Addenda Except Rules 2.4.12.2, 8.6.5.8 and Sections 5.4, 7.4, 7.5, 7.6, 7.9, 7.10, 8.10.1.1.3 and 8.11.1.1.
Safety Standards for Platform Lifts and Stairway Chairlifts	ASME A18.1, 1999; A18.1a, 2001; A18.1b, 2001	7/1/2004	1/1/2008	Adopted Standards and Addenda.
Safety Code for Elevators, Escalators, Dumbwaiters, Residential Elevators, Special Purpose	ASME A17.1-2004; A17.1a-2005	1/1/2008	Current	Adopted Standards and Addenda Except Rules 2.4.12.2, marked car top clearance space, 8.6.5.8, Maintenance of safety bulkhead, 5.4, Private residence incline elevators, 7.4 & 7.5 & 7.9 & 7.10 Material lifts, 8.10.1.1.3 and 8.11.1.1, QEI-1 inspector.
Safety Code for Platform Lifts and Stairway Chairlifts	ASME A18.1-2005	1/1/2008	Current	
Safety Code for Belt Manlifts	ASME A90.1-2003	1/1/2008	Current	
Safety Code for Personnel Hoists, Retroactive	ANSI A10.4-2004	1/1/2008	Current	

Note: Copies of codes and supplements can be obtained from The American Society of Mechanical Engineers, Order Department, 22 Law Drive, Box 2900, Fairfield, New Jersey, 07007-2900 or by visiting www.asme.org.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-00650, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-00650, filed 5/28/04, effective 6/30/04. 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, § 296-96-00650, filed 12/22/00, effective 1/22/01.]

WAC 296-96-00700 Chapter definitions. The following definitions apply to this chapter (see RCW 70.87.010 for additional definitions necessary for use with this chapter):

"ANSI" means the American National Standard Institute.

"ASA" means the American Safety Association.

"ASME" means the American Society of Mechanical Engineers.

"Acceptable proof" refers to the documentation that must be provided to the department during the elevator contractor and mechanic license application and renewal process. Acceptable proof may include department-approved forms documenting years of experience, affidavits, letters from previous employers, declarations of experience, education credits, copies of contractor registration information, etc. Additional documentation may be requested by the department to verify the information provided on the application.

"Code" refers to nationally accepted codes (i.e., ASME, ANSI, ASA, and NEC) and the Washington Administrative Code.

"Decommissioned conveyance" means an installation whose power feed lines have been disconnected and:

(a) A traction elevator, dumbwaiter, or material lift whose suspension ropes have been removed, whose car and counterweight rests at the bottom of the hoistway, and whose

hoistway doors have been permanently barricaded or sealed in the closed position on the hoistway side;

(b) A hydraulic elevator, dumbwaiter, or material lift whose: Car rests at the bottom of the hoistway, pressure piping has been disassembled and a section removed from the premises, hoistway doors have been permanently barricaded or sealed in the closed position on the hoistway side, suspension ropes have been removed and counterweights, if provided, landed at the bottom of the hoistway; or

(c) An escalator or moving walk whose entrances have been permanently barricaded.

"Final judgment" means any money that is owed the department as the result of an individual's or firm's unsuccessful appeal of a civil penalty. Final judgment also includes any penalties assessed against an individual or firm owed the department as a result of an unappealed civil penalty or any outstanding fees due under chapter 70.87 RCW and this chapter.

"General direction—Installation and alteration work" means the necessary education, assistance, and supervision provided by a licensed elevator mechanic (in the appropriate category) who is on the same job site as the helper/apprentice at least seventy-five percent of each working day. The ratio of helper to mechanic shall be one-to-one.

"General direction—Maintenance work" means the necessary education, assistance, and supervision provided by a licensed elevator mechanic (in the appropriate category) to ensure that the maintenance work is performed safely and to code.

"Lockout" means the placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

"Primary point of contact" is the designated individual employed by a licensed elevator contractor.

"Red tag" or "red tag status" means an elevator or other conveyance that has been removed from service and operation because of noncompliance with chapter 70.87 RCW and this chapter or at the request of the owner.

"Private residence elevator" (residential elevator) means a power passenger elevator which is limited in size, capacity, rise and speed and is installed in a private residence or multiple dwelling as a means of access to a private residence provided the elevators are so installed that they are not accessible to the general public or to other occupants in the building.

"RCW" means the Revised Code of Washington.

"Tagout" means the placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed by the individual who established the tag or by a person designated by the chief elevator inspector.

"Traction elevator" means an elevator in which the friction between the hoist ropes and the machine sheave is used to move the elevator car.

"USAS" means the U.S.A. Standards.

"WAC" means the Washington Administrative Code.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-00700, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-00700, filed 5/28/04, effective 6/30/04. 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, § 296-96-00700, filed 12/22/00, effective 1/22/01.]

WAC 296-96-00902 Are there exceptions from the elevator mechanic licensing requirements? Yes.

(1) Elevator mechanic licenses issued under chapter 70.87 RCW and this chapter are not required for:

(a) Individuals who install signal systems, fans, electric light fixtures, illuminated thresholds, finished cab flooring materials that are identical to existing materials and feed wires to the terminals on the elevator main line control provided that the individual does not require access to the pit, hoistway, or top of the car for the installation of these items.

(b) An owner or regularly employed employee of the owner performing only maintenance work of conveyances in accordance with RCW 70.87.270.

(2) Elevator mechanic licenses may not be required for certain types of incidental work that is performed on conveyances when the appropriate lockout and tagout procedures have been performed by a licensed elevator mechanic in the appropriate category. The department must be notified in

writing and must approve the scope of work prior to it being performed.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-00902, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-00902, filed 5/28/04, effective 6/30/04.]

WAC 296-96-00904 What must you do to become and remain a licensed elevator contractor? (1) Obtain and maintain a valid specialty or general contractor registration under chapter 18.27 RCW to engage in the business of conveyance work.

(2) Complete and submit a department-approved application. As part of the application:

(a) Specify the employee who is the licensed elevator contractor's primary point of contact.

(b) The person representing the company, firm or company who is applying for the elevator contractor's license must:

(i) Provide acceptable proof to the department that shows that the person representing the company, firm, or company has five years of work experience in performing conveyance work as verified by current and previous state of Washington elevator contractor licenses to do business; or

(ii) Pass a written examination administered by the department on chapter 70.87 RCW and this chapter. (In the case of a firm or company, the exam will be administered to the designated primary point of contact.)

(iii) Failure to pass the examination will require the submittal of a new application.

(3) Pay the fees specified in WAC 296-96-00922.

(4) The department may deny application of a license under this section if the applicant owes outstanding final judgments to the department.

(5) If the primary point of contact identified in subsection (2)(a) of this section separates employment, his/her relationship or designation is terminated, or death of the designated individual occurs, the elevator contractor must, within ninety days, designate a new individual who has successfully completed the elevator contractor examination and inform the department of the change in writing or the elevator contractor license will be automatically suspended.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-00904, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-00904, filed 5/28/04, effective 6/30/04.]

WAC 296-96-00906 What must you do to become a licensed elevator mechanic? (1) Qualify for licensing:

(a) For conveyance work covered by all categories identified in WAC 296-96-00910 except material lifts (05), residential conveyances (06), residential inclined elevators (07) and temporary licenses (09), the applicant must comply with the applicable mechanic licensing requirements as follows:

(i) Test.

(A) The applicant must provide acceptable proof to the department that shows the necessary combination of documented experience and education credits in the applicable license category (see WAC 296-96-00910) of not less than three years' work experience in the elevator industry perform-

ing conveyance work as verified by current and previous employers licensed to do business in this state or as an employee of a public agency; and

(B) Pass an examination administered by the department on chapter 70.87 RCW and this chapter.

(ii) National exam/education.

(A) Have obtained a certificate of completion and successfully passed the mechanic examination of a nationally recognized training program for the elevator industry such as the National Elevator Industry Educational Program or its equivalent; or

(B) Have obtained a certificate of completion of an apprenticeship program for an elevator mechanic, having standards substantially equal to those of chapter 70.87 RCW and this chapter, and registered with the Washington state apprenticeship and training council under chapter 49.04 RCW.

(iii) Reciprocity. The applicant must provide acceptable proof to the department that shows that the applicant is holding a valid license from a state having entered into a reciprocal agreement with the department and having standards substantially equal to those of chapter 70.87 RCW and this chapter.

(b) For conveyance work performed on material lifts as identified in WAC 296-96-00910(5):

Test.

(i) The applicant and the licensed elevator contractor/employer must comply with the provisions of RCW 70.87.245; and

(ii) The applicant must pass an examination administered by the department on chapter 70.87 RCW and this chapter;

(c) For residential conveyance work covered by category (06) as identified in WAC 296-96-00910:

Test.

(i) The applicant must provide acceptable proof to the department that shows the necessary combination of documented experience and education credits in the applicable license category (see WAC 296-96-00910) of not less than two years' work experience in the elevator industry performing conveyance work as verified by current and previous employers licensed to do business in this state; and

(ii) Pass an examination administered by the department on chapter 70.87 RCW and this chapter.

(d) For residential inclined conveyance work covered by category (07) as identified in WAC 296-96-00910:

Test.

(i) The applicant must provide acceptable proof to the department that shows the necessary combination of documented experience and education credits in the applicable license category (see WAC 296-96-00910) of not less than one year's work experience in the elevator industry or not less than three years' documented experience and education credits in conveyance work as described in category (01) performing conveyance work as verified by current and previous employers licensed to do business in this state; and

(ii) Pass an examination administered by the department on chapter 70.87 RCW and this chapter.

(e) For temporary mechanic licenses as identified in WAC 296-96-00910 category (09) the applicant must provide acceptable proof from a licensed elevator contractor that

attests that the temporary mechanic is certified as qualified and competent to perform work under chapter 70.87 RCW and this chapter.

(2) Complete and submit a department-approved application.

An applicant who is required to take an examination under the provisions of this section may not perform the duties of a licensed elevator mechanic until the applicant has been notified by the department that he/she has passed the examination.

(3) Pay the fees specified in WAC 296-96-00922.

(4) The department may deny application of a license under this section if the applicant owes outstanding final judgments to the department or does not meet the minimum criteria established in the elevator laws and rules.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-00906, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-00906, filed 5/28/04, effective 6/30/04.]

WAC 296-96-00910 What are the elevator mechanic license categories? The following are the licensing categories for qualified elevator mechanics or temporary elevator mechanics:

(1) **Category (01):** A general elevator mechanic license encompasses mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, and repair of all types of elevators and other conveyances in any location covered under chapter 70.87 RCW and this chapter.

(2) **Category (02):** This license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, and repair of the following commercial and residential conveyances:

(a) Residential conveyances:

(i) Wheelchair lifts;

(ii) Dumbwaiters;

(iii) Incline chairlifts; and

(iv) Residential elevators;

(b) Commercial conveyances:

(i) Wheelchair lifts;

(ii) Dumbwaiters; and

(iii) Incline chairlifts.

(3) **Category (03):** This license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, and repair of the following conveyances in industrial sites and grain terminals:

(a) Electric and hand powered manlifts;

(b) Special purpose elevators; and

(c) Belt manlifts.

(4) **Category (04):** This license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, and repair of the following conveyances:

(a) Temporary personnel hoists;

(b) Temporary material hoists; and

(c) Special purpose elevators.

(5) **Category (05):** This license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, and repair of material lifts.

(6) **Category (06):**

(a) This license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, and repair of the following conveyances:

- (i) Residential wheelchair lifts;
- (ii) Residential dumbwaiters; and
- (iii) Residential incline chairlifts.

(b) Work experience on conveyances in (a)(i), (ii), and (iii) of this subsection may not be all inclusively applied toward the category (02) license requirements.

Note: Maintenance work performed by the owner or at the direction of the owner is exempted from licensing requirements provided that the owner resides in the residence at which the conveyance is located and the conveyance is not accessible to the general public. Such exempt work does not count toward work experience for licensure.

(7) **Category (07):** This license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, and repair of residential inclined elevators.

Note: Maintenance work performed by the owner or at the direction of the owner is exempted from licensing requirements provided that the owner resides in the residence at which the conveyance is located and the conveyance is not accessible to the general public. Such exempt work does not count toward work experience for licensure.

(8) **Category (08):** This license is limited to maintenance of all conveyances and is further limited to employees of public agencies to obtain and maintain the license. This work should not count towards other licenses.

(9) **Category (09):** This temporary license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, and repair of conveyances. This license is limited to individuals that are certified as qualified and competent by licensed elevator contractors. The individual must be an employee of the licensed elevator contractor. The contractor shall furnish acceptable proof of competency as the department may require. Each license must recite that it is valid for a period of thirty days from the date of issuance and for such particular elevators or geographical areas as the department may designate, and otherwise entitles the licensee to the rights and privileges of an elevator mechanic license issued under chapter 70.87 RCW and this chapter.

Note: See policy number 07-01.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-00910, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-00910, filed 5/28/04, effective 6/30/04.]

WAC 296-96-00922 What are the fees associated with licensing? The following are the department's elevator license fees:

Type of Fee	Period Covered by Fee	Dollar Amount of Fee
Elevator contractor/mechanic application fee (not required for renewal of valid license)	Per application	\$54.60
Elevator contractor/mechanic examination fee	Per application	\$164.10
Reciprocity application fee*	Per application	\$54.60
Elevator mechanic license	2 years	\$109.40
Elevator contractor license	2 years	\$109.40
Temporary elevator mechanic license	30 days	\$27.20
Elevator mechanic/contractor timely renewal fee**	2 years	\$109.40
Elevator mechanic/contractor late renewal fee***	2 years	\$218.90
Training provider application/renewal fee	2 years	\$109.40
Continuing education course fee by approved training provider****	1 year	Not applicable
Replacement of any licenses		\$16.30
Refund processing fee		\$32.70

* Reciprocity application is only allowed for applicants who are applying for licensing based upon possession of a valid license that was obtained in state(s) with which the department has a reciprocity agreement.

** Renewals will be considered "timely" when the renewal application is received on or prior to the expiration date of the license.

*** Late renewal is for renewal applications received no later than ninety days after the expiration of the licenses. If the application is not received within ninety days from license expiration, the licensee must reapply and pass the competency examination.

**** This fee is paid directly to the continuing education training course provider approved by the department.

[Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-00922, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-00922, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-00922, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-00922, filed 5/28/04, effective 6/30/04.]

WAC 296-96-00924 What procedures does the department follow when issuing a civil penalty for licensing violations? (1) If the department determines that an individual has violated the licensing requirements of chapter 70.87 RCW or this chapter, the department may issue a civil penalty describing the reasons for the violation(s). The department may issue a civil penalty to:

(a) A person who is advertising, offering to do work or submitting a bid to perform conveyance work, or employing elevator mechanics and does not have a valid elevator contractor's license as required under chapter 70.87 RCW or this chapter; or

(b) An individual who is working under chapter 70.87 RCW or this chapter and does not have a valid elevator mechanic license.

(2) A person may appeal a civil penalty issued under chapter 70.87 RCW or this chapter.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-00924, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-00924, filed 5/28/04, effective 6/30/04.]

WAC 296-96-00926 What are the civil (monetary) penalties for violating the licensing requirements of chapter 70.87 RCW or this chapter? (1) A person cited for a violation under chapter 70.87 RCW or this chapter may be assessed a civil (monetary) penalty based upon the following schedule:

First Violation	\$500.00
Each additional Violation	\$500.00

(2) Each day a person, firm or company is in violation may be considered a separate violation.

(3) Each job site at which a person is in violation may be considered a separate violation.

(4) The department must serve notice by certified mail to a person for a violation of chapter 70.87 RCW or this chapter. A violation will be considered served on the date it is mailed to his or her last known address on record with the department.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-00926, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-00926, filed 5/28/04, effective 6/30/04.]

WAC 296-96-01000 What is the permit process for conveyances? (1) Prior to construction, alteration, or relocation of any conveyance, the licensed elevator contractor shall:

(a) Submit an installation application to the department. See WAC 296-96-01010 through 296-96-01025.

(b) Plans must be submitted to and approved by the department. See WAC 296-96-01030.

EXCEPTION: Most alterations will not require plans.

(c) Post an approved permit from the department on the job site.

(d) Obtain and pass an inspection prior to placing the conveyance in service. See WAC 296-96-01035.

(2) The owner must obtain and renew an annual operating certificate for each conveyance that they own, except for residential conveyances. See WAC 296-96-01065.

(3) After initial purchase and inspection, private residence conveyance(s) do not require an annual operating certificate. However, annual inspections may be conducted upon request. See WAC 296-96-01045 for the permit process.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01000, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-01000, filed 5/28/04, effective 6/30/04. 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, § 296-96-01000, filed 12/22/00, effective 1/22/01.]

WAC 296-96-01005 When do I need and what are the steps in obtaining a permit? (1) See WAC 296-96-01000 for the permit process.

(2) Construction and alteration permits are valid for one year from the date of issue. However, permits may be renewed if you:

(a) Apply for a renewal permit before your current permit expires;

(b) The department approves your request for a renewal permit; and

(c) You pay a \$51.60 renewal fee to the department for each permit you renew;

(3) If your permit has expired you must reapply for a new permit.

(4) See WAC 296-96-01006 for work requiring a permit.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01005, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01005, filed 5/22/07, effective 6/30/07. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-01005, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 70.87.030, 18.106.070, 18.106.125, 2001 c 7, and chapters 18.106, 43.22, and 70.87 RCW. 03-12-045, § 296-96-01005, filed 5/30/03, effective 6/30/03. 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, § 296-96-01005, filed 12/22/00, effective 1/22/01.]

WAC 296-96-01006 What type of conveyance work requires permitting and inspection? (1) All installations and relocation of conveyances requires permitting and inspection. All conveyance work must be performed by an elevator mechanic licensed to perform work in the appropriate category. (See WAC 296-96-00910).

(2) All alterations require permitting, inspection, and must include but are not limited to:

(a) Items identified in ASME A17.1.

(b) Any conveyance work that requires the conveyance to be tested prior to being returned to service, including:

(i) The replacement or repair of any parts, the installation of which would require recalibration or testing (e.g., brakes, hydraulic valves and piping, safeties, door reopening devices, governors, communication systems, cab interiors, car/hall buttons, etc.); or

(ii) Work performed on components or equipment affecting or necessary for fire and life safety (e.g., cab interiors, systems associated with fire recall, etc.).

(3) Permits and fees are not required for normal function and necessary maintenance and repair performed with parts

of equivalent materials, strength, and design or for any conveyance exempted by RCW 70.87.200.

Contact the department if you have any questions or need assistance determining if a permit and inspection are required.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01006, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-01006, filed 5/28/04, effective 6/30/04.]

WAC 296-96-01009 Who can purchase a permit?

The department may only issue a permit for conveyance work to a licensed elevator contractor.

Permits are only required for alterations, relocations and installations.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01009, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-01009, filed 5/28/04, effective 6/30/04.]

WAC 296-96-01010 What are the installation permit fees for conveyances, material lifts, and hoists and how are they calculated? Installation permit fees are based on the total cost of the conveyance and the labor to install the conveyance. The following permit fees apply to the construction or relocation of all conveyances and material lifts:

TOTAL COST OF CONVEYANCE	FEE
\$0 to and including \$1,000	\$54.60
\$1,001 to and including \$5,000	\$81.90
\$5,001 to and including \$7,000	\$136.70
\$7,001 to and including \$10,000	\$164.10
\$10,001 to and including \$15,000	\$218.90
OVER \$15,000	\$306.50 plus
Each additional \$1,000 or fraction thereof	\$7.60

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01010, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01010, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-01010, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-01010, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-01010, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-96-01010, filed 5/28/02, effective 6/28/02. 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 7, 2002 c 249, and chapters 19.28, 43.22, 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 296-96-01012 What are the permit fees for alterations to conveyances, material lifts, and hoists and how are they calculated? Permit fees are based on the total cost of the equipment, materials and labor to perform the alteration. The following permit fees apply to the alteration of all conveyances and material lifts:

TOTAL COST OF ALTERATION	FEE
\$0 to and including \$1,000	\$54.60
\$1,001 to and including \$5,000	\$81.90
\$5,001 to and including \$7,000	\$136.70
\$7,001 to and including \$10,000	\$164.10
\$10,001 to and including \$15,000	\$218.90
OVER \$15,000	\$218.90
Each additional \$1,000 or fraction thereof	\$7.60

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01012, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01012, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-01012, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-01012, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-96-01012, filed 5/28/02, effective 6/28/02.]

WAC 296-96-01025 What is the permit fee for personnel and material hoists? The fee for each personnel hoist or material hoist installation is

\$218.90
See WAC 296-96-01035(2) for requirements for jumps.
Note: An operating certificate is also required for these types of conveyances.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01025, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-96-01025, filed 5/28/02, effective 6/28/02. 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, § 296-96-01025, 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 if the installation work has not been performed, 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 and the reasons for which the refunds are requested.

The processing fee for each refund is\$32.70

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01027, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01027, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-01027, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-01027, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-01027, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-96-01027, filed 5/28/02, effective 6/28/02. 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 con-

struction, the applicant 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), 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. The permit holder 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. \$27.20
 If more than two sets of plans are submitted, the fee for each additional set \$10.80

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01030, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01030, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-01030, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-01030, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 43.22.-350, 43.22.434, 43.22.480, 43.22.500, 70.87.030, 18.106.070, 18.106.125, 2001 c 7, and chapters 18.106, 43.22, and 70.87 RCW. 03-12-045, § 296-96-01030, filed 5/30/03, effective 6/30/03. Statutory Authority: RCW 43.22.-350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-96-01030, filed 5/28/02, effective 6/28/02. 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? Yes. The initial inspection(s) 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 initial installation of the conveyance you will be issued a temporary operating certificate that is valid for 30 days. Prior to the expiration of the 30-day temporary operating certificate the application for an annual operating certificate and the appropriate fees must be paid to the department. Once the department has received the appropriate fees and application the owner will be issued the first annual operating certificate. The owner or owners' representative will receive an invoice from the department for renewal. The owner is required to renew the annual operating certificate yearly.

The following inspections require an additional inspection fee:

(1) **Reinspection.** If a conveyance does not pass an initial inspection and an additional inspection is required, the fee for each reinspection of a conveyance is \$109.40 per conveyance plus \$53.10 per hour for each hour in addition to the first hour.

The department may waive reinspection fees.

(2) **Inspecting increases in the height (jumping) of personnel and material hoists.**

The fee for inspecting an increase in the height (jumping) of each personnel hoist or material hoist is \$109.40 plus \$54.60 per hour for each hour in addition to 2 hours. This fee is for inspections occurring during regular working hours.

The permit holder may be allowed to operate a hoist prior to the jump inspection if:

(a) The electrical limits will not allow the lift to operate above the previously inspected landing.

(b) The state elevator inspector is contacted, agrees and can schedule within 3 days.

(3) Variance inspections.

(a) The fee for an on-site variance inspection is \$164.10 per conveyance plus \$54.60 per hour for each hour in addition to 2 hours. This fee is for inspections occurring during regular working hours.

(b) The fee for a variance that does not require an on-site inspection is \$54.60 per conveyance. The individual requesting the variance must provide the department with pictures, documentation, or other information necessary for the department to review the variance. The department may conduct an on-site variance inspection to verify the information provided or if it determines that an inspection is necessary. If an on-site variance inspection is performed, the fees in (a) of this subsection will apply.

(4) **"Red tag" status fee.** The annual fee for a conveyance in "Red tag" status is \$27.20.

Note: You must provide the department with written approval from the building official, indicating that the conveyance is not required for building occupancy, when you apply to have the conveyance placed in voluntary red tag status.

(5) **Decommission inspection.** The fee for performing a decommission inspection is \$54.60. Once the decommission inspection has been performed and approved, the conveyance will no longer require annual inspections until such time that the conveyance is brought back into service. Prior to operating the conveyance, a new inspection and annual operating permit must be obtained.

(6) **Voluntary inspections by request.** The owner or potential purchaser of a building within the department's jurisdiction may request a voluntary inspection of a conveyance. The fee for this inspection will be \$109.40 per conveyance and \$54.60 per hour for each hour in addition to 2 hours plus the standard per diem and mileage allowance granted to department inspectors. The owner/potential purchaser requesting the voluntary inspection will not be subject to any penalties based on the inspector's findings.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01035, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01035, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-01035, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-01035, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-01035, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.-480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-96-01035, filed 5/28/02, effective 6/28/02. 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 elevators to provide transportation for construction personnel, tools, and materials only? (1) The fee for the inspecting and testing of regular elevators used as temporary elevators is \$87.50, 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 in the elevator.

[Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01040, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-01040, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-01040, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-96-01040, filed 5/28/02, effective 6/28/02. 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, 70.87.120, 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 installation, a licensed elevator contractor 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 certificate 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 certificate, the following fee must be paid prior to an inspection:

TYPE OF CONVEYANCE	FEE
Each inclined stairway chair lift in private residence	\$25.50
Each inclined wheel chair lift in a private residence	\$25.50
Each vertical wheel chair lift in a private residence	\$32.20
Each dumbwaiter in a private residence.	\$25.50
Each inclined elevator at a private residence.	\$91.00
Each private residence elevator	\$58.60

TYPE OF CONVEYANCE	FEE
Duplication of a lost, damaged or stolen operating permit	\$10.80

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01045, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01045, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-01045, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-01045, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 43.22.-350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-96-01045, filed 5/28/02, effective 6/28/02. 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 \$65.60 per hour (including travel time) plus the standard per diem and mileage allowance granted to department inspectors. This fee is for inspections occurring during regular working hours.

[Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01050, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-01050, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-01050, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 70.87.030, 18.106.070, 18.106.125, 2001 c 7, and chapters 18.106, 43.22, and 70.87 RCW. 03-12-045, § 296-96-01050, filed 5/30/03, effective 6/30/03. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.-480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-96-01050, filed 5/28/02, effective 6/28/02. 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 \$65.60 per hour (including travel time) 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: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01055, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-01055, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-01055, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 70.87.030, 18.106.070, 18.106.125, 2001 c 7, and chapters 18.106, 43.22, and 70.87 RCW. 03-12-045, § 296-96-01055, filed 5/30/03, effective 6/30/03. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.-

480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-96-01055, filed 5/28/02, effective 6/28/02. 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 296-96-01057 Does the department charge a fee to perform investigations and what is the fee? An elevator inspector may charge at a rate of \$65.50 per hour (including travel time) plus the standard per diem and mileage allowance granted to department inspectors. These services shall include accident investigation relating to any and all accidents. This fee would include an inspection as required during the accident investigation.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01057, filed 11/30/07, effective 1/1/08.]

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 \$81.90 and \$81.90 per hour for each hour in addition to the first 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: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01060, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-01060, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-01060, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-96-01060, filed 5/28/02, effective 6/28/02. 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 certificate fees? An annual operating certificate will be issued to you upon payment of the appropriate fee. The owner of record will be invoiced by the department. If a change of owner has occurred, it is the new owner's responsibility to ensure the department has the corrected information. Below is the fee structure table:

TYPE OF CONVEYANCE	FEE
Each hydraulic elevator	\$109.40
Each roped-hydraulic elevator	\$136.70
plus for each hoistway opening in excess of two	\$10.80
Each cable elevator	\$136.70
plus for each hoistway opening in excess of two	\$10.80

TYPE OF CONVEYANCE	FEE
Each cable elevator traveling more than 25 feet without an opening—for each 25 foot traveled	\$10.80
Each limited-use/limited-application (—LULA) elevator	\$109.40
Each escalator	\$ 90.90
Each dumbwaiter in other than a private residence	\$58.60
Each material lift	\$109.40
Each incline elevator in other than a private residence	\$117.60
Each belt manlift	\$109.40
Each stair lift in other than a private residence	\$58.60
Each wheel chair lift in other than a private residence	\$58.60
Each personnel hoist	\$109.40
Each grain elevator personnel lift	\$90.90
Each material hoist	\$109.40
Each special purpose elevator	\$109.40
Each private residence elevator installed in other than a private residence	\$109.40
Each casket lift	\$90.90
Each sidewalk freight elevator	\$90.90
Each hand-powered manlift or freight elevator	\$61.60
Each boat launching elevator	\$90.90
Each auto parking elevator	\$90.90
Each moving walk	\$90.90
Duplication of a damaged, lost or stolen operating permit	\$10.80

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01065, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01065, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-01065, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-01065, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-96-01065, filed 5/28/02, effective 6/28/02. 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.]

WAC 296-96-01070 What are the civil (monetary) penalties for violating the conveyance permit and operation requirements of chapter 70.87 RCW and this chapter? (1) Any licensee, installer, owner or operator of a conveyance who violates a provision of chapter 70.87 RCW or this chapter shall be subject to the following civil penalties:

- (a) Operation of a conveyance without a permit:
 - First violation \$164.10
 - Second violation \$328.40
 - Each additional violation \$500.00
- (b) Installation of a conveyance without a permit:
 - First violation \$164.10
 - Second violation \$328.40
 - Each additional violation \$500.00

- (c) Relocation of a conveyance without a permit:
 - First violation \$164.10
 - Second violation \$328.40
 - Each additional violation \$500.00
- (d) Alteration of a conveyance without a permit:
 - First violation \$164.10
 - Second violation \$328.40
 - Each additional violation \$500.00
- (e) (i) Operation of a conveyance for which the department has issued a red tag or has revoked or suspended an operating permit or operation of a decommissioned elevator. \$500.00
 - (ii) Removal of a red tag from a conveyance \$500.00
- (f) Failure to comply with a correction notice:
 - After 90 days \$109.40
 - After 180 days \$273.60
 - After 270 days \$438.00
 - After 360 days \$500.00
 - Each 30 days after 360 days \$500.00
 - Note: Penalties are cumulative
- (g) Failure to submit official written notification that all corrections have been completed:
 - After 90 days \$109.40
 - After 180 days \$273.60
 - After 270 days \$438.00
 - After 360 days \$500.00
 - Each 30 days after 360 days \$500.00
 - Note: Penalties are cumulative
- (h) Failure to notify the department of each accident to a person requiring the services of a physician or resulting in a disability exceeding one day may result in a \$500.00 penalty per day. The conveyance must be removed from service until the department authorizes the operation of the conveyance. This may require an inspection and the applicable fees will be applied. Failure to remove the conveyance from service may result in an additional \$500.00 penalty per day. \$500.00 Plus WAC 296-96-01057
- (i) Falsifying official written documentation submitted to the department. Each day is a separate violation. \$500.00

tive 6/30/04. 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, § 296-96-01070, filed 12/22/00, effective 1/22/01.]

WAC 296-96-02400 When must the department be notified for a new or altered inspection? (1) The person or firm installing, relocating, or altering a conveyance shall notify the department in writing, at least seven days before requesting any inspection of the work, and shall subject the new, moved, or altered portions of the conveyance to the acceptance tests.

(2) The department may grant exceptions to this notice requirement.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02400, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02405 What is the inspection and approval process for alterations? The following process must be followed when performing alterations:

(1) Obtain an alteration permit from the department prior to performing the alteration. The permit application must include detailed information on the scope of the alteration.

(2) Take the conveyance out-of-service and perform the alteration.

(3)(a) If the conveyance requires an inspection prior to being returned to service (as identified on the alteration permit), you must contact the department to perform an inspection and:

(i) If the conveyance passes the inspection, the conveyance may be placed back into service.

(ii) If the conveyance fails the inspection, the conveyance must remain out-of-service until the corrections are made and approved by the department.

(b) If the conveyance is not required to be inspected prior to being returned to service, you must contact the department to perform an inspection and:

(i) If the conveyance passes the inspection, the conveyance may remain in service.

(ii) If the conveyance fails the inspection, the conveyance will be placed out-of-service until the corrections are made and approved by the department.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02405, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02410 Are there additional work requirements when performing an alteration? For certain types of alterations additional work may be required as part of the alteration and prior to approval of the conveyance. These alterations include, but are not limited to:

(1) Replacements of controllers will require the following:

(a) Fire fighter service requirements must be met in accordance with the most recent code adopted by the department.

(b) Seismic requirements ("Derailment and/or seismic switch as required") must be met in accordance with the most recent code adopted by the department. In addition, the car must operate according to A17.1 seismic requirements.

(c) Lighting in the machine room and pit must comply with the most recent code adopted by the department.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-01070, filed 11/30/07, effective 1/1/08. Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-96-01070, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-96-01070, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-96-01070, filed 5/24/05, effective 6/30/05. Statutory Authority: RCW 70.87-020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-01070, filed 5/28/04, effective 6/30/04.]

(d) Electrical outlets in the machine room and pit must be of the ground fault interrupter type.

(2) Replacement of controllers and a car operating panel and/or hall fixtures:

(a) The requirements of subsection (1) of this section must be met.

(b) All panels and fixtures must meet the applicable (e.g., height, sound, Braille, etc.) requirements in accordance with this chapter.

(3) Replacement of door operators and/or door equipment: Any changes to these items require the installation of door restrictors.

(4) Hydraulic piping: Replacement or relocation of hydraulic piping will require the installation of a rupture (overspeed) valve.

Note: The department may grant exceptions to the requirements identified in this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02410, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02415 What are the conditions for obtaining a temporary construction operating permit?

Note: See WAC 296-96-01040 for fees.

(1) In order to obtain a permit: The elevator must at a minimum adhere to:

(a) ASME A17-1 Section 5.10 Elevators Used for Construction.

(b) A single means of disconnecting the elevator must be provided and related equipment must be identified by the use of numbers or letters on the disconnect, the controller, the drive machine, the cross head, and the car operating panel.

(c) The key operation of Phase I must recall the elevator.

(d) A means of emergency communication with the elevator must be provided. If there is no permanent method of emergency communication an operator with communication equipment must be provided.

(e) Tests shall be conducted according to A17.1-8.10.5.10 Elevators Used for Construction.

(f) Hydraulic elevators with less than four stops may not be issued a temporary construction operating permit unless preapproved by the department.

(g) Elevator cab interiors must be completed. Temporary cabs may be used and walls must be covered with fire retardant materials.

(h) The elevator must pass load tests and safety circuit inspections.

(i) Temporary or permanent lights in the cab, machine room and at the landings must be provided.

(j) Machine rooms must be fully enclosed and have a lockable door.

(k) Hoistways must be fully enclosed.

(l) The elevator is for construction use only. Office furniture and goods used to stock the building are not to be considered construction work.

(2) The person operating the permitted conveyance under this section must be properly trained in operation and safety and:

(a) The operator, which may be one of your employees, must be on the elevator whenever it is in use.

(b) The operator must be designated to be the sole operator of the elevator.

(c) The operator must be trained in the proper operation of the elevator, the proper procedure to handle an emergency and must know who to contact in the event of an emergency involving the operation of the elevator.

(d) The operator must carry a means of two-way communication on his/her person at all times. (This may be in the form of a cellphone, walkie-talkie, etc., providing proper reception is obtainable at all times.)

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02415, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02420 What are the requirements for temporary construction operating permits?

(1) A thirty-day temporary construction operating permit is for transportation of construction personnel and materials only, not for the transportation by the general public.

(2) Temporary construction operating permits are valid for thirty days.

(3) You must contact the department for a reinspection to renew the permit.

(4) All elevators with expired temporary construction operating permits that have not passed a final inspection may not be operated. Operating an elevator with an expired permit shall result in a civil penalty (see WAC 296-96-01070 (1)(a)).

(5) Renewal of a temporary operating permit is at the discretion of the department.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02420, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02425 Where is a shut-off valve required for hydraulic elevators?

Two shut-off valves may be required.

(1) ASME requires that a shut-off valve be installed in the machine room.

(2) When the pit is lower than the machine, a shut-off valve must be installed in the pit.

(3) A separate shut-off valve is not required in the pit for hydraulic elevators equipped with a safety/rupture valve that rotates no more than 180 degrees to stop the flow of hydraulic fluid and has a safety shut-off handle capable of being grasped.

EXCEPTION: Limited use/limited application (LULA), special purpose and residential elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02425, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02450 Can pipes and ducts be installed above a machine room?

Electric conduit and ducts may be installed in the upper space ("upper space" is defined as the space above the fire-rated ceiling) of the elevator machine room as long as they are installed above the required seven-foot clearance and they do not interfere with the elevator equipment which also must be installed to allow a seven-foot clear head room.

(1) Straight through runs of electrical conduit without junction boxes can be installed in this space.

(2) Pipes and ducts conveying gases, vapor, or liquids may be installed in the space above the machine room

vided they are encased in a noncombustible secondary pipe without joints, or a moisture barrier without penetration.

EXCEPTION: Residential elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02455, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02455 What is the minimum working space required in machine rooms? (1) In machine rooms with equipment requiring maintenance and inspection, an eighteen-inch working space must be established.

(2) There must be a minimum of eighteen inches working space (other than the required controller panel clearances) on one of the four sides of the hydraulic tank.

(3) The requirements in subsections (1) and (2) of this section do not supersede NFPA 70.

(4) The side with the hydraulic outlet pipe is not considered usable working space.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02455, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02460 What are the requirements for electrical main line disconnects? (1) The main line disconnect switch(es) or circuit breaker must be located inside the machine room door on the lock jamb side of the machine room door and not more than twenty-four inches from the jamb to the operating handle; and it must be at a height of not more than sixty-six inches above the finish floor.

(2) For multicar machine rooms the switches shall be grouped together as close as possible to that location.

(3) For machine rooms with double swing doors, the doors must swing out and the switch(es) must be on the wall adjacent to the hinge side of the active door panel.

(4) The switch(es) must be designed so that they may be locked out and tagged in the open position.

EXCEPTION: Special purpose and residential inclined elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02460, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02465 What are the requirements associated with elevator machine rooms? (1) Panels or doors for the purpose of accessing nonelevator equipment are not permitted in elevator machine rooms. Passage through the machine room may not be used to gain access to other parts of the building that do not contain elevator equipment.

(2) The lighting control switch must be located inside the machine room within twenty-four inches of the lock jamb side of the machine room door.

(3) Cooling or venting of the elevator machine room shall be to the present building code adopted by the state.

Machinery spaces, machine rooms, control spaces, and control rooms that contain solid-state equipment for elevator operation shall be provided with an independent ventilation or air-conditioning system to protect against the overheating of the electrical equipment. Ventilation systems shall use outdoor makeup air. The system shall service the equipment space only, and shall be capable of maintaining the temperature and humidity within the range established by the manufacturer's specifications. Where no manufacturer specifications are available, the equipment space temperature shall be

maintained at no less than fifty-five degrees Fahrenheit and no more than ninety degrees Fahrenheit.

The cooling load for the equipment shall include the BTU output of the elevator operation equipment as specified by the manufacturer based on one hour of continuous operation. The outdoor design temperature for ventilation shall be from the 0.5 percent column for summer from the Puget Sound Chapter of ASHRAE publication "*Recommended Outdoor Design Temperatures, Washington State*." The following formula shall be used to calculate flow rate for ventilation:

$CFM = \text{BTU output of elevator machine room equipment} / [1.08 \times (\text{acceptable machine room temp} - \text{makeup air temp from the ASHRAE publication})]$

EXCEPTION: For buildings four stories or less, natural or mechanical means may be used in lieu of an independent ventilation or air-conditioning system to keep the equipment space ambient air temperature and humidity in the range specified by the elevator equipment manufacturer.

(4) A thermostat must be provided in the elevator machine room to control the temperature.

(5) Where no specifications are available, the machine room temperature shall be maintained at no less than fifty-five degrees Fahrenheit and no more than one hundred degrees Fahrenheit.

(6) When standby power is connected to the elevators, the machine room ventilation or air conditioning system shall be connected to the standby power.

(7) If the air conditioner is mounted overhead, seven feet of headroom clearance must be provided from the underside of the unit to the machine room floor.

(8) If ventilation is used, it must not exhaust air into other parts of the building.

(9) Machine rooms located in underground parking garages must have a means to exchange the air in the machine room. An "exchange of air" is completed through separate intake and exhaust systems.

EXCEPTION: The air in an underground parking garage machine room can be exchanged directly into the parking garage area.

(10) All elevators that are provided with remote elevator machine and/or control rooms must be provided with a permanent means of communication between the elevator car and the remote machine room and/or control room.

(11) Elevator machine room doors must have signs with lettering at least 1.25 inch in height with "elevator equipment room authorized personnel only - no storage."

EXCEPTION: Residential conveyances, LULAs and special purpose elevators are exempted from these requirements.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02465, filed 11/30/07, effective 1/1/08.]

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 296-96-02470 What are the requirements for Fireman's Service Phase I and Phase II recall? Devices for deactivating recall must be in the line of sight of the elevator; be secure from tampering; and must be accessible to fire, inspection, and elevator service personnel only. Owner-des-

ignated patient express and emergency hospital service elevators may have a manual control in the car for use by authorized patient care personnel. When activated, it shall preclude Phase I recall.

The illuminated visual signal in the car that indicates when Phase I Emergency Recall Operation is in effect must stay illuminated until the car is taken off Phase I operation.

Once the car returns to the designated landing on Phase I recall and the doors have reached their full open position, the buzzer must be silenced within ten seconds.

Groups of elevators containing four or more cars shall be provided with two, three-position key switches per group. For purposes of this section, a group shall be defined as all elevators serving the same portion of a building. Hall call buttons common to a group will remain in service unless both Phase I recall switches of a four car or larger group are placed in the recall mode or a fire alarm recall signal is initiated.

EXCEPTION: Limited use/limited application (LULA), special purpose, and residential elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02470, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02475 What are the requirements for sprinklers in hoistways and machine rooms? (1) The machine room sprinkler piping must terminate in the machine room. The sprinkler piping must not run through the machine room to other spaces.

(2) The hoistway must not be used to supply sprinkler piping to more than one floor.

(3) The pit will be considered as a floor level.

(4) Sprinkler heads at the top of the shaft must terminate in the shaft. The sprinkler must not run through the hoistway to other spaces. ("Other spaces" includes the machine room.)

(5) All risers and returns must be located outside of the hoistway and machine room.

(6) See requirements in ASME A17.1.

(7) If a sprinkler system is added to an existing installation, the conveyance will be required to:

(a) Install shunt trip per WAC 296-96-02277.

(b) If the conveyance was permitted to install on or after 1/1/1989 (A17.1-1987 code), then the fire service must operate to the code enforced per the original installation permit. A controller alteration will require fire and sprinkler system installation to the current adopted code.

(c) If the permit is prior to 12/31/1988, the fire service shall operate per current adopted standard in effect at the time of the alteration permit. (See A17.1-2.27.3.)

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02475, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02480 How does the department enforce ASME requirements for sprinklers, smoke detectors, and heat detectors in hoistways and machine rooms? ASME A17.1-2.8.2.3.2 states: "Means shall be provided to automatically disconnect the mainline power supply to the affected elevator upon or prior to the application of water from sprinklers located in the machine room or in the hoistway more than 600 mm (24 inches) above the pit floor. This means shall be independent of the elevator control and shall not be self-resetting. The activation of sprinklers outside the

hoistway or machine room shall not disconnect the main line power supply." This section applies to both new and altered elevators when sprinklers have been installed in the elevator machine room and/or hoistway.

(1) The department enforces this rule as follows:

(a) When sprinkler systems are installed in an elevator hoistway, fixed temperature heat detectors set only at one hundred thirty-five degrees Fahrenheit must be located at the top of the hoistway. If sprinklers are installed in the machine room, the same rule applies to heat detectors in the machine room. If heat detectors are installed, they must be no more than eighteen inches from the sprinkler and in accordance with NFPA must also be installed for elevator recall. The purpose of the heat detector is to automatically disconnect main-line power to the elevator before water flows from any sprinkler associated with the elevator system.

(b) Activation of a smoke detector or other department approved initiating device at the top of the hoistway shall cause all elevators having any equipment in that hoistway, and any associated elevators of a group automatic operation, to be returned nonstop to the designated level.

(c) Heat detectors must be:

(i) Located within eighteen inches of each sprinkler head, as required by the local building official, or as required by NFPA 13.

(ii) Ceiling mounted. However, pit detectors, if installed, may only be used as a signaling device and wall-mounted if they are so designed.

(iii) Heat detectors are not required in pits provided the automatic sprinkler heads are installed in such a way that the water spray pattern does not spray higher than three feet above the pit floor with a spray pattern directed level and down.

(d) The shunt trip disconnect must be installed in the machine room or machinery space and it must be easily identifiable.

(e) Power for the automatic disconnect control circuit.

(i) Must be derived from a one hundred twenty volt separate branch circuit. Circuit location must be identified on or next to the elevator disconnects; and

(ii) An illuminated visual device must be installed in the machine room adjacent to each elevator's disconnect. The purpose of this visual device is to indicate that power is available to the shunt trip activation mechanism; or

(iii) The department will allow disconnects that are labeled and listed to have built-in circuits that transform the power for the shunt trip device. This must be a one hundred twenty volt supply to the device. The shunt trip device must initiate shunt trip of the main line, not the fire panel. There must be an illuminated visual device incorporated on the disconnect switch that identifies that power is available to the shunt trip device.

(f) All electrical equipment and wiring associated with shunt trip devices must conform to the applicable ANSI/NFPA 70.

(g) The department does not require sprinkler shut-off valves. However, where they are installed, they must be located in an accessible place outside the hoistway, machine room or machinery space with their handles placed at no more than six feet above the floor.

(h) Emergency return units must be disabled when the shunt trip is activated.

(2) Alternative methods used to achieve ASME A17.1-2.8.2.3.2 must be approved by the department prior to installation.

EXCEPTION: Limited use/limited application (LULA), special purpose, and residential elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02480, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02485 What is required for emergency escape hatches? Emergency escape hatches must be hinged and secured from the car top so that the cover opens from the top of the car only. The hatch must be able to be opened without the use of tools.

EXCEPTION: Machine roomless elevators are exempt from this requirement. They must be locked from inside the car and provide the key in the elevator lock box.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02485, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02490 Are there exceptions for correction facility elevators? Facilities that require special consideration to ensure the safety of security personnel and to prevent escapes must meet the relevant requirements of ASME A17.1, except that accessible "in-car" stop switches and signaling devices are not required when the elevator operation is:

- (1) Continually monitored by audio-visual equipment.
- (2) Remotely controlled from a single location.

(3) Controls necessary for an elevator's operation may be located inside a car when the operating panel has a locked cover.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02490, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02495 Are self-leveling devices required? Automatic elevators must be equipped with a self-leveling device. Each car shall be equipped with a self-leveling feature that will automatically bring and maintain the car at floor landings within a tolerance of one-half inch (13 mm) under rated loading to zero loading conditions.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02495, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02500 Is a door reopening device required on automatic-closing car doors? Elevator doors shall be provided with a reopening device that shall stop and reopen a car door and hoistway door automatically if the door becomes obstructed by an object or person.

The reopening device shall be activated by sensing an obstruction passing through the opening at five inches (125 mm) nominal and twenty-nine inches (735 mm) nominal above the floor.

The reopening device shall not require physical contact to be activated, although contact shall be permitted before the door reverses.

The reopening device shall remain effective for twenty seconds minimum.

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EXCEPTION: Special purpose and residential elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02500, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02505 What is the minimum acceptable initial transfer time for an elevator door? The minimum acceptable time from notification that a car is answering a call until the doors of that car start to close shall be calculated from the following equation:

$T = D(1.5 \text{ ft/s})$ or $T = D/(455 \text{ mm}) = 5$ seconds minimum, where T equals the total time in seconds and D equals the distance (in feet or millimeters) from the point in the lobby or corridor 60 inches (1525 mm) directly in front of the farthest call button controlling that car to the centerline of its hoistway door.

EXCEPTION: For car with in car lanterns, T shall be permitted to begin when the signal is visible from the point sixty inches directly in front of the furthest hall call button and the audible signal is sounded.

Elevator doors shall remain fully open in response to a car call for three seconds minimum.

EXCEPTION: Special purpose and residential elevators are exempt.

EXCEPTION: Limited use/limited application (LULA), special purpose, and residential elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02505, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02510 What are the minimum cab size and other applicable requirements for car interiors? (1) All car interiors must be constructed to allow wheelchair users to enter the car, to maneuver within reach of the control panel and to exit the car.

(2) Minimum door width must be thirty-six inches.

(3) Minimum cab depth:

(a) From the rear wall to the return panel must be fifty-one inches; and

(b) From the rear wall to the inside face of the cab door must be fifty-four inches.

(4) For cabs with side-opening doors, the minimum cab width is sixty-eight inches;

(5) For cabs with center-opening doors, the minimum cab width is eighty inches;

(6) Maximum clearance between a car platform sill and the edge of a hoistway landing sill must be 1-1/4 inch; and

(7) If the building official having jurisdiction determines the elevator must comply with accessibility requirements, the elevator must comply with subsections (1) through (6) of this section.

Note: See IBC for stretcher requirements for building four stories or more. Written prior approval from the local building/fire official must be obtained to reduce these requirements.

EXCEPTION: Elevators located in existing school buildings or other buildings specifically identified by local authorities may have a minimum clear distance between walls or between a wall and the door, including the return panel, of 54 inches, and a minimum distance from the wall to the return panel of 51 inches.

EXCEPTION: LULA, special purpose, and residential elevators must meet the specifications in ASME A17.1 pertaining to car size.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02510, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02515 What is required for car controls? (1) Car controls shall be located within one of the reach ranges specified in ANSI 117.1 section 308.

EXCEPTION: Where the elevator panel serves more than sixteen openings and a parallel approach to the controls is provided, buttons with floor designations shall be permitted to be fifty-four inches maximum above the floor.

(2) Elevator car call sequential step scanning shall be provided where car control buttons are provided more than forty-eight inches above the floor.

(3) Floor selection shall be accomplished by applying momentary or constant pressure to the up or down scan button. The up scan button shall sequentially select floors above the current floor. The down scan button shall sequentially select floors above the current floor. When pressure is removed from the up and down scan button for more than two seconds, the last floor selected shall be registered as a car call. The up and down scan button shall be located adjacent to or immediately above the emergency control buttons. (new requirement)

(4) Car control buttons with floor designations shall be raised or flush.

(5) Buttons shall be three-fourth inch minimum in their smallest dimension.

(6) Buttons shall be arranged with numbers in ascending order. When two or more columns of buttons are provided they shall read from left to right.

(7) Control buttons shall be identified by tactile characters complying with ANSI 117.1 section 703.

(8) Tactile characters and Braille designations shall be placed immediately to the left of the control button to which the designations apply.

(9) Car control keypads shall be a standard telephone keypad arrangement.

(10) Keypads shall be identified by visual characters complying with ANSI A117.1 and shall be centered on the keypad button. The number five key shall have a single raised dot.

(11) The dot shall have a base diameter of 0.188 inch minimum to 0.120 inch maximum, and a height of 0.025 inch minimum and 0.037 inch maximum.

(12) Emergency controls shall have their centerlines thirty-five inches minimum above the floor.

(13) Emergency controls including the emergency alarm shall be grouped at the bottom of the panel.

(14) The control buttons for emergency stop, alarm, door open, door close, main entry floor, and phone shall be tactile symbols. Per ANSI table 407.4.7.1.3.

(15) Buttons with floor designations shall be provided with visible indicators to show that a call has been registered. The visible indicator shall extinguish when the car arrives at the designated floor.

EXCEPTION: Special purpose and residential elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02515, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02520 What are the location and operation requirements for car position indicators in the car?

(1) Audible and visible car position indicators shall be pro-

vided in elevator cars. Visible indicator characters shall be one-half inch minimum in height.

(2) Indicators shall be located above the car control panel or above the door.

(3) As the car passed the floor and when a car stops at a floor served by the elevator, the corresponding character shall illuminate.

(4) The signal shall be an automatic verbal annunciator that announces the floor at which the car is about to stop. The verbal announcement indicating the floor shall be completed prior to the initiation of door opening.

EXCEPTION: For elevators other than destination-oriented elevators that have a rated speed of two hundred feet per minute or less, a nonverbal audible signal with a frequency of 1500 Hz maximum that sounds as the car passes or is about to stop at a floor served by the elevator shall be permitted.

(5) The verbal annunciator shall be ten dBA minimum above ambient, but shall not exceed eighty dBA, measured at the annunciator.

(6) The verbal annunciator shall have a frequency of 300 Hz minimum and 3000 Hz maximum.

(7) Nonverbal audible annunciators must be at least twenty decibels with a frequency no higher than 1500 Hz.

EXCEPTION: Special purpose and residential elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02520, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02525 What is required for installation and operation of emergency communication systems?

Every elevator must contain an emergency two-way communication system. The installation and operation of this emergency communication system must comply with the ASME A17.1 code in effect when the department issued the elevator's installation permit. In addition to the appropriate ASME A17.1 code, the following requirements apply:

(1) The communication device located in the elevator car must comply with the following:

(a) The maximum height of any operable part of the communication system is forty-eight inches above the floor.

(b) Raised symbols and letters must identify the communication system. These symbols and letters must be located adjacent to the communication device. The characters used must be:

(i) At least 5/8 inches but no more than two inches high;

(ii) Raised 1/32 inch;

(iii) Upper case;

(iv) Sans serif or simple serif type; and

(v) Accompanied by Grade 2 Braille.

(c) If the system is located in a closed compartment, opening the door to the compartment must:

(i) Require the use of only one hand without tight grasping, pinching, or twisting of the wrist; and

(ii) Require a maximum force of five pounds.

(d) The emergency communication system must not be based solely upon voice communication since voice-only systems are inaccessible to people with speech or hearing impairments. An indicator light must be visible when the telephone is activated. This nonverbal means must enable the message recipient to determine the elevator's location address

and, when more than one elevator is installed, the elevator's number.

(e) The emergency communication system must use a line that is capable of communicating with and signaling to a person or service that can respond appropriately to the emergency at all times.

(2) A communication device must be installed in the lobby adjacent to the Phase I key switch. This device must be a two-way communication device used to communicate with individuals in the elevator.

(a) The height of any communication device(s) located in the lobby must be located between forty-eight and sixty inches above the floor.

(b) Additional communication device(s) may also be located in other parts of the building in addition to the one located in the lobby.

EXCEPTION: Elevators that have less than sixty feet of travel do not require an intercom.

(3) Subsections (1) and (2) of this section do not apply to special purpose elevators. However, residential and special purpose elevators must have a means of communication located inside the elevator cab. This communication device must be available at all times.

EXCEPTION: Residential inclined elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02525, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02530 What requirements apply to the size and location of car handrails? A handrail must provide coverage lengthwise at least ninety percent from wall to wall.

(1) A handrail must be installed on all car walls not used for normal exits. The handrails must be:

(a) Attached to the wall at a height of between thirty-two and thirty-five inches from the floor.

(b) Attached to the wall with a 1-1/2 inch space between the wall and the rail;

(c) Constructed with the hand grip portion not less than 1-1/4 inches but not more than two inches wide;

(d) Constructed with a cross-section shape that is substantially oval or round;

(e) Constructed with smooth surfaces and no sharp corners. Approaching handrail ends on a blank wall in the interior corners of a car do not have to return to the wall. However, if the handrail is located on the closing door wall of a single-slide or two-speed entrance elevator and it projects an abrupt end towards people entering the car, the handrail end must return to the wall.

(2) Residential elevators must have at least one handrail. The handrail must be installed on a car wall not used for normal exits.

EXCEPTION: Special purpose elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02530, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02535 What requirements apply to floor designations on elevator door jambs? (1) Floor designations shall be provided in tactile characters complying with

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ANSI A117.1 section 703.3 located on both jambs of elevator hoistway entrances.

(2) Tactile characters must be two inches minimum in height.

(3) A tactile star shall be provided on both jambs at the main entry level.

(4) Tactile characters shall be raised 1/32 inch minimum above their background.

(5) Characters shall be uppercase.

(6) Characters shall not be italic, oblique, script, highly decorative, or other unusual forms.

(7) Characters and their background shall have a non-glare finish.

(8) Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

(9) Braille shall be contracted Grade 2 Braille and comply with ANSI A117.1 section 703.4.

(10) Braille shall be forty-eight inches minimum and sixty inches maximum above the floor, measured to the base line of the Braille cells.

(11) Characters shall be permanently attached (meaning tools required to remove).

Note: See ASNI A117.1 for a complete list of requirements.

EXCEPTION: Special purpose and residential elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02535, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02540 What are the installation and operation requirements for hall buttons? (1) A clear floor space complying with ANSI A117.1 section 305 shall be provided at call controls.

(2) Objects beneath hall call buttons shall protrude one inch maximum.

(3) Call buttons and keypads shall be located within one of the reach ranges specified in ANSI A117.1 section 308 measured to the centerline of the highest operable part. In no instance shall they be lower than thirty-six inches.

(4) Call buttons shall be raised or flush.

(5) Call buttons shall be 3/4 inch minimum in the smallest dimension.

(6) The call button that designates the up direction shall be located above the call button that designates the down direction.

(7) Call buttons shall have visible signals to indicate when each call is registered and when each call is answered.

EXCEPTION: Special purpose and residential elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02540, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02545 What are the requirements for installation and operation of hall lanterns? (1) A visible and audible signal shall be provided at each hoistway entrance to indicate which car is answering a call and the car's direction of travel. Where in-car signals are provided, they shall be visible from the floor area adjacent to the hall call buttons.

(2) Visible signal fixtures shall be centered at seventy-two inches minimum above the floor. The visible signal ele-

ments shall be 2-1/2 inches minimum measured along the vertical centerline of the element. Signals shall be visible from the floor area adjacent to the hall call button.

(3) Audible signals shall sound once for the up direction and twice for the down direction, or shall have verbal annunciators that indicate the direction of elevator car travel.

(4) Audible signals shall have a frequency of 1500 Hz maximum. Verbal annunciators shall have a frequency of 300 Hz minimum and 3000 Hz maximum.

(5) The audible signal or verbal signal annunciator shall be 10 dBZ minimum above ambient, but shall not exceed 80 dBA, measured at the call button.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02545, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02550 What are the requirements for underground hydraulic elevator pipes, fittings, and cylinders? All newly installed underground pressure cylinders and pipes containing hydraulic elevator fluids shall be encased in an outer plastic containment.

(1) The plastic casing shall be constructed of polyethylene or polyvinyl chloride (PVC). The plastic pipe wall thickness must not be less than 0.125 inches (3.175 mm). The casing shall be capped at the bottom and all joints must be solvent or heat welded.

(2) The casing shall be sealed and dry around hydraulic pipe and cylinder to contain any leakage into the ground and to prevent electrolysis to the hydraulic pipe and the cylinder. Dry sand may be used to stabilize the hydraulic cylinder.

(3) A one-half inch pipe nipple with a one-way check valve shall be located between the casing and cylinder for monitoring purposes.

(4) Alternate methods must receive approval from the department prior to installation.

(5) This rule shall apply to all conveyances with installation permits issued by the department on or after 01/01/1993.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02550, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02555 What are the requirements for accessing elevated elevator pit equipment? Where elevated pit equipment requires assisted vertical access of more than five feet, a permanent noncombustible working platform shall be provided. Access to the platform must be by a fixed ladder or stair conforming to ANSI A14.3. The platform shall be of sufficient strength to support personnel and may be of open grillwork.

In residential installations where the pit depth exceeds three feet, a fixed vertical ladder, designed to the current adopted rules for commercial installations, must be provided.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02555, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02560 What are the requirements for submersible pumps or sumps? Sump pumps and drains are not required in elevator pits. Sump holes must be installed and measure a minimum of eighteen inches by eighteen inches by eighteen inches. If drains or sump pumps are installed, they must not be directly connected to sewers and/or storm drains. P-traps and check valves are not

allowed. All installations must meet the NEC and all plumbing codes. Drains meeting the above requirements may be installed in lieu of sump holes.

Sump hole covers must be designed to withstand a load of three hundred pounds per square foot.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02560, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02565 What are the requirements for top of car lighting for freight and passenger elevators? A permanently wired work light and outlet shall be installed on the top of freight and passenger elevators. The light(s) shall provide illumination of ten foot candles across the entire horizontal plane of the top of the car up to a height of six feet. The fixture(s) shall be protected from accidental breakage.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02565, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02570 How do we enforce hoistway ventilation? (1) Area of vents. Except as provided for in Section 3004.3.1, the area of the vents shall not be less than 3-1/2 percent of the area of the hoistway nor less than three square feet (0.28 m²) for each elevator car, and not less than 3-1/2 percent nor less than one-half square foot (0.047 m²) for each dumbwaiter car in the hoistway, whichever is greater. The total required vent area shall be equipped with dampers that remain powered closed until activated open by the fire alarm system panel. The dampers shall open upon loss of power.

(2) Activation of the powered vent must not be from the same device that activates the phase one fire recall.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02570, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02575 How do we enforce hoistway pressurization? Pressurization requirements. Elevator hoistways shall be pressurized to maintain a minimum positive pressure of 0.10 inches of water column with respect to adjacent occupied space on all floors and a maximum pressure so as to not prevent the automatic operation of the elevator doors, as well as accounting for the stack and wind effect expected on the mean low temperature January day. This pressure shall be measured at the midpoint of each hoistway door, with all hoistway doors open at the designated primary recall level and all other hoistway doors closed. The supply air intake shall be from an outside, uncontaminated source located a minimum distance of twenty feet from any air exhaust system or outlet.

(1) Elevator doors. Each elevator door shall operate properly when hoistway pressurization is in effect.

(2) Hoistway venting. Hoistway venting required by Section 3004 need not be provided for pressurized elevator shafts.

(3) Machine rooms. Elevator machine rooms shall be pressurized in accordance with this section unless separated from the hoistway shaft by construction in accordance with the International Building Code, Section 707.

(4) Special inspection. Special inspection for performance shall be required in accordance with the International Building Code, Section 909.18.8. System acceptance shall be

in accordance with the International Building Code, Section 909.19.

(a) The elevator department must observe the operation of the doors and insure proper documentation and tags are on site.

(b) Devices shall have an approved identifying tag or mark on them consistent with the other required documentation and shall be dated indicating the last time they were successfully tested and by whom.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02575, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02580 Are keys required to be on-site?

The keys to the machine room and the keys that are necessary to operate the elevator must be located in a locked key retainer box in the elevator lobby at the designated level above the hall buttons, or located by machine room doors at no more than six feet above the floor, provided access to the key box doesn't require passage through locked doors. If in order to meet this requirement the box would be located in an unsecured location (such as the outside portion of a condo), other arrangements shall be accommodated with the written permission of the department.

The key retainer box must be:

- Readily accessible to authorized personnel;
- Clearly labeled "ELEVATOR";
- Securely mounted;
- Equipped with a 1-inch mortise cylinder cam lock with keyway set to a #39504 Fort type key and securely mounted;

Further:

- Keys for access to elevator machine rooms and for operating elevator equipment must be tagged and kept in the key box.
- The box must contain all keys.
- Mechanical hoistway access devices must be located in the key box or machine room.

EXCEPTION: Residential elevators are exempt from this section.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02580, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02585 What are the requirements for fire doors installed in front of hoistway doors? If fire and/or smoke doors are required to be installed by the International Building Code or the local building official, they must:

- (1) Not be permanently attached to the hoistway door assembly.
- (2) Not encroach upon the full width and height of the hoistway door opening.
- (3) Ensure the adherence to ANSI A117.1 as to hall buttons, lanterns, jamb markings, key switches and position indicators locations and line of sight.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02585, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02590 When does the department require a local building official to sign off for the installation of LULAs, stair lifts, inclined wheelchair lifts and vertical wheelchair lifts? In existing buildings where LULAs, stair lifts, inclined wheelchair lifts and vertical

wheelchair lifts are to be installed, the local building official must signify that he/she is allowing this type of conveyance on a form provided by the department.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02590, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02595 What are the general requirements for LULA elevators? (1) LULAs may be permitted in churches, private clubs, and buildings listed on the historical register that are not required to comply with accessibility requirements.

(2) Installation of LULAs in existing buildings that are not required to comply with accessibility requirements will be considered on a case-by-case basis by the department.

(3) For LULAs installed according to subsections (1) and (2) of this section a form provided by the department must be signed by the local building official.

(4) LULAs must be equipped with an emergency communication device meeting the requirements of WAC 296-96-02330.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02595, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02600 What is required for physically handicapped lifts? (1) All inclined stairway chairlifts and inclined and vertical wheelchair lifts installed in buildings where the conveyance is not visible at all times must be equipped with a standard electric switch Chicago style lock and #2252 key.

(2) All inclined stairway chairlifts and inclined and vertical wheelchair lifts installed in residences licensed as group homes must be equipped with a standard electric key switch Chicago style lock and #2252 key.

(3) All inclined stairway chairlifts and inclined and vertical wheelchair lifts installed in schools, day care centers, churches and other facilities which typically accommodate or provide services for children must also be equipped with a standard electric key switch Chicago style lock and #2252 key.

(4) Where these conveyances are installed outdoors, they must be equipped with either a standard electric key switch Chicago style lock and #2252 key or a timing device. The timing device must not allow the conveyance to run outside of normal business hours.

(5) In locations where the conveyance is not visible at all times, the conveyance must be equipped with a means of two-way communication that is capable of communicating with and signaling to a person or service that can respond appropriately at all times.

EXEMPTION: Inclined stairway chairlifts and inclined and vertical wheelchair lifts in private residences are not required to be equipped with key switches.

(6) Beginning July 1, 2004, vertical wheelchair lifts in commercial installations must be equipped with low energy power-operated doors or gates complying with ANSI/BHMA A156.19. Doors and gates shall remain open for twenty seconds minimum. End doors shall be thirty-two inches minimum clear width. Side doors shall be forty-two inches minimum clear width.

EXCEPTION: Lifts having doors or gates on opposite sides shall be permitted to have manual doors and gates.

(7) For purposes of this section, "not visible at all times" includes, but is not limited to, conveyances located in stairwells, auditoriums, and other areas which are not generally in the normal path of travel during the hours that the building is occupied.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02600, filed 11/30/07, effective 1/1/08.]

WAC 296-96-02605 Are private residence inclined stairway chairlifts required to be permanently wired? Private residence inclined stairway chairlifts are not required to be permanently wired into a structure. These conveyances may be equipped with a cord and plug. The plug must be directly inserted into a wall receptacle that is protected by a fuse or a circuit breaker at its source and is capable of supporting the additional load on the circuit. The source must be identified either at the receptacle or at the feeder panel. The cord must be secured in a manner that will not create any tripping hazards.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-02605, filed 11/30/07, effective 1/1/08.]

WAC 296-96-05020 What requirements apply to the construction and fire safety of hoistway enclosures? Generally, local codes and ordinances govern hoistway enclosure construction. When not in conflict with a local code requirement, the enclosure must:

- (1) Be built to a height of 7 feet above each floor, landing and adjacent stairway tread;
- (2) Extend (adjacent to the counterweights) the full height of the floor and 8 inches beyond the counterweight raceway;
- (3) Be constructed of either solid material or material with openings that will reject a 2-inch diameter ball; and
- (4) Be supported and braced so that it does not deflect more than 1 inch when subjected to a force of 100 pounds applied perpendicular at any point.
- (5) A full height hoistway enclosure is required only on the side(s) of the material lift for which the car is not equipped with a gate or enclosure.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-05020, filed 11/30/07, effective 1/1/08. 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, § 296-96-05020, filed 12/22/00, effective 1/22/01.]

WAC 296-96-05120 What requirements apply to car operating devices, terminal stopping devices and electrical protective devices? If electrically operated, such devices must be enclosed. On lifts driven by winding drum machines, there must be a slack rope device employing an enclosed electric switch (manually reset type) which halts power to the drum and brake when the hoisting rope becomes slack.

On other lifts suspended by flexible means such as chain, there must be a slack rope/chains device employing an enclosed electric switch (manually reset type) which halts power to the machine and brake when the suspension means becomes slack.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-05120, filed 11/30/07, effective 1/1/08. 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, § 296-96-05120, filed 12/22/00, effective 1/22/01.]

WAC 296-96-05140 What requirements apply to car safeties? Car safeties must be used on all material lifts that are suspended by wire ropes or chains. They must be able to stop and sustain a car carrying 125 percent of its rated load. On lifts driven by rack and pinion machines:

(1) Car safeties will consist of a freely rotating safety pinion, an overspeed governor and a safety device which may be mounted on the car.

(2) The rotating pinion driving an overspeed governor will travel on a stationary rack which is vertically mounted in the hoistway.

(3) The governor will actuate the safety device when the downward speed of the car reaches the tripping speed and will bring the car to a gradual stop.

(4) Car safeties must be able to stop and sustain a car carrying one hundred twenty-five percent of its rated load.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-05140, filed 11/30/07, effective 1/1/08. 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, § 296-96-05140, filed 12/22/00, effective 1/22/01.]

WAC 296-96-05160 What types of ropes, chains, and rope connections must be used on a lift? (1) The following general requirements apply:

(a) Iron (low carbon steel) or steel wire ropes with fiber cores must be used to suspend cars and counterweights.

(b) The minimum safety factor for suspension ropes must be 6 times the manufacturers rated breaking strength per rope.

(c) The car, the counterweight end of the car and the counterweight wire ropes (or the stationary hitch ends where multiple roping is used) must be fastened so that the looped ends of the turned back portion in the rope sockets are clearly visible. Fastenings must either be:

- (i) Individual tapered, babbitted rope sockets; or
- (ii) Other types of department approved rope fastenings.

(d) Rope sockets must develop at least 80 percent of the breaking strength of the strongest rope used in the sockets.

(e) U-bolt rope clips (clamps) cannot be used for load fastenings.

(f) A metal or plastic data tag must be securely attached to one of the wire rope fastenings each time the ropes are replaced or reshackled. The data tag must include:

- (i) The diameter of the ropes in inches; and
- (ii) The manufacturer's rated breaking strength.
- (iii) The month and year the ropes or chain were installed.

(iv) The name of the person or organization who installed the ropes.

(v) All replacements of wire rope or chain must be in accordance with the lift manufacturer's specifications.

(2) The following requirements apply to specific types of material lifts:

(a) Traction type lifts must use at least three hoisting ropes.

(b) Lifts suspended by hoisting chains must comply with the chain manufacturer's specifications for maintenance, inspection, and application.

(c) Lifts using roller chain type lifting chains must use chains with a six to one safety factor based on ASME/ANSI B-29.1M minimum (not average) chain strength.

(d) Drum type lifts, must use either at least two hoisting ropes or a secondary as well as a primary load path to the hoist must be employed. Also, the cable secured to the drum must be at least one and one-half turns around the drum when the carrier is at its extreme limit of travel.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-05160, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-05160, filed 5/28/04, effective 6/30/04. 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, § 296-96-05160, filed 12/22/00, effective 1/22/01.]

WAC 296-96-07030 Does the department approve private residence elevator plans and specifications? Yes.

(1) Before commencing construction of any inclined private residence elevator the licensed installer must submit complete plans and specifications to the department for approval.

(2) Plans and specifications covering the installation of an inclined private residence elevator must be endorsed by a professional engineer before the department will approve the plans.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-07030, filed 11/30/07, effective 1/1/08. 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, § 296-96-07030, filed 12/22/00, effective 1/22/01.]

WAC 296-96-07050 What are the construction requirements for car landing enclosures and gates for inclined private residence elevators? Any landing enclosures and gates must have:

(1) A railing at least 42 inches high to protect all landing platforms and those areas of a building used as landing platforms; and

(2) A gate whose height is equal to the height of the railing to protect the passenger landing opening.

(a) Gates may either be a horizontally sliding type or a swing type; and

(b) All gates must be equipped with a latch that holds the gate closed and an electrical contact to prevent movement of the car when a gate is open; and

(3) Railing enclosure and gate shall reject a 1.5 inch diameter ball.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-07050, filed 11/30/07, effective 1/1/08. 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, § 296-96-07050, filed 12/22/00, effective 1/22/01.]

WAC 296-96-07120 What construction requirements apply to car doors and gates? (1) All car entrances must be protected by a door or gate. The height of the door or gate must be at least 42 inches and equal to the height of the car enclosure. Doors and gates may be either of a solid design or an openwork design. If of an openwork design, the door or gate must be able to reject a 3-inch diameter ball. After the effective date of these rules the diameter will be reduced to 1.5 inches.

(2) Car doors or gates must be equipped with an electric contact that prevents the elevator from operating unless the door or gate is securely closed. If the gate is a swing type opening outward from the car, the electric contact must not be made until the gate is securely latched.

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(3) All car doors or gates must be manually operated.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-07120, filed 11/30/07, effective 1/1/08. 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, § 296-96-07120, filed 12/22/00, effective 1/22/01.]

WAC 296-96-07150 What are the construction requirements for guide rails, track supports and fastenings? (1) Guides, guide rails, guide rail brackets, splice plates, and fastenings must be made of steel or other metals conforming to the requirements of this section.

(2) Guides, guide rails, guide rail brackets, and their fastenings and supports must, at the point of support, deflect 1/8 inch or less while resisting horizontal forces encountered during loading. When horizontal force is measured at a mid-point between brackets, guide rails must deflect 1/4 inch or less in any direction.

Fixed, suspended cable guides may be used as a guide member(s). When used, the deflection is to be specified by the manufacturer and approved by a structural engineer licensed in the state of Washington.

(3) The top and bottom of each guide or guide rail run must not allow a car and counterweight guiding members to travel beyond the guide rail ends.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-07150, filed 11/30/07, effective 1/1/08. 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, § 296-96-07150, filed 12/22/00, effective 1/22/01.]

WAC 296-96-07171 How and when are safeties and governors tested? (1) A safety must be tested before the inclined private residence elevator is put into service. It must be tested while the elevator is carrying its rated load.

(2) Governors on instantaneous type safeties must be tested by hand tripping the governor while the elevator is traveling at its rated speed. Creating sufficient slack in the rope and dropping the elevator is a method of testing speed governors located on an elevator or chassis.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-07171, filed 11/30/07, effective 1/1/08. 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, § 296-96-07171, filed 12/22/00, effective 1/22/01.]

WAC 296-96-07180 What are the construction requirements for driving machines and sheaves? (1)(a) Winding drums, traction sheaves, overhead sheaves and deflecting sheaves must:

(i) Be made of cast iron or steel;

(ii) Have diameters at least 30 times the diameter of the wire hoisting ropes; and

(iii) Have machined rope grooves.

(b) EXCEPTION:

(i) If 8 x 19 steel ropes are used, drum and sheave diameters may be reduced to 21 times the diameter of the hoisting rope.

(ii) Existing incline lifts suspended by cables are not required to have machine grooves, except for the first row of cables wrapped on the drum and shall be required to have a tracking device.

(iii) On existing inclined lifts suspended by cables that do not have machine grooves on the drum, the first layer of ropes will be recognized as providing the same traction as

grooves, provided that this layer remains on the drum at all times and is not allowed to wind out. Such lifts must be provided with a tracking device to ensure that the rope does not wind over itself on the drum.

(2) The factor of safety, based on the static load (the rated load plus the weight of the car, ropes, counterweights, etc.) to be used in the design of driving machines and sheaves, must be at least:

(a) Eight for driving machines and sheaves built of wrought iron and steel; or

(b) Ten for driving machines built of cast iron, cast steel or other materials.

(3) Set screw type fastenings must not be substituted for keys or pins if connections are subject to torque or tension.

(4) Gears:

(a) When connecting drums or sheaves to the main driving gear, friction gears, clutch mechanisms or couplings must not be used.

(b) Worm gears having cast iron teeth must not be used.

(5) Brakes:

(a) Electric brakes must be of the friction type set by springs and must release electrically.

(b) All brakes must be able to stop and hold an elevator carrying 125 percent of its rated load.

(c) At least one brake must be mounted so that in the case of gearbox failure, the drum will hold the rated load.

(d) If a single ground or short-circuit, a counter-voltage or a motor field discharge occurs and the operating device is set in the stop position, the brake magnet must set the brake.

(6) Driving machines:

(a) A driving machine may be mounted on an elevator chassis or in a remote location. However, if mounted in a remote location, all sheaves and sprockets must be guarded and positioned so the hoisting ropes and chains remain properly aligned while the elevator is in use.

(b) Screw type machines must not be used.

(c) Hydraulic driving machines must conform to ASME A17.1.

(d) Roped-hydraulic machines may be used.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-07180, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-07180, filed 5/28/04, effective 6/30/04. 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, § 296-96-07180, filed 12/22/00, effective 1/22/01.]

WAC 296-96-07190 What construction requirements apply to terminal stopping switches? A hoistway must be equipped with normal upper and lower terminal stopping switches that are activated by an elevator chassis. Normal upper and lower terminal stopping switches must stop the elevator at the normal top and bottom terminals of travel.

(1) A hoistway must be equipped with final terminal stopping switches that are activated by an elevator chassis. These switches must stop the elevator if the elevator travels beyond the normal terminals and prevent the elevator from moving in either direction.

(2) Winding drum machines may use a slack cable switch instead of a bottom final terminal switch.

(3) Normal and final terminal stopping switches must not control the same switches on the controller unless at least two

separate and independent switches are used. At least two of these separate switches must be closed in order to complete the motor and brake circuits for each direction of travel.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-07190, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-07190, filed 5/28/04, effective 6/30/04. 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, § 296-96-07190, filed 12/22/00, effective 1/22/01.]

WAC 296-96-07200 What are the requirements for operation of an inclined private residence elevator? (1) If the activation of the elevator is by key switch or key pad it must conform to the requirements of (a) and (b) of this subsection. The department may approve alternative methods of equal security such as key card or magnetic swipe card. Methods must conform to the following:

(a) The key or code must be entered each time to move the elevator.

(b) Key-operated switches must be of the spring return type and must be operated by a weatherproof cylinder type lock having not less than five pin or five disc combination with the key removable only when the switch is in the off position.

(2) If activation of the elevator is provided by a timing circuit that only allows the circuits to be initiated or unlocked for a sufficient amount of time to allow passengers to board the elevator and begin transit, a separate activation switch on the car is not required. The operating circuits must automatically relock:

(a) If the elevator is not activated within its preset period of time;

(b) When any landing stop button is activated;

(c) When the preset timing period has expired and the car has completed transit to another landing or returns to the departure landing.

(3) Emergency stop switches must be provided on or adjacent to the operating station.

(a) Stop switches in the car must:

(i) Be of a manually opened and manually closed type;

(ii) Have red handles or buttons and be conspicuously marked "STOP";

(iii) Open even if springs fail when springs are used.

(b) Stop switch at other operating stations:

(i) May be of a momentary type;

(ii) Must have red handles or buttons and be conspicuously marked "STOP";

(iii) Must open even if springs fail when springs are used;

(iv) After initiation of stopping, the car may not automatically restart. Run condition must be manually initiated.

(4) Design and installation of control and operating circuits must meet the following:

(a) Control systems based upon the completion or maintenance of an electric circuit must not be used for interrupting power and applying machine brakes at terminals; stopping elevators when an emergency stop switch is open or when any electrical protective device operates; stopping a machine when the safety applies.

(b) If springs are used to activate switches, contact, or circuit breaking relays to stop the elevator at a terminal, the springs must be of the restrained compression type.

(5) Hand rope operation must not be used.

(6) Radio controls may be used in lieu of wiring for all car controls provided:

(a) The system is set up so that it is fail safe (if contact is lost, the unit will stop);

(b) In such installations, the STOP button in the car shall open the contact, and maintain an open condition, so that the car stops in the fail-safe mode as described in (a) of this subsection; and

(c) The controls are permanently mounted and conform to code.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-07200, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-07200, filed 5/28/04, effective 6/30/04. 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, § 296-96-07200, filed 12/22/00, effective 1/22/01.]

WAC 296-96-07210 What are the construction requirements for suspension methods? (1) When a chassis is suspended from a driving machine by a wire rope, a single method of suspension may be used. The suspension means may be any one of the following:

(a) Steel elevator wire rope;

(b) Steel aircraft cable; or

(c) Roller chain conforming to ANSI transmission roller chains and sprocket teeth.

(2) Steel tapes must not be used as a suspension method.

(3) The minimum diameter of hoist ropes or cables must be 1/4 inch galvanized elevator wire rope and 3/16 inch aircraft cable.

(4) Factor of safety:

(a) The minimum factor of safety for a suspension method is 8 based upon the rope tension while elevating a car carrying its rated load.

(b) In no case, must the rated breaking strength of the rope be less than 4,000 pounds.

(5) The contact arc of a wire rope on a traction sheave must be sufficient to produce adequate traction under all load conditions.

(6) All wire ropes anchored to a winding drum must have at least one full turn of rope on the drum when the car or counterweight reaches its over-travel limit.

(7) The winding-drum ends of car and counterweight wire ropes must be secured by:

(a) Clamps on the inside of the drum; or

(b) Return loop; or

(c) Properly made individual tapered babbitted sockets;

or

(d) Properly attached fittings recommended by wire rope manufacturers.

(e) U-bolt type clamps must not be used.

(8) The ends of wire ropes must be fastened to cars or counterweights by:

(a) Return loop; or

(b) Properly made individual tapered babbitted sockets that conform to ASME A17.1 requirements. (The diameter of the hole in the small end of the socket must not exceed the

nominal diameter of the rope by more than 3/32 inch.); or properly attached fittings recommended by wire rope manufacturers.

(c) U-bolt type clamps must not be used.

(9) Rope repair:

(a) Car and counterweight wire ropes cannot be lengthened or repaired by splicing.

(b) If a single wire rope in a set is worn or damaged and needs to be replaced, the entire set must be replaced.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-07210, filed 11/30/07, effective 1/1/08. 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, § 296-96-07210, filed 12/22/00, effective 1/22/01.]

WAC 296-96-07230 What requirements apply to electrical wiring? (1) All wiring must conform to the National Electrical Code (NEC) in effect at the time of installation or major alteration.

(2) If a driving machine is mounted on the elevator chassis, the electrical connections between the elevator and the power source must be able to stop power if a traveling cable parts.

(3) All electrical connections between the elevator and the stationary connections must be insulated flexible conductors conforming to the applicable articles in the NEC relating to Elevators, Dumbwaiters, Escalators, Moving Walks, Wheelchair Lifts, and Stairway Chair Lifts.

(4) An elevator mechanic employed by an elevator contractor may perform electrical work from the electrical disconnect to and including the elevator operating control systems.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-07230, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-07230, filed 5/28/04, effective 6/30/04. 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, § 296-96-07230, filed 12/22/00, effective 1/22/01.]

WAC 296-96-08200 What are the requirements for the activation and operation of an inclined private residence conveyances for transporting property? (1) If activation of the conveyance is by key switch, key pad or swipe card, the activation and operation must conform to the requirements of (a) and (b) of this subsection. The department may approve alternative methods of equal security.

(a) The key or code must be entered each time to move the conveyance.

(b) Key-operated switches must be of the spring return type and must be operated by a weatherproof cylinder type lock having not less than five pin or five disc combination with the key removable only when the switch is in the off position.

(2) If activation is provided by a timing circuit that only permits the circuits to be initiated or unlocked for a sufficient amount of time to allow the loading of materials, the operating circuits must automatically relock:

(a) If the conveyance is not activated within its preset period of time;

(b) When any landing stop button is activated; or

(c) When the car has completed transit to another landing or returns to the departure landing.

(3) Emergency stop switches must be provided on or adjacent to the operating station. Stop switches:

- (a) May be of a momentary type;
 - (b) Must have red handles or buttons and be conspicuously marked "STOP"; and
 - (c) Must open even if springs fail when springs are used.
- (4) After initiation of stopping, the car may not automatically restart. Run condition must be manually initiated.

(5) Design and installation of control and operating circuits must meet the following:

(a) Control systems based upon the completion or maintenance of an electric circuit must not be used for interrupting power and applying machine brakes at terminals, stopping elevators when an emergency stop switch is open or when any electrical protective device operates, or for stopping a machine when the safety applies.

(b) If springs are used to activate switches, contact, or circuit breaking relays to stop the elevator at a terminal, the springs must be a restrained compression type.

(6) Hand rope operation must not be used.

(7) For inclined private residence conveyances installed before January 1, 2008, radio controls may be used in lieu of wiring for all car controls provided:

(a) The system is set up so that it is fail safe (if radio contact is lost, the unit will stop);

(b) In such installations, the stop button in the car shall interrupt the circuit of frequency; and

(c) The controls are permanently mounted and comply with the applicable rules.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-08200, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-08200, filed 5/28/04, effective 6/30/04. 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, § 296-96-08200, filed 12/22/00, effective 1/22/01.]

WAC 296-96-08210 What are the requirements for suspension methods? (1) When a chassis is suspended from a driving machine by a wire rope, a single method of suspension may be used. The suspension means may be any one of the following:

- (a) Steel elevator wire rope;
- (b) Steel aircraft cable; or
- (c) Roller chain conforming to ANSI transmission roller chains and sprocket teeth.

(2) Steel tapes must not be used as a suspension method.

(3) The minimum diameter of hoist ropes or cables must be 1/4 inch galvanized elevator wire rope and 3/16 inch aircraft cable.

(4) Factor of safety:

(a) The minimum factor of safety for a suspension method is 5 based upon the rope tension while elevating the elevator carrying its rated load.

(b) In no case, must the rated breaking strength of the rope be less than 4,000 pounds.

(5) The contact arc of a wire rope on a traction sheave must be sufficient to produce adequate traction under all load conditions.

(6) All wire ropes anchored to a winding drum must have at least one full turn of rope on the drum when the car or counterweight reaches its over-travel limit.

(7) The winding-drum ends of car and counterweight wire ropes must be secured by:

- (a) Clamps on the inside of the drum;
- (b) Return loop;
- (c) Properly made individual tapered babbitted sockets;

or

(d) Properly attached fittings recommended by wire rope manufacturers. U-bolt type clamps must not be used.

(8) The ends of wire ropes must be fastened to cars or counterweights by:

- (a) Return loop;
- (b) Properly made individual tapered babbitted sockets that conform to ASME A17.1 requirements (The diameter of the hole in the small end of the socket must not exceed the nominal diameter of the rope by more than 3/32 inch.); or
- (c) Properly attached fittings recommended by wire rope manufacturers. U-bolt type clamps must not be used.

(9) Rope repair:

(a) Car and counterweight wire ropes cannot be lengthened or repaired by splicing.

(b) If a single wire rope in a set is worn or damaged and needs to be replaced, the entire set must be replaced.

(10) A metal or plastic data tag must be securely attached to one of the wire rope fastenings each time the ropes are replaced or reshackled. The data tag must include:

- (a) The diameter of the ropes in inches; and
- (b) The manufacturer's rated breaking strength.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-08210, filed 11/30/07, effective 1/1/08. 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, § 296-96-08210, filed 12/22/00, effective 1/22/01.]

WAC 296-96-08230 What requirements apply to electrical wiring? (1) All wiring must conform to the NEC in effect at the time of installation or major alteration.

(2) If a driving machine is mounted on the conveyance chassis, the electrical connections between the conveyance and the power source must be able to stop power if a traveling cable parts.

(3) All electrical connections between the conveyance chassis and the stationary connections must be insulated flexible conductors conforming to the applicable articles of the NEC relating to Elevators, Dumbwaiters, Escalators, Moving Walks, Wheelchair Lifts, and Stairway Chair Lifts.

(4) An elevator mechanic employed by an elevator contractor may perform electrical work from the electrical disconnect to and including the elevator operating control systems.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-08230, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-08230, filed 5/28/04, effective 6/30/04. 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, § 296-96-08230, filed 12/22/00, effective 1/22/01.]

WAC 296-96-09001 What regulations apply to personnel hoists? All personnel hoist installations, maintenance, repair and tests must comply with the American National Standard Institute ANSI A10.4-2004 edition or the latest published edition adopted by ANSI, Safety Require-

ments for Personnel Hoists and Employee Elevators for Construction and Demolition Operations.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-09001, filed 11/30/07, effective 1/1/08. 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, § 296-96-09001, filed 12/22/00, effective 1/22/01.]

WAC 296-96-10001 What regulations apply to material hoists? All material hoist installations, maintenance, repair, and tests must comply with the American National Standard Institute ANSI A10.5-1992 edition or the latest published edition adopted by ANSI, Safety Requirements for Material Hoists.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-10001, filed 11/30/07, effective 1/1/08. 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, § 296-96-10001, filed 12/22/00, effective 1/22/01.]

WAC 296-96-11001 What regulations apply to belt manlifts? WAC 296-96-11016 through 296-96-11080 apply to all existing belt manlifts.

Belt manlifts installed between July 1, 2004, and January 1, 2008, must meet the requirements in ASME A90.1-1997.

After the effective date of these rules all belt manlift installations and alterations must meet ASME A90.1-2003.

All belt manlifts must be maintained, inspected and tested to conform to section 8 and appendix II of ASME A90.1-2003.

Maintenance inspection report shall be kept in a secure location within the building the belt manlift serves.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-11001, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-11001, filed 5/28/04, effective 6/30/04. 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, § 296-96-11001, filed 12/22/00, effective 1/22/01.]

WAC 296-96-13149 What are the structural requirements for counterweights, counterweight enclosures, and counterweight fastenings? All counterweights must be fully enclosed at landings or at the path of travel.

(1) At the bottom of a counterweight enclosure, there must be an inspection opening large enough to allow the inspection of cable fastenings, counterweight and buffer.

(2) Rectangular shaped counterweights must be secured by at least two, half-inch mild steel bolts with lock nuts.

(3) Round counterweights must be fastened with a center bolt at least three quarter inch in diameter and secured with a lock nut.

(4) All bolt eyes must be welded closed.

(5) Cable fastenings shall be by babbitted tapered elevator sockets or other acceptable methods. If cable clamps are used, a minimum of three cable clamps must be provided. U-shaped clamps shall not be acceptable.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-13149, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-13149, filed 5/28/04, effective 6/30/04.]

WAC 296-96-16140 How must car frames and platforms be connected? Connections between members of the

car frames and platform must be riveted, bolted, or welded and must meet the following specifications:

(1) Bolts where used through sloping flanges of structural members must have bolt heads of the tipped head type or must be fitted with beveled washers.

(2) Nuts used on sloping flanges of structural members must seat on beveled washers.

(3) Welding of parts upon which safe operation depends must be done in accordance with the appropriate standards established by the American Welding Society.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-16140, filed 11/30/07, effective 1/1/08. 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, § 296-96-16140, filed 12/22/00, effective 1/22/01.]

WAC 296-96-23100 Are keys required to be on-site? Yes.

(1) The keys to the machine room and the keys that are necessary to operate the elevator must be located in a locked key retainer box in the elevator lobby; or located by machine room doors at no more than six feet above the floor, provided access to the key box doesn't require passage through locked doors. The key retainer box must be:

(a) Readily accessible to authorized personnel;

(b) Clearly labeled "Elevator"; and

(c) Equipped with a 1-inch cylinder cam lock key #39504.

Further:

Keys for access to elevator machine rooms and for operating elevator equipment must be tagged and kept in the key box.

The key box must contain all keys necessary for inspections of the elevator.

Mechanical hoistway access devices must be kept in the key box or machine room.

(2) The department may approve existing retainer boxes provided they are:

(a) Readily accessible to authorized personnel;

(b) Clearly labeled "Elevator"; and

(c) The lock must be either a 1-inch cylinder cam lock key #39504 or a combination lock. The combination for the lock must be on record with the department.

Deviations from this section due to security concerns must be approved by the department via a variance request.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23100, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-23100, filed 5/28/04, effective 6/30/04. 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, § 296-96-23100, filed 12/22/00, effective 1/22/01.]

WAC 296-96-23116 What requirements apply to car numbers? In any building with more than one elevator, numbers at least two inches in height identifying each car must be located at the main lobby entrance, inside the car, on the machine, and on the disconnect switch and if the conveyance has a walk-in pit, the buffer stands.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23116, filed 11/30/07, effective 1/1/08. 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, § 296-96-23116, filed 12/22/00, effective 1/22/01.]

WAC 296-96-23117 What requirements apply to top of car railings for traction elevators? A standard railing must be installed on the top of all traction elevators where the perpendicular distance between the edges of the car top and the adjacent hoistway enclosure exceeds twelve inches horizontal clearance. The railing shall be substantially constructed of metal and shall consist of a top rail, intermediate rail and post. The top rail shall have a smooth surface and the upper surface shall be located at a vertical height of forty-two inches. The intermediate rail shall be located approximately halfway between the top rail and the car top. There must be a minimum of six inches of clearance above the top rail when the car is at its furthest point of travel. If the vertical clearance from the car top to the hoistway enclosure, including gravity-stopping distance, is less than 48 inches away, the top handrail height may be reduced to 42 inches plus or minus 3 inches. If the clearances will not allow a 39-inch handrail, do not install the top of car railing, instead provide signage required by WAC 296-96-23119.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23117, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-23117, filed 5/28/04, effective 6/30/04.]

WAC 296-96-23118 What requirements apply to top of car railings for hydraulic elevators in unenclosed hoistways? A standard railing must be installed on the top of hydraulic elevators installed in unenclosed hoistways. The railing shall be substantially constructed of metal and shall consist of a top rail, intermediate rail and post. The top rail shall have a smooth surface and, the upper surface shall be located at a vertical height of 42 inches plus or minus 3 inches. The intermediate rail shall be located approximately halfway between the top rail and the car top. There must be a minimum of six inches of clearance above the top rail when the car is at its furthest point of travel on the mechanical stop. If the vertical clearance of 6 inches cannot be achieved, do not install car top railing, instead provide signage required by WAC 296-96-119 [WAC 296-96-23119].

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23118, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-23118, filed 5/28/04, effective 6/30/04.]

WAC 296-96-23119 What signage requirements apply to traction elevators with minimal overhead clearance? Elevators that do not have a minimum of twenty-four inches of clearance from the crosshead, or any equipment mounted on the crosshead, to the lowest member of the overhead structure in the hoistway when the car has reached its maximum upward movement must have signage. A sign must be located near the top of car inspection station. An additional sign must be posted on the hoistway wall. This sign must be visible when accessing the car top. The sign shall consist of alternating four-inch diagonal red and white stripes and must clearly state "danger low clearance" in lettering not less than four inches in height.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23119, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c

143 and 2004 c 66. 04-12-047, § 296-96-23119, filed 5/28/04, effective 6/30/04.]

WAC 296-96-23122 What type of lighting must be installed in machine rooms and machinery space? Permanent electric lighting must be provided in all machine rooms and machinery spaces. All installations prior to 7/1/2004 require illumination to be at least 10 foot-candles at floor level.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23122, filed 11/30/07, effective 1/1/08. 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, § 296-96-23122, filed 12/22/00, effective 1/22/01.]

WAC 296-96-23132 What lighting requirements apply to pits? (1) Installations prior to 7/1/2004 require a permanent lighting fixture producing at least 5 foot-candle at the pit floor must be installed in all pits.

(2) A light switch must be installed and must be accessible from the pit access door.

(3) A permanent grounded outlet must be provided in all pits.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23132, filed 11/30/07, effective 1/1/08. 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, § 296-96-23132, filed 12/22/00, effective 1/22/01.]

WAC 296-96-23316 What requirements apply to plunger stops? Plungers must be provided with solid metal stops and/or other means to prevent the plunger from traveling beyond the limits of the cylinder. Stops must be designed and constructed so as to stop the plunger from maximum speed in the up direction under full pressure without damage to the connection to the driving machine, plunger, plunger connection, or any other parts of the hydraulic system. For rated speeds exceeding 100 feet per minute where a solid metal stop is provided, means other than the normal terminal stopping device (i.e., emergency terminal speed limiting device) must be provided to retard the car to 100 feet per minute with retardation no greater than gravity, before striking the stop.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23316, filed 11/30/07, effective 1/1/08. 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, § 296-96-23316, filed 12/22/00, effective 1/22/01.]

WAC 296-96-23450 What requirements apply to step tread lighting? Step treads and landings must be illuminated throughout. The light intensity on the treads must not be less than 5 ftc (54 kx).

The illumination shall be uniform intensity and shall not contrast materially with that of the surrounding area.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23450, filed 11/30/07, effective 1/1/08. 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, § 296-96-23450, filed 12/22/00, effective 1/22/01.]

WAC 296-96-23455 What requirements apply to comb and step distinction? There shall be a visual contrast between the comb and step, achieved by color, pattern, or texture.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23455, filed 11/30/07, effective 1/1/08.]

WAC 296-96-23460 What requirements apply to safety zone? The entry and exit zone shall be kept clear of all obstacles. The width of the zone shall be not less than the width between the centerlines of the handrails plus eight inches. The length of the zone, measured from the end of the newel, shall be not less than twice the distance between the centerlines of the handrails.

EXCEPTION: On the entrance side, the safety zone distance may be reduced, when cart restriction devices are installed, with prior written permission.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23460, filed 11/30/07, effective 1/1/08.]

WAC 296-96-23465 What requirements apply to landing access plates? Access plates at the top and bottom landings shall be properly located and securely fastened in place when no more than seventy lbf effort is required to open the access plate.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23465, filed 11/30/07, effective 1/1/08.]

WAC 296-96-23600 What is the scope of Part VI, Alterations, Repairs and Maintenance? Subpart VI, Alterations, Repairs and Maintenance, applies to periodic inspections, tests, alterations, and maintenance. The applicable code references are: ASME A17.1-Part 8, ASME A18.1-Part 10, ASME A90.1-Part 8, and appendix 2, ANSI A10.4-Part 26 & 27, ANSI A10.5-Part 4, and other requirements in this chapter.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23600, filed 11/30/07, effective 1/1/08. 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, § 296-96-23600, filed 12/22/00, effective 1/22/01.]

WAC 296-96-23610 What requirements apply to routine periodic inspections and tests? The owner or the owner's agent must ensure that her/his conveyances are inspected and tested on a periodic annual basis by a person qualified to perform such services. All conveyances must be tested to the applicable code(s) by an elevator mechanic licensed in the appropriate category for the conveyance being tested. (See appendix N in ASME A17.1.)

(1) For annual testing of electric, hydraulic, and roped hydraulic elevators, a log indicating the date of testing with all pertinent data included must be posted in the machine room. The log must be completed by the qualified person performing the test.

(a) A log indicating the date of testing with all pertinent data included must be posted in the machine room. The log must be completed by the licensed elevator mechanic performing the test.

(b) It is the responsibility of the owner or the owner's representative to install an updated log sheet in the machine room; the outdated log shall remain posted in the machine room.

(2) Required for fire fighters' service portion of the log. It is the owner's responsibility to test fire fighters' service operation of Phase I and Phase II key switches quarterly and annually perform the smoke detector test.

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Note: The fire service key switch(es) and smoke detector testing may be performed and logged by the building owner.

(3) For five-year testing:

(a) A full-load safety test must be performed with weights on all conveyances except hydraulic elevators.

(b) For roped hydraulic elevators a static load test with the full load on the car must also be performed.

(c) For tests administered under this subsection:

(i) A safety tag with the date and company conducting the test must be permanently attached to the governor, safeties, and the rupture valves with a wire and seal.

(A) For vertical platform lifts and stair chairs the tag must be located at the disconnecting means.

(B) Separate safety tags must be used to distinguish the no-load annual safety test and the five-year full load test.

(ii) Documentation must be submitted to the department on the approved state form.

(d) Qualified people will conduct the test. A qualified person is either:

(i) An elevator mechanic licensed in the appropriate category for the conveyance being tested;

(ii) The representative of a firm that manufactured the particular material lift, and who holds a current temporary mechanic's license in this state; or

(iii) The representative of a firm that manufactured the particular material lift who is working under the direct supervision of an elevator mechanic licensed in the appropriate category for the conveyance being tested.

Escalators shall be tested and cleaned annually. Upon completion of this work, the appropriate form indicating that the work was done must be submitted to the department.

(4) All other conveyances requiring annual testing must have tags indicating the date and the name of the company who performed the test. When the required location for mounting the tag is not readily accessible, the tag may be mounted on the main line disconnect.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23610, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. 04-12-047, § 296-96-23610, filed 5/28/04, effective 6/30/04. 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, § 296-96-23610, filed 12/22/00, effective 1/22/01.]

WAC 296-96-23620 What requirements apply to alterations, repairs and maintenance? The owner or the owner's agent is responsible for the safe operation, proper maintenance, and alteration of his or her conveyance(s) and must comply with the present adopted ASME A17.1, Part 8.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23620, filed 11/30/07, effective 1/1/08. 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, § 296-96-23620, filed 12/22/00, effective 1/22/01.]

WAC 296-96-23630 What requirements apply to elevator equipment displaced by seismic activity? Any elevator equipment, hydraulic or cable that is displaced as a result of seismic activity must be anchored to conform with current standards, when repaired or reanchored to the building.

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23630, filed 11/30/07, effective 1/1/08. 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, § 296-96-23630, filed 12/22/00, effective 1/22/01.]

WAC 296-96-23710 What requirements apply to lifts for the physically handicapped? On installations prior to 7/1/2004: Inclined and vertical chairlifts and inclined and vertical wheelchair lifts installed only for use by persons with disabilities in locations other than in or at a private residence must be equipped with a standard electric switch Chicago lock with key #2252.

EXCEPTION: See WAC 296-96-02370 for key alterations.

This requirement is in addition to ASME A18.1, and the current Washington state rules and regulations on barrier-free design located in ANSI A117.1 in effect via the State Building Code (IBC).

[Statutory Authority: Chapter 70.87 RCW. 07-24-041, § 296-96-23710, filed 11/30/07, effective 1/1/08. 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, § 296-96-23710, filed 12/22/00, effective 1/22/01.]

Chapter 296-99 WAC

SAFETY STANDARDS FOR GRAIN HANDLING FACILITIES

WAC

296-99-030	What training must an employer provide for employees?
296-99-040	What practices must an employer follow for entry into grain storage structures?
296-99-065	What preventive maintenance program must an employer implement?

WAC 296-99-030 What training must an employer provide for employees? (1) The employer must train employees:

(a) Annually; and

(b) Whenever a new job assignment exposes an employee to a new hazard.

(2) The employer must ensure that employees are trained in the following:

(a) General safety precautions against fires and explosions, including how to recognize and prevent the hazards of excess dust accumulation and ignition sources.

(b) Specific procedures and safety practices for job tasks including, but not limited to:

- Cleaning grinding equipment;
- Clearing choked legs;
- Housekeeping;
- Hot work; and
- Preventive maintenance.

(3) The employer must provide additional training for employees who are assigned special tasks, including but not limited to:

(a) Procedures for grain storage entry according to chapter 296-809 WAC, Confined spaces, and how to:

- Control hazardous energy (lockout/tagout) according to chapter 296-803 WAC, Lockout/tagout (control of hazardous energy);
- Avoid getting buried by moving grain (engulfment);
- Avoid falling from heights; and
- Prevent mechanical hazards.

(b) How to handle flammable or toxic substances.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-99-030, filed 1/24/07, effective 4/1/07. Statutory Authority: Chapter 49.17 RCW. 97-22-065, § 296-99-030, filed 11/3/97, effective 1/1/98; 88-23-054 (Order 88-25), § 296-99-030, 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 chapter 296-803 WAC 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 chapter 296-809 WAC, Confined spaces, 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, 49.17.050, 49.17.060. 07-03-163, § 296-99-040, filed 1/24/07, effective 4/1/07. 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.]

WAC 296-99-065 What preventive maintenance program must an employer implement? (1) The employer must implement a written program that covers the requirements of chapter 296-803 WAC, Lockout/tagout (control of hazardous energy).

(2) The employer must implement preventive maintenance procedures that include the following:

(a) Conducting regularly scheduled inspections for specified machinery.

(b) Preparing written inspection reports kept on file that include:

- The date of each inspection;
- The name of the inspector; and
- The serial number, or other identification of the machinery as described next in (c) of this subsection.

(c) Conducting regularly scheduled inspections and completing immediate repairs of the mechanical equipment and safety controls of the following machinery:

- Grain dryers;
- Grain stream processing equipment;
- Dust collection systems including their filter collectors that malfunction or operate below designed efficiency;
- Overheated bearings; and
- Slipping or misaligned belt drives for inside bucket elevators.

When immediate repairs are not feasible, then the affected machine must be taken out of service.

(d) Performing lubrication and other maintenance according to manufacturers' recommendations or more often when needed, such as when operating records indicate that a more stringent schedule is necessary.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-99-065, filed 1/24/07, effective 4/1/07. Statutory Authority: Chapter 49.17 RCW. 97-22-065, § 296-99-065, filed 11/3/97, effective 1/1/98; 88-23-054 (Order 88-25), § 296-99-065, filed 11/14/88.]

Chapter 296-104 WAC

BOARD OF BOILER RULES—SUBSTANTIVE

WAC

296-104-018	Administration—How are rules interpreted and revised?
296-104-540	Repairs—What are the requirements for nuclear repairs of safety devices?
296-104-700	What are the inspection fees—Examination fees—Certificate fees—Expenses?

WAC 296-104-018 Administration—How are rules interpreted and revised? Stakeholders may request clarifications and interpretations of these rules by contacting the chief inspector. Interpretations will be brought to the board if the inquirer is aggrieved by the interpretation of the chief inspector (RCW 70.79.360). The board will consider written requests for interpretations and revisions to these definitions, rules, and regulations. Inquiries shall be limited to requests for interpretation of the rules or to proposed revisions to the existing rules and shall be submitted to the department of labor and industries forty-five days prior to the board of boiler rules meeting date. The requests shall be in writing upon the form furnished by the chief inspector located on the boiler program web site. Requests not using the form must be in the following format:

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(1) Scope. Identify a single rule or closely related rules that are in dispute.

(2) Background. State the purpose of the inquiry, which should be either to obtain an interpretation or to propose a revision to existing rules. Provide concise information needed for the board's understanding of the inquiry, including references to the WAC section as well as other code and/or standards paragraphs.

(3) Inquiry structure. Provide statements in a condensed and precise question format and, where appropriate, compose in such a way that "yes" or "no" (perhaps with provisos) would be an acceptable reply.

(4) Proposed reply. State what it is believed the rule requires. If in the inquirer's opinion a revision to the definitions, rules, and regulations is needed, recommended wording should be provided.

Inquiries shall be submitted by mail to:

Board of Boiler Rules
c/o Chief Inspector
Department of Labor & Industries
Boiler Section
P.O. Box 44410
Olympia, WA 98504-4410

or

Inquiries shall be submitted by delivery to:

Board of Boiler Rules
c/o Chief Inspector
Department of Labor & Industries
Boiler Section
7273 Linderson Way SW
Tumwater, WA 98501

or

Inquiries shall be submitted electronically to:

Board of Boiler Rules
c/o Chief Inspector
BoilerBoardInquires@lni.wa.gov

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, and 70.79.350. 07-11-137, § 296-104-018, filed 5/22/07, effective 6/30/07; 05-22-092, § 296-104-018, filed 11/1/05, effective 1/1/06. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-018, filed 10/26/99, effective 11/26/99. Statutory Authority: RCW 70.79.040. 92-11-070, § 296-104-018, filed 5/20/92, effective 6/20/92.]

WAC 296-104-540 Repairs—What are the requirements for nuclear repairs of safety devices? All nuclear pressure retaining items shall be safe-guarded by safety devices, as specified in the ASME Section III, Division 1, Class 1, 2, and 3.

(1) The resetting, repair, and restamping of these safety devices shall be performed only by organizations holding a valid National Board "NR" and "VR" Certificate of Authorization to repair ASME Section III Code safety devices. An owner's ASME Section XI program may be used in lieu of a "NR" Certificate of Authorization for repair activities of the owner's valves. The repair work shall be documented on the applicable NR-1/NVR-1 form or on an owner's NIS-2 form. All repair/replacement activities performed under the "NR" Certificate of Authorization or owner's Section XI Repair

program must be in accordance with the provisions of the NBIC, ASME Section XI, and the rules of the jurisdiction.

(2) External adjustments or repair activities performed by the owner shall be resealed with a metal tag showing the identification of the organization and the date.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, and 70.79.350. 07-24-057, § 296-104-540, filed 12/4/07, effective 1/4/08; 06-24-042, § 296-104-540, filed 11/30/06, effective 1/1/07. Statutory Authority: RCW 70.79.030 and 70.79.040. 98-22-024, § 296-104-540, filed 10/28/98, effective 11/28/98.]

WAC 296-104-700 What are the inspection fees—Examination 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	\$33.00	\$26.40
All other boilers less than 500 sq. ft.	\$39.60	\$26.40
500 sq. ft. to 2500 sq. ft.	\$65.80	\$33.00
Each additional 2500 sq. ft. of total heating surface, or any portion thereof	\$26.40	\$13.00
Power boilers:	Internal	External
Less than 100 sq. ft.	\$33.00	\$26.40
100 sq. ft. to less than 500 sq. ft.	\$39.90	\$26.40
500 sq. ft. to 2500 sq. ft.	\$65.80	\$33.00
Each additional 2500 sq. ft. of total heating surface, or any portion thereof	\$26.40	\$13.00
Pressure vessels:		
Automatic utility hot water supply heaters per RCW 70.79.090		\$6.20
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.	\$26.40	\$19.70
15 sq. ft. to less than 50 sq. ft.	\$39.20	\$19.70
50 sq. ft. to 100 sq. ft.	\$45.60	\$26.40
For each additional 100 sq. ft. or any portion thereof	\$45.60	\$13.00
Certificate of inspection fees: For objects inspected, the certificate of inspection fee is \$19.70 per object.		
Boiler and pressure vessel installation/reinstallation permit (excludes inspection and certificate of inspection fee)		\$50.00
Nonnuclear shop inspections, field construction inspections, and special inspection services:		
For each hour or part of an hour up to 8 hours		\$39.90
For each hour or part of an hour in excess of 8 hours		\$59.60

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	\$59.60
For each hour or part of an hour in excess of 8 hours	\$93.10
Nonnuclear triennial shop survey and audit:	
When state is authorized inspection agency:	
For each hour or part of an hour up to 8 hours	\$39.90
For each hour or part of an hour in excess of 8 hours	\$59.60
When insurance company is authorized inspection agency:	
For each hour or part of an hour up to 8 hours	\$59.60
For each hour or part of an hour in excess of 8 hours	\$93.10

Examination fee: A fee of \$73.70 will be charged for each applicant sitting for an inspection examination(s).

Special inspector commission: An initial fee of \$25 and an annual renewal fee of \$10 along with an annual work card fee of \$15.

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.

Requests for Washington state specials and extensions of inspection frequency: For each vessel to be considered by the board, a fee of \$370.10 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, and 70.79.350. 07-11-137, § 296-104-700, filed 5/22/07, effective 6/30/07; 06-12-032, § 296-104-700, filed 5/31/06, effective 7/1/06; 05-12-028, § 296-104-700, filed 5/24/05, effective 6/30/05. Statutory Authority: Chapter 70.79 RCW. 04-21-069, § 296-104-700, filed 10/19/04, effective 1/1/05; 04-13-044, § 296-104-700, filed 6/10/04, effective 6/30/04. 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. 04-01-194, § 296-104-700, filed 12/24/03, effective 1/24/04; 03-12-051, § 296-104-700, filed 5/30/03, effective 6/30/03; 02-23-036, § 296-104-700, filed 11/13/02, effective 12/14/02; 02-12-021, § 296-104-700, filed 5/28/02, effective 6/28/02; 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 296-115 WAC

SAFETY REQUIREMENTS FOR CHARTER BOATS

WAC

296-115-015	Definitions applicable to all sections of this chapter.
296-115-035	Specific inspection requirements.
296-115-050	General requirements.
296-115-070	Rules of navigation.

WAC 296-115-015 Definitions applicable to all sections of this chapter.

Note: Meaning of words. Unless the context indicates otherwise, words used in this chapter will have the meaning given in this section.

Approved means approved by the director; however, if a provision of this chapter requires approval by an agency or organization other than the department such as nationally recognized testing laboratories or the United States Coast Guard is required, then approval by the specified authority will be accepted.

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.

Bare boat charter means the unconditional lease, rental, or charter of a boat by the owner, or his or her agent, to a person who by written agreement, or contract, assumes all responsibility and liability for the operation, navigation, and provisioning of the boat during the term of the agreement or contract, except when a captain or crew is required or provided by the owner or owner's agents to be hired by the charterer to operate the vessel.

Carrying passengers or cargo means the transporting of any person or persons or cargo on a vessel for a fee or other consideration.

CFR means Code of Federal Regulations.

Charter boat means a vessel or barge operating on waters of the state of Washington which is not inspected or licensed by the United States Coast Guard and over which the United States Coast Guard does not exercise jurisdiction and which is rented, leased, or chartered to carry more than six persons or cargo.

Commercial means any activity from which the operator, or the person chartering, renting, or leasing a vessel derives a profit, and/or which qualifies as a legitimate business expense under the Internal Revenue Statutes.

Competent person means someone who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt action to eliminate them.

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.

Defect means any characteristic or condition that tends to weaken or reduce the strength of the tool, object, or structure of which it is a part.

Department means the department of labor and industries.

Director means the director of the department of labor and industries, or his/her designated representative.

Employer means any person, firm, corporation, partnership, business trust, legal representative, or other business entity that operates a passenger vessel for hire in this state and employs one or more employees or contracts with one or more persons, the essence of which is the personal labor of such persons. Any person, partnership, or business entity that has no employees, and is covered by the Industrial Insurance Act shall be considered both an employer and an employee.

Enclosed space means any space, other than a confined space, which is enclosed by bulkheads and overhead. It includes cargo holds, tanks, quarters, and machinery and boiler spaces.

Equipment means a system, part, or component of a vessel as originally manufactured, or a system, part, or component manufactured or sold for replacement, repair, or improvement of a system, part, or component of a vessel; an accessory or equipment for, or appurtenance to a vessel; or a marine safety article, accessory, or equipment, including radio equipment, intended for use by a person on board a vessel.

Hazard means a condition, potential or inherent, that is likely to cause injury, death, or occupational disease.

Hazardous substance means a substance that, because it is explosive, flammable, poisonous, corrosive, oxidizing, irritating, or otherwise harmful, is likely to cause death or injury, including all substances listed on the USCG hazardous materials list.

Inspection means the examination of vessels by the director or an authorized representative of the director.

Maritime specialist in P&TS means a technical and operations specialist in maritime issues located in the department of labor and industries' policy and technical services section.

Passenger means any person or persons, carried on board a vessel in consideration of the payment of a fee or other consideration.

Port means left hand side of a vessel as one faces the bow.

Starboard means right hand side of a vessel as one faces the bow.

Power driven vessel means any vessel propelled by machinery.

Qualified means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve problems relating to the subject matter, the work, or the project.

Safety and health standard means a standard that requires the adoption or use of one or more practices, means, methods, operations, or processes reasonably necessary or appropriate to provide safe or healthful employment and places of employment.

Should means recommended.

Substantial means constructed of such strength, of such material, and of such workmanship, that the object referred to will withstand all normal wear, shock, and usage.

Standard safeguard means a device intended to remove a hazard incidental to the machine, appliance, tool, or equipment to which the device is attached.

Standard safeguards shall be constructed of either metal, wood, other suitable material, or a combination of these. The final determination of the sufficiency of any safeguard rests with the director.

Suitable means that which fits, or has the qualities or qualifications to meet a given purpose, occasion, condition, function, or circumstance.

Under way means a vessel is not at anchor, or made fast to the shore, or aground.

USCG means the United States Coast Guard.

United States Coast Guard Navigation means rules International/Inland, Commandants Instruction M16672.29C as now adopted, or hereafter legally amended by the United States Coast Guard.

Vessel means every description of motorized watercraft, other than a bare boat charter boat, seaplane, or sailboat, used or capable of being used to transport more than six passengers or cargo on water for rent, lease, or hire.

Working day means a calendar day, except Saturdays, Sundays, and legal holidays as set forth in RCW 1.16.050, as now or hereafter amended. The time within which an act is to be done under the provisions of this chapter shall be computed by excluding the first working day and including the last working day.

Worker, personnel, man, person, employee, and other terms of like meaning, unless the context indicates otherwise means an employee of an employer who is employed in the business of his/her employer whether by way of manual labor or otherwise and every person in this state who is engaged in the employment of or who is working under an independent contract the essence of which is his/her personal labor for an employer whether by manual labor or otherwise.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-115-015, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and 1999 c 111. 00-23-100, § 296-115-015, filed 11/21/00, effective 1/1/01. Statutory Authority: Chapter 49.17 RCW. 95-04-007, § 296-115-015, filed 1/18/95, effective 3/1/95; 91-24-017 (Order 91-07), § 296-115-015, filed 11/22/91, effective 12/24/91; 91-03-044 (Order 90-18), § 296-115-015, filed 1/10/91, effective 2/12/91. 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), § 296-115-015, filed 11/13/80.]

WAC 296-115-035 Specific inspection requirements.

(1) Drydocking or hauling out.

Each passenger vessel subject to the provisions in this section must be drydocked or hauled out at intervals not to exceed sixty months and the underwater hull and appendages, propellers, shafting, stern bearings, rudders, through-hull fittings, sea valves and strainers must be examined to determine that these items are in satisfactory condition.

(2) At the annual inspection the inspector must view the vessel afloat and conduct the following tests and inspections of the hull:

(a) Hull exterior and interior, bulkheads, and weather deck.

(b) Examine and test by operation all watertight closures in the hull, decks, and bulkheads.

(c) Inspect all railings and bulwarks and their attachment to the hull.

(d) Inspect weathertight closures above the weather deck and drainage or water from exposed decks and superstructure.

(3) At the annual inspection the inspector will examine and test the following items:

(a) Main propulsion machinery.

(b) Engine starting system.

(c) Engine control mechanisms.

(d) Auxiliary machinery.

(e) Fuel systems.

(f) Sea valves and bulkhead closure valves.

(g) Bilge and drainage systems.

(h) Electrical system, including circuit protection.

(4) Lifesaving and fire extinguishing equipment. At each annual inspection the inspector must inspect the life saving and fire extinguishing equipment for serviceability.

(5) Miscellaneous systems and equipment. At each annual inspection the marine dock inspector must inspect and test the vessel's steering apparatus, ground tackle, navigation lights, sanitary facilities, pressure vessels, and any other equipment aboard the vessel for serviceability and safety.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-115-035, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and 1999 c 111. 00-23-100, § 296-115-035, filed 11/21/00, effective 1/1/01. Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-115-035, filed 1/10/91, effective 2/12/91. 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), § 296-115-035, filed 11/13/80.]

WAC 296-115-050 General requirements. (1) Application.

(a) The following rules are applicable to all vessels operated within the scope of this chapter.

(b) Where an existing vessel does not comply with a particular requirement of this section, the director may grant a temporary variance to allow time for modifications to be made.

(c) Where an existing vessel does not comply with a specific requirement contained herein but the degree of protection afforded is judged to be adequate for the service in which the vessel is used, the director may grant a permanent variance.

(2) Lifesaving equipment. Where equipment required by this section is required to be of an approved type, the equipment is required to be approved by the USCG.

(3) Lifesaving equipment required.

(a) All vessels carrying passengers must carry life floats or buoyant apparatus for all persons on board.

(b) All life floats or buoyant apparatus must be international orange in color.

(c) In the case of vessels operating not more than one mile from land, the director may permit operation with reduced amounts of life floats or buoyant apparatus, when, in his opinion, it is safe to do so.

(d) Lifeboats, life rafts, dinghies, dories, skiffs, or similar type craft may be substituted for the required life floats or

buoyant apparatus if the substitution is approved by the director.

(e) Life floats, buoyant apparatus, or any authorized substitute must have the following equipment:

(i) A life line around the sides at least equivalent to 3/8-inch manila, festooned in bights of at least three feet, with a seine float in the center of each bight.

(ii) Two paddles or oars not less than four feet in length.

(iii) A painter of at least thirty feet in length and of at least two-inch manila or the equivalent.

(f) All vessels must have an approved adult type life preserver for each person carried, with at least ten percent additional of a type suitable for children.

(g) Life preservers must be stowed in readily accessible places in the upper part of the vessel, and each life preserver shall be marked with the vessel's name.

(h) All vessels must carry at least one life ring buoy of an approved type with sixty feet of line attached.

(i) The life ring buoy must be carried in a readily accessible location and must be capable of being cast loose at any time.

(4) Fire protection.

(a) The general construction of a vessel must minimize fire hazards.

(b) Internal combustion engine exhausts, boiler and galley uptakes, and similar sources of ignition must be kept clear of and suitably insulated from woodwork or other combustible material.

(c) Lamp, paint, and oil lockers and similar storage areas for flammable or combustible liquids must be constructed of metal or lined with metal.

(5) Fire protection equipment. Equipment required by this section, when required to be of an approved type, must be of a type approved by the USCG or other agency acceptable to the director.

(6) Fire pumps.

(a) All vessels carrying more than forty-nine passengers must carry an approved power fire pump, and all other vessels must carry an approved hand fire pump. These pumps must be provided with a suitable suction and discharge hose. These pumps may also serve as bilge pumps.

(b) Vessels required to have a power fire pump must also have a fire main system, including fire main, hydrants, hose, and nozzles. The fire hose may be a good commercial grade garden hose of not less than 5/8 inch size.

(7) Fixed fire extinguishing system.

(a) All vessels powered by internal combustion engines using gasoline or other fuel having a flashpoint of 110°F or lower, must have a fixed fire extinguishing system to protect the machinery and fuel tank spaces.

(b) This system must be an approved type using carbon dioxide and have a capacity sufficient to protect the space.

(c) Controls for the fixed system must be installed in an accessible location outside the space protected.

(8) Fire axe. All vessels must have one fire axe located in or near the pilothouse.

(9) Portable fire extinguishers.

(a) All vessels must have a minimum number of portable fire extinguishers of an approved type. The number required will be determined by the director.

(b) Portable fire extinguishers must be inspected at least once a month. Extinguishers found defective must be serviced or replaced.

(c) Portable fire extinguishers must be serviced at least once a year. The required service must consist of discharging and recharging foam and dry chemical extinguishers and weighing and inspecting carbon dioxide extinguishers.

(d) Portable fire extinguishers must be hydrostatically tested at intervals not to exceed those specified in WAC 296-800-300 in the safety and health core rules.

(e) Portable fire extinguishers of the vaporizing liquid type such as carbon tetrachloride and other toxic vaporizing liquids are prohibited and must not be carried on any vessel.

(f) Portable fire extinguishers must be mounted in brackets or hangers near the space protected. The location must be marked in a manner satisfactory to the director.

(10) Means of escape.

(a) Except as otherwise provided in this section, all vessels must be provided with not less than two avenues of escape from all general areas accessible to the passengers or where the crew may be quartered or normally employed. The avenues must be located so that if one is not available the other may be. At least one of the avenues should be independent of watertight doors.

(b) Where the length of the compartment is less than twelve feet, one vertical means of escape will be acceptable under the following conditions:

(i) There is no source of fire in the space, such as a galley stove or heater and the vertical escape is remote from the engine and fuel tank space; or

(ii) The arrangement is such that the installation of two means of escape does not materially improve the safety of the vessel or those aboard.

(11) Ventilation.

(a) All enclosed spaces within the vessel must be properly vented or ventilated. Where such openings would endanger the vessel under adverse weather conditions, means must be provided to close them.

(b) All crew and passenger space must be adequately ventilated in a manner suitable to the purpose of the space.

(12) Crew and passenger accommodations.

(a) Vessels with crew members living aboard must have suitable accommodations.

(b) Vessels carrying passengers must have fixed seating for the maximum number of passengers permitted to be carried.

(c) Fixed seating must be installed with spacing to provide for ready escape in case of fire or other casualty.

(d) Fixed seating must be installed as follows, except that special consideration may be given by the director if escape over the side can be readily accomplished through windows or other openings in the way of the seats:

(i) Aisles not over fifteen feet long must be not less than twenty-four inches wide.

(ii) Aisles over fifteen feet long must be not less than thirty inches wide.

(iii) Where seats are in rows the distance from seat front to seat front must be not less than thirty inches.

(e) Portable or temporary seating may be installed but must be arranged in general as provided for fixed seating.

(13) Toilet facilities and drinking water.

(a) Vessels must be provided with toilets and wash basins as specified in WAC 296-800-230, except that in the case of vessels used exclusively on short runs of approximately thirty minutes or less, the director may approve other arrangements.

(b) All toilets and wash basins must be fitted with adequate plumbing. Facilities for men and women must be in separate compartments, except in the case of vessels carrying forty-nine passengers and less, the director may approve other arrangements.

(c) Potable drinking water must be provided for all passengers and crew. The provisions of WAC 296-800-230 apply.

(d) Covered trash containers must be provided in passenger areas.

(14) Rails and guards.

(a) Except as otherwise provided in this section, rails or equivalent protection must be installed near the periphery of all weather decks accessible to passengers and crews. Where space limitations make deck rails impractical, such as at narrow catwalks in the way of deckhouse sides, hand grabs may be substituted.

(b) Rails must consist of evenly spaced courses. The spacing must not be greater than twelve inches except as provided in WAC 296-115-050 (14)(f). The lower rail courses may not be required where all or part of the space below the upper rail course is fitted with a bulwark, chain link fencing, wire mesh or the equivalent.

(c) On passenger decks of vessels engaged in ferry or excursion type operation, rails must be at least forty-two inches high. The top rail must be pipe, wire, chain, or wood and must withstand at least two hundred pounds of side loading. The space below the top rail must be fitted with bulwarks, chain link fencing, wire mesh, or the equivalent.

(d) On vessels in other than passenger service, the rails must be not less than thirty-six inches high, except that where vessels are used in special service, the director may approve other arrangements, but in no case less than thirty inches.

(e) Suitable storm rails or hand grabs must be installed where necessary in all passageways, at deckhouse sides, and at ladders and hatches where passengers or crew might have normal access.

(f) Suitable covers, guards, or rails must be installed in the way of all exposed and hazardous places such as gears or machinery. (See chapter 296-806 WAC, Machine safety for detailed requirements.)

(15) Machinery installation.

(a) Propulsion machinery.

(i) Propulsion machinery must be suitable in type and design for the propulsion requirements of the hull in which it is installed. Installations meeting the requirements of the USCG or other classification society will be considered acceptable to the director.

(ii) Installations using gasoline as a fuel must meet the requirements of applicable USCG standards.

(iii) Installations using diesel fuel must meet the requirements of applicable USCG standards.

(b) Auxiliary machinery and bilge systems.

(i) All vessels must be provided with a suitable bilge pump, piping and valves for removing water from the vessel.

(ii) Vessels carrying more than forty-nine passengers must have a power operated bilge pump. The source of power must be independent of the propulsion machinery. Other vessels must have a hand operated bilge pump, but may have a power operated pump if it is operated by an independent power source.

(c) Steering apparatus and miscellaneous systems.

(i) All vessels must be provided with a suitable steering apparatus.

(ii) All vessels must be provided with navigation lights and shapes, whistles, fog horns, and fog bells as required by the USCG rules of navigation.

(iii) All vessels must be equipped with a suitable number of portable battery lights for emergency purposes.

(d) Electrical installations. The electrical installations of all vessels must be at least equal to applicable USCG standards, or as approved by the director.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-115-050, filed 1/24/07, effective 4/1/07; 04-14-028, § 296-115-050, filed 6/29/04, effective 1/1/05; 03-18-090, § 296-115-050, filed 9/2/03, effective 11/1/03. Statutory Authority: RCW 49.17.010, [49.17].-040, [49.17].050 and 1999 c 111. 00-23-100, § 296-115-050, filed 11/21/00, effective 1/1/01. 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), § 296-115-050, filed 11/13/80.]

WAC 296-115-070 Rules of navigation. The operation and navigation of all vessels subject to this chapter must be in strict accordance with the United States Coast Guard Navigation Rules International/Inland, Commandants Instruction M16672.29C as now adopted, or hereafter legally amended by the United States Coast Guard.

(1) A copy of the United States Coast Guard Navigation Rules International/Inland, Commandants Instruction M16672.29C, must be on board all vessels subject to this chapter at all times when the vessel is under way.

(2) At least annually, where applicable, the operator of each vessel must "swing the vessel" to determine the actual compass readings in relation to true compass headings, and must maintain a record on board the vessel.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-115-070, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and 1999 c 111. 00-23-100, § 296-115-070, filed 11/21/00, effective 1/1/01. Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-115-070, filed 1/10/91, effective 2/12/91. 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), § 296-115-070, filed 11/13/80.]

Chapter 296-126 WAC

STANDARDS OF LABOR FOR THE PROTECTION OF THE SAFETY, HEALTH AND WELFARE OF EMPLOYEES FOR ALL OCCUPATIONS SUBJECT TO CHAPTER 49.12 RCW

WAC

296-126-023 Payment interval.

WAC 296-126-023 Payment interval. (1) This rule shall apply to employers and employees subject to chapter 49.12 RCW.

Note: Employers and employees not subject to this regulation may still be subject to the payment interval requirements of WAC 296-128-035 or 296-131-010.

(2) Definitions:

(a) "Monthly interval" means a one-month time period between established pay days.

(b) "Pay day" means a specific day or date established by the employer on which wages are paid for hours worked during a pay period.

(c) "Payment interval" means the amount of time between established pay days. A payment interval may be daily, weekly, bi-weekly, semi-monthly or monthly.

(d) "Pay period" means a defined time frame for which an employee will receive a paycheck. A pay period may be daily, weekly, bi-weekly, semi-monthly or monthly.

(3) An employer shall pay all wages owed to an employee on an established regular pay day at no longer than monthly payment intervals. If federal law provides specific payment interval requirements that are more favorable to an employee than the payment interval requirements provided under this rule, federal law shall apply.

(4) If an employer pays wages on the basis of a pay period that is less than a month, the employer shall establish a regular pay day no later than ten calendar days after the end of the pay period, unless expressly provided otherwise by law.

Example 1: Employer establishes a weekly pay period. The workweek is from Sunday January 1 through Saturday January 7. Unless a different payment interval applies by law, the employer must pay wages no later than January 17.

Example 2: Employer establishes two semi-monthly pay periods (the first pay period covers the 1st day of the month to the 15th day of the month; the second pay period covers the 16th day of the month to the last day of the month). Unless a different payment interval applies by law, the employer must pay wages no later than the 25th day of the current month for the first pay period, and no later than the 10th day of the following month for the second pay period.

(5) If an employer pays wages on the basis of a monthly pay period, the employer may establish a regular payroll system under which wages for work performed by an employee during the last seven days of the monthly pay period may be withheld and included with the wages paid on the pay day for the next pay period.

Example: Employer establishes a monthly pay period starting on the 1st day of each month with an established pay day on the last day of the month. In a thirty-one-day month, unless a different payment interval applies by law, the employer must pay wages for work performed between the 1st and 24th days of the month on the established pay day (the last day of the month). The employer may pay wages for work performed between the 25th and 31st days of the current month on the following month's pay day (which means that the employer would pay wages for work performed between the 25th and 31st days of the current month, and the 1st and 24th days of the following month, on the following month's pay day).

If pay period is:	Then pay day must be no later than:	And employer must pay wages for at least:
Monthly, starting on 1st day of the month	Last day of the month	1st day of the month - 24th day of the month

(6) An employer shall pay overtime wages owed to an employee on the regular pay day for the pay period in which the overtime wages were earned. If the correct amount of overtime wages cannot be determined until after such regular pay day, the employer may establish a separate pay day for overtime wages; however, the payment of overtime wages may not be delayed for a period longer than that which is reasonably necessary for the employer to compute and arrange for payment of the amount due, and overtime wages must be paid by the regular pay day following the next pay period.

Example: Employer establishes two semi-monthly pay periods. The first pay period covers work performed from the 1st day of the month to the 15th day of the month with the pay day of the 25th; the second pay period covers the 16th day of the month with the pay day of the 10th of the following month. An employee works overtime in each of the pay periods. Unless a different payment interval applies by law, the employer must pay overtime wages no later than the 10th day of the following month for the overtime earned during the first pay period, and no later than the 25th day of the following month for the overtime earned during the second pay period.

If pay period is:	And if pay day for regular wages is:	Then pay day for overtime wages must be no later than:
1st of the month - 15th day of the month	25th of the month	10th of the following month
16th of the month - 30th or 31st of the month	10th of the following month	25th of the following month

(7) Mailed paychecks shall be postmarked no later than the established pay day. If the established pay day falls on a weekend day or holiday when the business office is not open, mailed paychecks shall be postmarked no later than the next business day. Employers that pay employees by direct deposit or other electronic means shall ensure that such wage payments are made and available to employees on the established pay day.

(8) These rules may be superseded by a collective bargaining agreement negotiated under the National Labor Relations Act, 29 U.S.C. Sec. 151 et seq., the Public Employees' Bargaining Act, RCW 41.56.010 et seq., or the Personnel System Reform Act, RCW 41.80.001 et seq., if the terms of, or recognized custom and practice under, the collective bargaining agreement prescribe specific payment interval requirements for employees covered by the collective bargaining agreement; provided, that:

(a) All regular wages (whether paid on an hourly, salary, commission, piece rate, or other basis) shall be paid to employees covered by the collective bargaining agreement ("covered employees") at no longer than monthly intervals;

(b) All other wages (including overtime, bonus pay, and other categories of specialty pay in addition to regular wages) are paid in accordance with the payment interval requirements applicable to covered employees under the terms of, or recognized custom and practice under, the collective bargaining agreement; and

(c) The employer pays regular wages to covered employees at no less than the applicable minimum wage rate.

[Statutory Authority: Chapters 49.12, 49.30, and 49.46 RCW. 07-03-145, § 296-126-023, filed 1/23/07, effective 3/1/07. Statutory Authority: RCW 43.22.270, 49.12.020, 49.12.091, 49.12.050, 49.46.020 and 49.46.070. 89-22-016 (Order 89-16), § 296-126-023, filed 10/24/89, effective 11/24/89; Order 74-9, § 296-126-023, filed 3/13/74, effective 4/15/74.]

**Chapter 296-128 WAC
MINIMUM WAGES**

WAC
296-128-035 Payment interval.

WAC 296-128-035 Payment interval. (1) This rule shall apply to employers and employees subject to chapter 49.46 RCW.

Note: Employers and employees not subject to this regulation may still be subject to the payment interval requirements of WAC 296-126-023 or 296-131-010.

(2) Definitions:

(a) "Monthly interval" means a one-month time period between established pay days.

(b) "Pay day" means a specific day or date established by the employer on which wages are paid for hours worked during a pay period.

(c) "Payment interval" means the amount of time between established pay days. A payment interval may be daily, weekly, bi-weekly, semi-monthly or monthly.

(d) "Pay period" means a defined time frame for which an employee will receive a paycheck. A pay period may be daily, weekly, bi-weekly, semi-monthly or monthly.

(3) An employer shall pay all wages owed to an employee on an established regular pay day at no longer than monthly payment intervals. If federal law provides specific payment interval requirements that are more favorable to an employee than the payment interval requirements provided under this rule, federal law shall apply.

(4) If an employer pays wages on the basis of a pay period that is less than a month, the employer shall establish a regular pay day no later than ten calendar days after the end of the pay period, unless expressly provided otherwise by law.

Example 1: Employer establishes a weekly pay period. The workweek is from Sunday January 1 through Saturday January 7. Unless a different payment interval applies by law, the employer must pay wages no later than January 17.

Example 2: Employer establishes two semi-monthly pay periods (the first pay period covers the 1st day of the month to the 15th day of the month; the second pay period covers the 16th day of the month to the last day of the month). Unless a different payment interval applies by law, the employer must pay wages no later than the 25th day of the current month for the first pay period, and no later than the 10th day of the following month for the second pay period.

(5) If an employer pays wages on the basis of a monthly pay period, the employer may establish a regular payroll system under which wages for work performed by an employee during the last seven days of the monthly pay period may be withheld and included with the wages paid on the pay day for the next pay period.

Example: Employer establishes a monthly pay period starting on the 1st day of each month with an established pay day on the last day of the month. In a thirty-one-day month, unless a different payment interval applies by law, the employer must pay wages for work performed between the 1st and 24th days of the month on the established pay day (the last day of the month). The employer may pay wages for work performed between the 25th and 31st days of the current month on the following month's pay day (which means that the employer would pay wages for work performed between the 25th and 31st days of the current month, and the 1st and 24th days of the following month, on the following month's pay day).

If pay period is:	And if pay day for regular wages is:	Then pay day for overtime wages must be no later than:
1st of the month - 15th day of the month	25th of the month	10th of the following month
16th of the month - 30th or 31st of the month	10th of the following month	25th of the following month

(6) An employer shall pay overtime wages owed to an employee on the regular pay day for the pay period in which the overtime wages were earned. If the correct amount of overtime wages cannot be determined until after such regular pay day, the employer may establish a separate pay day for overtime wages; provided, that the payment of overtime wages may not be delayed for a period longer than that which is reasonably necessary for the employer to compute and arrange for payment of the amount due, and overtime wages must be paid by the regular pay day following the next pay period.

Example: Employer establishes two semi-monthly pay periods. The first pay period covers work performed from the 1st day of the month to the 15th day of the month with the pay day of the 25th; the second pay period covers the 16th day of the month to the last day of the month with the pay day of the 10th of the following month. An employee works overtime in each of the pay periods. Unless a different payment interval applies by law, the employer must pay the overtime wages no later than the 10th day of the following month for the overtime earned during the first pay period, and no later than the 25th day of the following month for the overtime earned during the second pay period.

If pay period is:	And if pay day for regular wages is:	Then pay day for overtime wages must be no later than:
1st of the month - 15th day of the month	25th of the month	10th of the following month
16th of the month - 30th or 31st of the month	10th of the following month	25th of the following month

(7) Mailed paychecks shall be postmarked no later than the established pay day. If the established pay day falls on a weekend day or holiday when the business office is not open,

mailed paychecks shall be postmarked no later than the next business day. Employers that pay employees by direct deposit or other electronic means shall ensure that such wage payments are made and available to employees on the established pay day.

(8) These rules may be superseded by a collective bargaining agreement negotiated under the National Labor Relations Act, 29 U.S.C. Sec. 151 et seq., the Public Employees' Bargaining Act, RCW 41.56.010 et seq., or the Personnel System Reform Act, RCW 41.80.001 et seq., if the terms of, or recognized custom and practice under, the collective bargaining agreement prescribe specific payment interval requirements for employees covered by the collective bargaining agreement; provided, that:

(a) All regular wages (whether paid on an hourly, salary, commission, piece rate, or other basis) shall be paid to employees covered by the collective bargaining agreement ("covered employees") at no longer than monthly intervals;

(b) All other wages (including overtime, bonus pay, and other categories of specialty pay in addition to regular wages) are paid in accordance with the payment interval requirements applicable to covered employees under the terms of, or recognized custom and practice under, the collective bargaining agreement; and

(c) The employer pays regular wages to covered employees at no less than the applicable minimum wage rate.

[Statutory Authority: Chapters 49.12, 49.30, and 49.46 RCW. 07-03-145, § 296-128-035, filed 1/23/07, effective 3/1/07. Statutory Authority: RCW 43.22.270, 49.12.020, 49.12.091, 49.12.050, 49.46.020 and 49.46.070. 89-22-016 (Order 89-16), § 296-128-035, filed 10/24/89, effective 11/24/89.]

Chapter 296-131 WAC

AGRICULTURAL EMPLOYMENT STANDARDS

WAC

296-131-010 Payment interval.

WAC 296-131-010 Payment interval. (1) This rule shall apply to employers and employees engaged in agricultural labor as defined in RCW 50.04.150 and subject to WAC 296-131-001.

Note: Employers and employees not subject to this regulation may still be subject to the payment interval requirements of WAC 296-126-023 or 296-128-035.

(2) Definitions:

(a) "Monthly interval" means a one-month time period between established pay days.

(b) "Pay day" means a specific day or date established by the employer on which wages are paid for hours worked during a pay period.

(c) "Payment interval" means the amount of time between established pay days. A payment interval may be daily, weekly, bi-weekly, semi-monthly or monthly.

(d) "Pay period" means a defined time frame for which an employee will receive a paycheck. A pay period may be daily, weekly, bi-weekly, semi-monthly or monthly.

(3) An employer shall pay all wages owed to an employee on an established regular pay day at no longer than monthly payment intervals. If federal law provides specific payment interval requirements that are more favorable to an

employee than the payment interval requirements provided under this rule, federal law shall apply.

(4) If an employer pays wages on the basis of a pay period that is less than a month, the employer shall establish a regular pay day no later than ten calendar days after the end of the pay period, unless expressly provided otherwise by law.

Example 1: Employer establishes a weekly pay period. The workweek is from Sunday January 1 through Saturday January 7. Unless a different payment interval applies by law, the employer must pay wages no later than January 17.

Example 2: Employer establishes two semi-monthly pay periods (the first pay period covers the 1st day of the month to the 15th day of the month; the second pay period covers the 16th day of the month to the last day of the month). Unless a different payment interval applies by law, the employer must pay wages no later than the 25th day of the current month for the first pay period, and no later than the 10th day of the following month for the second pay period.

(5) If an employer pays wages on the basis of a monthly pay period, the employer may establish a regular payroll system under which wages for work performed by an employee during the last seven days of the monthly pay period may be withheld and included with the wages paid on the pay day for the next pay period.

Example: Employer establishes a monthly pay period starting on the 1st day of each month with an established pay day on the last day of the month. In a thirty-one-day month, unless a different payment interval applies by law, the employer must pay wages for work performed between the 1st and 24th days of the month on the established pay day (the last day of the month). The employer may pay wages for work performed between the 25th and 31st days of the current month on the following month's pay day (which means that the employer would pay wages for work performed between the 25th and 31st days of the current month, and the 1st and 24th days of the following month, on the following month's pay day).

If pay period is:	Then pay day must be no later than:	And employer must pay wages for at least:
Monthly, starting on 1st day of the month	Last day of the month	1st day of the month - 24th day of the month

(6) An employer shall pay overtime wages owed to an employee on the regular pay day for the pay period in which the overtime wages were earned. If the correct amount of overtime wages cannot be determined until after such regular pay day, the employer may establish a separate pay day for overtime wages; however, the payment of overtime wages may not be delayed for a period longer than that which is reasonably necessary for the employer to compute and arrange for payment of the amount due, and overtime wages must be paid by the regular pay day following the next pay period.

Example: Employer establishes two semi-monthly pay periods. The first pay period covers work performed from the 1st day of the month to the 15th day of the month with the pay day of the 25th; the second pay period covers the 16th day of the month to the last day of the month with the pay day of the

10th of the following month. An employee works overtime in each of the pay periods. Unless a different payment interval applies by law, the employer must pay overtime wages no later than the 10th day of the following month for the overtime earned during the first pay period, and no later than the 25th day of the following month for the overtime earned during the second pay period.

If pay period is:	And if pay day for regular wages is:	Then pay day for overtime wages must be no later than:
1st of the month - 15th day of the month	25th of the month	10th of the following month
16th of the month - 30th or 31st of the month	10th of the following month	25th of the following month

(7) Mailed paychecks shall be postmarked no later than the established pay day. If the established pay day falls on a weekend day or holiday when the business office is not open, mailed paychecks shall be postmarked no later than the next business day. Employers that pay employees by direct deposit or other electronic means shall ensure that such wage payments are made and available to employees on the established pay day.

(8) These rules may be superseded by a collective bargaining agreement negotiated under the National Labor Relations Act, 29 U.S.C. Sec. 151 et seq., the Public Employees' Bargaining Act, RCW 41.56.010 et seq., or the Personnel System Reform Act, RCW 41.80.001 et seq., if the terms of, or recognized custom and practice under, the collective bargaining agreement prescribe specific payment interval requirements for employees covered by the collective bargaining agreement; provided, that:

(a) All regular wages (whether paid on an hourly, salary, commission, piece rate, or other basis) shall be paid to employees covered by the collective bargaining agreement ("covered employees") at no longer than monthly intervals;

(b) All other wages (including overtime, bonus pay, and other categories of specialty pay in addition to regular wages) are paid in accordance with the payment interval requirements applicable to covered employees under the terms of, or recognized custom and practice under, the collective bargaining agreement; and

(c) The employer pays regular wages to covered employees at no less than the applicable minimum wage rate.

[Statutory Authority: Chapters 49.12, 49.30, and 49.46 RCW. 07-03-145, § 296-131-010, filed 1/23/07, effective 3/1/07. Statutory Authority: RCW 43.22.270, 1989 c 380 and chapter 49.46 RCW. 89-22-015 (Order 89-15), § 296-131-010, filed 10/24/89, effective 11/24/89.]

**Chapter 296-134 WAC
FAMILY LEAVE**

Note: The contents of this chapter are no longer in effect. Policy development and rule making are underway to reflect the elements of the Family Leave Act that will be enforced by the department of labor and industries. Please refer to the L&I web page for on-going updates and current information, <http://www.lni.wa.gov/WorkplaceRights>.

**DISPOSITION OF SECTIONS FORMERLY
CODIFIED IN THIS CHAPTER**

- 296-134-001 Declaration of purpose. [Statutory Authority: 1989 1st ex.s. c 11. 89-23-044, § 296-134-001, filed 11/13/89, effective 12/14/89.] Repealed by 07-08-089, filed 4/3/07, effective 6/1/07. Statutory Authority: RCW 49.78.400.
- 296-134-010 Definitions. [Statutory Authority: 1989 1st ex.s. c 11. 89-23-044, § 296-134-010, filed 11/13/89, effective 12/14/89.] Repealed by 07-08-089, filed 4/3/07, effective 6/1/07. Statutory Authority: RCW 49.78.400.
- 296-134-030 Entitlement to leave. [Statutory Authority: 1989 1st ex.s. c 11. 89-23-044, § 296-134-030, filed 11/13/89, effective 12/14/89.] Repealed by 07-08-089, filed 4/3/07, effective 6/1/07. Statutory Authority: RCW 49.78.400.
- 296-134-040 Notice. [Statutory Authority: 1989 1st ex.s. c 11. 89-23-044, § 296-134-040, filed 11/13/89, effective 12/14/89.] Repealed by 07-08-089, filed 4/3/07, effective 6/1/07. Statutory Authority: RCW 49.78.400.
- 296-134-050 Medical confirmation. [Statutory Authority: 1989 1st ex.s. c 11. 89-23-044, § 296-134-050, filed 11/13/89, effective 12/14/89.] Repealed by 07-08-089, filed 4/3/07, effective 6/1/07. Statutory Authority: RCW 49.78.400.
- 296-134-060 Leave from same employer. [Statutory Authority: 1989 1st ex.s. c 11. 89-23-044, § 296-134-060, filed 11/13/89, effective 12/14/89.] Repealed by 07-08-089, filed 4/3/07, effective 6/1/07. Statutory Authority: RCW 49.78.400.
- 296-134-070 Returning to employment. [Statutory Authority: 1989 1st ex.s. c 11. 89-23-044, § 296-134-070, filed 11/13/89, effective 12/14/89.] Repealed by 07-08-089, filed 4/3/07, effective 6/1/07. Statutory Authority: RCW 49.78.400.
- 296-134-090 Penalties. [Statutory Authority: 1989 1st ex.s. c 11. 89-23-044, § 296-134-090, filed 11/13/89, effective 12/14/89.] Repealed by 07-08-089, filed 4/3/07, effective 6/1/07. Statutory Authority: RCW 49.78.400.

**Chapter 296-150C WAC
COMMERCIAL COACHES**

WAC

296-150C-3000 Commercial coach fees.

WAC 296-150C-3000 Commercial coach fees.

INITIAL FILING FEE	\$34.30
DESIGN PLAN FEES:	
INITIAL FEE - MASTER DESIGN	\$236.70
INITIAL FEE - ONE YEAR DESIGN	\$96.80
RENEWAL FEE	\$40.90
RESUBMIT FEE	\$69.10
ADDENDUM (Approval expires on same date as original plan)	\$69.10

ELECTRONIC PLAN SUBMITTAL FEE \$5.00 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 (Plan review for educational, institutional or health care facilities and other buildings)	
Electrical Plan submission fee	\$69.10
Service/feeder Ampacity:	
0 - 100	\$30.60
101 - 200	\$38.10
201 - 400	\$71.60
401 - 600	\$84.40
601 - 800	\$108.80
801 - 1000	\$133.20
Over 1000	\$144.60
Over 600 volts surcharge	\$22.80
Thermostats:	
First	\$13.40
Each additional	\$3.10
Low voltage fire alarm and burglar alarm:	
Each control panel and up to four circuits or zones	\$12.30
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*	\$81.80
ELECTRICAL COMMERCIAL/INDUSTRIAL	
Electrical Service/feeders 200 Amperage plus	
Service/feeder	\$201.60
Additional Feeder	\$38.20
ELECTRICAL MULTIFAMILY RESIDENTIAL	
Electrical Service/feeders 200 Amperage plus	
Service/feeder	\$106.90
Additional Feeder	\$27.20
MEDICAL GAS PLAN REVIEW:	
SUBMISSION FEE	\$66.20
FIRST STATION	\$66.20
EACH ADDITIONAL STATION	\$24.10
RECIPROCAL PLAN REVIEW:	
INITIAL FEE - MASTER DESIGN	\$105.50
INITIAL FEE - ONE YEAR DESIGN	\$63.70
RENEWAL FEE	\$63.70
ADDENDUM	\$63.70
PLANS APPROVED BY PROFESSIONALS	\$48.00
APPROVAL OF EACH SET OF DESIGN PLANS BEYOND FIRST TWO SETS	\$12.90
DEPARTMENT INSPECTION FEES	
INSPECTION/REINSPECTION (Per hour* plus travel time* and mileage**)	\$69.10
TRAVEL (Per hour)	\$69.10
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
DEPARTMENT AUDIT FEES:	
AUDIT (Per hour*)	\$69.10
TRAVEL (Per hour*)	\$69.10
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	

ALTERATION INSPECTION (One hour plus insignia alteration fee)	\$103.40
INSIGNIA FEES:	
FIRST SECTION/ALTERATION	\$20.80
EACH ADDITIONAL SECTION	\$12.90
REISSUED-LOST/DAMAGED	\$12.90
OTHER FEES:	
FIELD TECHNICAL SERVICE (Per hour* plus travel time* and mileage**)	\$69.10
PUBLICATION PRINTING AND DISTRIBUTION OF RCW'S AND WAC'S (One free copy per year upon request)	\$12.90
* 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: Chapter 43.22 RCW. 07-19-086, § 296-150C-3000, filed 9/18/07, effective 10/19/07. Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-150C-3000, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-150C-3000, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapter 43.22 RCW. 05-23-002, § 296-150C-3000, filed 11/3/05, effective 12/4/05. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-150C-3000, filed 5/24/05, effective 6/30/05. Statutory Authority: Chapter 43.22 RCW and 2003 c 291. 05-01-102, § 296-150C-3000, filed 12/14/04, effective 2/1/05. Statutory Authority: Chapters 18.27 and 43.22 RCW. 04-12-048, § 296-150C-3000, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 70.87.030, 18.106.070, 18.106.125, 2001 c 7, and chapters 18.106, 43.22, and 70.87 RCW. 03-12-045, § 296-150C-3000, filed 5/30/03, effective 6/30/03. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-150C-3000, filed 5/28/02, effective 6/28/02. 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-0020 What definitions apply to this chapter?
- 296-150F-0320 What must I provide with my request for design-plan approval by the department?
- 296-150F-0580 Must I obtain an insignia for used factory-built structures?
- 296-150F-3000 Factory-built housing and commercial structure fees.

WAC 296-150F-0020 What definitions apply to this chapter? "Approved" is approved by the department of labor and industries.

"Building site" is a tract, parcel, or subdivision of land on which a factory-built house or commercial structure will be installed.

"Component" is a part or element of another system as defined by the International Building Code, section 202, and is:

- Designed to be installed in a structure;
- Manufactured as a unit; and
- Designed for a particular function or group of functions.

A component may be a service core or other assembly that is a factory assembled section of a building. It may include mechanical, electrical, plumbing, and related systems. It may be a complete kitchen, bathroom, or utility room. Service cores are referred to as "wet boxes," "mechanical cores," or "utility cores."

Note: A roof truss is not considered a component.

"Damaged in transit" is damage that effects the integrity of the structural design or damage to any other system referenced in the codes required by the State Building Code, or other applicable codes.

"Department" is the department of labor and industries. The department may also be referred to as "we" or "us" in this

chapter. Note: You may contact us at: Department of Labor and Industries, Specialty Compliance, PO Box 44440, Olympia, WA 98504-4440.

"Design plan" is a plan for the construction of factory-built housing, commercial structures, or components that includes floor plans, elevation drawings, specifications, engineering data, or test results necessary for a complete evaluation of the design.

"Design option" is a design that a manufacturer may use as an option to its design plan.

"Educational facility" is a building or portion of a building used primarily for educational purposes by six or more persons at one time for twelve hours per week or four hours in any one day. Educational occupancy includes: Schools (preschool through grade twelve), colleges, academies, universities, and trade schools.

"Equipment" is all material, appliances, devices, fixtures, fittings, or accessories used in the manufacture, assembly, installation, or alteration of factory-built housing, commercial structures, and components.

"Factory assembled structure (FAS) advisory board" is a board authorized to advise the director of the department regarding the issues and adoption of rules relating to factory-built housing, commercial structures and components. (See RCW 43.22.420.)

"Health or personal care facilities" are buildings or parts of buildings that contain, but are not limited to, facilities that are required to be licensed by the department of social and health services or the department of health (e.g., hospitals, nursing homes, private alcoholism hospitals, private psychiatric hospitals, boarding homes, alcoholism treatment facilities, maternity homes, birth centers or childbirth centers, residential treatment facilities for psychiatrically impaired children and youths, and renal hemodialysis clinics) and medical, dental or chiropractic offices or clinics, outpatient or ambulatory surgical clinics, and such other health care occu-

pancies where patients who may be unable to provide for their own needs and safety without the assistance of another person are treated. (Further defined in WAC 296-46B-010.)

"Insignia" is a label that we attach to a structure to verify that a factory-built house or commercial structure meets the requirements of this chapter. It could also be a stamp or label attached to a component to verify that it meets the requirements of this chapter.

"Install" is to erect or set in place a structure at a building site. It may also be the construction or assembly of a component as part of a factory-built house or commercial structure.

"Institutional facility" is a building or portion of a building used primarily for detention and correctional occupancies where some degree of restraint or security is required for a time period of twenty-four or more hours. Such occupancies include, but are not restricted to: Penal institutions, reformatories, jails, detention centers, correctional centers, and residential-restrained care.

"Listing agency" is an organization whose business is approving equipment, components, or installations for publication.

"Local enforcement agency" is an agency of city or county government with power to enforce local regulations governing the installation of factory-built housing and commercial structures.

"Master design plan" is a design plan that expires when a new State Building Code has been adopted.

"Manufacturing" is making, fabricating, forming, or assembling a factory-built house, commercial structure, or component.

"One-year design plan" is a design plan that expires one year after approval or when a new State Building Code has been adopted.

"Repair" is the replacement, addition, modification, or removal of any construction, equipment, system, or installation to correct damage in transit or during on-site installation before occupancy.

"Unit" is a factory-built house, commercial structure, or component.

"Used structure" is a building as defined by section 202 of the International Building Code that has been given a certificate of occupancy by the local building department and has been occupied.

[Statutory Authority: Chapter 43.22 RCW, 07-05-063, § 296-150F-0020, filed 2/20/07, effective 4/1/07; 05-23-002, § 296-150F-0020, filed 11/3/05, effective 12/4/05; 98-14-078, § 296-150F-0020, filed 6/30/98, effective 7/31/98. 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-0020, filed 10/23/96, effective 11/25/96.]

WAC 296-150F-0320 What must I provide with my request for design-plan approval by the department? All requests for design-plan approval must include:

- (1) A completed design-plan approval request form;
- (2) Two complete sets of design plans, specifications, engineering analysis, test procedures and results plus one additional set for each manufacturing location where the design plan will be used (see WAC 296-150F-0340 and 296-150F-0350);

(3) At least one set of design plans must have an original wet stamp from a professional engineer or architect licensed in Washington state. All new, renewed, and resubmitted plans, specifications, reports and structural calculations prepared by or prepared under his or her direct supervision shall be signed, dated and stamped with their seal. Specifications, reports, and structural calculations may be stamped only on the first sheet, provided this first sheet identifies all of the sheets that follow are included and identified in the same manner. Plans that have not been prepared by or under the engineer's or architect's supervision shall be reviewed by them and they shall prepare a report concerning the plans reviewed. This report shall:

- (a) Identify which drawings have been reviewed by drawing number and date;
- (b) Include a statement that the plans are in compliance with current Washington state regulations; and
- (c) The report shall be stamped and signed by the reviewer.

Any deficiencies shall be corrected on the drawings before submitting to the department or be included in the report and identify as to how they are to be corrected. This report shall be attached to the plan(s) that were reviewed. We will retain the set with the original wet stamp;

(4) A one-time initial filing fee and the design-plan fee (see WAC 296-150F-3000); and

(5) A "key drawing" to show the arrangement of modules if the plan covers three or more modules.

(6) Electrical plan review for educational, institutional or health care facilities and other buildings. Plan review is a part of the electrical inspection process; its primary purpose is to determine:

- (a) That loads and service/feeder conductors are calculated and sized according to the proper NEC or WAC article or section;
- (b) The classification of hazardous locations; and
- (c) The proper design of emergency and standby systems.

(7) All electrical plans for new or altered electrical installations in educational, institutional, and health or personal care occupancies classified or defined in this chapter must be reviewed and approved before the electrical installation or alteration is started. Approved plans must be available for use during the electrical installation or alteration and for use by the electrical inspector.

(8) All electrical plans for educational facilities, hospitals and nursing homes must be prepared by, or under the direction of, a consulting engineer registered under chapter 18.43 RCW in compliance with chapters 246-320, 180-29, and 388-97 WAC as applicable and stamped with the engineer's mark and signature.

(9) Plans to be reviewed by the department must be legible, identify the name and classification of the facility, clearly indicate the scope and nature of the installation and the person or firm responsible for the electrical plans. The plans must clearly show the electrical installation or alteration in floor plan view, include switchboard and/or panel board schedules and when a service or feeder is to be installed or altered, must include a riser diagram, load calculation, fault current calculation and interrupting rating of equipment. Where existing electrical systems are to supply

additional loads, the plans must include documentation that proves adequate capacity and ratings. The plans must be submitted with a plan review submittal form available from the department.

[Statutory Authority: Chapter 43.22 RCW. 07-05-063, § 296-150F-0320, filed 2/20/07, effective 4/1/07; 05-23-002, § 296-150F-0320, filed 11/3/05, effective 12/4/05. Statutory Authority: RCW 43.22.340 and 43.22.480. 99-13-010, § 296-150F-0320, filed 6/4/99, effective 7/5/99. 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-0320, filed 10/23/96, effective 11/25/96.]

WAC 296-150F-0580 Must I obtain an insignia for used factory-built structures? All used factory-built housing and commercial structures that are to be installed on a building site in Washington state must have an insignia of approval from the department prior to being installed on a building site or it must be approved by the local building official as a moved building as allowed by section 101.2 of the International Building Code.

[Statutory Authority: Chapter 43.22 RCW. 07-05-063, § 296-150F-0580, filed 2/20/07, effective 4/1/07. 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-0580, filed 10/23/96, effective 11/25/96.]

WAC 296-150F-3000 Factory-built housing and commercial structure fees.

INITIAL FILING FEE	\$60.80
DESIGN PLAN FEES:	
INITIAL FEE - MASTER DESIGN (CODE CYCLE)	\$300.50
INITIAL FEE - ONE YEAR DESIGN	\$176.00
RENEWAL FEE	\$60.80
RESUBMIT FEE	\$87.90
ADDENDUM (Approval expires on same date as original plan.)	\$87.90
ELECTRONIC PLAN SUBMITTAL FEE \$4.90 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 (Plan review for educational, institutional or health care facilities and other buildings):	
Electrical Plan submission fee	\$66.90
Service/feeder Ampacity:	
0 - 100	\$29.60
101 - 200	\$37.00
201 - 400	\$69.30
401 - 600	\$81.80
601 - 800	\$105.50
801 - 1000	\$129.10
Over 1000	\$140.00
Over 600 volts surcharge	\$22.10
Thermostats:	
First	\$13.10
Each additional	\$3.10
Low voltage fire alarm and burglar alarm:	
Each control panel and up to four circuits or zones	\$11.90
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.) will be charged per hour or fraction of an hour*	\$79.20
ELECTRICAL COMMERCIAL/INDUSTRIAL	
Electrical Service /feeders 200 Ampacity plus	
Service/feeder	\$201.60
Additional Feeder	\$38.20
ELECTRICAL MULTIFAMILY RESIDENTIAL	
Electrical Service/feeders 200 Ampacity plus	
Service/feeder	\$106.90
Additional Feeder	\$27.20
MEDICAL GAS PLAN REVIEW:	
SUBMISSION FEE	\$83.50
FIRST STATION	\$83.50
EACH ADDITIONAL STATION	\$30.30
RECIPROCAL PLAN REVIEW:	
INITIAL FEE-MASTER DESIGN	\$134.30
INITIAL FEE-ONE YEAR DESIGN	\$81.20

RENEWAL FEE	\$81.20
ADDENDUM	\$81.20
PLANS APPROVED BY DESIGN PROFESSIONALS	\$60.80
APPROVAL OF EACH SET OF DESIGN PLANS BEYOND FIRST THREE SETS	\$15.70
DEPARTMENT INSPECTION FEES	
INSPECTION/REINSPECTION (Per hour* plus travel time* and mileage**)	\$77.80
TRAVEL (Per hour*)	\$77.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
DEPARTMENT AUDIT FEES:	
AUDIT (Per hour*)	\$77.80
TRAVEL (Per hour*)	\$77.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
INSIGNIA FEES:	
FIRST SECTION	\$248.40
EACH ADDITIONAL SECTION	\$22.40
REISSUED-LOST/DAMAGED	\$60.80
OTHER FEES:	
FIELD TECHNICAL SERVICE (Per hour* plus travel time* and mileage**)	\$77.80
NOTIFICATION TO LOCAL ENFORCEMENT AGENCY (NLEA)	\$33.70
PUBLICATION PRINTING AND DISTRIBUTION OF RCW'S AND WAC'S (One free copy per year upon request)	\$12.60
* 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: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-150F-3000, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapter 43.22 RCW. 07-05-063, § 296-150F-3000, filed 2/20/07, effective 4/1/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-150F-3000, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapter 43.22 RCW. 05-23-002, § 296-150F-3000, filed 11/3/05, effective 12/4/05. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-150F-3000, filed 5/24/05, effective 6/30/05. Statutory Authority: Chapter 43.22 RCW and 2003 c 291. 05-01-102, § 296-150F-3000, filed 12/14/04, effective 2/1/05. Statutory Authority: Chapters 18.27 and 43.22 RCW. 04-12-048, § 296-150F-3000, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 43.22.340, 43.22.400, 43.22.432, 43.22.433, 43.22.434, 43.22.480, and 43.22.485, 2002 c 268, and chapter 43.22 RCW. 03-12-044, § 296-150F-3000, filed 5/30/03, effective 5/30/03. 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-0306	What codes are used when altering a manufactured/mobile home?
296-150M-0323	What is the requirement for energy conservation inspection?
296-150M-0410	What are the requirements for altering mobile/manufactured homes?
296-150M-0600	Who establishes standards for installation of manufactured homes?
296-150M-0614	How may I obtain a copy of the American National Standards Institute (ANSI) A225.1-Manufactured Homes Installation?
296-150M-3000	Manufactured/mobile home fees.

WAC 296-150M-0306 What codes are used when altering a manufactured/mobile home? Alterations to a manufactured/mobile home must be in compliance with the Manufactured Home Construction and Safety Standards, 24 CFR Part 3280, as adopted by the Secretary for the Department of Housing and Urban Development (HUD) and the amendments to that federal standard adopted in this WAC chapter. The department will accept the following provisions, which supersede the applicable requirements in 24 CFR Part 3280.

ment of Housing and Urban Development (HUD) and the amendments to that federal standard adopted in this WAC chapter. The department will accept the following provisions, which supersede the applicable requirements in 24 CFR Part 3280.

- (1) Tested equivalent air conditioning/heat pump components that have been tested and listed for use with a particular furnace by a nationally recognized testing laboratory.
- (2) Water heaters that are listed by a nationally recognized testing laboratory and installed per the manufacturer's installation instructions.

Note: For installation of electrical furnaces and/or water heater in pre-HUD homes, the requirement of 24 CFR Part 3280.203 for flame spread limitations is waived as long as the installation meets the requirement of the installed appliance for distance from combustibles.

- (3) Pellet stoves for installation that have been listed by a department approved nationally recognized testing labora-

tory. For a current list of approved laboratories, contact any department field office or the department at the address shown in WAC 296-150M-0020.

(4) All electrical alterations and additions to the manufactured/mobile home shall comply with the current edition of the National Electrical Code.

(5) The International Residential Code for structural alterations.

Note: The replacement of exterior siding is an alteration and requires the approval of the department and an alteration insignia.

(6) The use of corrugated stainless steel tubing (CSST) is allowed when installed according to the manufactured installations instructions for mobile/manufactured homes by the following CSST manufacturers:

- (a) Gastite;
- (b) TracPipe;
- (c) Pro-Flex.

(7) Installation of gas room heaters in bedrooms must:

(a) Have direct vented (sealed combustion) and be listed as UL 307A for liquid fuel burning heater or ANSI Z21.88 for vented gas fireplaces.

(b) Not be able to draw combustion air from the living space and must be designed so that it will become inoperative if any door, latch, or opening is not properly sealed.

(c) Have a smoke detector, listed to UL 217. The smoke detector can either be hardwired or battery powered and installed according to the manufacturer's installation requirements.

(d) Have a carbon dioxide (CO₂) detector, listed to UL 2034. The CO₂ detector must be installed according to the manufacturer's installation requirements.

(e) Have at least one means of egress.

[Statutory Authority: Chapter 43.22 RCW. 07-05-063, § 296-150M-0306, filed 2/20/07, effective 4/1/07. Statutory Authority: Chapter 43.22 RCW and 2005 c 399. 05-24-020, § 296-150M-0306, filed 11/29/05, effective 1/1/06. 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-0306, filed 8/22/00, effective 9/30/00. Statutory Authority: RCW 43.22.340 and 43.22.480. 99-13-010, § 296-150M-0306, filed 6/4/99, effective 7/5/99. Statutory Authority: Chapter 43.22 RCW. 98-14-078, § 296-150M-0306, filed 6/30/98, effective 7/31/98.]

WAC 296-150M-0323 What is the requirement for energy conservation inspection? Energy conservation inspections are random inspections for utilities and/or their contractors who have prior approval from the department and who provide energy conservation related equipment which affects the electrical systems of a manufactured or mobile home.

See WAC 296-150M-3000 for the fee for an energy conservation permit.

[Statutory Authority: Chapter 43.22 RCW. 07-05-063, § 296-150M-0323, filed 2/20/07, effective 4/1/07.]

WAC 296-150M-0410 What are the requirements for altering mobile/manufactured homes? (1) Roof over framing (dormer) additions to manufactured/mobile homes must meet the following requirements:

(a) Maintain a minimum twenty pound roof, live load, and provide documentation to the department.

(b) The dead load for the dormer must be the difference between the live load design of the roof and the roof design snow load of the manufactured/mobile home location (as per Snow Load Analysis for Washington, by Structural Engineers Association of Washington).

(c) Existing roofing material, other than the sheathing, must be completely removed under the dormer.

(d) An engineering analysis shall take into account the wind load on the structure, when the dormer extends above the original ridge line of the manufactured/mobile home.

(e) The engineer or architect of record must clarify in writing on the original stamped drawings that the design plans may be used on other manufactured/mobile homes of the same live load, for generic designs that are to be used more than one time.

(f) Submit all manufactured/mobile home alterations to the department to be reviewed by plan review for compliance.

(2) Reroofing of a manufactured/mobile home must be installed and vented according to the manufacturer's installation instructions.

(a) Existing asphalt roof will require removal of the original asphalt roofing material prior to the installation of new asphalt roofing.

(b) If the original asphalt roofing material is not removed and a second layer of asphalt roofing is added, an engineering analysis must be completed to ensure that the existing roof structure can support the additional load while maintaining a 20 psf live roof load.

(c) Metal roofing with or without insulation board applied after removing existing asphalt shingles must:

(i) Follow the roofing manufacturer's installation requirements.

(ii) Maintain minimum pitch of the roof as required by the roofing manufacturer's installation requirements.

(d) Metal roofing with or without insulation board over an existing metal roof must:

Allow the metal roof to be installed over another metal roof as required by the manufacturer's installation requirements.

(3) Replacing floor decking must meet the following requirements:

(a) Plan review is not required for the following:

(i) The floor decking being replaced is not bigger than forty-eight inches by ninety-six inches (each section of home).

(ii) Two-by-six blocking is added to each floor joist and secured with 16d nails at six inches on center.

(iii) Two-by-six blocking is added at the ends of the cut such that one-half is under the existing decking and one-half is under the decking being replaced and is secured with 16d nails, two at each joint.

(iv) Adding floor decking that is the same thickness and grade as originally installed.

(v) Adding decking that is secured with construction adhesive bead and #8x1-3/4 inch screws at six inches on center.

(b) Plan review is required, but engineering will not be required under the following condition:

(i) The floor decking being replaced is greater than forty-eight inches by ninety-six inches.

(ii) The decking being replaced is no more than fifty percent of the floor length, each section of home.

(iii) The decking being replaced is no more than seventy-five percent of the floor width, each section of home.

(c) If the floor decking being replaced is larger than forty-eight inches by ninety-six inches, both plan review and engineering will be required.

(d) On generic designs that are to be used more than once, an engineer or architect must clearly state in writing on the original stamped drawings that the design plans may be used on other manufactured/mobile homes of the same manufacturer.

(4) Additions (i.e., rooms, garages, carports, etc.) added to manufactured/mobile homes.

(a) Labor and industries factory assembled structures section is responsible for any alterations to the manufactured/mobile home. This includes:

(i) Any opening that is added or changed.

(ii) Electrical circuits added to the addition that come from the electrical panel in the manufactured/mobile home.

(iii) Using the manufactured/mobile home for support of the addition.

(b) A plan review is required when adding an addition to a manufactured/mobile home for:

(i) Openings not constructed per the department.

(ii) Manufactured/mobile homes which use the structure for support of the addition.

(iii) Adding a dormer on the home.

Note: An engineer or architect licensed in Washington state must design the plans and seal the plans and calculations. The department's FAS plan review section will perform a plan review.

(c) Labor and industries electrical section is responsible for any electrical circuits added to the manufactured/mobile home that come from the pedestal where the electrical section has electrical inspection authority. Some cities have electrical inspection authority and would make those electrical inspections in their jurisdiction.

(d) Local jurisdiction (city or county) is responsible for the inspection of the addition except as noted above.

(e) Items to pay particular attention to:

(i) If the addition is being served by a required egress door:

- The lock must be removed and nonlocking passage hardware installed or the door may be removed entirely leaving a passageway.

- An exit door equal in size to the one removed must be installed in the addition.

(ii) If the addition is being served by a 3rd door and the other doors meet the egress requirements outlined above, no changes to the exterior door are required.

(iii) Electrical circuits run from the manufactured/mobile home electrical panel must:

- Be in conduit if routed under the home; and
- Terminate at the edge of the home in a junction box.

(iv) The addition may be flashed to the manufactured/mobile home for purposes of sealing the exterior joint and may have trim installed on the interior for finishing.

(5) Attaching awnings and carports and garages.

(a) Self-supporting awnings and carports.

When awnings and carports are self-supporting they may be flashed to the manufactured/mobile home and no permit is required from L&I FAS section. Please check with your local jurisdiction building department for any permits required by them.

(b) Awnings and carports using the home for support.

Aluminum or wood awnings and carports that use the manufactured/mobile home for support will need to:

- Have the connections to the home designed and the additional load on the home analyzed by an engineer or architect licensed in Washington state. The engineer or architect will need to seal these designs and calculations;

- The installer must submit the designs to the FAS plan review section for a review; and

- The installer must have the installation inspected, after the plans are approved.

(c) Manufactured home comes from factory garage ready.

If the manufactured home comes from the factory garage ready, no inspection is required by L&I. Garage ready from the factory means:

- Dormers, if required, are installed by the factory;

- All gypsum board required on the home has been installed at the factory;

- Any door between the home and the garage meets the requirements for separation of a residence from a garage as required by the building code;

- All electrical installations meet the requirements of the National Electrical Code for one hour walls;

- The dryer outlet termination has been designed at the factory to not exhaust into the garage; and

- No other changes are required to the manufactured home at the installation site.

Note: If any changes are required to the manufactured home at the installation site, an alteration permit is required from the department.

(d) Manufactured/mobile home is not garage ready.

If the manufactured/mobile home is not garage ready when it leaves the factory, an alteration permit is required. Engineering analysis and plan review may also be required if additional loads are placed upon the home or openings are made or changed.

The following are some examples of when a plan review would be required:

- A dormer is added;

- An opening in the home is made or changed (Note: Openings constructed to the department's approved details would not require a plan review); and

- Gypsum board is added to the wall of the home.

Items to also be aware of:

When a garage is to be attached to a manufactured/mobile home, the following must also be considered:

- The means of egress through exterior doors is not compromised (two are required);

- The means of egress from the bedroom(s) is not compromised (one egress directly to the exterior from each); and/or endwalls are usually shearwalls and any additional openings in them will need an engineering analysis and plan review to substantiate.

(6) Decertification of a manufactured/mobile home.

- (a) Can only be decertified if the jurisdiction having authority will allow the unit to remain on the property.
- (b) All electrical components, including the electrical panel, receptacles, switches and light must be removed and wires cut to where they enter the device.
- (c) All plumbing fixtures and exposed plumbing water, drain and waste lines must be cut off where they enter any wall, floor or ceiling.
- (d) All mechanical components including water heaters, furnaces, and kitchen appliances must be removed from the home.

[Statutory Authority: Chapter 43.22 RCW. 07-05-063, § 296-150M-0410, filed 2/20/07, effective 4/1/07.]

WAC 296-150M-0600 Who establishes standards for installation of manufactured homes? (1) The director of labor and industries is responsible for establishing uniform installation standards where possible and practical for persons or entities engaged in performing the installation of manufactured homes within the state.

(2) Local jurisdictions may adopt additional installation requirements only for those installation situations not covered by federal standards. For example, local jurisdictions may impose noise control construction ordinances, prescribe the frost depth and soil bearing capacity at the installation site, and adopt requirements to protect manufactured homes in hazardous areas, (see WAC 296-150M-0620).

Also, local jurisdictions may impose their requirements for snow loads as long as all structures within their jurisdiction are required to comply with the same standard and provided those installing the manufactured home are given options in satisfying that standard. Such an option might include, but not be limited to, allowing an installer to erect an

additional structure, which meets local standards, and protects the manufactured home. For example, an installer could erect a free standing ramada over a manufactured home to protect it from local snow loads.

Local jurisdictions **may not**:

- (a) Dictate foundation design and construction which is built according to either the manufacturer's installation instructions or a design created by an engineer or architect licensed in Washington state.
- (b) Impose regulations on smoke detectors because they are regulated by federal standards.

[Statutory Authority: Chapter 43.22 RCW. 07-05-063, § 296-150M-0600, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 43.22.340 and 43.22.480. 99-13-010, § 296-150M-0600, filed 6/4/99, effective 7/5/99. Statutory Authority: Chapter 43.22 RCW. 98-14-078, § 296-150M-0600, filed 6/30/98, effective 7/31/98. 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-0600, filed 10/23/96, effective 11/25/96.]

WAC 296-150M-0614 How may I obtain a copy of the American National Standards Institute (ANSI) A225.1-Manufactured Homes Installation? Copies of the standard are available from:

Office of Manufactured Housing, Installer Certification,
 Department of Community, Trade and Economic Development
 Post Office Box 42525
 Olympia, Washington 98505-2525
 Or call 1-800-946-0852 [1-800-964-0852]

[Statutory Authority: Chapter 43.22 RCW. 07-05-063, § 296-150M-0614, filed 2/20/07, effective 4/1/07. Statutory Authority: Chapter 43.22 RCW and 2003 c 291. 05-01-102, § 296-150M-0614, filed 12/14/04, effective 2/1/05. Statutory Authority: RCW 43.22.340 and 43.22.480. 99-13-010, § 296-150M-0614, filed 6/4/99, effective 7/5/99.]

WAC 296-150M-3000 Manufactured/mobile home fees.

INITIAL FILING FEE	\$33.20
DESIGN PLAN FEES:	
STRUCTURAL ALTERATION - MASTER DESIGN (CODE CYCLE)	\$134.40
STRUCTURAL ALTERATION - ONE YEAR DESIGN	\$90.10
RENEWAL FEE	\$40.10
RESUBMITTAL FEE	\$66.90
ADDENDUM (Approval expires on the same date as original plan.)	\$66.90
ELECTRONIC PLAN SUBMITTAL FEE \$5.00 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	
MECHANICAL	
Heat Pump	\$32.80
Combination Heat Pump (new) and Furnace (replacement)	\$43.80
Air Conditioning	\$32.80
Combination Air Conditioning (new) and Furnace (replacement)	\$43.80
Furnace Installation (gas*** or electric)	\$32.80
Gas*** Piping	\$32.80
Wood Stove	\$32.80
Pellet Stove	\$32.80
Gas*** Room Heater	\$32.80
Gas*** Decorative Appliance	\$32.80
Range: Changing from electric to gas***	\$32.80
Gas*** Water Heater Replacement	\$21.90
Water Heater: Changing from electric to gas***	\$21.90
Any combination of Furnace, Range, and Water Heater changing from electric to gas*** and includes Gas Piping charge	\$65.80
ELECTRICAL	

Heat Pump	\$43.80
Heat Pump (when home is prewired for a heat pump)	\$10.90
Combination Heat Pump (new) and Furnace (replacement)	\$54.80
Air Conditioner	\$43.80
Air Conditioner (when home is prewired for an air conditioner)	\$10.90
Combination Air Conditioner (new) and Furnace (replacement)	\$54.80
Furnace Installation (gas or electric)	\$43.80
Wood Stove (if applicable)	\$43.80
Pellet Stove (if applicable)	\$43.80
Gas*** Room Heater (if applicable)	\$43.80
Gas*** Decorative Appliance (if applicable)	\$43.80
Range: Changing from gas*** to electric	\$43.80
Electric Water Heater Replacement	\$43.80
Electric Water Heater replacing Gas*** Water Heater	\$43.80
Each added or modified 120 volt circuit (maximum charge is two circuits)	\$43.80
Each added 240 volt circuit (for other than Heat Pumps, Air Conditioners, Furnaces, Water Heaters, Ranges, Hot Tubs or Spas)	\$43.80
Hot Tub or Spa (power from home electrical panel)	\$43.80
Replace main electrical panel	\$43.80
Low voltage fire/intrusion alarm	\$43.80
Fire Safety	\$43.80
Any combination of Furnace, Range and Water Heater changing from electric to gas***	\$43.80
PLUMBING	
Fire sprinkler system (also requires a plan review)	\$21.90
Each added fixture	\$21.90
Replacement of water piping system (this includes two inspections)	\$98.80
STRUCTURAL	
Inspection as part of a mechanical/fire safety installation (cut truss/floor joist, sheet rocking)	\$43.80
Reroofs (may require a plan review)	\$76.80
Changes to home when additions bear loads on home per the design of a professional (also requires a plan review)	\$76.80
Other structural changes (may require a plan review)	\$76.80
Fire Safety (may also require an electrical fire safety inspection)	\$43.80
MISCELLANEOUS	
OTHER REQUIRED INSPECTIONS (Per hour*)	\$60.30
ALL REINSPECTIONS (Per hour*)	\$60.30
Refund	\$10.90
INSIGNIA FEES:	
ALTERATION	\$10.90
FIRE SAFETY CERTIFICATE	\$10.90
REISSUED - LOST/DAMAGED	\$10.90
IPIA	
DEPARTMENT AUDIT FEES	
REGULARLY SCHEDULED IPIA AUDIT:	
First inspection on each section (one time only)	\$30.40
Second and succeeding inspections of unlabeled sections (Per hour*)	\$66.90
OTHER IPIA FEES:	
Red tag removal during a regularly scheduled IPIA audit (Per hour*separate from other fees)	\$66.90
Red tag removal at a time other than a regularly scheduled IPIA audit (Per hour* plus travel time* and mileage**)	\$66.90
Increased frequency surveillance (Per hour* plus travel time* and mileage**)	\$66.90
Attendance at manufacturers training classes (Per hour* only)	\$66.90
Subpart "I" investigations (Per hour* plus travel time* and mileage**)	\$66.90
Alterations to a labeled unit (Per hour* plus travel time* and mileage**)	\$66.90
IPIA Issues/Responses (Per hour* Plus travel time* and mileage**)	\$66.90
Monthly surveillance during a regularly scheduled IPIA audit (Per hour*plus travel time* and mileage**)	\$66.90
Monthly surveillance at a time other than a regularly scheduled IPIA audit (Per hour* plus travel time* and mileage**)	\$66.90
Plant certifications, recertifications and addenda updates (Per hour* plus travel time* and mileage** per each inspector)	\$66.90
Response to HBT Audit during a regularly scheduled IPIA audit (Per hour*)	\$66.90
Response to HBT Audit at a time other than a regularly scheduled IPIA audit (Per hour* plus travel time*and mileage**)	\$66.90
Alternative construction (AC) letter inspections at placement site (Per hour* plus travel time*and mileage**)	\$66.90
Replacement of HUD labels (Per hour* plus travel time* and mileage**)	\$66.90
State Administrative Agency (SAA) inspection fee (Per hour* plus travel time* and mileage**)	\$66.90
OTHER FEES:	
FIELD TECHNICAL SERVICE (Per hour plus travel time* and mileage**)	\$62.00
PUBLICATION PRINTING AND DISTRIBUTION OF RCWs AND WACs (One free copy per year upon request)	\$12.30
VARIANCE INSPECTION FEE	\$87.70
HOMEOWNER REQUESTED INSPECTION	\$87.70
DECERTIFICATION OF A MOBILE/MANUFACTURED HOME	\$87.70

DEMOLITION OF A MOBILE/MANUFACTURED HOME	\$87.70
ENERGY CONSERVATION PERMIT	\$15.00
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.	
*** Gas means all gases; natural, propane, etc.	

[Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-150M-3000, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapter 43.22 RCW. 07-05-063, § 296-150M-3000, filed 2/20/07, effective 4/1/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-150M-3000, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapter 43.22 RCW and 2005 c 399. 05-24-020, § 296-150M-3000, filed 11/29/05, effective 1/1/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-150M-3000, filed 5/24/05, effective 6/30/05. Statutory Authority: Chapters 18.27 and 43.22 RCW. 04-12-048, § 296-150M-3000, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 43.22.340, 43.22.400, 43.22.432, 43.22.433, 43.22.434, 43.22.480, and 43.22.485, 2002 c 268, and chapter 43.22 RCW. 03-12-044, § 296-150M-3000, filed 5/30/03, effective 5/30/03. 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.

INITIAL FILING FEE	\$33.30
DESIGN PLAN FEES:	
NEW PLAN REVIEW FEE WITHOUT STRUCTURAL REQUIREMENTS	\$94.20
NEW PLAN REVIEW FEE WITH STRUCTURAL REQUIREMENTS	\$124.50
RESUBMITTAL FEE	\$67.30
ADDENDUM (Approval expires on same date as original plan.)	\$67.30
ELECTRONIC PLAN SUBMITTAL FEE \$5.00 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	\$12.40
RESUBMITTAL FEE	\$67.30
ADDENDUM	\$67.30
DEPARTMENT AUDIT FEES:	
AUDIT (per hour)*	\$67.30
TRAVEL (per hour)*	\$67.30
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
DEPARTMENT INSPECTION FEES:	
INSPECTION (per hour)*	\$67.30
TRAVEL (per hour)*	\$67.30
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
ALTERATION INSPECTION (One hour plus insignia alteration fee)	\$100.60
INSIGNIA FEES:	
STATE CERTIFIED	\$12.40
ALTERATION	\$33.30
REISSUED-LOST/DAMAGED	\$12.40
OTHER FEES:	
FIELD TECHNICAL SERVICE (per hour* plus travel time* and mileage**)	\$67.30
PUBLICATION PRINTING AND DISTRIBUTION OF RCWs AND WACs (One free copy per year upon request)	\$12.60
* 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: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-150P-3000, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-150P-3000, filed 5/24/05, effective 6/30/05. Statutory Authority: Chapters 18.27 and 43.22 RCW. 04-12-048, § 296-150P-3000, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 70.87.030, 18.106.070, 18.106.125, 2001 c 7, and chapters 18.106, 43.22, and 70.87 RCW. 03-12-045, § 296-150P-3000, filed 5/30/03, effective 6/30/03. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-150P-3000, filed 5/28/02, effective 6/28/02. 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 296-150T 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.

INITIAL FILING FEE	\$48.00
DESIGN PLAN FEES:	
INITIAL ONE YEAR DESIGN	\$138.80
RENEWAL FEE	\$48.00
RESUBMIT FEE	\$69.10
ADDENDUM (Approval expires on same date as original plan)	\$69.10
ELECTRONIC PLAN SUBMITTAL FEE \$4.90 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*	\$81.90
APPROVAL OF EACH SET OF DESIGN PLANS BEYOND FIRST TWO SETS	\$12.90
DEPARTMENT INSPECTION FEES	
INSPECTION/REINSPECTION (Per hour* plus travel time* and mileage**)	\$69.10
TRAVEL (Per hour)*	\$69.10
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
DEPARTMENT AUDIT FEES:	
AUDIT (Per hour*)	\$69.10
TRAVEL (Per hour*)	\$69.10
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
INSIGNIA FEES:	
FIRST SECTION	\$194.60
EACH ADDITIONAL SECTION	\$18.90
REISSUED-LOST/DAMAGED	\$48.00
ELECTRICAL COMMERCIAL/INDUSTRIAL	
Electrical Service/feeders 200 Amperage plus Service/feeder	\$201.60
Additional Feeder	\$38.20
ELECTRICAL MULTIFAMILY RESIDENTIAL	
Electrical Service/feeders 200 Amperage plus Service/feeder	\$106.90
Additional Feeder	\$27.20
OTHER FEES:	
FIELD TECHNICAL SERVICE (Per hour* plus travel time* and mileage**)	\$69.10
PUBLICATION PRINTING AND DISTRIBUTION OF RCW'S AND WAC'S (One free per year)	\$12.90
* 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: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-150T-3000, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-150T-3000, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-150T-3000, filed 5/24/05, effective 6/30/05. Statutory Authority: Chapter 43.22 RCW and 2003 c 291. 05-01-102, § 296-150T-3000, filed 12/14/04, effective 2/1/05. Statutory Authority: Chapters 18.27 and 43.22 RCW. 04-12-048, § 296-150T-3000, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 70.87.030, 18.106.070, 18.106.125, 2001 c 7, and chapters 18.106, 43.22, and 70.87 RCW. 03-12-045, § 296-150T-3000, filed 5/30/03, effective 6/30/03. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-150T-3000, filed 5/28/02, effective 6/28/02. 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.

INITIAL FILING FEE	\$34.30
DESIGN PLAN FEES:	
INITIAL FEE - MASTER DESIGN	\$236.70
INITIAL FEE - ONE YEAR DESIGN	\$96.80
RENEWAL FEE	\$41.20
RESUBMIT FEE	\$69.10
ADDENDUM (Approval expires on same date as original plan)	\$69.10
ELECTRONIC PLAN SUBMITTAL FEE \$4.90 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 (Plan review for educational, institutional or health care facilities and other buildings)	
Electrical plan submission fee	\$69.10
Service/feeder ampacity:	
0 - 100	\$30.60
101 - 200	\$38.10
201 - 400	\$71.60
401 - 600	\$84.40
601 - 800	\$108.80
801 - 1000	\$133.20
Over 1000	\$144.60
Over 600 volts surcharge	\$22.80
Thermostats:	
First	\$13.40
Each additional	\$3.10
Low voltage fire alarm and burglar alarm:	
Each control panel and up to four circuits or zones	\$12.30
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*	\$81.80
RECIPROCAL PLAN REVIEW:	
INITIAL FEE - MASTER DESIGN	\$105.50
INITIAL FEE - ONE YEAR DESIGN	\$63.70
RENEWAL FEE	\$63.70
ADDENDUM	\$63.70
APPROVAL OF EACH SET OF DESIGN PLANS BEYOND FIRST TWO SETS	\$12.90
DEPARTMENT INSPECTION FEES:	
INSPECTION/REINSPECTION (Per hour* plus travel time* and mileage**)	\$69.10
TRAVEL (Per hour)*	\$69.10
PER DIEM**	

HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
ALTERATION INSPECTION (One hour plus insignia alteration fee)	\$103.40
DEPARTMENT AUDIT FEES:	
AUDIT (Per hour*)	\$69.10
TRAVEL (Per hour*)	\$69.10
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
INSIGNIA FEES:	
FIRST SECTION/ALTERATION	\$19.90
REISSUED-LOST/DAMAGED	\$12.90
EXEMPT	\$34.30
ELECTRICAL COMMERCIAL/INDUSTRIAL	
Electrical Service/feeders 200 Amperage plus	
Service/feeder	\$201.60
Additional Feeder	\$38.20
ELECTRICAL MULTIFAMILY RESIDENTIAL	
Electrical Service/feeders 200 Amperage plus	
Service/feeder	\$106.90
Additional Feeder	\$27.20
OTHER FEES:	
FIELD TECHNICAL SERVICE (Per hour* plus travel time* and mileage**)	\$69.10
PUBLICATION PRINTING AND DISTRIBUTION OF RCW'S AND WAC'S (One free copy per year upon request)	\$12.90
* 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: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-150V-3000, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-150V-3000, filed 5/2/06, effective 6/30/06. Statutory Authority: Chapter 43.22 RCW. 05-23-002, § 296-150V-3000, filed 11/3/05, effective 12/4/05. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-150V-3000, filed 5/24/05, effective 6/30/05. Statutory Authority: Chapter 43.22 RCW and 2003 c 291. 05-01-102, § 296-150V-3000, filed 12/14/04, effective 2/1/05. Statutory Authority: Chapters 18.27 and 43.22 RCW. 04-12-048, § 296-150V-3000, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 70.87.030, 18.106.070, 18.106.125, 2001 c 7, and chapters 18.106, 43.22, and 70.87 RCW. 03-12-045, § 296-150V-3000, filed 5/30/03, effective 6/30/03. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-150V-3000, filed 5/28/02, effective 6/28/02. 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

296-155-160	Gases, vapors, fumes, dusts, and mists.
296-155-17317	Respiratory protection.
296-155-174	Cadmium.
296-155-17613	Respiratory protection.
296-155-20301	Definitions.
296-155-305	Signaling and flaggers.
296-155-456	Hazardous (classified) locations.
296-155-605	Equipment.
296-155-615	Material handling equipment.
296-155-706	Structural steel assembly.

WAC 296-155-160 Gases, vapors, fumes, dusts, and mists. (1) Exposure of employees to inhalation, ingestion, skin absorption, or contact with any material or substance at a concentration above those specified in chapter 296-841 WAC shall be avoided.

(2) To achieve compliance with subsection (1) of this section, administrative or engineering controls must first be

implemented whenever feasible. When such controls are not feasible to achieve full compliance, protective equipment or other protective measures shall be used to keep the exposure of employees to air contaminants within the limits prescribed in WAC 296-62-07515. Any equipment and technical measures used for this purpose must first be approved for each particular use by a competent industrial hygienist or other technically qualified person. Whenever respirators are used, their use shall comply with WAC 296-155-220.

(3) Whenever internal combustion equipment exhausts in enclosed spaces, tests shall be made and recorded to ensure 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 chapter 296-841 WAC, identifying and controlling respiratory hazards.

(4) Whenever any employee is exposed to asbestos, the provisions of the general occupational health standards, chapter 296-62 WAC shall apply.

(5) Subsections (1) and (2) of this section do not apply to the exposure of employees to formaldehyde. Whenever any employee is exposed to formaldehyde, the requirements of chapter 296-856 WAC shall apply.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-155-160, filed 1/24/07, effective 4/1/07; 06-08-087, § 296-155-160, filed 4/4/06, effective 9/1/06; 05-03-093, § 296-155-160, filed 1/18/05, effective 3/1/05. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-160, filed 7/20/94, effective 9/20/94; 88-14-108 (Order 88-11), § 296-155-160, filed 7/6/88; 87-24-051 (Order 87-24), § 296-155-160, filed 11/30/87. Statutory Authority: RCW 49.17.050(2) and 49.17.040. 87-10-008 (Order 87-06), § 296-155-160, filed 4/27/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-160, filed 1/21/86. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-155-160, filed 11/30/83; Order 74-26, § 296-155-160, filed 5/7/74, effective 6/6/74.]

WAC 296-155-17317 Respiratory protection. (1)

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:

(a) Periods necessary to install or implement feasible engineering and work-practice controls.

(b) Work operations, such as maintenance and repair activities and spray application processes, 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 PELs.

(d) Emergencies.

(2) Respirator program. The employer must develop, implement and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators.

(3) Respirator selection.

(a) The employer must select and provide to employees appropriate respirators as specified in this section and WAC 296-842-13005 in the respirator rule.

(b) An employee who cannot use a negative-pressure respirator must be given the option of using a positive-pressure respirator, or a supplied-air respirator operated in the continuous-flow or pressure-demand mode.

(c) Provide HEPA filters or N-, R-, or P-100 filters for powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators.

(d) Provide to employees, for escape, one of the following respirator options:

(i) Any self-contained breathing apparatus with a full facepiece or hood, operated in the positive-pressure or continuous-flow mode

OR

(ii) A full facepiece air-purifying respirator.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-155-17317, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-155-17317, filed 1/18/05, effective 3/1/05. Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050. 99-10-071, § 296-155-17317, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 93-04-111 (Order 92-15), § 296-155-17317, 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 µg/m³), 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 work-

place 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 concentrations 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 thirty or more days per year (twelve 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 develop, implement, and maintain a respiratory protection program as required by chapter 296-842 WAC, except WAC 296-842-14005.

(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. The employer must:

(i) Select and provide the appropriate respirator as specified in this section and WAC 296-842-13005 in the respirator rule.

- Provide employees with full facepiece respirators when they experience eye irritation.

- Make sure high-efficiency particulate air (HEPA) filters or N-, R-, or P-100 series filters are provided for powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators.

(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 µg/m³.

(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 thirty or more days per year (twelve consecutive months); and

(II) Is not currently exposed by the employer in those tasks on thirty 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 aggregated total of more than twelve 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 thirty days after initial assignment to

a job with exposure to cadmium or no later than ninety 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 twelve 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 thirty 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 ninety 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 ninety 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 ninety 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 fre-

quency 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 forty 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.

(ii) 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 twelve 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 ninety days after this section goes into effect, whichever date is later, to any employee without a medical examination within the preceding twelve 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 eighteen 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 eighteen 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 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 thirty 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) Multiemployer workplace. In a multiemployer 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 eight-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 years, in accordance with chapter 296-802 WAC.

(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 years, in accordance with chapter 296-802 WAC.

(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 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 chapter 296-802 WAC.

(ii) Within fifteen 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 chapter 296-802 WAC.

(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 296-842-15005 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, 49.17.050, 49.17.060, 07-05-072, § 296-155-174, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-155-174, filed 1/18/05, effective 3/1/05; 04-10-026, § 296-155-174, filed 4/27/04, effective 8/1/04. 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 296-155-17613 Respiratory protection. (1) General. For employees who use respirators required by WAC 296-155-176, the employer must provide respirators that comply with the requirements of this section. Respirators must be used during:

(a) Periods when an employee's exposure to lead exceeds the PEL.

(b) Work operations for which engineering controls and work-practices are not sufficient to reduce employee exposures to or below the PEL.

(c) Periods when an employee requests a respirator.

(d) Periods when respirators are required to provide interim protection of employees while they perform the operations as specified in WAC 296-155-17609(2).

(2) Respirator program.

(a) The employer must develop, implement, and maintain a respiratory protection program as required by chapter 296-842 WAC, Respirators.

(b) 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 WAC 296-155-17621 (3)(a)(ii) to determine whether or not the employee can use a respirator while performing the required duty.

(3) Respirator selection. The employer must:

(a) Select and provide for employees appropriate respirators according to this section and WAC 296-842-13005 in the respirator rule.

(b) Provide employees with a powered air-purifying respirator (PAPR) when an employee chooses to use a PAPR and it provides adequate protection to the employee.

(c) Provide employees with full facepiece respirators instead of half facepiece respirators for protection against lead aerosols that may cause eye or skin irritation at the use concentration.

(d) Provide HEPA filters or N-, R-, or P-100 filters for powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-155-17613, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-155-17613, filed 1/18/05, effective 3/1/05. Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050, 99-10-071, § 296-155-17613, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 93-22-054 (Order 93-07), § 296-155-17613, filed 10/29/93, effective 12/10/93.]

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, or chapter 296-841 WAC, Airborne contaminants, 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, 49.17.050, 49.17.060, 07-05-062, § 296-155-20301, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-155-20301, filed 1/18/05, effective 3/1/05. 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 296-155-305 Signaling and flaggers.

Definition:

Flagger means a person who provides temporary traffic control.

For the purposes of this chapter, *MUTCD* means the Federal Highway Administration's Manual on Uniform Traffic

Control as currently modified and adopted by the Washington state department of transportation.

Link: For the current version of the MUTCD, see the department of transportation's web site at <http://www.wsdot.wa.gov/biz/trafficoperations/mutcd.htm>.

- (1) General requirements for signaling and flaggers.
 - (a) Employers must first apply the requirements in this section. Then you must set up and use temporary traffic controls according to the guidelines and recommendations in Part VI of the MUTCD.
 - (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 view and print a copy of the MUTCD at the following web site <http://www.wsdot.wa.gov/biz/trafficoperations/mutcd.htm>.

- (2) When to use flaggers.
 - (a) Flaggers are to be used only when other reasonable traffic control methods will not adequately control traffic in the work zone.
 - (b) If signs, signals, and barricades do not provide necessary protection from traffic at work zones and construction sites on or adjacent to a highway or street, then you must use flaggers or other appropriate traffic controls.
 - (3) Flagger signaling.
 - (a) Flagger signaling must be with sign paddles approved by WSDOT and conform to guidelines and recommendations of MUTCD.
 - (b) Sign paddles must comply with the requirements of the MUTCD.
 - (c) When flagging is done during periods of darkness, sign paddles must be retroreflective or illuminated in the same manner as signs.
 - (d) During emergency situations, red flags, meeting the specifications of the MUTCD, may be used to draw a driver's attention to particularly hazardous conditions. In non-emergency situations, a red flag may be held in a flagger's free hand to supplement the use of a sign paddle.
 - (4) Adequate warning of approaching vehicles. Employers must:
 - Position work zone flaggers so they are not exposed to traffic or equipment approaching them from behind.
 - If this is not possible, then the employer, responsible contractor, and/or project owner must develop and use a method to ensure that flaggers have adequate visual warning of traffic and equipment approaching from behind.

Note:

- The following are some optional examples of methods that may be used to adequately warn or protect flaggers:
 - Mount a mirror on the flagger's hard hat.
 - Use an observer.
 - 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.

(5) High-visibility garments for flaggers.

(a) While flagging during daylight hours, a flagger must at least wear, as an outer garment:

- A high-visibility safety garment designed according to Class 2 specifications in ANSI/ISEA 107-1999, American National Standard for High-Visibility Safety Apparel.

- Consisting of at least 775 square inches of background material that are fluorescent yellow-green, fluorescent orange-red or fluorescent red in color;

AND

- 201 square inches of retroreflective material that encircles the torso and is placed to provide 360 degrees visibility around the flagger.

- A high visibility hard hat that is white, yellow, yellow-green, orange or red in color.

Note: A high-visibility garment meets Class 2 specifications if the garment:

- Meets the requirements above;

OR

- Has an ANSI "Class 2" label.

Definition:

For the purpose of this rule, **hours of darkness** means one-half hour before sunset to one-half hour after sunrise.

(b) While flagging during hours of darkness, a flagger must at least wear, as an outer garment:

- A high-visibility safety garment designed according to Class 2 specifications in ANSI/ISEA 107-1999.

- Consisting of at least 775 square inches of background material that are fluorescent yellow-green, fluorescent orange-red or fluorescent red in color;

AND

- 201 square inches of retroreflective material that encircles the torso and is placed to provide 360 degrees visibility around the flagger.

- White coveralls, or other coveralls or trousers that have retroreflective banding on the legs designed according to ANSI/ISEA 107-1999 standards.

- When snow or fog limit visibility, pants, coveralls, or rain gear, meeting these additional requirements must be worn:

- In a highly visible color;

- With retroreflective banding on the legs;

- Designed according to ANSI/ISEA 107-1999.

- A high-visibility hard hat:

- Marked with at least 12 square inches of retroreflective material applied to provide 360 degrees of visibility.

Note: ANSI/ISEA 107-1999 is available by:

- Purchasing 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/>.

OR

- Reading a copy of ANSI/ISEA 107-1999 at any Washington state library.

(6) Flagger training. Employers must make sure that:

(a) Each flagger has in their possession:

- A valid Washington traffic control flagger card; or

- A valid flagger card from a state such as:

- Oregon;

- Idaho;

- Montana;

OR

- Other states having a flagger training reciprocity agreement with Washington.

(b) The flagger card shows the following:

- Verification that the flagger training required 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, not to exceed three years from the date of issuance;

AND

- The flagger's picture or a statement that says "valid with photo ID."

(c) Flagger training is based upon the MUTCD.

Exemption: Personnel that have not completed a flagger-training course may be assigned duties as flaggers only during emergencies. Emergency assignments are temporary and last only until a certified flagger can be put into the position.

Definition:

For the purpose of this rule, **emergency** means an unforeseen occurrence endangering life, limb, or property.

(7) Flagger orientation and traffic control plan.

(a) The employer, responsible contractor or project owner must conduct an orientation that familiarizes the flagger with the job site. This requirement applies 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) If flaggers are used on a job that will last more than one day, then 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, the following items 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.

(8) Advance warning signs.

(a) Employers must provide the following on all flagging operations:

- A three sign advance warning sequence on all roadways with a speed limit below 45 mph.

- A four sign advance warning sequence on all roadways with a 45 mph or higher speed limit.

(b) Warning signs must reflect the actual condition of the work zone. When not in use, warning signs must either be taken down or covered.

(c) Employers must make sure to follow Table 1 for spacing of advance warning sign placement.

Table 1. Advanced Warning Sign Spacing

Road Type	Speed	Distances Between Advance Warning Signs*			
		A**	B**	C**	D**
Freeways & Expressways	70	1,500 ft.+/- or per the MUTCD.	1,500 ft.+/- or per the MUTCD.	1,500 ft.+/- or per the MUTCD.	1,500 ft.+/- or per the MUTCD.
	55				
Rural Highways	65	800 ft.+/-	800 ft.+/-	800 ft.+/-	800 ft.+/-
	60				
Rural Roads	55	500 ft.+/-	500 ft.+/-	500 ft.+/-	500 ft.+/-
	45				
Rural Roads and Urban Arterials	40	350 ft.+/-	350 ft.+/-	350 ft.+/-	N/A
	35				
Rural Roads, Urban Streets, Residential Business Districts	30	200 ft.***	200 ft.***	200 ft.***	N/A
	25				
Urban Streets	25 or less	100 ft.***	100 ft.***	100 ft.***	N/A

*All spacing may be adjusted to accommodate interchange ramps, at-grade intersections, and driveways.

**This refers to the distance between advance warning signs. See Figure 1, Typical Lane Closure on Two-Lane Road. This situation is typical for roadways with speed limits less than 45 mph.

***This spacing may be reduced in urban areas to fit roadway conditions.

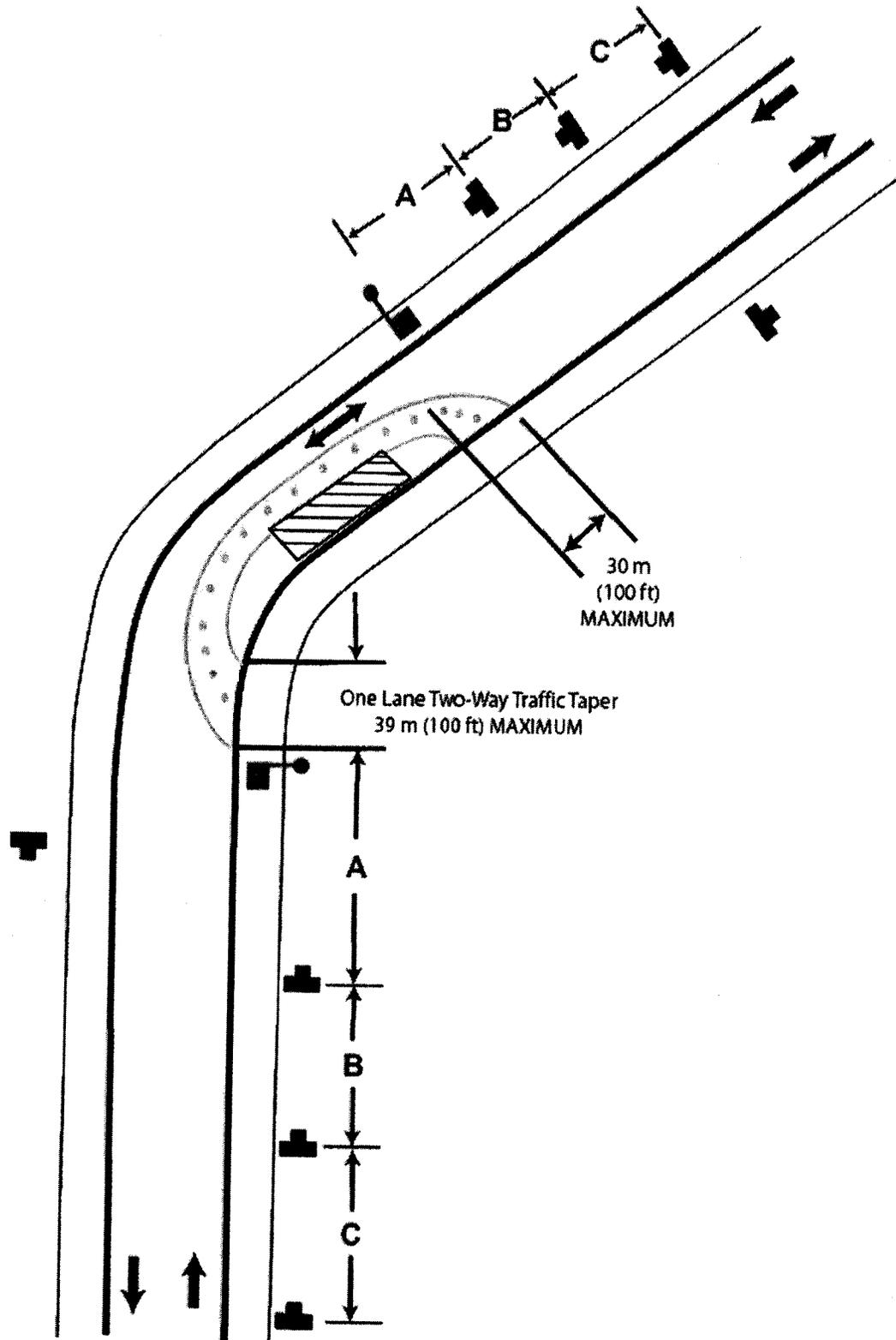
Exemption: In a mobile flagging operation, as defined by the MUTCD when the flagger is moving with the operation, the "flagger ahead (symbol or text)" sign must be:

- Within 1,500 feet of the flagger;

AND

- The flagger station must be seen from the sign.

If terrain does not allow a motorist to see the flagger from the "flagger ahead" sign, the distance between the flagger and the sign must be shortened to allow visual contact, but in no case can the distance be less than the distance specified in Table 1, Advanced Warning Sign Spacing.



(9) Providing a safe job site for flaggers. Employers, responsible contractors and/or project owners must make sure that:

(a) Flagger stations are located far enough in advance of the work space so that the approaching road users will have sufficient distance to stop before entering the work space.

Follow Table 2 for the distance of the flagger workstation in advance of the work space.

Table 2. Distance of Flagger Station in Advance of the Work Space

Speed* (mph)	Distance (ft)**
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335
60	415
65	485

*Posted speed, off-peak 85th-percentile speed prior to work starting or the anticipated operating speed.

**This spacing may be reduced to fit roadway and worksite conditions. Distances greater than those listed in the table are acceptable.

(b) Flaggers stand either on the shoulder adjacent to the road user being controlled or in the closed lane prior to stopping road users. A flagger must only stand in the lane being used by moving road users after road users have stopped.

Definition:

Road user means a vehicle operator, bicyclist, or pedestrian within a public roadway, including workers in temporary traffic control zones.

(c) Flagger workstations are illuminated during hours of darkness by floodlights that do not create glare that poses a hazard for drivers.

Note: To identify potential glare, observe the lighted area from various directions and angles on the main roadway after initial floodlight setup.

Exemption: Emergency situations are exempt from these illumination requirements. For the purpose of this rule, **emergency** means an unforeseen occurrence endangering life, limb, or property.

(d) Flaggers are not assigned other duties while engaged in flagging activities.

(e) Flaggers do not use devices that may distract the flagger's vision, hearing, or attention.

- Examples of these devices include cell phones, pagers, radios, and headphones.
- Devices such as two-way radios used for communications between flaggers to direct traffic or ensure flagger safety are acceptable.

(f) Flaggers receive a rest period of at least ten minutes, on the employer's time, for each four 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.

Exemption: Scheduled rest periods are not required where the nature of the work allows a flagger to take intermittent rest periods equivalent to ten minutes for each four hours worked.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-155-305, filed 1/24/07, effective 4/1/07; 06-05-027, § 296-155-305, filed 2/7/06, effective 4/1/06; 04-24-089, § 296-155-305, filed 12/1/04, effective 1/1/05; 03-06-075, § 296-155-305, filed 3/4/03, effective 8/1/03. 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 296-155-456 Hazardous (classified) locations.

(1) Scope. This section sets forth requirements for electric equipment and wiring in locations which are classified depending on the properties of the flammable vapors, liquids or gases, or combustible dusts or fibers which may be present therein and the likelihood that a flammable or combustible concentration or quantity is present. Each room, section or area shall be considered individually in determining its classification. These hazardous (classified) locations are assigned six designations as follows: Class I, Division 1; Class I, Division 2; Class II, Division 1; Class II, Division 2; Class III, Division 1; Class III, Division 2. For definitions of these locations see WAC 296-155-462. All applicable requirements in this part apply to all hazardous (classified) locations, unless modified by provisions of this section.

(a) All components and utilization equipment used in a hazardous location shall be chosen from among those listed by a nationally recognized testing laboratory, such as Underwriters' Laboratories, Inc., or Factory Mutual Engineering Corp., except custom-made components and utilization equipment.

(b) Equipment approved for a specific hazardous location shall not be installed or intermixed with equipment approved for another specific hazardous location.

(2) Electrical installations. Equipment, wiring methods, and installations of equipment in hazardous (classified) locations shall be approved as intrinsically safe or approved for the hazardous (classified) location or safe for the hazardous (classified) location. Requirements for each of these options are as follows:

(a) Intrinsically safe. Equipment and associated wiring approved as intrinsically safe is permitted in any hazardous (classified) location included in its listing or labeling.

(b) Approved for the hazardous (classified) location.

(i) General. Equipment shall be approved not only for the class of location but also for the ignitable or combustible properties of the specific gas, vapor, dust, or fiber that will be present.

Note: NFPA 70, the National Electrical Code, lists or defines hazardous gases, vapors, and dusts by "groups" characterized by their ignitable or combustible properties.

(ii) Marking. Equipment shall not be used unless it is marked to show the class, group, and operating temperature or temperature range, based on operation in a 40°C ambient, for which it is approved. The temperature marking shall not exceed the ignition temperature of the specific gas, vapor, or dust to be encountered. However, the following provisions modify this marking requirement for specific equipment:

(A) Equipment of the nonheat-producing type (such as junction boxes, conduit, and fitting) and equipment of the heat-producing type having a maximum temperature of not more than 100°C (212°F) need not have a marked operating temperature or temperature range.

(B) Fixed lighting fixtures marked for use only in Class I, Division 2 locations need not be marked to indicate the group.

(C) Fixed general-purpose equipment in Class I locations, other than lighting fixtures, which is acceptable for use in Class I, Division 2 locations need not be marked with the class, group, division, or operating temperature.

(D) Fixed dust-tight equipment, other than lighting fixtures, which is acceptable for use in Class II, Division 2 and Class III locations need not be marked with the class, group, division, or operating temperature.

(c) Safe for the hazardous (classified) location. Equipment which is safe for the location shall be of a type and design which the employer demonstrates will provide protection from the hazards arising from the combustibility and flammability of vapors, liquids, gases, dusts, or fibers.

Note: The National Electrical Code, NFPA 70, contains guidelines for determining the type and design of equipment and installations which will meet this requirement. The guidelines of this document address electric wiring, equipment, and systems installed in hazardous (classified) locations and contain specific provisions for the following: Wiring methods, wiring connections, conductor insulation, flexible cords, sealing and drainage, transformers, capacitors, switches, circuit breakers, fuses, motor controllers, receptacles, attachment plugs, meters, relays, instruments, resistors, generators, motors, lighting fixtures, storage battery charging equipment, electric cranes, electric hoists and similar equipment, utilization equipment, signaling systems, alarm systems, remote control systems, local loud speaker and communication systems, ventilation piping, live parts, lightning surge protection, and grounding. Compliance with these guidelines will constitute one means, but not the only means, of compliance with this subsection.

(3) Conduits. All conduits shall be threaded and shall be made wrench-tight. Where it is impractical to make a threaded joint tight, a bonding jumper shall be utilized.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-155-456, filed 1/24/07, effective 4/1/07. Statutory Authority: Chapter 49.17 RCW. 88-11-021 (Order 88-04), § 296-155-456, filed 5/11/88.]

WAC 296-155-605 Equipment. (1) General requirements.

(a) All equipment left unattended at night, adjacent to a highway in normal use, or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, to identify the location of the equipment.

(b) All tire servicing of multipiece and single-piece rim wheels are subject to the requirements of chapter 296-864 WAC.

(c)(i) Heavy machinery, equipment, or parts thereof, which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between them. Bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment, shall be either fully lowered or blocked when being repaired or when not in use. All controls shall be in a neutral position, with the motors stopped and brakes set, unless work being performed required otherwise.

(ii) Whenever the equipment is parked, the parking brake shall be set. Equipment parked on inclines shall have the wheels chocked and the parking brake set.

(d) The use, care and charging of all batteries shall conform to the requirements of part I of this chapter.

(e) All cab glass shall be safety glass, or equivalent, that introduces no visible distortion affecting the safe operation of any machine covered by this part.

(f) All equipment covered by this part shall comply with the requirements of WAC 296-155-525 (3)(a) when working or being moved in the vicinity of power lines or energized transmitters.

(g) Where traffic is diverted onto dusty surfaces, good visibility shall be maintained by the suppression of dust, through the periodic application of oil or water to the grade surface, as required.

(h) No equipment, vehicle, tool, or individual shall operate within 10 feet of any power line or electrical distribution equipment except in conformity with the requirements of WAC 296-155-525 (3)(a).

(2) Specific requirements. (Reserved.)

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-155-605, filed 1/24/07, effective 4/1/07; 98-05-046, § 296-155-605, filed 2/13/98, effective 4/15/98. Statutory Authority: RCW 49.17.040 and 49.17.050, 86-03-074 (Order 86-14), § 296-155-605, filed 1/21/86; Order 74-26, § 296-155-605, filed 5/7/74, effective 6/6/74.]

WAC 296-155-615 Material handling equipment. (1)

General requirements for earthmoving equipment.

(a) Scope.

These rules apply to the earthmoving equipment. Some examples of earthmoving equipment are:

- Scrapers;
- Loaders;
- Crawler or wheel tractors;
- Bulldozers;
- Off-highway trucks;
- Graders;
- Agricultural and industrial tractors;

AND

• Similar equipment.

(b) Seat belts.

• Seat belts must be provided and used by all operators and passengers on all equipment covered by this section.

• Seat belts must meet the requirements of the Society of Automotive Engineers, J386-1969, Seat Belts for Construction Equipment.

• Seat belts for agricultural and light industrial tractors must meet the seat belt requirements of Society of Automotive Engineers J333a-1970, Operator Protection for Agricultural and Light Industrial Tractors.

Exemption: Seat belts are not required for equipment designed only for standup operation.

• Seat belts must not be used on equipment that does not have rollover protective structure (ROPS) or adequate canopy protection in place.

Exemption: Mechanics and persons in training may ride on the equipment without a seatbelt if one is not provided.

(c) Access roadways and grades.

- Equipment must not be operated on access roadway or grades unless they are constructed and/or maintained to allow for the safe operation of the equipment.
- Every emergency access ramp and berm used by an employer must be constructed to restrain and control run-away vehicles.

(d) Brakes.

Earthmoving equipment must have brakes capable of stopping and holding the equipment fully loaded.

- Equipment mentioned in (a) of this subsection, General requirements for earthmoving equipment, must have brakes meeting the specifications in Society of Automotive Engineers SAE-J237, Loader Dozer-1971, J236, Graders-1971, and J319b, Scrapers-1971.

• Brake systems for self-propelled rubber-tired off-highway equipment manufactured after January 1, 1972, must meet the applicable minimum performance criteria set forth in the following Society of Automotive Engineers Recommended Practices:

Self-propelled scrapers	SAE J319b-1971
Self-propelled graders	SAE J236-1971
Truck and wagons	SAE J166-1971
Front-end loaders and dozers	SAE J237-1971

(e) Fenders.

• If pneumatic-tired earthmoving haulage equipment has a maximum speed that exceeds fifteen miles per hour, then the equipment must be equipped with fenders on all wheels to meet the requirements of Society of Automotive Engineers SAE J321a-1970, Fenders for Pneumatic-Tired Earthmoving Haulage Equipment.

• An employer may, at any time, seek to show under WAC 296-155-010, Variance and procedure, that the uncovered wheels present no hazard to personnel from flying materials.

- Note:** Examples of pneumatic-tired earthmoving haulage equipment may include:
- Trucks;
 - Scrapers;
 - Tractors;
- AND**
- Trailing units.

(f) Rollover protective structures (ROPS).

For requirements pertaining to rollover protective structures and overhead protection, see WAC 296-155-950 through 296-155-965.

(g) Audible alarms.

- All bidirectional machines must be equipped with a horn, distinguishable from the surrounding noise level. This horn must be:
 - Operated as needed when the machine is moving in either direction;

AND

- Maintained in an operative condition.

- Note:** Examples of bidirectional machines include:
- Rollers;
 - Compactors;
 - Front-end loaders;
 - Bulldozers;
- AND**
- Similar equipment.

- Employers must make sure that earthmoving or compacting equipment with an obstructed view to the rear in reverse is not operated unless:
 - A reverse signal alarm distinguishable from the surrounding noise level is used;

OR

- An observer signals that it is safe to back up.
- If the surrounding noise level is of such amplitude that reverse signal alarms are not effective, then amber strobe lights must be used.

(h) Operators must look in the direction of travel.

The driver must look in the direction of, and keep a clear view of the path of travel, when operating equipment in reverse.

Exemption: See (g)(ii) of this subsection, Audible alarms, for requirements pertaining to equipment that has an obstructed view to the rear.

(i) Scissor points.

Scissor points on all front-end loaders, which constitute a hazard to the operator during normal operation, must be guarded.

(j) Tractors.

- Tractor motors must be cranked only by operators or other experienced persons.
- Waterproof and comfortable seat cushions must be provided on tractors at all times when working.
- Operator must not leave controls of tractor with master clutch engaged.

(k) Winch lines.

Winch lines must be maintained in good condition and provided with spliced eye, knob or hook in working end, except under conditions where unspliced end is required.

(l) Bulldozers and carry-all gates.

- Repairs on blade or dozer equipment must not be initiated unless the motor has been stopped and dozer blade is resting on the ground or securely blocked. The same applies to carry-all gates.
- Bulldozer blades and carry-all gates must rest on the ground or on blocking when machines are not in operation.

(m) Moving equipment.

Personnel must not get on or off machine while machine is in motion.

(n) Hazardous conditions.

Where excessive dust conditions are created, such areas must be sprinkled with water or an environmentally safe solution to keep dust at a minimum.

Reference: When dust presents a hazard, see chapter 296-841 WAC, Respiratory hazards for additional requirements.

(2) Excavating and other equipment.

(a) Tractors covered in subsection (1) of this section must have seat belts as required for the operators when seated in the normal seating arrangement for tractor operation.

(b) For the purposes of this part and of Part L of this chapter, the names and descriptions for measurement of dimensions of machinery and attachments must be as described in Society of Automotive Engineers 1970 Handbook, pages 1088 through 1103.

(c) The safety requirements, ratios, or limitations applicable to machines or attachment usage covered in Power

Crane and Shovel Association's Standards No. 1 and No. 2 of 1968, and No. 3 of 1969, must be complied with, and must apply to cranes, machines, and attachments under this part.

(3) Lifting and hauling equipment (other than equipment covered under Part L of this chapter). Industrial trucks (including forklifts) shall meet the requirements of chapter 296-863 WAC, WAC 296-155-605 and the following:

(a) Lift trucks, stackers, etc., shall have the rated capacity clearly posted on the vehicle so as to be clearly visible to the operator. When auxiliary removable counter-weights are provided by the manufacturer, corresponding alternate rated capacities also shall be clearly shown on the vehicle. These ratings shall not be exceeded.

(b) No modifications or additions which affect the capacity or safe operation of the equipment shall be made without the manufacturer's or professional 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.

(c) If a load is lifted by two or more trucks working in unison, the proportion of the total load carried by any one truck shall not exceed its capacity.

(d) Steering or spinner knobs shall not be attached to the steering wheel unless the steering mechanism is of a type that prevents road reactions from causing the steering handwheel to spin. The steering knob shall be mounted within the periphery of the wheel.

(e) All high lift rider industrial trucks shall be equipped with overhead guards which meet the configuration and structural requirements as defined in paragraph 502 of American National Standards Institute B56.1-1975, Safety Standards for Powered Industrial Trucks.

(f) All industrial trucks in use shall meet the applicable requirements of design, construction, stability, inspection, testing, maintenance, and operation, as defined in American National Standards Institute B56.1-1975, Safety Standards for Powered Industrial Trucks.

(g) Unauthorized personnel shall not be permitted to ride on powered industrial trucks. A safe place to ride shall be provided where riding of trucks is authorized.

(h) When a forklift truck is used for elevating workers a platform shall be specifically built for that purpose and shall comply with the following requirements:

(i) The platform shall be securely attached to the forks and shall have standard guardrails and toeboards on all open sides.

(ii) The hydraulic system of the forklift shall be so designed that the lift mechanism will not drop faster than one hundred thirty-five feet per minute in the event of a failure in any part of the system. Forklifts used for elevating platforms shall be identified that they are so designed.

(iii) A safety strap shall be installed or the control lever shall be locked to prevent the boom from tilting.

(iv) An operator shall be at the controls of the forklift equipment while persons are on the platform.

(v) The operator shall be in the normal operating position while raising or lowering the platform.

(vi) The vehicle shall not travel from point to point while workers are on the platform except that inching or maneuvering at very slow speed is permissible.

(vii) The area between workers on the platform and the mast shall be adequately guarded to prevent contact with chains or other shear points.

(viii) All platforms shall be visually inspected daily or before each use by the person in charge of the work being performed, and shall be tested as frequently as is necessary to maintain minimum safety factors.

(ix) Whenever a truck, except for high lift order picker trucks, is equipped with vertical hoisting controls elevatable with the lifting carriage or forks, the following precautions shall be taken for the protection of personnel being elevated.

(A) Provide a platform secured to the lifting carriage and/or forks.

(B) Provide means whereby personnel on the platform can shut off power to the truck.

(C) Provide such protection from falling objects as indicated necessary by the operating conditions.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-155-615, filed 1/24/07, effective 4/1/07; 04-24-089, § 296-155-615, filed 12/1/04, effective 1/1/05. Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050. 00-01-176, § 296-155-615, filed 12/21/99, effective 3/1/00. Statutory Authority: RCW 49.17.010, [49.17].-040, [49.17].050 and [49.17].060. 98-05-046, § 296-155-615, filed 2/13/98, effective 4/15/98. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-615, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-615, filed 1/21/86; Order 74-26, § 296-155-615, filed 5/7/74, effective 6/6/74.]

WAC 296-155-706 Structural steel assembly. (1) Structural stability must be maintained at all times during the erection process.

• Make sure that multistory structures have the following:

– Permanent floors installed as the erection of structural members progress;

– No more than eight stories between the erection floor and the upper-most permanent floor; and

– No more than four floors or forty-eight feet (14.6 m), whichever is less, of unfinished bolting or welding above the foundation or uppermost permanent secured floor.

Exception: The above applies except where the structural integrity is maintained as a result of design.

(2) Walking/working surfaces.

(a) Shear connectors and other similar devices.

(i) Shear connectors, reinforcing bars, deformed anchors or threaded studs must not be attached to the top flanges of beams, joists or beam attachments so they project vertically from or horizontally across the top flange of the member until after the metal decking, or other walking/working surface has been installed. This becomes a tripping hazard. Examples of shear connectors are headed steel studs, steel bars or steel lugs.

(ii) Installation of shear connectors on composite floors. When shear connectors are used in construction of composite floors, roofs and bridge decks, employees must lay out and install the shear connectors after the metal decking has been installed, using the metal decking as a working platform.

(b) Slip resistance of metal decking. (Reserved.)

(c) Reserved.

(d) Safe access must be provided to the working level. Employees must not slide down ropes, columns, or ladders.

(3) Plumbing-up.

(a) When deemed necessary by a competent person, plumbing-up equipment must be installed in conjunction with the steel erection process to ensure the stability of the structure.

(b) When used, plumbing-up equipment must be in place and properly installed before the structure is loaded with construction material such as loads of joists, bundles of decking or bundles of bridging.

(c) Plumbing-up equipment must be removed only with the approval of a competent person.

(4) Metal decking.

(a) Hoisting, landing and placing of metal decking bundles.

(i) Bundle packaging and strapping must not be used for hoisting unless specifically designed for that purpose.

(ii) If loose items such as dunnage, flashing, or other materials are placed on the top of metal decking bundles to be hoisted, such items must be secured to the bundles.

(iii) Bundles of metal decking on joists must be landed in accordance with WAC 296-155-709 (5)(d).

(iv) Metal decking bundles must be landed on framing members so that enough support is provided to allow the bundles to be unbanded without dislodging the bundles from the supports.

(v) At the end of the shift or when environmental or job site conditions require, metal decking must be secured against displacement.

(b) Roof and floor holes and openings. Metal decking at roof and floor holes and openings must be installed as follows:

(i) Framed metal deck openings must have structural members turned down to allow continuous deck installation except where not allowed by structural design constraints or constructibility.

(ii) Roof and floor holes and openings must be decked over. Where large size, configuration or other structural design does not allow openings to be decked over (such as elevator shafts, stair wells, etc.) employees must be protected in accordance with chapter 296-155 WAC, Part C-1 or Part K.

(iii) Metal decking holes and openings must not be cut until immediately prior to being permanently filled with the equipment or structure needed or intended to fulfill its specific use and which meets the strength requirements of (c) of this subsection, or must be immediately covered.

(c) **Covering roof and floor openings.** Smoke dome or skylight fixtures that have been installed are not considered covers for the purpose of this section unless they meet the strength requirements of WAC 296-155-505 (4)(g) (Part K).

(d) **Decking gaps around columns.** Wire mesh, exterior plywood, or equivalent, must be installed around columns where planks or metal decking do not fit tightly. The materials used must be of sufficient strength to provide fall protection for personnel and prevent objects from falling through.

(e) Installation of metal decking.

(i) Metal decking must be laid tightly and immediately secured upon placement to prevent accidental movement or displacement.

(ii) During initial placement, metal decking panels must be placed to ensure full support by structural members.

(f) Derrick floors.

(i) A derrick floor must be fully decked and or planked and the steel member connections completed to support the intended floor loading.

(ii) Temporary loads placed on a derrick floor must be distributed over the underlying support members so as to prevent local overloading of the deck material.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-155-706, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-13-115, § 296-155-706, filed 6/19/02, effective 9/1/02.]

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, reregistration, and reinstatement of certificates of registration?

WAC 296-200A-900 What fees does the department charge contractors for issuance, renewal, reregistration, and reinstatement of certificates of registration? The department charges the following fees:

(1) \$113.40 for each issuance, renewal or reregistration of a certificate of registration for contractors. This registration is valid for two years from date of issuance, renewal or reregistration or until it is suspended or revoked.

(2) \$53.60 for the reinstatement of a certificate of registration.

(3) \$12.60 for providing a duplicate certificate of registration.

(4) \$25.60 for each requested certified letter prepared by the department.

(5) \$162.00 for the construction and electrical contractor listing publication on CD ROM per year, prorated according to the number of issues left in the subscription year, which runs from November 1 through October 31. Each issue costs \$13.50.

(6) \$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 \$28.10.

(7) \$20.00 is required to cover the costs for the service of process in an action against a contractor, the contractor's bond, or the deposit under RCW 18.27.040.

(8) \$25.00 is required to cover the costs for the service of processing refunds.

[Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-200A-900, filed 5/22/07, effective 6/30/07. Statutory Authority: Chapters 18.27, 43.22, and 70.87 RCW. 05-12-032, § 296-200A-900, filed 5/24/05, effective 6/30/05. Statutory Authority: Chapters 18.27 and 43.22 RCW. 04-12-048, § 296-200A-900, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 18.27.040, 18.27.070, 18.27.075, 18.27.125 and 2001 c 159, and chapter 18.27 RCW. 03-20-097, § 296-200A-900, filed 9/30/03, effective 11/17/03. Statutory Authority: RCW 43.22.350, 43.22.-434, 43.22.480, 43.22.500, 18.27.040, 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 7, 2002 c 249, and chapters 19.28, 43.22, 18.27, and 70.87 RCW. 02-12-022, § 296-200A-900, filed 5/28/02, effective 6/28/02. 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

296-301-130 Extractors.
296-301-225 Workroom ventilation.

WAC 296-301-130 Extractors. (1) Centrifugal extractor.

(a) Cover. Each extractor shall be equipped with a metal cover.

(b) Interlocking device. Each extractor shall be equipped with an interlocking device that will prevent the cover from being opened while the basket is in motion, and also prevent the power operation of the basket while the cover is open.

(c) Brakes. Each extractor shall be equipped with a mechanically or electrically operated brake to quickly stop the basket when the power driving the basket is shut off.

(d) Maximum allowable speed. Each centrifugal extractor shall be effectively secured in position on the floor or foundation so as to eliminate unnecessary vibration, and shall not be operated at a speed greater than the manufacturer's rating, which shall be stamped where easily visible in letters not less than one-quarter inch in height. The maximum allowable speed shall be given in revolutions per minute (rpm).

(2) Engine drum extractor—Over-speed governor. Each engine individually driving an extractor shall be provided with an approved engine stop and a speed limit governor.

(3) Squeezer or wringer extractor—Nip guards. All nip guards shall comply with the requirements of WAC 296-301-04503(4).

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-301-130, filed 1/24/07, effective 4/1/07; Order 74-19, § 296-301-130, filed 5/6/74.]

WAC 296-301-225 Workroom ventilation. In all workrooms in which potentially toxic substances are used, the maximum allowable concentrations listed in chapter 296-841 WAC, airborne contaminants, shall be maintained. Open surface tanks shall conform to the requirements of WAC 296-62-11021.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-301-225, filed 1/24/07, effective 4/1/07; Order 74-19, § 296-301-225, filed 5/6/74.]

Chapter 296-303 WAC SAFETY STANDARDS FOR LAUNDRY MACHINERY AND OPERATIONS

WAC

296-303-01001 General industrial safety standards.
296-303-02001 Washroom machines.

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 12.1-1956.

(c) Identification of piping systems. American National Standard Scheme for the Identification of Piping Systems, 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 B31.1.0-1967. 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, 49.17.050, 49.17.060. 07-03-163, § 296-303-01001, filed 1/24/07, effective 4/1/07. 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.]

WAC 296-303-02001 Washroom machines. (1) Marking machine. Each power marking machine shall be equipped with a spring-compression device of such design as to prevent injury to fingers, should they be caught between the marking plunger and platen; or the marking machine shall be equipped with a control mechanism that will require the simultaneous action of both hands to operate the machine; or there shall be a guard that will act as a barrier in front of, and which will prevent the operator's fingers from coming into contact with the marking plunger.

(2) Washing machine.

(a) Each washing machine shall be equipped with an interlocking device that will prevent the inside cylinder from moving under power when the outer door on the case or shell

is open, and will also prevent the door from being opened while the inside cylinder is in motion. This device should not prevent the movement of the inner cylinder under the action of a hand-operated mechanism or under the operation of an "inching device."

(b) Each washing machine shall be provided with means for holding open the doors or covers of inner and outer cylinders or shells while being loaded or unloaded. Spring loaded devices are an acceptable means.

(3) Extractor.

(a) Each extractor shall be equipped with a metal cover.

(b) Each extractor shall be equipped with an interlocking device that will prevent the cover from being opened while the basket is in motion, and will also prevent the power operation of the basket while the cover is not fully closed and secured. This device should not prevent the movement of the basket by hand to ensure an even loading.

(c) Each extractor shall also be effectively secured in position on the floor or foundation so as to eliminate unnecessary vibrations, and shall not be operated at a speed greater than that given in the manufacturer's rating, which shall be stamped on the inside of the basket where it is easily visible, in letters not less than one-fourth inch in height. The maximum permissible speed shall be given in revolutions per minute.

(d) Each engine individually driving an extractor shall be provided with an approved engine stop and a speed-limit governor. It is suggested that where an extractor is driven by a direct-current motor a "no field" release be installed to prevent overspeed, which may result from an open or broken field.

(4) Power wringer. Each power wringer shall be equipped with a safety bar or other guard across the entire front of the feed or first pressure rolls, so arranged that the striking of the bar or guard by the hand of the operator or other person will stop the machine.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-303-02001, filed 1/24/07, effective 4/1/07; Order 74-18, § 296-303-02001, filed 5/6/74.]

Chapter 296-304 WAC

SAFETY STANDARDS FOR SHIP REPAIRING, SHIPBUILDING AND SHIPBREAKING

WAC

296-304-01001	Definitions.
296-304-01007	Fire safety plan.
296-304-01009	Precautions for hot work.
296-304-01013	Fire response.
296-304-01017	Land-side fire protection systems.
296-304-01023	Appendix A—Model fire safety plan.
296-304-020	Confined and enclosed spaces and other dangerous atmospheres in shipyard employment.
296-304-02005	Cleaning and other cold work.
296-304-02007	Hot work.
296-304-02013	Appendix B—Compliance assistance guidelines for confined and enclosed spaces and other dangerous atmospheres.
296-304-02015	Appendix C—Confined and enclosed spaces and other dangerous atmospheres in shipyard employment.
296-304-04005	Welding, cutting and heating in way of preservative coatings.
296-304-05003	Ladders.
296-304-05005	Guarding of deck openings and edges.
296-304-06013	Health and sanitation.
296-304-08009	Powder-actuated fastening tools.
296-304-11003	Drums and containers.

296-304-14007	Criteria governing accreditation to certificate vessels' cargo gear.
296-304-15001	General duties—Exemptions.
296-304-16001	General.
296-304-17011	Proof tests—Loose gear.
296-304-20001	General provisions.

WAC 296-304-01001 Definitions. "Alarm" - A signal or message from a person or device that indicates that there is a fire, medical emergency, or other situation that requires emergency response or evacuation. At some shipyards, this may be called an "incident" or a "call for service."

"Alarm system" - A system that warns employees at the worksite of danger.

"Anchorage" - A secure point to attach lifelines, lanyards, or deceleration devices.

"Body belt" - A strap with means to both secure it around the waist and to attach it to a lanyard, lifeline, or deceleration device. Body belts may be used only in fall restraint or positioning device systems and may not be used for fall arrest. Body belts must be at least one and five-eighths inches (4.13 cm) wide.

"Body harness" - Straps to secure around an employee so that fall arrest forces are distributed over at least the thighs, shoulders, chest and pelvis with means to attach it to other components of a personal fall arrest system.

"Class II standpipe system" - A one and one-half inch (3.8 cm) hose system which provides a means for the control or extinguishment of incipient stage fires.

"Cold work" - Work that does not involve riveting, welding, burning, or other fire-producing or spark-producing operations.

"Contract employer" - An employer, such as a painter, joiner, carpenter, or scaffolding subcontractor, who performs work under contract to the host employer or to another employer under contract to the host employer at the host employer's worksite. This excludes employers who provide incidental services that do not influence shipyard employment (such as mail delivery or office supply services).

"Competent person" - A person who can recognize and evaluate employee exposure to hazardous substances or to other unsafe conditions and can specify the necessary protection and precautions necessary to ensure the safety of employees as required by these standards.

"Confined space" - A small compartment with limited access such as a double bottom tank, cofferdam, or other small, confined space that can readily create or aggravate a hazardous exposure.

"Connector" - A device used to connect parts of a personal fall arrest system or parts of a positioning device system together. It may be:

- An independent component of the system (such as a carabiner); or
- An integral component of part of the system (such as a buckle or D-ring sewn into a body belt or body harness or a snaphook spliced or sewn to a lanyard or self-retracting lanyard).

"Dangerous atmosphere" - An atmosphere that may expose employees to the risk of death, incapacitation, injury, acute illness, or impairment of ability to self-rescue (i.e., escape unaided from a confined or enclosed space).

"Deceleration device" - A mechanism, such as a rope grab, rip stitch lanyard, specially woven lanyard, tearing or deforming lanyard, or automatic self-retracting lifeline/lanyard, that serves to dissipate a substantial amount of energy during a fall arrest, or to limit the energy imposed on an employee during fall arrest.

"Deceleration distance" - The additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured from the location of an employee's body belt or body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, to the location of that attachment point after the employee comes to a full stop.

"Designated area" - An area established for hot work after an inspection that is free of fire hazards.

"Director" - The director of the department of labor and industries or a designated representative.

"Drop test" - A method utilizing gauges to ensure the integrity of an oxygen fuel gas burning system. The method requires that the burning torch is installed to one end of the oxygen and fuel gas lines and then the gauges are attached to the other end of the hoses. The manifold or cylinder supply valve is opened and the system is pressurized. The manifold or cylinder supply valve is then closed and the gauges are watched for at least sixty seconds. Any drop in pressure indicates a leak.

"Emergency operations" - Activities performed by fire response organizations that are related to: Rescue, fire suppression, emergency medical care, and special operations or activities that include responding to the scene of an incident and all activities performed at that scene.

"Employee" - Any person engaged in ship repairing, ship building, or ship breaking or related employment as defined in these standards.

"Employer" - An employer with employees who are employed, in whole or in part, in ship repair, ship building and ship breaking, or related employment as defined in these standards.

"Enclosed space" - A space, other than a confined space, that is enclosed by bulkheads and overhead. It includes cargo holds, tanks, quarters, and machinery and boiler spaces.

"Equivalent" - Alternative designs, materials, or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the method or item specified in the standard.

"Fire hazard" - A condition or material that may start or contribute to the spread of fire.

"Fire protection" - Methods of providing fire prevention, response, detection, control, extinguishment, and engineering.

"Fire response" - The activity taken by the employer at the time of an emergency incident involving a fire at the worksite, including fire suppression activities carried out by internal or external resources or a combination of both, or total or partial employee evacuation of the area exposed to the fire.

"Fire response employee" - A shipyard employee who carries out the duties and responsibilities of shipyard fire fighting in accordance with the fire safety plan.

"Fire response organization" - An organized group knowledgeable, trained, and skilled in shipyard fire fighting operations that responds to shipyard fire emergencies, including: Fire brigades, shipyard fire departments, private or contractual fire departments, and municipal fire departments.

"Fire suppression" - The activities involved in controlling and extinguishing fires.

"Fire watch" - The activity of observing and responding to the fire hazards associated with hot work in shipyard employment and the employees designated to do so.

"Fixed extinguishing system" - A permanently installed fire protection system that either extinguishes or controls fire occurring in the space it protects.

"Flammable liquid" - 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.

"Free fall" - To fall before a personal fall arrest system begins to apply force to arrest the fall.

"Free fall distance" - The vertical displacement of the fall arrest attachment point on the employee's body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before the device operates and fall arrest forces occur.

"Gangway" - A ramp-like or stair-like means to board or leave a vessel including accommodation ladders, gang-planks and brows.

"Hazardous substance" - A substance likely to cause injury because it is explosive, flammable, poisonous, corrosive, oxidizing, irritant, or otherwise harmful.

"Hose systems" - Fire protection systems consisting of a water supply, approved fire hose, and a means to control the flow of water at the output end of the hose.

"Host employer" - An employer who is in charge of coordinating work or who hires other employers to perform work at a multiemployer workplace.

"Hot work" - Riveting, welding, burning or other fire or spark producing operations.

"Incident management system" - A system that defines the roles and responsibilities to be assumed by personnel and the operating procedures to be used in the management and direction of emergency operations; the system is also referred to as an "incident command system (ICS)."

"Incipient stage fire" - A fire, in the initial or beginning stage, which can be controlled or extinguished by portable fire extinguishers, Class II standpipe or small hose systems without the need for protective clothing or breathing apparatus.

"Inerting" - The displacement of the atmosphere in a permit space by noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible. This procedure produces an IDLH oxygen-deficient atmosphere.

"Interior structural fire fighting operations" - The physical activity of fire response, rescue, or both involving a fire beyond the incipient stage inside of buildings, enclosed structures, vessels, and vessel sections.

"Lanyard" - A flexible line of rope, wire rope, or strap which generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage.

"Lifeline" - A component consisting of a flexible line to connect to an anchorage at one end to hang vertically (vertical lifeline), or to connect to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

"Lower levels" - Those areas or surfaces to which an employee can fall. Such areas or surfaces include but are not limited to ground levels, floors, ramps, tanks, materials, water, excavations, pits, vessels, structures, or portions thereof.

"Multiemployer workplace" - A workplace where there is a host employer and at least one contract employer.

"Personal alert safety system (PASS)" - A device that sounds a loud signal if the wearer becomes immobilized or is motionless for thirty seconds or more.

"Personal fall arrest system" - A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, body harness and may include a lanyard, a deceleration device, a lifeline, or a suitable combination.

"Physical isolation" - The elimination of a fire hazard by removing the hazard from the work area (at least thirty-five feet for combustibles), by covering or shielding the hazard with a fire-resistant material, or physically preventing the hazard from entering the work area.

"Physically isolated" - Positive isolation of the supply from the distribution piping of a fixed extinguishing system. Examples of ways to physically isolate include: Removing a spool piece and installing a blank flange; providing a double block and bleed valve system; or completely disconnecting valves and piping from all cylinders or other pressure vessels containing extinguishing agents.

"Portable unfired pressure vessel" - A pressure container or vessel used aboard ship, other than the ship's equipment, containing liquids or gases under pressure. This does not include pressure vessels built to Department of Transportation regulations under 49 CFR Part 178, Subparts C and H.

"Positioning device system" - A body belt or body harness system rigged to allow an employee to be supported at an elevated vertical surface, such as a wall or window, and to be able to work with both hands free while leaning.

"Powder actuated fastening tool" - A tool or machine that drives a stud, pin, or fastener by means of an explosive charge.

"Protected space" - Any space into which a fixed extinguishing system can discharge.

"Proximity fire fighting" - Specialized fire fighting operations that require specialized thermal protection and may include the activities of rescue, fire suppression, and property conservation at incidents involving fires producing very high levels of conductive, convective, and radiant heat such as aircraft fires, bulk flammable gas fires, and bulk

flammable liquid fires. Proximity fire fighting operations usually are exterior operations but may be combined with structural fire fighting operations. Proximity fire fighting is not entry fire fighting.

"Qualified instructor" - A person with specific knowledge, training, and experience in fire response or fire watch activities to cover the material found in WAC 296-304-01019 (2) or (3).

"Qualified person" - A person who has successfully demonstrated the ability to solve or resolve problems related to the subject matter and work by possessing a recognized degree or certificate of professional standing or by extensive knowledge, training, and experience.

"Related employment" - Any employment related to or performed in conjunction with ship repairing, ship building or ship breaking work, including, but not limited to, inspecting, testing, and serving as a watchman.

"Rescue" - Locating endangered persons at an emergency incident, removing those persons from danger, treating the injured, and transporting the injured to an appropriate health care facility.

"Restraint (tether) line" - A line from an anchorage, or between anchorages, to which the employee is secured so as to prevent the employee from walking or falling off an elevated work surface.

Note: A restraint line is not necessarily designed to withstand forces resulting from a fall.

"Rope grab" - A deceleration device that travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest the fall of an employee. A rope grab usually uses the principle of inertial locking, cam/level locking or both.

"Shall" or "must" - Mandatory.

"Ship breaking" - Breaking down a vessel's structure to scrap the vessel, including the removal of gear, equipment or any component part of a vessel.

"Ship building" - Construction of a vessel, including the installation of machinery and equipment.

"Ship repairing" - Repair of a vessel including, but not limited to, alterations, conversions, installations, cleaning, painting, and maintenance.

"Shipyards fire fighting" - The activity of rescue, fire suppression, and property conservation involving buildings, enclosed structures, vehicles, vessels, aircraft, or similar properties involved in a fire or emergency situation.

"Small hose system" - A system of hoses ranging in diameter from 5/8" (1.6 cm) up to 1 1/2" (3.8 cm) which is for the use of employees and which provides a means for the control and extinguishment of incipient stage fires.

"Standpipe" - A fixed fire protection system consisting of piping and hose connections used to supply water to approved hose lines or sprinkler systems. The hose may or may not be connected to the system.

"Vessel" - Every watercraft for use 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.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-304-01001, filed 1/24/07, effective 4/1/07; 05-19-086, § 296-304-01001, filed 9/20/05, effective 12/1/05; 03-04-099, § 296-304-01001, filed 2/4/03, effective 8/1/03. Statutory Authority: RCW 49.17.040,

[49.17].050 and [49.17].060. 98-02-006, § 296-304-01001, filed 12/26/97, effective 3/1/98. Statutory Authority: Chapter 49.17 RCW. 95-04-006, § 296-304-01001, filed 1/18/95, effective 3/10/95; Order 76-7, § 296-304-01001, filed 3/1/76; Order 74-25, § 296-304-01001, filed 5/7/74.]

WAC 296-304-01007 Fire safety plan. (1) **Employer responsibilities.** The employer must develop and implement a written fire safety plan that covers all the actions that employers and employees must take to ensure employee safety in the event of a fire. (See Appendix A to this section for a model fire safety plan.)

(2) **Plan elements.** The employer must include the following information in the fire safety plan:

- (a) Identification of the significant fire hazards;
- (b) Procedures for recognizing and reporting unsafe conditions;
- (c) Alarm procedures;
- (d) Procedures for notifying employees of a fire emergency;
- (e) Procedures for notifying fire response organizations of a fire emergency;
- (f) Procedures for evacuation;
- (g) Procedures to account for all employees after an evacuation; and
- (h) Names, job titles, or departments for individuals who can be contacted for further information about the plan.

(3) **Reviewing the plan with employees.** The employer must review the plan with each employee at the following times:

- (a) By March 1, 2006, for employees who are currently working;
- (b) Upon initial assignment for new employees; and
- (c) When the actions the employee must take under the plan change because of a change in duties or a change in the plan.

(4) **Additional employer requirements.** The employer also must:

- (a) Keep the plan accessible to employees, employee representatives, and WISHA;
- (b) Review and update the plan whenever necessary, but at least annually;
- (c) Document that affected employees have been informed about the plan as required by this subsection; and
- (d) Ensure any outside fire response organization that the employer expects to respond to fires at the employer's worksite has been given a copy of the current plan.

(5) **Contract employers.** Contract employers in shipyard employment must have a fire safety plan for their employees, and this plan must comply with the host employer's fire safety plan.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-17-034, § 296-304-01007, filed 8/7/07, effective 12/1/07; 07-03-163, § 296-304-01007, filed 1/24/07, effective 4/1/07; 05-19-086, § 296-304-01007, filed 9/20/05, effective 12/1/05.]

WAC 296-304-01009 Precautions for hot work. (1) **General requirements.**

(a) **Designated areas.** The employer may designate areas for hot work in sites such as vessels, vessel sections, fabricating shops, and subassembly areas that are free of fire hazards.

(b) **Nondesignated areas.**

(i) Before authorizing hot work in a nondesignated area, the employer must visually inspect the area where hot work is to be performed, including adjacent spaces, to ensure the area is free of fire hazards, unless a marine chemist's certificate or shipyard competent person's log is used for authorization.

(ii) The employer shall authorize employees to perform hot work only in areas that are free of fire hazards, or that have been controlled by physical isolation, fire watches, or other positive means.

Note: The requirements of (b) of this subsection apply to all hot work operations in shipyard employment except those covered by WAC 296-304-02007.

(2) **Specific requirements.**

(a) **Maintaining fire hazard-free conditions.** The employer must keep all hot work areas free of new hazards that may cause or contribute to the spread of fire. Unexpected energizing and energy release are covered by WAC 296-304-120. Exposure to toxic and hazardous substances is covered in chapter 296-841 WAC, Airborne contaminants; chapter 296-802 WAC, Employee medical and exposure records; and WAC 296-800-170, Employer chemical hazard communication—Introduction.

(b) **Fuel gas and oxygen supply lines and torches.** The employer must make sure that:

- (i) No unattended fuel gas and oxygen hose lines or torches are in confined spaces;
- (ii) No unattended charged fuel gas and oxygen hose lines or torches are in enclosed spaces for more than fifteen minutes;
- (iii) All fuel gas and oxygen hose lines are disconnected at the supply manifold at the end of each shift; and
- (iv) All disconnected fuel gas and oxygen hose lines are rolled back to the supply manifold or to open air to disconnect the torch; or extended fuel gas and oxygen hose lines are not reconnected at the supply manifold unless the lines are given a positive means of identification when they were first connected and the lines are tested using a drop test or other positive means to ensure the integrity of fuel gas and oxygen burning system.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-062, § 296-304-01009, filed 2/20/07, effective 4/1/07; 05-19-086, § 296-304-01009, filed 9/20/05, effective 12/1/05.]

WAC 296-304-01013 Fire response. (1) **Employer responsibilities.** The employer must:

- (a) Decide what type of response will be provided and who will provide it; and
- (b) Create, maintain, and update a written policy that:
 - (i) Describes the internal and outside fire response organizations that the employer will use; and
 - (ii) Defines what evacuation procedures employees must follow, if the employer chooses to require a total or partial evacuation of the worksite at the time of a fire.

(2) **Required written policy information.**

(a) **Internal fire response.** If an internal fire response is to be used, the employer must include the following information in the employer's written policy:

- (i) The basic structure of the fire response organization;
- (ii) The number of trained fire response employees;

(iii) The fire response functions that may need to be carried out;

(iv) The minimum number of fire response employees necessary, the number and types of apparatuses, and a description of the fire suppression operations established by written standard operating procedures for each type of fire response at the employer's facility;

(v) The type, amount, and frequency of training that must be given to fire response employees; and

(vi) The procedures for using protective clothing and equipment.

(b) **Outside fire response.** If an outside fire response organization is used, the employer must include the following information in the written policy:

(i) The types of fire suppression incidents to which the fire response organization is expected to respond at the employer's facility or worksite;

(ii) The liaisons between the employer and the outside fire response organizations; and

(iii) A plan for fire response functions that:

(A) Addresses procedures for obtaining assistance from the outside fire response organization;

(B) Familiarizes the outside fire response organization with the layout of the employer's facility or worksite, including access routes to controlled areas, and site-specific operations, occupancies, vessels or vessel sections, and hazards; and

(C) Sets forth how hose and coupling connection threads are to be made compatible and includes where the adapter couplings are kept; or

(D) States that the employer will not allow the use of incompatible hose connections.

(c) **A combination of internal and outside fire response.** If a combination of internal and outside fire response is to be used, the employer must include the following information, in addition to the requirements in (a) and (b) of this subsection, in the written policy:

(i) The basic organizational structure of the combined fire response;

(ii) The number of combined trained fire responders;

(iii) The fire response functions that may need to be carried out;

(iv) The minimum number of fire response employees necessary, the number and types of apparatuses, and a description of the fire suppression operations established by written standard operating procedures for each particular type of fire response at the worksite; and

(v) The type, amount, and frequency of joint training with outside fire response organizations if given to fire response employees.

(d) **Employee evacuation.** The employer must include the following information in the employer's written policy:

(i) Emergency escape procedures;

(ii) Procedures to be followed by employees who may remain longer at the worksite to perform critical shipyard employment operations during the evacuation;

(iii) Procedures to account for all employees after emergency evacuation is completed;

(iv) The preferred means of reporting fires and other emergencies; and

(v) Names or job titles of the employees or departments to be contacted for further information or explanation of duties.

(e) **Rescue and emergency response.** The employer must include the following information in the employer's written policy:

(i) A description of the emergency rescue procedures; and

(ii) Names or job titles of the employees who are assigned to perform them.

(3) **Medical requirements for shipyard fire response employees.** The employer must ensure that:

(a) All fire response employees receive medical examinations to assure that they are physically and medically fit for the duties they are expected to perform;

(b) Fire response employees, who are required to wear respirators in performing their duties, meet the medical requirements of chapter 296-842 WAC, Respirators;

(c) Each fire response employee has an annual medical examination; and

(d) The medical records of fire response employees are kept in accordance with chapter 296-802 WAC, Employee medical and exposure records.

(4) **Organization of internal fire response functions.** The employer must:

(a) Organize fire response functions to ensure enough resources to conduct emergency operations safely;

(b) Establish lines of authority and assign responsibilities to ensure that the components of the internal fire response are accomplished;

(c) Set up an incident management system to coordinate and direct fire response functions, including:

(i) Specific fire emergency responsibilities;

(ii) Accountability for all fire response employees participating in an emergency operation; and

(iii) Resources offered by outside organizations; and

(d) Provide the information required in this subsection to the outside fire response organization to be used.

(5) **Personal protective clothing and equipment for fire response employees.**

(a) **General requirements.** The employer must:

(i) Supply to all fire response employees, at no cost, the appropriate personal protective clothing and equipment they may need to perform expected duties; and

(ii) Ensure that fire response employees wear the appropriate personal protective clothing and use the equipment, when necessary, to protect them from hazardous exposures.

(b) **Thermal stability and flame resistance.** The employer must:

(i) Ensure that each fire response employee exposed to the hazards of flame does not wear clothing that could increase the extent of injury that could be sustained; and

(ii) Prohibit wearing clothing made from acetate, nylon, or polyester, either alone or in blends, unless it can be shown that:

(A) The fabric will withstand the flammability hazard that may be encountered; or

(B) The clothing will be worn in such a way to eliminate the flammability hazard that may be encountered.

(c) **Respiratory protection.** The employer must:

(i) Provide self-contained breathing apparatus (SCBA) to all fire response employees involved in an emergency operation in an atmosphere that is immediately dangerous to life or health (IDLH), potentially IDLH, or unknown;

(ii) Provide SCBA to fire response employees performing emergency operations during hazardous chemical emergencies that will expose them to known hazardous chemicals in vapor form or to unknown chemicals;

(iii) Provide fire response employees who perform or support emergency operations that will expose them to hazardous chemicals in liquid form either:

(A) SCBA; or

(B) Respiratory protective devices certified by the National Institute for Occupational Safety and Health (NIOSH) under 42 CFR Part 84 as suitable for the specific chemical environment;

(iv) Ensure that additional outside air supplies used in conjunction with SCBA result in positive pressure systems that are certified by NIOSH under 42 CFR Part 84;

(v) Provide only SCBA that meet the requirements of NFPA 1981-2002 Standard on Open-Circuit Self-Contained Breathing Apparatus for the Fire Service (incorporated by reference, see WAC 296-304-01003); and

(vi) Ensure that the respiratory protection program and all respiratory protection equipment comply with chapter 296-842 WAC, Respiratory protection.

(d) **Interior structural firefighting operations.** The employer must:

(i) Supply at no cost to all fire response employees exposed to the hazards of shipyard fire response, a helmet, gloves, footwear, and protective hoods, and either a protective coat and trousers or a protective coverall; and

(ii) Ensure that this equipment meets the applicable recommendations in NFPA 1971-2000 Standard on Protective Ensemble for Structural Fire Fighting (incorporated by reference, see WAC 296-304-01003).

(e) **Proximity fire fighting operations.** The employer must provide, at no cost, to all fire response employees who are exposed to the hazards of proximity fire fighting, appropriate protective proximity clothing that meets the applicable recommendations in NFPA 1976-2000 Standard on Protective Ensemble for Proximity Fire Fighting (incorporated by reference, see WAC 296-304-01003).

(f) **Personal alert safety system (PASS) devices.** The employer must:

(i) Provide each fire response employee involved in fire fighting operations with a PASS device; and

(ii) Ensure that each PASS device meets the recommendations in NFPA 1982-1998 Standard on Personal Alert Safety Systems (PASS) (incorporated by reference, see WAC 296-304-01003).

(g) **Life safety ropes, body harnesses, and hardware.** The employer must ensure that:

(i) All life safety ropes, body harnesses, and hardware used by fire response employees for emergency operations meet the applicable recommendations in NFPA 1983-2001, Standard on Fire Service Life Safety Rope and System Components (incorporated by reference, see WAC 296-304-01003);

(ii) Fire response employees use only Class I body harnesses to attach to ladders and aerial devices; and

(iii) Fire response employees use only Class II and Class III body harnesses for fall arrest and rappelling operations.

(6) Equipment maintenance.

(a) **Personal protective equipment.** The employer must inspect and maintain personal protective equipment used to protect fire response employees to ensure that it provides the intended protection.

(b) **Fire response equipment.** The employer must:

(i) Keep fire response equipment in a state of readiness;

(ii) Standardize all fire hose coupling and connection threads throughout the facility and on vessels and vessel sections by providing the same type of hose coupling and connection threads for hoses of the same or similar diameter; and

(iii) Ensure that either all fire hoses and coupling connection threads are the same within a facility or vessel or vessel section as those used by the outside fire response organization, or supply suitable adapter couplings if such an organization is expected to use the fire response equipment within a facility or vessel or vessel section.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-034, § 296-304-01013, filed 8/7/07, effective 12/1/07; 05-19-086, § 296-304-01013, filed 9/20/05, effective 12/1/05.]

WAC 296-304-01017 Land-side fire protection systems. (1) Employer responsibilities. The employer must ensure all fixed and portable fire protection systems needed to meet WISHA standards for employee safety or employee protection from fire hazards in land-side facilities, including, but not limited to, buildings, structures, and equipment, meet the requirements of this section.

(2) Portable fire extinguishers and hose systems.

(a) The employer must select, install, inspect, maintain, and test all portable fire extinguishers according to NFPA 10-2002 Standard for Portable Fire Extinguishers (incorporated by reference, see WAC 296-304-01003).

(b) The employer is permitted to use Class II or Class III hose systems, in accordance with NFPA 10-2002, as portable fire extinguishers if the employer selects, installs, inspects, maintains, and tests those systems according to the specific recommendations in NFPA 14-2003 Standard for the Installation of Standpipe, Private Hydrant, and Hose Systems (incorporated by reference, see WAC 296-304-01003).

(3) General requirements for fixed extinguishing systems. The employer must:

(a) Ensure that any fixed extinguishing system component or extinguishing agent is approved by an OSHA nationally recognized testing laboratory for use on the specific hazards the employer expects it to control or extinguish;

(b) Notify employees and take the necessary precautions to ensure employees are safe from fire if for any reason a fire extinguishing system stops working, until the system is working again;

(c) Ensure all repairs to fire extinguishing systems and equipment are done by a qualified technician or mechanic;

(d) Provide and ensure employees use proper personal protective equipment when entering discharge areas in which the atmosphere remains hazardous to employee safety or health, or provide safeguards to prevent employees from entering those areas. See WAC 296-304-02003 for additional requirements applicable to safe entry into spaces containing dangerous atmospheres;

(e) Post hazard warning or caution signs at both the entrance to and inside of areas protected by fixed extinguishing systems that use extinguishing agents in concentrations known to be hazardous to employee safety or health; and

(f) Select, install, inspect, maintain, and test all automatic fire detection systems and emergency alarms according to NFPA 72-2002 National Fire Alarm Code (incorporated by reference, see WAC 296-304-01003).

(4) **Fixed extinguishing systems.** The employer must select, install, maintain, inspect, and test all fixed systems required by WISHA as follows:

(a) Standpipe and hose systems according to NFPA 14-2003 Standard for the Installation of Standpipe, Private Hydrant, and Hose Systems (incorporated by reference, see WAC 296-304-01003);

(b) Automatic sprinkler systems according to NFPA 25-2002 Standard for the Inspection, Testing, and Maintenance of Water-based Fire Protection Systems, and either NFPA 13-2002 Standard for the Installation of Sprinkler Systems or NFPA 750-2003 Standard on Water Mist Fire Protection Systems (incorporated by reference, see WAC 296-304-01003);

(c) Fixed extinguishing systems that use water or foam as the extinguishing agent according to NFPA 15-2001 Standard for Water Spray Fixed Systems for Fire Protection; NFPA 11-2005 Standard for Low, Medium, and High-Expansion Foam Systems; (incorporated by reference, see WAC 296-304-01003);

(d) Fixed extinguishing systems using dry chemical as the extinguishing agent according to NFPA 17-2002 Standard for Dry Chemical Extinguishing Systems (incorporated by reference, see WAC 296-304-01003); and

(e) Fixed extinguishing systems using gas as the extinguishing agent according to NFPA 12-2005 Standard on Carbon Dioxide Extinguishing Systems; NFPA 12A-2004 Standard on Halon 1301 Fire Extinguishing Systems; and NFPA 2001-2004 Standard on Clean Agent Fire Extinguishing Systems (incorporated by reference, see WAC 296-304-01003).

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-034, § 296-304-01017, filed 8/7/07, effective 12/1/07; 05-19-086, § 296-304-01017, filed 9/20/05, effective 12/1/05.]

WAC 296-304-01023 Appendix A—Model fire safety plan.

Note: This appendix is nonmandatory and provides guidance to assist employers in establishing a fire safety plan as required in WAC 296-304-01007.

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1. Purpose.
2. Worksite fire hazards and how to properly control them.
3. Alarm systems and how to report fires.
4. How to evacuate in different emergency situations.
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1. Purpose

The purpose of this fire safety plan is to inform our employees of how we will control and reduce the possibility of fire in the workplace and to specify what equipment employees may use in case of fire.

2. Work site fire hazards and how to properly control them

- (a) Measures to contain fires.

(b) Teaching selected employees how to use fire protection equipment.

(c) What to do if you discover a fire.

(d) Potential ignition sources for fires and how to control them.

(e) Types of fire protection equipment and systems that can control a fire.

(f) The level of fire fighting capability present in the facility, vessel, or vessel section.

(g) Description of the personnel responsible for maintaining equipment, alarms, and systems that are installed to prevent or control fire ignition sources, and to control fuel source hazards.

3. Alarm systems and how to report fires

(a) A demonstration of alarm procedures, if more than one type exists.

(b) The worksite emergency alarm system.

(c) Procedures for reporting fires.

4. How to evacuate in different emergency situations

(a) Emergency escape procedures and route assignments.

(b) Procedures to account for all employees after completing an emergency evacuation.

(c) What type of evacuation is needed and what the employee's role is in carrying out the plan.

(d) Helping physically impaired employees.

5. Employee awareness

Names, job titles, or departments of individuals who can be contacted for further information about this plan.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-034, § 296-304-01023, filed 8/7/07, effective 12/1/07.]

WAC 296-304-020 Confined and enclosed spaces and other dangerous atmospheres in shipyard employment.

Scope, application and definitions applicable to this subsection:

(1) Scope and application. This section applies to work in confined and enclosed spaces and other dangerous atmospheres in shipyard employment, including vessels, vessel sections, and on land-side operations regardless of geographic location.

(2) Definitions applicable to this section:

Adjacent spaces means those spaces bordering a subject space in all directions, including all points of contact, corners, diagonals, decks, tank tops, and bulkheads.

Certified industrial hygienist (CIH) means an industrial hygienist who is certified by the American Board of Industrial Hygiene.

Coast Guard authorized person means an individual who meets the requirement of WAC 296-304-02015, Appendix C, for tank vessels, for passenger vessels, and for cargo and miscellaneous vessels.

Dangerous atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (i.e., escape unaided from a confined or enclosed space), injury, or acute illness.

Director means the director of the department of labor and industries or his/her designated representative.

Enter with restrictions denotes a space where entry for work is permitted only if engineering controls, personal protective equipment, clothing, and time limitations are as specified by the marine chemist, certified industrial hygienist, or the shipyard competent person.

Entry means the action by which a person passes through an opening into a space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Hot work means any activity involving riveting, welding, burning, the use of powder-actuated tools or similar fire-producing operations. Grinding, drilling, abrasive blasting, or similar spark-producing operations are also considered hot work except when such operations are isolated physically from any atmosphere containing more than 10 percent of the lower explosive limit of a flammable or combustible substance.

Immediately dangerous to life or health (IDLH) means an atmosphere that poses an immediate threat to life or that is likely to result in acute or immediate severe health effects.

Inert or inerted atmosphere means an atmospheric condition where:

(a) The oxygen content of the atmosphere in the space is maintained at a level equal to or less than 8.0 percent by volume or at a level at or below 50 percent of the amount required to support combustion, whichever is less; or

(b) The space is flooded with water and the vapor concentration of flammable or combustible materials in the free space atmosphere above the water line is less than 10 percent of the lower explosive limit for the flammable or combustible material.

Labeled means identified with a sign, placard, or other form of written communication, including pictograms, that provides information on the status or condition of the work space to which it is attached.

Lower explosive limit (LEL) means the minimum concentration of vapor in air below which propagation of a flame does not occur in the presence of an ignition source.

Marine chemist means an individual who possesses a current marine chemist certificate issued by the National Fire Protection Association (NFPA).

NFPA means National Fire Protection Association.

Nationally Recognized Testing Laboratory (NRTL) means an organization recognized by OSHA, in accordance with Appendix A of 29 CFR 1910.7, which tests for safety and lists or labels or accepts equipment and materials that meet all the criteria found in Section 1910.7 (b)(1) through (b)(4)(ii).

Not safe for hot work denotes a space where hot work may not be performed because the conditions do not meet the criteria for "safe for hot work."

Not safe for workers denotes a space where an employee may not enter because the conditions do not meet the criteria for "safe for workers."

Oxygen-deficient atmosphere means an atmosphere having an oxygen concentration of less than 19.5 percent by volume.

Oxygen-enriched atmosphere means an atmosphere that contains 22.0 percent or more oxygen by volume.

Safe for hot work denotes a space that meets all of the following criteria:

(a) The oxygen content of the atmosphere does not exceed 22.0 percent by volume;

(b) The concentration of flammable vapors in the atmosphere is less than 10 percent of the lower explosive limit;

(c) The residues or materials in the space are not capable of producing a higher concentration than permitted in (a) or (b) of the above, under existing atmospheric conditions in the presence of hot work and while maintained as directed by the marine chemist or competent person; and

(d) All adjacent spaces have been cleaned, or inerted, or treated sufficiently to prevent the spread of fire.

Safe for workers denotes a space that meets the following criteria:

(a) The oxygen content of the atmosphere is at least 19.5 percent and below 22.0 percent by volume;

(b) The concentration of flammable vapors is below 10 percent of the lower explosive limit (LEL);

(c) Any toxic materials in the atmosphere associated with cargo, fuel, tank coatings, or inerting media are within permissible concentrations at the time of the inspection; and

(d) Any residues or materials associated with the work authorized by the marine chemist, certified industrial hygienist, or competent person will not produce uncontrolled release of toxic materials under existing atmospheric conditions while maintained as directed.

Space means an area on a vessel or vessel section or within a shipyard such as, but not limited to: Cargo tanks or holds; pump or engine rooms; storage lockers; tanks containing flammable or combustible liquids, gases, or solids; rooms within buildings; crawl spaces; tunnels; or accessways. The atmosphere within a space is the entire area within its bounds.

Upper explosive limit (UEL) means the maximum concentration of flammable vapor in air above which propagation of flame does not occur on contact with a source of ignition.

Vessel section means a subassembly, module, or other component of a vessel being built, repaired, or broken.

Visual inspection means the physical survey of the space, its surroundings and contents to identify hazards such as, but not limited to, restricted accessibility, residues, unguarded machinery, and piping or electrical systems.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-034, § 296-304-020, filed 8/7/07, effective 12/1/07. Statutory Authority: Chapter 49.17 RCW. 95-04-006, § 296-304-020, filed 1/18/95, effective 3/10/95; 93-04-111 (Order 92-15), § 296-304-020, filed 2/3/93, effective 3/15/93; Order 74-25, § 296-304-020, filed 5/7/74.]

WAC 296-304-02005 Cleaning and other cold work.

(1) Locations covered by this section. The employer shall ensure that manual cleaning and other cold work are not performed in the following spaces unless the conditions of subsection (2) of this section have been met:

(a) Spaces containing or having last contained bulk quantities of combustible or flammable liquids or gases; and

(b) Spaces containing or having last contained bulk quantities of liquids, gases or solids that are toxic, corrosive or irritating.

(2) Requirements for performing cleaning or cold work.

(a) Liquid residues of hazardous materials shall be removed from work spaces as thoroughly as practicable before employees start cleaning operations or cold work in a space. Special care shall be taken to prevent the spilling or the draining of these materials into the water surrounding the vessel, or for shore-side operations, onto the surrounding work area.

(b) Testing shall be conducted by a competent person to determine the concentration of flammable, combustible, toxic, corrosive, or irritant vapors within the space prior to the beginning of cleaning or cold work.

(c) Continuous ventilation shall be provided at volumes and flow rates sufficient to ensure that the concentration(s) of:

(i) Flammable vapor is maintained below 10 percent of the lower explosive limit; and

Note to (2)(c)(i): Spaces containing highly volatile residues may require additional ventilation to keep the concentration of flammable vapors below 10 percent of the lower explosive limit and within the permissible exposure limit.

(ii) Toxic, corrosive, or irritant vapors are maintained within the permissible exposure limits and below IDLH levels.

(d) Testing shall be conducted by the competent person as often as necessary during cleaning or cold work to assure that air concentrations are below 10 percent of the lower explosive limit and within the PELs and below IDLH levels. Factors such as, but not limited to, temperature, volatility of the residues and other existing conditions in and about the spaces are to be considered in determining the frequency of testing necessary to assure a safe atmosphere.

Note to (2)(d): See WAC 296-304-02013—Appendix B, for additional information on frequency of testing.

(e) Spills or other releases of flammable, combustible, toxic, corrosive, and irritant materials shall be cleaned up as work progresses.

(f) An employee may not enter a confined or enclosed space or other dangerous atmosphere if the concentration of flammable or combustible vapors in work spaces exceeds 10 percent of the lower explosive limit.

Exception: An employee may enter for emergency rescue or for a short duration for installation of ventilation equipment provided:

(i) No ignition sources are present;

(ii) The atmosphere in the space is monitored continuously;

(iii) The atmosphere in the space is maintained above the upper explosive limit; and

(iv) Respiratory protection, personal protective equipment, and clothing are provided in accordance with WAC 206-304-090 through 296-304-09007.

Note to (2)(f): Other provisions for work in IDLH and other dangerous atmospheres are located in WAC 296-304-090 through 296-304-09007.

(g) A competent person shall test ventilation discharge areas and other areas where discharged vapors may collect to determine if vapors discharged from the spaces being ventilated are accumulating in concentrations hazardous to employees.

(h) If the tests required in (g) of this subsection indicate that concentrations of exhaust vapors that are hazardous to employees are accumulating, all work in the contaminated area shall be stopped until the vapors have dissipated or been removed.

(i) Only explosion-proof, self-contained portable lamps, or other electric equipment approved by a National Recognized Testing Laboratory (NRTL) for the hazardous location shall be used in spaces described in subsection (1) of this section, until such spaces have been certified as "safe for workers."

Note to (2)(i): Battery-fed, portable lamps or other electric equipment bearing the approval of a NRTL for the class, and division of the location in which they are used are deemed to meet the requirements of (i) of this subsection.

(j) The employer shall prominently post signs that prohibit sources of ignition within or near a space that has contained flammable or combustible liquids or gases in bulk quantities:

(i) At the entrance to those spaces;

(ii) In adjacent spaces; and

(iii) In the open area adjacent to those spaces.

(k) All air moving equipment and its component parts, including duct work, capable of generating a static electric discharge of sufficient energy to create a source of ignition, shall be bonded electrically to the structure of a vessel or vessel section or, in the case of land-side spaces, grounded to prevent an electric discharge in the space.

(l) Fans shall have nonsparking blades, and portable air ducts shall be of nonsparking materials.

Note to (2): See WAC 296-304-02003(3) and applicable requirements of chapter 296-62 WAC, general occupational health standards, for other provisions affecting cleaning and cold work.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-034, § 296-304-02005, filed 8/7/07, effective 12/1/07. Statutory Authority: Chapter 49.17 RCW, 95-04-006, § 296-304-02005, filed 1/18/95, effective 3/10/95; Order 74-25, § 296-304-02005, filed 5/7/74.]

WAC 296-304-02007 Hot work. (1) Hot work requiring testing by a marine chemist or Coast Guard authorized person.

(a) The employer shall ensure that hot work is not performed in or on any of the following confined and enclosed spaces and other dangerous atmospheres, boundaries of spaces or pipelines until the work area has been tested and certified by a marine chemist or a U.S. Coast Guard authorized person as "safe for hot work":

(i) Within, on, or immediately adjacent to spaces that contain or have contained combustible or flammable liquids or gases.

(ii) Within, on, or immediately adjacent to fuel tanks that contain or have last contained fuel; and

(iii) On pipelines, heating coils, pump fittings or other accessories connected to spaces that contain or have last contained fuel.

(iv) Exception: On dry cargo, miscellaneous and passenger vessels and in the landside operations within spaces which meet the standards for oxygen, flammability and toxicity in WAC 296-304-02003, but are adjacent to spaces containing flammable gases or liquids, as long as the gases or liquids with a flash point below 150 deg. F (65.6 deg. C) when

the distance between such spaces and the work is 25 feet (7.62 m) or greater.

Note: For flammable liquids with flash points above 150 deg. F (65.6 deg. C), see subsection (2) of this section.

Note to (1)(a): The criteria for "safe for hot work" is located in the definition section, WAC 296-304-020(2).

(b) The certificate issued by the marine chemist or Coast Guard authorized person shall be posted in the immediate vicinity of the affected operations while they are in progress and kept on file for a period of at least three months from the date of the completion of the operation for which the certificate was generated.

(2) Hot work requiring testing by a competent person.

(a) Hot work is not permitted in or on the following spaces or adjacent spaces or other dangerous atmospheres until they have been tested by a competent person and determined to contain no concentrations of flammable vapors equal to or greater than 10 percent of the lower explosive limit:

(i) Dry cargo holds;

(ii) The bilges;

(iii) The engine room and boiler spaces for which a marine chemist or a Coast Guard authorized person certificate is not required under subsection (1)(a)(i) of this section; and

(iv) Vessels and vessel sections for which a marine chemist or Coast Guard authorized person certificate is not required under subsection (1)(a)(i) of this section; and

(v) Land-side confined and enclosed spaces or other dangerous atmospheres not covered by subsection (1)(a) of this section.

(b) If the concentration of flammable vapors or gases is equal to or greater than 10 percent of the lower explosive limit in the space or an adjacent space where the hot work is to be done, then the space shall be labeled "not safe for hot work" and ventilation shall be provided at volumes and flow rates sufficient to ensure that the concentration of flammable vapors or gases is below 10 percent by volume of the lower explosive limit. The warning label may be removed when the concentration of flammable vapors and gases are below 10 percent of the lower explosive limit.

Note to WAC 296-304-02007: See WAC 296-304-02013—Appendix B, for additional information relevant to performing hot work safely.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-034, § 296-304-02007, filed 8/7/07, effective 12/1/07; 03-04-099, § 296-304-02007, filed 2/4/03, effective 8/1/03. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060, 95-22-015, § 296-304-02007, filed 10/20/95, effective 1/16/96. Statutory Authority: Chapter 49.17 RCW, 95-04-006, § 296-304-02007, filed 1/18/95, effective 3/10/95; Order 76-7, § 296-304-02007, filed 3/1/76; Order 74-25, § 296-304-02007, filed 5/7/74.]

WAC 296-304-02013 Appendix B—Compliance assistance guidelines for confined and enclosed spaces and other dangerous atmospheres. This appendix is a non-mandatory set of guidelines provided to assist employers in complying with the requirements of WAC 296-304-020 through 296-304-02011. This appendix neither creates additional obligations nor detracts from obligations otherwise contained in this chapter. It is intended to provide explanatory information and educational material to employers and

employees to foster understanding of, and compliance with, this chapter.

WAC 296-304-020 through 296-304-02011. These standards are minimum safety standards for entering and working safely in vessel tanks and compartments.

WAC 296-304-020(2) Definition of "Hot work." There are several instances in which circumstances do not necessitate that grinding, drilling, abrasive blasting be regarded as hot work. Some examples are:

(1) Abrasive blasting of the hull for paint preparation does not necessitate pumping and cleaning the tanks of a vessel.

(2) Prior to hot work on any hollow structure, the void space should be tested and appropriate precautions taken.

WAC 296-304-020(2) Definition of "Lower explosive limit." The terms lower flammable limit (LFL) and lower explosive limit (LEL) are used interchangeably in fire science literature.

WAC 296-304-020(2) Definition of "Upper explosive limit." The terms upper flammable limit (UFL) and upper explosive limit (UEL) are used interchangeably in fire science literature.

WAC 296-304-02003(1) After a tank has been properly washed and ventilated, the tank should contain 20.8 percent oxygen by volume. This is the same amount found in our normal atmosphere at sea level. However, it is possible that the oxygen content will be lower. When this is the case, the reasons for this deficiency should be determined and corrective action taken.

An oxygen content of 19.5 percent can support life and is adequate for entry. However, any oxygen level less than 20.8 percent and greater than 19.5 percent level should also alert the competent person to look for the causes of the oxygen deficiency and to correct them prior to entry.

WAC 296-304-02003(2) Flammable atmospheres. Atmospheres with a concentration of flammable vapors at or above 10 percent of the lower explosive limit (LEL) are considered hazardous when located in confined spaces. However, atmospheres with flammable vapors below 10 percent of the LEL are not necessarily safe.

Such atmospheres are too lean to burn. Nevertheless, when a space contains or produces measurable flammable vapors below the 10 percent LEL, it might indicate that flammable vapors are being released or introduced into the space and could present a hazard in time. Therefore, the cause of the vapors should be investigated and, if possible, eliminated prior to entry.

Some situations that have produced measurable concentrations of flammable vapors that could exceed 10 percent of the LEL in time are:

(1) Pipelines that should have been blanked or disconnected have opened, allowing product into the space.

(2) The vessel may have shifted, allowing product not previously cleaned and removed during washing to move into other areas of the vessel.

(3) Residues may be producing the atmosphere by releasing flammable vapor.

WAC 296-304-02003(2) Flammable atmospheres that are toxic. An atmosphere with a measurable concentration of a flammable substance below 10 percent of the LEL may be above the WISHA permissible exposure limit for that sub-

stance. In that case, refer to WAC 296-304-02003 (3)(b), (c), and (d).

WAC 296-304-02005 (2)(d), 296-304-02009(3), and 296-304-02009(5). The frequency with which a tank is monitored to determine if atmospheric conditions are being maintained is a function of several factors that are discussed below:

(1) Temperature. Higher temperatures will cause a combustible or flammable liquid to vaporize at a faster rate than lower temperatures. This is important since hotter days may cause tank residues to produce more vapors and that may result in the vapors exceeding 10 percent of the LEL or an overexposure to toxic contaminants.

(2) Work in the tank. Any activity in the tank could change the atmospheric conditions in that tank. Oxygen from a leaking oxyfuel hose or torch could result in an oxygen-enriched atmosphere that would more easily propagate a flame. Some welding operations use inert gas, and leaks can result in an oxygen-deficient atmosphere. Manual tank cleaning with high pressure spray devices can stir up residues and result in exposures to toxic contaminants. Simple cleaning or mucking out, where employees walk through and shovel residues and sludge, can create a change in atmospheric conditions.

(3) Period of time elapsed. If a period of time has elapsed since a marine chemist or Coast Guard authorized person has certified a tank as safe, the atmospheric condition should be rechecked by the competent person prior to entry and starting work.

(4) Unattended tanks or spaces. When a tank or space has been tested and declared safe, then subsequently left unattended for a period of time, it should be retested prior to entry and starting work. For example, when barges are left unattended at night, unidentified products from another barge are sometimes dumped into their empty tanks. Since this would result in a changed atmosphere, the tanks should be retested prior to entry and starting work.

(5) Work break. When workers take a break or leave at the end of the shift, equipment sometimes is inadvertently left in the tanks. At lunch or work breaks and at the end of the shift are the times when it is most likely someone will leave a burning or cutting torch in the tank, perhaps turned on and leaking oxygen or an inert gas. Since the former can produce an oxygen-enriched atmosphere, and the latter an oxygen-deficient atmosphere, tanks should be checked for equipment left behind, and atmosphere, monitored if necessary prior to reentering and resuming work. In an oxygen-enriched atmosphere, the flammable range is severely broadened. This means that an oxygen-enriched atmosphere can promote very rapid burning.

(6) Ballasting or trimming. Changing the position of the ballast, or trimming or in any way moving the vessel so as to expose cargo that had been previously trapped, can produce a change in the atmosphere of the tank. The atmosphere should be retested after any such move and prior to entry or work.

WAC 296-304-02007 (1) and (2) hot work. This is a reminder that other sections of the WISHA shipyard safety and health standards in chapter 296-304 WAC should be reviewed prior to starting any hot work. Most notably, WAC 296-304-040 through 296-304-04013, welding, cutting and heating, places additional restrictions on hot work: The

requirements of WAC 296-304-04001 and 296-304-04005 must be met before hot work is begun on any metal that is toxic or is covered by a preservative coating respectively; the requirements of WAC 296-304-04007 must be met before welding, cutting, or heating is begun on any structural voids.

WAC 296-304-02003 (1)(b). During hot work, more than 20.8 percent oxygen by volume can be unsafe since it extends the normal flammable range. The standard permits the oxygen level to reach 22.0 percent by volume in order to account for instrument error. However, the cause of excess oxygen should be investigated and the source removed.

WAC 296-304-02011(2). If the entire vessel has been found to be in the same condition, then employers shall be considered to be in compliance with this requirement when signs using appropriate warning language in accordance with WAC 296-304-02011(1) are posted at the gangway and at all other means of access to the vessel.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-034, § 296-304-02013, filed 8/7/07, effective 12/1/07. Statutory Authority: Chapter 49.17 RCW. 95-04-006, § 296-304-02013, filed 1/18/95, effective 3/10/95.]

WAC 296-304-02015 Appendix C—Confined and enclosed spaces and other dangerous atmospheres in shipyard employment. This appendix provides a complete reprint of U.S. Coast Guard regulations as of October 1, 1993 referenced in WAC 296-304-020 for purposes of determining who is a Coast Guard authorized person.

(1) Title 46 CFR 35.01-1 (a) through (c) covering hot work on tank vessels reads as follows:

(a) The provisions of "Standard for the Control of Gas Hazards on Vessels to be Repaired," NFPA No. 306, published by National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269, shall be used as a guide in conducting the inspections and issuance of certificates required by this chapter.

(b) Until an inspection has been made to determine that such operation can be undertaken with safety, no alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions shall be made:

(i) Within or on the boundaries of cargo tanks that have been used to carry flammable or combustible liquid or chemicals in bulk, or within spaces adjacent to such cargo tanks; or

(ii) Within or on the boundaries of fuel tanks; or

(iii) To pipe lines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks.

(c) Such inspections shall be made and evidenced as follows:

(i) In ports or places in the United States or its territories and possessions, the inspection shall be made by a marine chemist certificated by the National Fire Protection Association; however, if the services of such certified marine chemists are not reasonably available, the Officer in Charge, Marine Inspection, upon the recommendation of the vessel owner and his/her contractor or their representative, shall select a person who, in the case of an individual vessel, shall be authorized to make such inspection.

(ii) If the inspection indicates that such operations can be undertaken with safety, a certificate setting forth the fact in writing and qualified as may be required, shall be issued by

the certified marine chemist or the authorized person before the work is started.

(iii) Such qualifications shall include any requirements as may be deemed necessary to maintain, insofar as can reasonably be done, the safe conditions in the spaces certified, throughout the operation and shall include such additional tests and certifications as considered required.

(iv) Such qualifications and requirements shall include precautions necessary to eliminate or minimize hazards that may be present from protective coatings or residues from cargoes.

(2) Title 46 CFR 71.60(c)(1) covering hot work on passenger vessels reads as follows:

(a) The provisions of "Standard for the Control of Gas Hazards on Vessels to be Repaired," NFPA No. 306, published by National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269, shall be used as a guide in conducting the inspections and issuance of certificates required by this chapter.

(b) Until an inspection has been made to determine that such operation can be undertaken with safety, no alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions shall be made:

(i) Within or on the boundaries of cargo tanks which have been used to carry flammable or combustible liquid or chemicals in bulk, or within spaces adjacent to such cargo tanks; or

(ii) Within or on the boundaries of fuel tanks; or

(iii) To pipe lines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks.

(c) Such inspections shall be made and evidenced as follows:

(i) In ports or places in the United States or its territories and possessions the inspection shall be made by a marine chemist certificated by the National Fire Protection Association; however, if the services of such certified marine chemist are not reasonably available, the Officer in Charge, Marine Inspection, upon the recommendation of the vessel owner and his/her contractor or their representative, shall select a person who, in the case of an individual vessel, shall be authorized to make such inspection.

(ii) If the inspection indicated that such operations can be undertaken with safety, a certificate setting forth the fact in writing and qualified as may be required, shall be issued by the certified marine chemist or the authorized person before the work is started.

(iii) Such qualifications shall include any requirements as may be deemed necessary to maintain, insofar as can reasonably be done, the safe conditions in the spaces certified throughout the operation and shall include such additional tests and certifications as considered required.

(iv) Such qualifications and requirements shall include precautions necessary to eliminate or minimize hazards that may be present from protective coatings or residues from cargoes.

(3) Title 46 CFR 91.50-1(c)(1) covering hot work on cargo and miscellaneous vessels as follows:

(a) The provisions of "Standard for the Control of Gas Hazards on Vessels to be Repaired," NFPA No. 306, published by National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269, shall be used as a guide in

conducting the inspections and issuance of certificates required by this chapter.

(b) Until an inspection has been made to determine that such operation can be undertaken with safety, no alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions shall be made:

(i) Within or on the boundaries of cargo tanks which have been used to carry flammable or combustible liquid or chemicals in bulk, or within spaces adjacent to such cargo tanks; or,

(ii) Within or on the boundaries of fuel tanks; or,

(iii) To pipe lines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks.

(c) Such inspections shall be made and evidenced as follows:

(i) In ports or places in the United States or its territories and possessions the inspection shall be made by a marine chemist certificated by the National Fire Protection Association; however, if the services of such certified marine chemist are not reasonably available, the Officer in Charge, Marine Inspection, upon the recommendation of the vessel owner and his/her contractor or their representative, shall select a person who, in the case of an individual vessel, shall be authorized to make such inspection.

(ii) If the inspection indicated that such operations can be undertaken with safety, a certificate setting forth the fact in writing and qualified as may be required, shall be issued by the certified marine chemist or the authorized person before the work is started.

(iii) Such qualifications shall include any requirements as may be deemed necessary to maintain, insofar as can reasonably be done, the safe conditions in the spaces certified throughout the operation and shall include such additional tests and certifications as considered required.

(iv) Such qualifications and requirements shall include precautions necessary to eliminate or minimize hazards that may be present from protective coatings or residues from cargoes.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-034, § 296-304-02015, filed 8/7/07, effective 12/1/07. Statutory Authority: Chapter 49.17 RCW. 95-04-006, § 296-304-02015, filed 1/18/95, effective 3/10/95.]

WAC 296-304-04005 Welding, cutting and heating in way of preservative coatings. (1) Before welding, cutting or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservative coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.

(2) Precautions shall be taken to prevent ignition of highly flammable hardened preservative coatings. When coatings are determined to be highly flammable they shall be stripped from the area to be heated to prevent ignition. A 1 1/2-inch or larger fire hose with fog nozzle, which has been uncoiled and placed under pressure, shall be immediately available for instant use in the immediate vicinity, consistent with avoiding freezing of the hose.

(3) Protection against toxic preservative coatings.

(a) In enclosed spaces all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a dis-

tance of at least 4 inches from the area of heat application or the employees shall be protected by air line respirators meeting the requirements of chapter 296-842 WAC, Respirators.

(b) In the open air employees shall be protected by a filter type respirator in accordance with the requirements of chapter 296-842 WAC, Respirators.

(4) Before welding, cutting or heating is commenced in enclosed spaces on metals covered by soft and greasy preservatives, the following precautions shall be taken:

(a) A competent person shall test the atmosphere in the space to ensure that it does not contain explosive vapors, since there is a possibility that some soft and greasy preservatives may have flash points below temperatures which may be expected to occur naturally. If such vapors are determined to be present, no hot work shall be commenced until such precautions have been taken as will ensure that the welding, cutting or heating can be performed in safety.

(b) The preservative coatings shall be removed for a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heated area may be used to limit the size of the area required to be cleaned. The prohibition contained in WAC 296-304-03005 (2)(b) shall apply.

(5) Immediately after welding, cutting or heating is commenced in enclosed spaces on metal covered by soft and greasy preservatives, and at frequent intervals thereafter, a competent person shall make tests to ensure that no flammable vapors are being produced by the coatings. If such vapors are determined to be present, the operation shall be stopped immediately and shall not be resumed until such additional precautions have been taken as are necessary to ensure that the operation can be resumed safely.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-304-04005, filed 1/24/07, effective 4/1/07. Statutory Authority: Chapter 49.17 RCW, 95-04-006, § 296-304-04005, filed 1/18/95, effective 3/10/95; 93-19-142 (Order 93-04), § 296-304-04005, filed 9/22/93, effective 11/1/93; Order 74-25, § 296-304-04005, filed 5/7/74.]

WAC 296-304-05003 Ladders. (1) General requirements.

(a) The use of ladders with broken or missing rungs or steps, broken or split side rails, or other faulty or defective construction is prohibited. When ladders with such defects are discovered, they shall be immediately withdrawn from service. Inspection of metal ladders shall include checking for corrosion of interiors of open end, hollow rungs.

(b) When sections of ladders are spliced, the ends shall be abutted, and not fewer than 2 cleats shall be securely nailed or bolted to each rail. The combined cross sectional area of the cleats shall be not less than the cross sectional area of the side rail. The dimensions of side rails for their total length shall be those specified in (2) or (3) of this section.

(c) Portable ladders shall be lashed, blocked or otherwise secured to prevent their being displaced. The side rails of ladders used for access to any level shall extend not less than 36 inches above that level. When this is not practical, grab rails which will provide a secure grip for an employee moving to or from the point of access shall be installed.

(d) Portable metal ladders shall be of strength equivalent to that of wood ladders. Manufactured portable metal ladders

provided by the employer shall be in accordance with the provisions of the United States of America Standard Safety Code for Portable Metal Ladders, A14.2-1972.

(e) Portable metal ladders shall not be used near electrical conductors nor for electric arc welding operations.

(f) Manufactured portable wood ladders provided by the employer shall be in accordance with the provisions of the United States of America Standard Safety Code for Portable Wood Ladders, A-14.1-1968.

(2) Construction of portable wood cleated ladders up to 30 feet in length.

(a) Wood side rails shall be made from west coast hemlock, eastern spruce, Sitka spruce, or wood of equivalent strength. Material shall be seasoned, straight-grained wood, and free from shakes, checks, decay or other defects which will impair its strength. The use of low density woods is prohibited.

(b) Side rails shall be dressed on all sides, and kept free of splinters.

(c) All knots shall be sound and hard. The use of material containing loose knots is prohibited. Knots shall not appear on the narrow face of the rail and, when in the side face, shall be not more than 1/2 inch in diameter or within 1/2 inch of the edge of the rail or nearer than 3 inches to a tread or rung.

(d) Pitch pockets not exceeding 1/8 inch in width, 2 inches in length and 1/2 inch in depth are permissible in wood side rails, provided that not more than one such pocket appears in each 4 feet of length.

(e) The width between side rails at the base shall be not less than 11 1/2 inches for ladders 10 feet or less in length. For longer ladders this width shall be increased at least 1/4 inch for each additional 2 feet in length.

(f) Side rails shall be at least 1 5/8 x 3 5/8 inches in cross section.

(g) Cleats (meaning rungs rectangular in cross section with the wide dimension parallel to the rails) shall be of the material used for side rails, straight-grained and free from knots. Cleats shall be mortised into the edges of the side rails 1/2 inch, or filler blocks shall be used on the rails between the cleats. The cleats shall be secured to each rail with three 10d common wire nails or fastened with through bolts or other fasteners of equivalent strength. Cleats shall be uniformly spaced not more than 12 inches apart.

(h) Cleats 20 inches or less in length shall be at least 25/32 x 3 inches in cross section. Cleats over 20 inches but not more than 30 inches in length shall be at least 25/32 x 3 3/4 inches in cross section.

(3) Construction of portable wood cleated ladders from 30 to 60 feet in length.

(a) Ladders from 30 to 60 feet in length shall be in accordance with the specifications of (2) of this section with the following exceptions:

(i) Rails shall be of not less than 2 x 6 inch lumber.

(ii) Cleats shall be of not less than 1 x 4 inch lumber.

(iii) Cleats shall be nailed to each rail with five 10d common wire nails or fastened with through bolts or other fastenings of equivalent strength.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-304-05003, filed 1/24/07, effective 4/1/07; 03-04-099, § 296-304-05003, filed 2/4/03, effective 8/1/03; Order 74-25, § 296-304-05003, filed 5/7/74.]

WAC 296-304-05005 Guarding of deck openings and edges. (1) When employees are working in the vicinity of flush manholes and other small openings of comparable size in the deck and other working surfaces, such openings shall be suitably covered or guarded to a height of not less than 30 inches, except where the use of such guards is made impracticable by the work actually in progress.

(2) When employees are working around open hatches not protected by coamings to a height of 24 inches or around other large openings, the edge of the opening shall be guarded in the working area to a height of 36 to 42 inches, except where the use of such guards is made impracticable by the work actually in progress.

(3) When employees are exposed to unguarded edges of decks, platforms, flats, and similar flat surfaces, more than 5 feet above a solid surface, the edges shall be guarded by adequate guardrails meeting the requirements of WAC 296-304-05001 (9)(a) and (b), unless the nature of the work in progress or the physical conditions prohibit the use or installation of such guardrails.

(4) When employees are working near the unguarded edges of decks of vessels afloat, they shall be protected by buoyant personal flotation devices, meeting the requirements of WAC 296-304-09017(1).

(5) Sections of bilges from which floor plates or gratings have been removed shall be guarded by guardrails except where they would interfere with work in progress. If these open sections are in a walkway at least two 10-inch planks placed side by side, or equivalent, shall be laid across the opening to provide a safe walking surface.

(6) Gratings, walkways, and catwalks, from which sections or ladders have been removed, shall be barricaded with adequate guardrails.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-304-05005, filed 1/24/07, effective 4/1/07; 03-04-099, § 296-304-05005, filed 2/4/03, effective 8/1/03; Order 74-25, § 296-304-05005, 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), 1111 3rd Ave. Suite 715, Seattle, Washington 98101.

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, 49.17.050, 49.17.060, 07-03-163, § 296-304-06013, filed 1/24/07, effective 4/1/07. 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.]

WAC 296-304-08009 Powder-actuated fastening tools. (1) The employer must ensure powder-actuated fastening tools are used, designed, constructed, and maintained according to the requirements of WAC 296-807-150, Powder actuated fastening systems.

(2) The employer must ensure that employees using powder-actuated fastening tools are protected by personal protective equipment that meets the requirements of WAC 296-304-09005 (1) and (2). The employer must also meet the

requirements of chapter 296-817 WAC, Hearing loss prevention (noise).

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-304-08009, filed 1/24/07, effective 4/1/07; 03-11-060, § 296-304-08009, filed 5/19/03, effective 8/1/03. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060, 98-02-006, § 296-304-08009, filed 12/26/97, effective 3/1/98. Statutory Authority: Chapter 49.17 RCW, 95-04-006, § 296-304-08009, filed 1/18/95, effective 3/10/95; Order 76-7, § 296-304-08009, filed 3/1/76; Order 74-25, § 296-304-08009, filed 5/7/74.]

WAC 296-304-11003 Drums and containers. (1) Shipping drums and containers shall not be pressurized to remove their contents.

(2) A temporarily assembled pressurized piping system conveying hazardous liquids or gases shall be provided with a relief valve and by-pass to prevent rupture of the system and the escape of such hazardous liquids or gases.

(3) Pressure vessels, drums and containers containing toxic or flammable liquids or gases shall not be stored or used where they are subject to open flame, hot metal, or other sources of artificial heat.

(4) Unless pressure vessels, drums and containers of 30 gallon capacity or over containing flammable or toxic liquids or gases are placed in an out-of-the-way area where they will not be subject to physical injury from an outside source, barriers or guards shall be erected to protect them from such physical injury.

(5) Containers of 55 gallons or more capacity containing flammable or toxic liquid shall be surrounded by dikes or pans which enclose a volume equal to at least 35 percent of the total volume of the containers.

(6) Fire extinguishers adequate in number and suitable for the hazard shall be provided. These extinguishers shall be located in the immediate area where pressure vessels, drums and containers containing flammable liquids or gases are stored or in use. Such extinguishers shall be ready for use at all times.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-304-11003, filed 1/24/07, effective 4/1/07; Order 74-25, § 296-304-11003, filed 5/7/74.]

WAC 296-304-14007 Criteria governing accreditation to certificate vessels' cargo gear. (1) A person applying for accreditation to issue registers and pertinent certificates, to maintain registers and appropriate records, and to conduct initial, annual and quadrennial surveys, shall not be accredited unless he is engaged in one or more of the following activities:

- (a) Classification of vessels;
- (b) Certification of vessels' cargo gear;
- (c) Shipbuilding or ship repairing, or both insofar as related to work on vessels' cargo handling gear;
- (d) Unit and loose gear testing of vessels' cargo handling gear.

(2) Applicants for accreditation under WAC 296-304-14007(1) for operations in coastal or Great Lakes ports who come within WAC 296-304-14007 (1)(b) or (d) shall not be accredited unless they conduct at least 1,500 hours of cargo gear certification work per year.

(3) A person applying for accreditation to carry out tests of loose gear or wire rope, or both, or to carry out heat treat-

ments, and to issue the related certificates, shall be engaged in one or both of the following activities:

- (a) Testing of loose gear or wire rope, or both;
- (b) Heat treatment of chains and loose cargo gear.

(4) A person applying for accreditation shall be staffed by individuals technically qualified to conduct the inspections and examinations and to conduct or supervise tests and heat treatments prescribed in this part. Any representatives, agents or surveyors acting on behalf of a person applying for accreditation in ports in which such operations are conducted shall be similarly qualified.

(a) Accreditation to conduct such nondestructive examination as may be a part of any certification activity may be granted to applicants found competent and equipped to carry out this activity.

(5) Except as noted in WAC 296-304-13001 (2)(a), and unless exemptions are granted under WAC 296-304-15001(8), a person applying for accreditation as specified in WAC 296-304-14007(1) shall be prepared to carry out all of the requirements of WAC 296-304-150 through 296-304-15005, 296-304-160 through 296-304-16025, and 296-304-170 through 296-304-17023 except that loose gear and wire rope tests and heat treatments may be carried out by the manufacturer of the gear concerned or by another person accredited specifically for this purpose.

(6) A person applying for accreditation shall have a satisfactory record of performance.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-304-14007, filed 1/24/07, effective 4/1/07; Order 74-25, § 296-304-14007, filed 5/7/74.]

WAC 296-304-15001 General duties—Exemptions.

(1) Except as noted in WAC 296-304-13001 and 296-304-15001(8), the requirements set forth in WAC 296-304-160 through 296-304-16025 and 296-304-170 through 296-304-17023 shall be strictly adhered to in all testing, examinations, inspections and heat treatments.

(2) Supervision of all testing, examinations, inspections, and heat treatments shall be carried out only by such persons as are listed in the application for accreditation or subsequent supplements thereto, submitted pursuant to this section.

(3) The certificates issued by an accredited person shall be signed and all register entries made only by an authorized agent of such accredited person. No certification shall be issued until any deficiencies considered by the accredited person to constitute a currently unsatisfactory condition have been corrected. Replacement parts shall be of equal or better quality as original equipment and suitable for the purpose. In the event deficiencies remain uncorrected and no certification may therefore be issued, the accredited person shall inform the nearest district office of the department of labor and industries of the circumstances.

(4) Dynamometers or other recording test equipment owned by an accredited person shall have been tested for accuracy within the six months next preceding application for accreditation or renewal of same. Such test shall be performed with calibrating equipment which has been checked in turn so that indications are traceable to the U.S. Bureau of Standards. A copy of test reports shall accompany the application. Where test equipment is not the property of the accredited person, that person shall not issue any certificate

based upon the use of such equipment unless its owner has made available a certificate of accuracy based on the requirements of this section, obtained within 1 year prior to such use, and stating the errors of the equipment. Reasonable standards of accuracy shall be met and proof loads adjusted as necessary.

(5) An accredited person shall, upon request, provide the nearest local office of the department of labor and industries with advance information as to scheduled testing or of such other functions as are performed and facilitate the department of labor and industries observation of any such activities as it may desire to witness: Provided, however, That tests need not be delayed, except when specifically requested by the department of labor and industries under unusual circumstances.

(6) All cargo gear registers or certificates issued by an accredited person shall be made on forms prescribed or approved by the department of labor and industries.

(7) Unless otherwise instructed by the director in specific instances, any person accredited under WAC 296-304-14007(1) shall accept certificates relating to loose gear or wire rope tests or to heat treatments which are issued by the manufacturer of the gear concerned, by another person accredited specifically by the director for this purpose, or by any other person whose certificates are acceptable to the department of labor and industries. Such certificates shall either be attached as a part of the vessel's certification or shall be used as the basis for the issuance of the accredited person's own loose gear, wire rope, or heat treatment certificates. In the latter case, the original certificates shall be kept on file by the accredited person as part of the permanent record of the vessel concerned.

(8) In case of practical difficulties or unnecessary hardships, the director in his discretion may grant exemptions from any provision of WAC 296-304-150 through 296-304-15005, 296-304-160 through 296-304-16025 and 296-304-170 through 296-304-17023.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-304-15001, filed 1/24/07, effective 4/1/07; Order 74-25, § 296-304-15001, filed 5/7/74.]

WAC 296-304-16001 General. (1) Except as noted in WAC 296-304-13001 and as provided in exemptions under WAC 296-304-15001(9), certification performed by accredited persons shall conform to the requirements contained in this section.

(2) Safe working loads assigned to assembled units of gear shall be based on applicable design criteria acceptable to the accredited person. Where no design data on which to base a rating is obtainable, the safe working load ratings assigned shall be based on the owner's information and warranty that those so assigned are correct. Unit test certificates shall state the basis for any such safe working load assignment.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-304-16001, filed 1/24/07, effective 4/1/07; Order 74-25, § 296-304-16001, filed 5/7/74.]

WAC 296-304-17011 Proof tests—Loose gear. (1) Chains, rings, shackles and other loose gear (whether accessory to a machine or not) shall be tested with a proof load equal to that shown against the article in the following table:

Article of gear	Proof load
Chain, ring, hook, shackle or swivel	100 percent in excess of the safe working load.
Blocks:	
Single sheave block	300 percent in excess of the safe working load. ¹
Multiple sheave block with safe working load up to and including 20 tons	100 percent in excess of the safe working load.
Multiple sheave block with safe working load over 20 tons up to and including 40 tons	20 tons in excess of the safe working load.
Multiple sheave block with safe working load over 40 tons	50 percent in excess of the safe working load.
Pitched chains used with hand-operated blocks and rings, hooks, shackles or swivels permanently attached thereto.	50 percent in excess of the safe working load.
Hand-operated blocks used with pitched chains and rings, hooks, shackles or swivels permanently attached thereto	50 percent in excess of the safe working load.

¹The proof load applied to the block is equivalent to twice the maximum resultant load on the eye or pin of the block when lifting the nominal safe working load defined in WAC 296-304-17011 (1)(a) below. The proof load is, therefore, equal to four times the safe working load as defined in WAC 296-304-17011 (1)(a) below or twice the safe working load as defined in WAC 296-304-17011 (1)(b) below.

- (a) The nominal safe working load of a single-sheave block should be the maximum load which can be safely lifted by the block when the load is attached to a rope which passes around the sheave of the block.
- (b) In the case of a single-sheave block where the load is attached directly to the block instead of to a rope passing around the sheave, it is permissible to lift a load equal to twice the nominal safe working load of the block as defined in WAC 296-304-17011 (1)(a) above.
- (c) In the case of a lead block so situated that an acute angle cannot be formed by the two parts of the rope passing over it (i.e., the angle is always 90° or more), the block need not have a greater nominal safe working load than one-half the maximum resultant load which can be placed upon it.
- (2) In cases where persons accredited to carry out loose gear tests may be retained to conduct tests of special stevedoring gear as described in WAC 296-56-60098 (8)(e), which does not form part of a vessel's equipment, such tests shall adhere to the requirements set forth in WAC 296-56-60098 (8)(e).
- (3) After being tested as required by WAC 296-304-17011(1), and before being taken into use, all chains, rings, hooks, shackles, blocks or other loose gear, except as noted in WAC 296-304-17013, shall be thoroughly examined, the sheaves and pins of the blocks being removed for this purpose, to determine whether any part has been injured or per-

manently deformed by the test. Shell bolt nuts shall be securely locked upon reassembly. Defective loose gear components shall be replaced before the certificate is issued.

(4) Any certificate relating to shackles, swivels or strength members of single-sheave blocks which have been restored to original dimensions by welding shall state this fact.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-304-17011, filed 1/24/07, effective 4/1/07; Order 74-25, § 296-304-17011, filed 5/7/74.]

WAC 296-304-20001 General provisions. (1) Certification of shore-based material handling devices shall conform to the requirements contained in this section, except in cases for which exemptions or variations have been granted by the director as provided in WAC 296-304-18001(4) and 296-304-190.

(2) Any replacements or repairs deemed necessary by the accredited person shall be carried out before application of a proof test.

(3) "Ton" in this section means a ton of 2,000 pounds.

(4) When applied to shore-based material handling devices, ratings may be stated in pounds rather than tons. When stated in tons of 2,000 pounds, this fact shall be indicated.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-304-20001, filed 1/24/07, effective 4/1/07; Order 74-25, § 296-304-20001, filed 5/7/74.]

Chapter 296-305 WAC

SAFETY STANDARDS FOR FIRE FIGHTERS

WAC
296-305-01009 Appeals.

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, infor-

mation 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.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-305-01009, filed 1/24/07, effective 4/1/07. 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.]

Chapter 296-400A WAC
PLUMBER CERTIFICATION RULES
 (Formerly chapter 296-400 WAC)

WAC

296-400A-045 What fees will I have to pay?

WAC 296-400A-045 What fees will I have to pay?

The following are the department's plumbers fees:

(1) Fees related to journeyman and specialty plumber certification:

<u>Type of Fee</u>	<u>Period Covered by Fee</u>	<u>Dollar Amount of Fee</u>
Examination application	Per examination	\$126.10
Domestic pump specialty application fee*****	Per application	\$126.10
Reciprocity application*	Per application	\$126.10
Trainee certificate**	One year	\$37.70
Domestic pump specialty trainee certificate**	Two years	\$75.40
Temporary permit (not applicable for backflow assembly maintenance and repair specialty)	90 days	\$62.70
Journeyman or residential specialty certificate***	Two years (fee may be prorated based on months)	\$101.00
Domestic pump specialty plumber certificate***	Three years (fee may be prorated based on months)	\$151.50
Backflow assembly maintenance and repair specialty certificate	Two years (fee may be prorated based on months)	\$69.70
Medical gas endorsement application	Per application	\$46.50
Medical gas endorsement***	One year	\$34.70
Medical gas endorsement examination fee****		See note below.
Medical gas endorsement training course fee*****		See note below.
Domestic pump specialty examination fee****		See note below.
Reinstatement fee for residential and journeyman certificates		\$202.40
Reinstatement fee for backflow assembly maintenance and repair specialty certificates		\$116.50
Reinstatement fee for domestic pump		\$303.00
Replacement fee for all certificates		\$17.10
Refund processing fee		\$27.20
Unsupervised trainee endorsement		\$27.20
Inactive status fee		\$27.20
Honorary plumbing certification		\$101.00
Certified letter fee		\$27.20
Continuing education new course fee*****		\$164.10
Continuing education renewal course fee*****		\$81.90
Continuing education classes provided by the department		\$12 per continuing education training hour \$8 per continuing education training hour for correspondence and internet courses

* Reciprocity application is only allowed for applicants that are applying work experience toward certification that was obtained in state(s) with which the department has a reciprocity agreement. The reciprocity application is valid for one year.

** The trainee certificate shall expire one year from the date of issuance and must be renewed on or before the date of expiration. The domestic pump specialty trainee certificate shall expire two years from the date of issuance and must be renewed on or before the date of expiration.

- *** This fee applies to either the original issuance or a renewal of a certificate. If you have passed the plumbers certificate of competency examination or the medical gas piping installer endorsement examination and paid the certificate fee, you will be issued a plumber certificate of competency or a medical gas endorsement that will expire on your birth date. The annual renewal of a Medical Gas Piping Installer Endorsement shall include a continuity affidavit verifying that brazing work has been performed biannually.
- **** This fee is paid directly to a nationally recognized testing agency under contract with the department. It covers the cost of preparing and administering the written competency examination and the materials necessary to conduct the practical competency examination required for the medical gas piping system installers endorsement. **This fee is not paid to the department.**
- ***** This fee is paid directly to a training course provider approved by the department, in consultation with the state advisory board of plumbers. It covers the cost of providing training courses required for the medical gas piping system installer endorsement. **This fee is not paid to the department.**
- ***** This fee is for a three-year period or code cycle.
- ***** The domestic pump specialty application is valid for one year.

(2) If your birth year is:

(a) In an even-numbered year, your certificate will expire on your birth date in the next even-numbered year.

(b) In an odd-numbered year, your certificate will expire on your birth date in the next odd-numbered year.

[Statutory Authority: Chapters 18.27, 18.106, 43.22, and 70.87 RCW. 07-11-128, § 296-400A-045, filed 5/22/07, effective 6/30/07. Statutory Authority: RCW 18.106.040, 18.106.140. 06-24-040, § 296-400A-045, filed 11/30/06, effective 12/31/06. Statutory Authority: Chapters 18.106, 43.22, and 70.87 RCW. 06-10-066, § 296-400A-045, filed 5/2/06, effective 6/30/06. Statutory Authority: RCW 19.103.040, 18.106.140, and chapter 18.106 RCW. 05-11-061, § 296-400A-045, filed 5/17/05, effective 6/30/05. Statutory Authority: RCW 18.106.040, 18.106.140, 2002 c 82, and 2003 c 399. 04-12-046, § 296-400A-045, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 70.87.030, 18.106.070, 18.106.125, 2001 c 7, and chapters 18.106, 43.22, and 70.87 RCW. 03-12-045, § 296-400A-045, filed 5/30/03, effective 6/30/03. Statutory Authority: RCW 18.106.040, 18.106.140, 2001 c 281, and chapter 18.106 RCW. 02-14-074, § 296-400A-045, filed 6/28/02, effective 7/1/02. Statutory Authority: RCW 18.106.125. 99-07-101, § 296-400A-045, filed 3/23/99, effective 4/23/99. Statutory Authority: Chapter 18.106 RCW. 98-13-126, § 296-400A-045, filed 6/17/98, effective 7/20/98. Statutory Authority: Chapters 18.106, 18.27 and 43.22 RCW. 98-12-041, § 296-400A-045, filed 5/29/98, effective 6/30/98. Statutory Authority: RCW 18.106.050, [18.106.]070, [18.106.]110, [18.106.]125, [18.106.]140 and [18.106.]270. 97-11-052, § 296-400A-045, filed 5/20/97, effective 6/30/97.]

Chapter 296-806 WAC MACHINE SAFETY

WAC

296-806-405	Summary.
296-806-42516	Safeguard storage bins.
296-806-45004	Safeguard work-holding devices (chucks).
296-806-47502	Guard drum sanders.

WAC 296-806-405 Summary.

• In addition to the requirements in this section, you need to refer to the following sections of this chapter in order to fully protect your employees from machine hazards.

• Requirements for all machines, WAC 296-806-200 and 296-806-300.

• You need to refer to Portable power tools, chapter 296-807 WAC for requirements relating to hand-held abrasive wheel tools.

This section applies to machines that are not hand held and that use an abrasive wheel.

Exemption: This rule does not apply to natural sandstone wheels and metal, wooden, cloth or paper discs having a layer of abrasive on the surface.

Definition:

An *abrasive wheel* is a grinding tool consisting of bonded abrasive grains. This includes diamond and reinforced wheels.

Your responsibility:

To make sure abrasive wheel machines and wheels are safe to use.

You must:

GENERAL REQUIREMENTS FOR ABRASIVE WHEELS

Make sure abrasive wheels and machines are properly designed and constructed

WAC 296-806-40502.

Make sure machines have safety guards

WAC 296-806-40504.

Make sure safety guards meet specific requirements

WAC 296-806-40506.

Provide a tongue guard on bench, pedestal, floorstand, and cylindrical grinders

WAC 296-806-40508.

Use a work rest for off-hand grinding

WAC 296-806-40510.

MOUNTING ABRASIVE WHEELS

Make sure abrasive wheels are safe to use

WAC 296-806-40512.

Mount wheels properly

WAC 296-806-40514.

Use proper flanges

WAC 296-806-40516.

Make sure flanges are in good condition

WAC 296-806-40518.

Use specific flanges for Type 1 cutting-off wheels

WAC 296-806-40520.

Use specific flanges for Type 27A cutting-off wheels

WAC 296-806-40522.

Use blotters when required

WAC 296-806-40524.

Meet specific blotter requirements when using modified Types 6 and 11 wheels (terrazzo)

WAC 296-806-40526.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-806-405, filed 1/24/07, effective 4/1/07; 04-14-028, § 296-806-405, filed 6/29/04, effective 1/1/05.]

WAC 296-806-42516 Safeguard storage bins.

Exemption: This requirement does not apply to under-the-counter ingredient bins found in retail stores.

You must:

(1) Provide locks or latches to keep storage bin covers closed, and gaskets or other equivalent devices, to make sure covers are dust tight.

(2) Make sure employees lock covers in the open position when entering bins.

• Covers for bins that employees may enter must have a metal fastener (hasp) and lock that can be locked in the "open" position.

(3) Provide a standard stationary safety ladder on the inside and outside of storage bins with sides more than five feet deep.

- The ends of ladders must be kept away from moving screw conveyors.
- Outside ladders must reach from floor level to the top of the bin.
- Inside ladders must reach from the top of the bin to the bottom of the bin.

(4) Provide an electric interlock on the main entrance cover of large storage bins near the interior exit ladder.

- The interlock needs to prevent feed and unloading screw motors from operating while the cover is open.

Reference: You may need to follow other requirements found in chapter 296-809 WAC, Confined spaces.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-806-42516, filed 1/24/07, effective 4/1/07; 04-14-028, § 296-806-42516, filed 6/29/04, effective 1/1/05.]

WAC 296-806-45004 Safeguard work-holding devices (chucks).

You must:

- Provide a fixed or movable guard, device, awareness barrier, or peripheral cover over areas exposed to the operator on work-holding devices or chucks when:
 - They are in the clamped mode and have parts that extend beyond the outside diameter of the holding device.
 - They have an irregular shape to the periphery of their body.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-806-45004, filed 1/24/07, effective 4/1/07; 04-14-028, § 296-806-45004, filed 6/29/04, effective 1/1/05.]

WAC 296-806-47502 Guard drum sanders.

You must:

- Make sure drum sanders have one of the following to enclose that part of the drum not used to work on the material:
 - Guard.
 - Exhaust hood.

Reference: Exhaust hoods are required on sanders when dust levels exceed exposure limits. See chapter 296-841 WAC, Airborne contaminants.

Exemption: When a table is used for the application of material to be finished, you do not need to enclose the portion of the drum above the table that is necessary to do the work.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-806-47502, filed 2/20/07, effective 4/1/07; 04-14-028, § 296-806-47502, filed 6/29/04, effective 1/1/05.]

**Chapter 296-807 WAC
PORTABLE POWER TOOLS**

WAC

296-807-100	Scope.
296-807-14035	Use air tools safely.
296-807-15010	Make sure employees are aware tools are in use and wear appropriate personal protective equipment (PPE).
296-807-17020	Visually inspect jacks and keep them in good working order.
296-807-18050	Use proper flanges.

WAC 296-807-100 Scope. This chapter applies to the tools and equipment shown in Table 1, Scope of this chapter.

**Table 1
Scope of this Chapter**

Section:	Applies to:
110 Switches (controls)	Hand-held portable power tools.
120 Portable circular saws	Hand-held portable circular saws.
130 Portable belt sanding machines	Hand-held portable belt sanding machines.
140 Compressed air tools	Hand-held portable compressed air powered tools. It also applies to airhose and plastic pipe used to supply compressed air to these tools.
150 Powder actuating fastening systems	Powder actuated fastening systems designed to use the expanding gases from a powder load to propel a stud, pin, fastener, or other object into hard structural material.
160 Power lawnmowers	Consumer and commercial power lawnmowers.
170 Jacks	Portable hand- or power-operated: <ul style="list-style-type: none"> • Hydraulic jacks • Mechanical ratchet jacks • Mechanical screw jacks.
180 Portable tools using abrasive wheels	Portable tools using abrasive wheels.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-807-100, filed 1/24/07, effective 4/1/07; 03-09-009, § 296-807-100, filed 4/4/03, effective 8/1/03.]

WAC 296-807-14035 Use air tools safely.

Exemption:

This section does not apply to:

- Tools specifically for medical or dental use
- Tools specifically for use in the food processing industry
- Tools mounted in stationary installations
- Air hoists
- Construction and mining tools such as paving breakers, diggers, tampers, and rock drills.

You must:

- (1) Relieve the pressure in the air line before disconnecting a compressed air tool from the line or disconnecting a hose joint unless there is automatic valve closing protection at the joint being separated.
- (2) Disconnect the tool from the compressed air supply before repairs are done.
- (3) Make sure that eye protection is worn at all times by:
 - The person operating the tool
 - Other persons in the area where tools are being used.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-807-14035, filed 1/24/07, effective 4/1/07; 03-09-009, § 296-807-14035, filed 4/4/03, effective 8/1/03.]

WAC 296-807-15010 Make sure employees are aware tools are in use and wear appropriate personal protective equipment (PPE).

You must:

(1) Make sure eye or face protection is worn by:

- Tool operators
- Assistants
- Persons close to where the tool is being used.

You must:

(2) Post signs where tools are being used and in adjacent areas where tool use could pose a hazard. Signs must:

- Be easily seen
- Be at least 8 x 10 inches (20 x 25 cm)
- Use letters in boldface type at least one inch (2.5 cm)

high

• Read "POWDER ACTUATED TOOL IN USE" or similar wording.

- Note:** Tool use could create a hazard in adjacent areas by allowing a fastener to penetrate one or more of the following:
- Wall
 - Floor
 - Other working surface.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-807-15010, filed 1/24/07, effective 4/1/07; 03-09-009, § 296-807-15010, filed 4/4/03, effective 8/1/03.]

WAC 296-807-17020 Visually inspect jacks and keep them in good working order.

- Note:** There are two types of inspection, frequent or periodic, depending on how often they are done.

You must:

(1) Inspect jacks at appropriate intervals:

- Make sure frequent inspections are done by the operator or other designated person as follows:
 - Before a jack is first placed in service.
 - Monthly for a jack used in normal service.
 - Daily or before each use for a jack used for other than normal service.
 - Before using a jack that has been altered, modified, or repaired.
 - Before using a jack that has not been used in one year or more.
- Make sure a periodic inspection of the jack is done once a year.

• Inspect the jack using Table 4, Jack Inspection Requirements, during any frequent or periodic inspection.

(2) Make sure a jack that is out of order is:

- Tagged
- Not used until repaired.

(3) Make sure a jack is properly lubricated at regular intervals.

- Note:** The jack should be lubricated following the manufacturer's instructions.

Table 4

Jack Inspection Requirements

Inspection Item	Frequent Inspection	Periodic Inspection
Check all of the following items that apply to the jack:		
Improper pawl engagement	X	X
Excessive pawl wear	X	X
Chipped, cracked, or worn rack teeth	X	X
Cracked or damaged housing	X	X

Table 4

Jack Inspection Requirements

Inspection Item	Frequent Inspection	Periodic Inspection
Check all of the following items that apply to the jack:		
Damaged, bent, or worn threads	X	X
Leaking hydraulic fluid	X	X
Scored or damaged plunger	X	X
Improper functioning	X	X
Free movement of swivel, heads, and caps	X	X
Loose bolts or rivets	X	X
Damaged or improperly assembled accessory equipment	X	X
Rack wear or bending	X	X
Other items as specified in the manufacturer's instructions	X	X
Watch the jack during operation	X	X
More detailed inspection required if a designated person determines any condition discovered is a hazard	X	
Clean and check internal parts for wear or damage if inspection indicates an internal problem		X

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-807-17020, filed 1/24/07, effective 4/1/07; 03-09-009, § 296-807-17020, filed 4/4/03, effective 8/1/03.]

WAC 296-807-18050 Use proper flanges.

You must:

- Mount all abrasive wheels between flanges that have a diameter at least one-third the diameter of the wheel.

Exemption:

This requirement does not apply to the following types of wheels:

- Mounted wheels
- Cup, cone or plug wheels with threaded inserts or projecting studs
- Abrasive disc wheels (inserted nut, inserted washer and projecting stud type)
- Plate mounted wheels
- Cylinder, cup, or segmental wheels mounted in chucks
- Types 27, 28 and 29 wheels
- Internal wheels less than two inches in diameter
- Modified Type 6 and 11 wheels (terrazzo)
- Types 1 and 27A cutting-off wheels.

You must:

- Make sure flanges are:
 - Dimensionally accurate
 - Properly balanced
 - Flat
 - Free of rough surfaces or sharp edges.

• Make sure, if a wheel is mounted between two flanges, that both flanges:

- Are the same diameter
- Have equal bearing surfaces.

Exemption:

The following wheels do not require same diameter, equal bearing surface flanges:

- Types 27, 28, and 29 wheels with adaptors
- Modified Types 6 and 11 wheels with tapered K dimension
- Internal wheels less than two inches in diameter.

You must:

- Make sure the driving flange is:
 - Part of the spindle

OR

- Securely fastened to the spindle.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-807-18050, filed 1/24/07, effective 4/1/07; 03-09-009, § 296-807-18050, filed 4/4/03, effective 8/1/03.]

Chapter 296-809 WAC

CONFINED SPACES

WAC

296-809-70002	Follow these requirements when classifying a confined space as a nonpermit confined space.
296-809-800	Definitions.

WAC 296-809-70002 Follow these requirements when classifying a confined space as a nonpermit confined space.

You must:

- Make sure the confined space meets these conditions to be classified as nonpermit confined spaces:
 - The confined space does not contain an actual or potential hazardous atmosphere.
 - The confined space does not contain hazards capable of causing death or serious physical harm. This includes any recognized health or safety hazards including engulfment in solid or liquid material, electrical shock, or moving parts.
 - If you must enter to remove hazards, the space must be treated as a permit-required confined space until hazards have been eliminated.

- Note:**
- Controlling atmospheric hazards through forced air ventilation does not eliminate the hazards.
 - You should evaluate the use of lockout-tagout, as covered in chapter 296-803 WAC, to determine if using it fully eliminates the hazard.
 - You are allowed to use alternate entry procedures covered in WAC 296-809-600, if you can demonstrate that forced air ventilation alone will control all hazards in the space.

You must:

- Document how you determined the confined space contained no permit-required confined space hazards. Certify this documentation with the following:
 - Date.
 - Location of the space.
 - Signature of the person making the determination.
- Make the certification available to each entrant, or their authorized representative.

- Note:** This certification must be completed every time a permit-required confined space is reclassified as a nonpermit space.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-809-70002, filed 1/24/07, effective 4/1/07; 04-03-081, § 296-809-70002, filed 1/20/04, effective 5/1/04.]

WAC 296-809-800 Definitions.

Acceptable entry conditions:

The conditions that must exist in a permit-required confined space to allow safe entry and work.

Attendant:

An individual stationed outside one or more permit-required confined spaces to monitor the entrants.

Blanking or blinding:

The absolute closure of a pipe, line, or duct by fastening a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore. It is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Confined space:

A space that is **all** of the following:

- Large enough and arranged so an employee could fully enter the space and work.
- Has limited or restricted entry or exit. Examples of spaces with limited or restricted entry are tanks, vessels, silos, storage bins, hoppers, vaults, excavations, and pits.
- Not primarily designed for human occupancy.

Double block and bleed:

The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Emergency:

Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit-required confined space that could endanger authorized entrants.

Engulfment:

The surrounding capture of a person by a liquid or finely divided (flowable) solid substance that can be inhaled to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Enter (entry):

The action by which a person passes through an opening into a permit-required confined space and includes work activities in that space. Entry is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

- Note:** If the opening is large enough for the worker to fully enter the space, a permit is required even for partial body entry. Permits are not required for partial body entry where the opening is not large enough for full entry, although other rules such as chapter 296-803 WAC, lockout-tagout, and chapter 296-841 WAC, Airborne contaminants, may apply.

Entrant:

An employee who is authorized by the employer to enter a permit-required confined space.

Entry permit (permit):

The written or printed document that is provided by you to allow and control entry into a permit-required confined space and that contains the information required in WAC 296-809-500, Permit entry procedures.

Entry supervisor:

The person (such as the employer, crew leader, or crew chief) responsible for:

- Determining if acceptable entry conditions are present at a permit-required confined space where entry is planned;
- Authorizing entry and overseeing entry operations; and
- Terminating entry as required.

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 a permit-required confined space), injury, or acute illness caused by one or more of the following:

- Flammable gas, vapor, or mist in excess of ten 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 five feet (1.52 m) or less.

- Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.
- Atmospheric concentration of any substance which may exceed a permissible exposure limit. For additional information about atmospheric concentration, see chapter 296-62 WAC, Parts F, G, and I, General occupational health standards and chapter 296-841 WAC, Airborne contaminants.

Note: An airborne concentration of a 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 definition.

- Any other atmospheric condition that is immediately dangerous to life or health.

Note: You can find guidance on establishing acceptable atmospheric conditions for air contaminants, which have no WISHA-determined doses or permissible exposure limits using other sources of information, such as:

- Material safety data sheets required by WAC 296-800-170, Employer chemical hazard communication.
- Published information.
- Internal documents.

Hot work permit:

A written authorization to perform operations, for example, riveting, welding, cutting, burning, and heating, that can provide a source of ignition.

Immediately dangerous to life or health (IDLH):

Any of the following conditions:

- An immediate or delayed threat to life.
- Anything that would cause irreversible adverse health effects.
- Anything that would interfere with an individual's ability to escape unaided from a permit-required confined 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 twelve to seventy-two hours after exposure. The victim "feels normal" after recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health (IDLH).

Inerting:

The displacement of the atmosphere in a permit-required confined space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

Note: This procedure produces an IDLH oxygen-deficient atmosphere.

Isolation:

The process by which a permit-required confined space is removed from service and completely protected against the release of energy and material into the space by such means as: Blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.

Line breaking:

The intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Nonpermit confined space:

A confined space that does NOT contain actual hazards or potential hazards capable of causing death or serious physical harm.

Oxygen deficient atmosphere:

An atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen enriched atmosphere:

An atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required confined space or permit space:

A confined space that has one or more of the following characteristics capable of causing death or serious physical harm:

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material with the potential for engulfing someone who enters.
- Has an internal configuration that could allow someone entering to be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross section.
- Contains any physical hazard. This includes any recognized health or safety hazards including engulfment in solid or liquid material, electrical shock, or moving parts.
- Contains any other recognized serious safety or health hazard that could either:
 - Impair the ability to self-rescue; or
 - Result in a situation that presents an immediate danger to life or health.

Permit-required confined space program:

An overall program for:

- Controlling and appropriately protecting employees from permit-required confined space hazards; and
- Regulating employee entry into permit-required confined spaces.

Prohibited condition:

Any condition in a permit-required confined space that is not allowed by the permit during the authorized entry period.

Rescue service:

The personnel designated to rescue employees from permit-required confined spaces.

Retrieval system:

The equipment used for nonentry rescue of persons from permit-required confined spaces, such as a retrieval line, full-body harness or wristlets, and a lifting device or anchor.

Testing:

The process of identifying and evaluating the hazards that entrants may be exposed to in a permit-required confined space. Testing includes specifying the tests that are to be performed in the permit-required confined space.

Note: Testing allows employers to devise and implement adequate controls to protect entrants during entry, and to determine if acceptable entry conditions are present.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-809-800, filed 2/20/07, effective 4/1/07; 04-03-081, § 296-809-800, filed 1/20/04, effective 5/1/04.]

Chapter 296-823 WAC**OCCUPATIONAL EXPOSURE TO BLOODBORNE PATHOGENS****WAC**

296-823-18015	Make sure these practices for contaminated material and waste are followed.
296-823-18055	Make sure these additional criteria are followed for HIV and HBV production facilities.

WAC 296-823-18015 Make sure these practices for contaminated material and waste are followed.**You must:**

- Incinerate or decontaminate all regulated waste by a method known to effectively destroy bloodborne pathogens, such as autoclaving
- Make sure to place materials to be decontaminated away from the work area in a container that is:
 - Durable
 - Leakproof
 - Appropriately labeled, or color-coded
 - Closed before being removed from the work area.

Reference: You can find additional requirements for appropriate labels and color-coding in WAC 296-823-14025.

You must:

- Incinerate or decontaminate ALL waste from work areas and from animal rooms before disposal
- Make sure an autoclave is available for decontamination of regulated waste.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-823-18015, filed 1/24/07, effective 4/1/07; 04-12-070, § 296-823-18015, filed 6/1/04, effective 9/1/04; 03-09-110, § 296-823-18015, filed 4/22/03, effective 8/1/03.]

WAC 296-823-18055 Make sure these additional criteria are followed for HIV and HBV production facilities.**You must:**

- Separate the HIV and HBV work areas from areas that are open to unrestricted traffic flow within the building
- Use two sets of doors to separate HIV and HBV work areas from access corridors or other contiguous areas.

Note: You may provide a physical separation of the high-containment work area from access corridors or other areas or activities by providing:

- A double-doored clothes-change room (showers may be included)
 - Airlock
- OR**
- Other access facilities that require passing through two sets of doors before entering the work area.

- Make sure the surfaces of doors, walls, floors, and ceilings in the work area are water resistant so they can be easily cleaned. These surfaces must be sealed or capable of being sealed to facilitate decontamination

- Make sure access doors to the work area or containment module are self-closing

- Provide a ducted exhaust-air ventilation system. This system must create directional airflow that draws air into the work area through the entry area and you must verify this airflow. The exhaust air must:

- NOT be recirculated to any other area of the building
- Be discharged to the outside
- Be dispersed away from occupied areas and air intakes.

- Make sure an autoclave for decontamination of regulated waste is available within or as near as possible to the work area.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-823-18055, filed 1/24/07, effective 4/1/07; 04-12-070, § 296-823-18055, filed 6/1/04, effective 9/1/04; 03-09-110, § 296-823-18055, filed 4/22/03, effective 8/1/03.]

Chapter 296-824 WAC**EMERGENCY RESPONSE****WAC**

296-824-100	Scope.
296-824-20005	Develop an emergency response plan.
296-824-70005	Follow the appropriate postemergency response requirements.
296-824-800	Definitions.

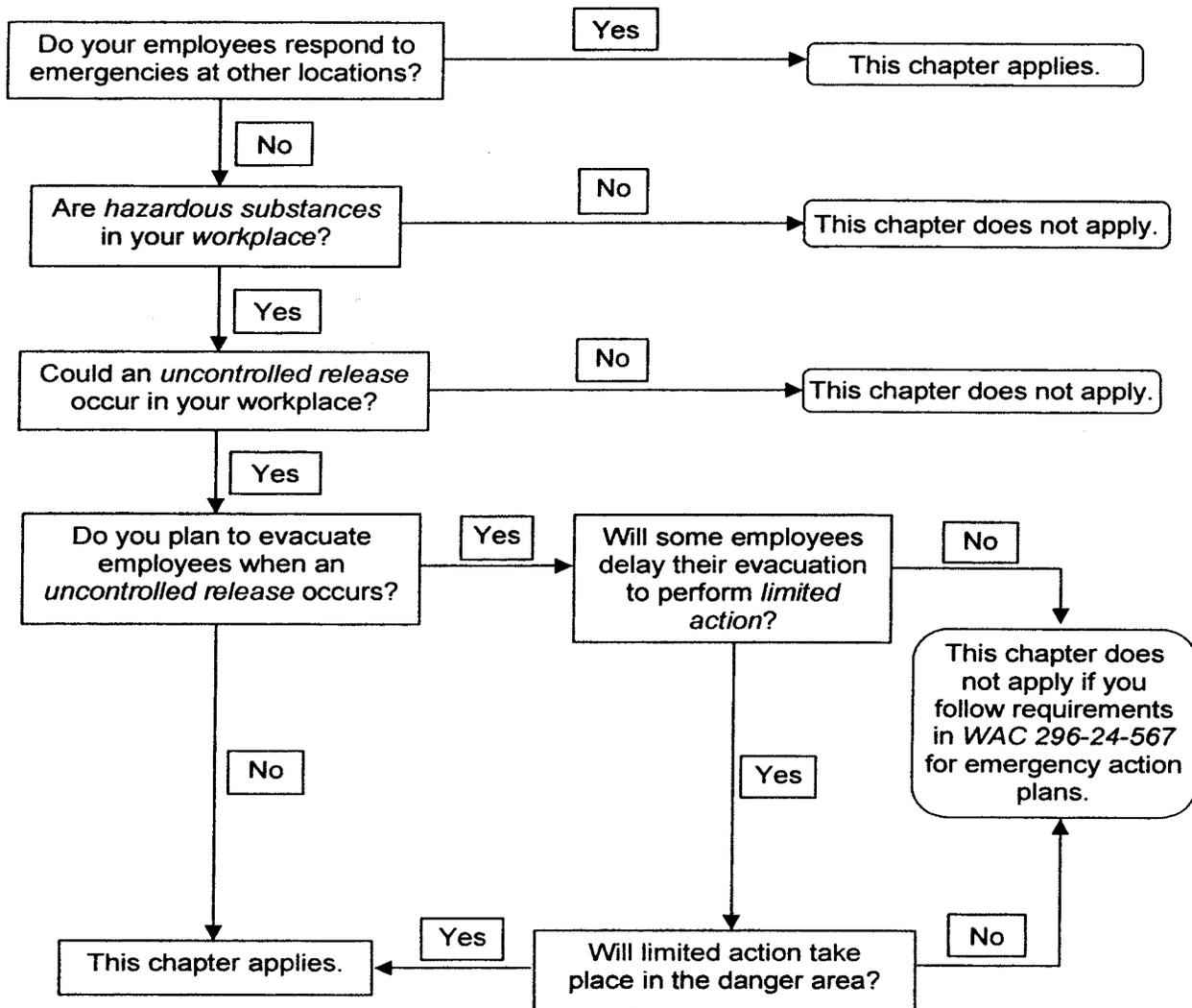
WAC 296-824-100 Scope. This chapter states the minimum requirements that help you protect the safety and health of your employees during a response to a *hazardous substance releases* in your *workplace* or any other location.

This chapter applies if your employees are, or could become, involved in responding to uncontrolled releases of hazardous substances in your workplace or any other location. Use the scope flow chart, and definitions that follow, to determine if this chapter applies to your workplace(s). Defined words are italicized in the flow chart.

EXEMPTION: • This chapter does not apply to you if your workplace is a hazardous waste site. If you are not sure about your site classification, see chapter 296-843 WAC, Hazardous waste operations.

- If your workplace is a treatment, storage, and disposal site this chapter may apply.

Note: Requirements in other chapters may also apply to your workplace. You will find some safety and health requirements (for example, personal protective equipment) are addressed on a general level in the WISHA Safety and Health Core Rules, chapter 296-800 WAC, while being addressed for a specific application in this rule. When this happens, both requirements apply and should not conflict. If you are uncertain which requirements to follow, you must comply with the more protective requirement. Contact your local L&I office if you need assistance in making this determination.



Definitions applicable to the flow chart. (See WAC 296-824-800 for additional definitions used in the chapter):

Danger area

Areas where conditions pose a serious danger to employees, such as areas where:

- Immediately dangerous to life or health (IDLH) conditions could exist

OR

- High levels of exposure to toxic substances could exist

OR

- There is a potential for exceeding the lower explosive limit (LEL), also known as the lower flammability limit (LFL), of a substance.

Emergency response

A response to an anticipated release of a hazardous substance that is, or could become, an *uncontrolled release*.

Hazardous substance

Any biological, radiological, or chemical substance that can have adverse effects on humans. (See WAC 296-824-800 for a more specific definition.)

Immediately dangerous to life or health (IDLH)

Any atmospheric condition that would:

- Cause an immediate threat to life
- Cause permanent or delayed adverse health effects
- Interfere with an employee's ability to escape

Incidental release

A release that can be safely controlled at the time of the release and does not have the potential to become an *uncontrolled release*.

Example of a situation that results in an incidental release:

A tanker truck is receiving a load of hazardous liquid when a leak occurs. The driver knows the only hazard from the liquid is minor skin irritation. The employer has trained the driver on procedures and provided equipment to use for a release of this quantity. The driver puts on skin protection and stops the leak. A spill kit is used to contain, absorb, and pick up the spilled material for disposal.

Limited action

Action necessary to:

- Secure an operation during emergency responses,
- OR**
- Prevent an incident from increasing in severity.

Examples include shutting down processes and closing emergency valves.

Release

A spill, leak, or other type of hazardous substance discharge.

Uncontrolled release

A release where significant safety and health risks could be created. Releases of hazardous substances that are either incidental or could not create a safety or health hazard (i.e., fire, explosion or chemical exposure) are not considered to be uncontrolled releases.

Examples of conditions that could create a significant safety and health risk:

- Large-quantity releases
- Small-releases that could be highly toxic
- Potentially contaminated individuals arriving at hospitals
- Airborne exposures that could exceed a WISHA permissible exposure limit or a published exposure limit and employees are not adequately trained or equipped to control the release.

Example of an uncontrolled release:

A forklift driver knocks over a container of a solvent-based liquid, releasing the contents onto the warehouse floor. The driver has been trained to recognize the vapor is flammable and moderately toxic when inhaled. The driver has not been trained or provided appropriate equipment to address this type of spill. In this situation, it is not safe for the driver to attempt a response. The driver needs to notify someone of the release so an emergency response can be initiated.

Workplace

- A fixed facility
- OR**
- A temporary location (such as a traffic corridor)
- OR**
- Locations where employees respond to emergencies.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-824-100, filed 1/24/07, effective 4/1/07; 02-20-034, § 296-824-100, filed 9/24/02, effective 10/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-11-141, § 296-824-100, filed 5/22/02, effective 10/1/02.]

WAC 296-824-20005 Develop an emergency response plan.

- Note:**
- You may already have an emergency response plan, such as required by chapter 296-843 WAC, Hazardous waste operations or by state and locally coordinated response efforts (Section 303 of Superfund Amendments and Reauthorization Act (SARA), Title III). You may use those plans to comply with this section, if they include the items listed below.
 - Before a written emergency response plan can be developed, you will need to anticipate the types of uncontrolled releases that employees could encounter in your workplace(s).

You must:

- (1) Make sure your plan is written and adequately addresses, as a minimum, all of the following:

- Preemergency planning and coordination with additional responders (including personnel from other employers such as: Fire departments, law enforcement agencies, emergency medical services, and state or federal agencies).

- Personnel roles, (See Table 1) and lines of authority and communications for all affected parties including responders

- Employee training (see WAC 296-824-30005 for more detail):

- Note:**
- Responders' level of training depends on the duties or roles the employer assigns.
 - Training for the employees' role should address the competencies specified in Tables 3 through 6.
 - Training on specific substances may be appropriate depending on the number and characteristics of hazardous substances expected to be encountered. For example, if employees may only respond to one substance, you could provide training (covering the knowledge and skills specified in Tables 3 through 6) on that single substance. If employees might respond to a range of hazardous substances, training may be required to cover categories of hazardous substances.
 - Videos and automated training methods (for example: Interactive computer-based programs) may be used in training; however, instructors must be readily available to:
 - Encourage and provide responses to questions for the benefit of the group.
 - Evaluate employee understanding of the material.
 - Provide other instructional interaction to the group.

- Emergency recognition
- Immediate emergency procedures including:
 - Methods of alerting employees (see WAC 296-800-310, exit routes and employee alarm systems) and outside responders
 - Procedures for limited action (emergency prevention)

Note: *Limited action* includes shutting down processes, closing emergency valves and other critical actions to secure the operation, or prevent the incident from increasing in severity.

Limited Action and Employee Roles	
If . . .	Then employees involved would be:
Limited action could be conducted in the danger area	Considered emergency responders
Limited action will not be conducted in the danger area	Considered evacuees, not emergency responders

- Details of who will evacuate immediately and who will remain behind for limited action
- Evacuation routes and procedures
- How to establish safe distances and places of refuge (for example, during emergency response the incident commander (IC) decides to make changes based on new developments, i.e., changes in the wind direction).

- Methods of securing and controlling access to the site
- Emergency medical treatment and first aid
- A complete personal protective equipment (PPE) program that addresses:

- Selection of PPE including selection criteria to be used and the identification, specified use and limitations of the PPE selected.

- Training on proper use of PPE (including maintenance).

- Hazards created by wearing PPE including heat stress during temperature extremes, and/or other appropriate medical considerations.

- Criteria used for determining the proper fit of PPE.
- Procedures covering proper use of PPE including procedures for inspection, putting it on (donning) and removing it (doffing).
- Maintenance of PPE including procedures for decontamination, disposal and storage.
- Methods used to evaluate the effectiveness of your PPE program.

Note:

- If a manufacturer's printed information or WISHA rule adequately addresses procedural requirements (such as donning or doffing for PPE), it is not necessary to rewrite this into your program; simply attach the printed information.
- You may use written procedures provided by the equipment manufacturer when they meet the requirements of other chapters, including chapter 296-842 WAC, Respirators.

- Emergency equipment
- Emergency response procedures
- Decontamination procedures determined by a hazardous materials specialist or other qualified individual
- Methods to critically assess the response and conduct appropriate follow-up

You must:

(2) Make your written emergency response plan available to employees, their representatives, and WISHA personnel for inspecting or copying.

Note: In situations where multiple employers could respond to an incident, all plans should consistently address:

- Who will be designated as the incident commander (IC)

AND

- If, when, and how transfer of the incident commander (IC) position will take place.

Table 1 Roles and Duties of Emergency Responders	
If the employee's role is:	Then all of the following apply. They:
First responder at the awareness level	<ul style="list-style-type: none"> • Are likely to witness or discover a hazardous substance release • Are trained to initiate an emergency response by notifying the proper authorities of the release • Take no further action beyond notifying the authorities
First responder at the operations level	<ul style="list-style-type: none"> • Respond to actual or potential releases in order to protect nearby persons, property, and/or the environment from the effects of the release • Are trained to respond defensively, without trying to stop the release • May try to: <ul style="list-style-type: none"> - Confine the release from a safe distance - Keep it from spreading - Protect others from hazardous exposures
Hazardous materials technician	<ul style="list-style-type: none"> • Respond to releases or potential releases, with the intent of stopping the release • Are trained to approach the point of release offensively in order to, either: <ul style="list-style-type: none"> - Plug - Patch - Stop the release using other methods
Hazardous materials specialist	<ul style="list-style-type: none"> • Respond along with, and provide support to, hazardous materials technicians • Are required to have more specific knowledge of hazardous substances than a hazardous materials technician • Act as the site activity liaison when federal, state, local, and other government authorities participate
Incident commander	<ul style="list-style-type: none"> • Have ultimate responsibility for: <ul style="list-style-type: none"> - Direction - Control - Coordination of the response effort - Will assume control of the incident beyond the first responder awareness level
Specialist employee	<ul style="list-style-type: none"> • Are a technical, medical, environmental, or other type of expert • May represent a hazardous substance manufacturer, shipper, or a government agency • May be present at the scene or may assist from an off-site location • Regularly work with specific hazardous substances • Are trained in the hazards of specific substances • Are expected to give technical advice or assistance to the incident commander or incident safety officer, when requested
Skilled support personnel	<ul style="list-style-type: none"> • Are needed to perform an immediate, specific emergency support task at the site • Are skilled in the operation of equipment including: <ul style="list-style-type: none"> - Earth moving equipment - Cranes - Hoisting equipment
Incident safety officer	<ul style="list-style-type: none"> • Are designated by the incident commander

Table 1 Roles and Duties of Emergency Responders	
If the employee's role is:	Then all of the following apply. They:
	<ul style="list-style-type: none"> • Are knowledgeable in operations being implemented at the site • Have specific responsibility to: <ul style="list-style-type: none"> – Identify and evaluate hazards – Provide direction on employee safety matters

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-824-20005, filed 1/24/07, effective 4/1/07; 05-03-093, § 296-824-20005, filed 1/18/05, effective 3/1/05; 02-20-034, § 296-824-20005, filed 9/24/02, effective 10/1/02.]

WAC 296-824-70005 Follow the appropriate post-emergency response requirements.

Important:

- Postemergency response is the stage of the emergency response where the immediate threat from the release has been stabilized or eliminated, and cleanup of the site has started.
- When cleanup is done by the employees who were part of the initial emergency response, the employees are not cov-

ered by this section (however, training, PPE and other requirements in WAC 296-824-20005 through 296-824-60015 apply to these employees).

You must:

- (1) Follow Table 10 to determine which requirements apply to your postemergency response activities.
- (2) Maintain clean-up equipment as specified in Table 10.

Table 10 Rules that Apply to Postemergency Response Activities	
When postemergency response cleanup is performed by employees who were not part of the initial emergency response and:	The following rules or requirements apply:
It is necessary to remove hazardous substances, health hazards and contaminated materials (example: Soil) from the site	Chapter 296-843 WAC, Hazardous waste operations.
Cleanup is done on plant property using plant or workplace employees AND It is not necessary to remove hazardous substances, health hazards and contaminated materials from the site.	For training: <ul style="list-style-type: none"> • WAC 296-24-567(1), Employee emergency action plans • Chapter 296-842 WAC, Respirators • WAC 296-800-170, Employer chemical hazard communication • Other appropriate training requirements relevant to personal protective equipment (PPE) and decontamination For equipment: <ul style="list-style-type: none"> • Make sure that all equipment used for clean-up work is serviced and inspected before use.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-824-70005, filed 1/24/07, effective 4/1/07; 05-03-093, § 296-824-70005, filed 1/18/05, effective 3/1/05; 02-20-034, § 296-824-70005, filed 9/24/02, effective 10/1/02.]

WAC 296-824-800 Definitions. The following definitions are specific to this chapter:

Annually

Any twelve-month cycle.

Buddy system

A system of organizing employees (who enter or stand by danger areas) into work groups, so each employee can be observed by at least one other member of the group. The purpose of this system is to provide rapid assistance to employees in an emergency.

Clean-up operation(s)

An operation where hazardous substances are removed, contained, incinerated, neutralized, stabilized, cleared up or, in any other manner, processed or handled with the goal of making the site safer for people or the environment.

Danger area

Areas where conditions pose a serious danger to employees, such as areas where:

- Immediately dangerous to life or health (IDLH) conditions could exist

OR

- High levels of exposure to toxic substances could exist
- OR**

- There is a potential for exceeding the lower explosive limit (LEL), also known as the lower flammability limit (LFL), of a substance.

Decontamination

Removing hazardous substances from employees and their equipment so potential adverse health effects will not occur.

Emergency response

An organized response to an anticipated release of a hazardous substance that is, or could become an uncontrolled release.

Emergency response plan

A written plan that requires coordination between emergency response participants, and contains procedures, criteria, and other information that will be applied to emergency response operations. Each employer's plan should be compatible with local and state plans.

Engineering controls

Methods of controlling employee exposures by modifying the source or reducing the quantity of contaminants.

Hazardous materials team (HAZMAT team)

A group of employees who are expected to perform responses to releases, or possible releases, of hazardous substances for the purpose of control and stabilization. As a result of their duties, HAZMAT team members may have close contact with hazardous substances.

Note: A HAZMAT team may be a separate component of a fire brigade or fire department.

Hazardous substance

Any of the following substances that could adversely affect an exposed employee's health or safety:

- Substances defined under section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) or "Superfund" Act (visit: <http://www.epa.gov>)

- Biological or other disease-causing agents released that could reasonably be expected to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations in a person or their offspring when the person:
 - Is directly exposed to the agent in the environment
 - Directly ingests, inhales, or assimilates the agent from the environment
 - Indirectly ingests the agent through a food chain

- Substances listed by the United States Department of Transportation as hazardous materials under Title 49 (Transportation) in the Code of Federal Regulations (CFR), Part 172, section 101 and appendices (visit: <http://www.nara.gov> and search for "List of CFR subjects")
- Hazardous wastes as defined in this chapter.

Hazardous waste

A substance designated by chapter 173-303 WAC, Dangerous waste regulations, department of ecology, as a dangerous waste or an extremely hazardous waste and any waste fitting the definition of "health hazard" in this chapter.

Note: For department of ecology regulations, visit: <http://www.ecy.wa.gov>

Health hazard

A chemical, a mixture of chemicals, or a pathogen for which there is statistically significant evidence, based on at least one study conducted according to established scientific principles, that acute or chronic health effects may occur in exposed employees.

The term "health hazard" includes stress due to temperature extremes and chemicals that are:

- Carcinogens
- Toxic or highly toxic agents
- Reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, or neurotoxins
- Agents acting on the hematopoietic system agents that damage lungs, skin, eyes, or mucous membranes. (Detailed definitions of these chemical terms can be found in the Safety and health core rules, WAC 296-800-170, chemical hazard communication.)

Incident command system (ICS)

An organized approach to control and manage operations at an emergency response incident.

Incidental release

A release that can be safely controlled at the time of the release and does not have the potential to become an uncontrolled release.

Note:

Example of a situation that results in an incidental release:

A tanker truck is receiving a load of hazardous liquid when a leak occurs. The driver knows the only hazard from the liquid is minor skin irritation. The employer has trained the driver on procedures and provided equipment to use for a release of this quantity. The driver puts on skin protection and stops the leak. A spill kit is used to contain, absorb, and pick up the spilled material for disposal.

Immediately dangerous to life or health (IDLH)

Any atmospheric condition that would:

- Cause an immediate threat to life

OR

- Cause permanent or delayed adverse health effects

OR

- Interfere with an employee's ability to escape

Limited action

Action necessary to:

- Secure an operation during emergency responses,

OR

- Prevent an incident from increasing in severity.

Examples include shutting down processes and closing emergency valves.

Lines of authority

A preestablished ranking of individuals, qualified to assume a commanding role during an emergency response, noted in an emergency response plan and implemented during a response. This is most important when responders from multiple employers could participate in an emergency response.

Lower explosive limit (LEL)

See lower flammable limit (LFL).

Lower Flammable limit (LFL)

The lowest concentration of a material that will propagate a flame. The LFL is usually expressed as a percent (by volume) of the material in air (or other oxidant).

Must

Must means mandatory.

Permissible exposure limit (PEL)

Means the established time-weighted-average (TWA) concentration or ceiling concentration of a contaminant that must not be exceeded. The exposure, inhalation, or dermal permissible limit specified in chapter 296-841 WAC, Airborne contaminants.

Personal protective equipment (PPE)

Protective items designed to be worn by the user to protect them against airborne, skin contact and other hazards. This includes items such as respiratory protection, protective suits, gloves, eye protection, etc.

Postemergency response

The stage of the emergency response where the immediate threat from the release has been stabilized or eliminated, and cleanup of the site has started.

Published exposure level

Exposure limits published in "*National Institute for Occupational Safety and Health (NIOSH) Recommendations for Occupational Safety and Health*" (DHHS publication #92-100, 1992).

If an exposure limit is not published by NIOSH, then "published exposure level" means the exposure limits published by the American Conference of Governmental Industrial Hygienists (ACGIH) in "*TLVs and BEIs-Threshold Limit Values for Chemical Substances and Physical Agents*" (1999 edition).

Note: Additional exposure levels published by recognized organizations such as the American Industrial Hygiene Association are not required to be observed by this rule; however, they may be a useful resource when a hazardous substance is not covered by NIOSH and ACGIH publications.

Release

A spill, leak, or other type of hazardous substance discharge.

Uncontrolled release

A release where significant safety and health risks could be created. Releases of hazardous substances that are either incidental or could not create a safety or health hazard (i.e., fire, explosion or chemical exposure) are not considered to be uncontrolled releases.

Examples of conditions that could create a significant safety and health risk:

- Large-quantity releases
- Small releases that could be highly toxic
- Potentially contaminated individuals arriving at hospitals
- Airborne exposures that could exceed a WISHA permissible exposure limit or a published exposure limit and employees are not adequately trained or equipped to control the release.

Example of an uncontrolled release:

A forklift driver knocks over a container of a solvent-based liquid, releasing the contents onto the warehouse floor. The driver has been trained to recognize the vapor is flammable and moderately toxic when inhaled. The driver has not been trained or provided appropriate equipment to address this type of spill. In this situation, it is not safe for the driver to attempt a response. The driver needs to notify someone of the release so an emergency response can be initiated.

Workplace

- A fixed facility
- OR**
- A temporary location (such as a traffic corridor)
- OR**
- Locations where employees respond to emergencies.

You

The employer. For a complete definition of "employer" see Safety and health core rules, chapter 296-800 WAC.

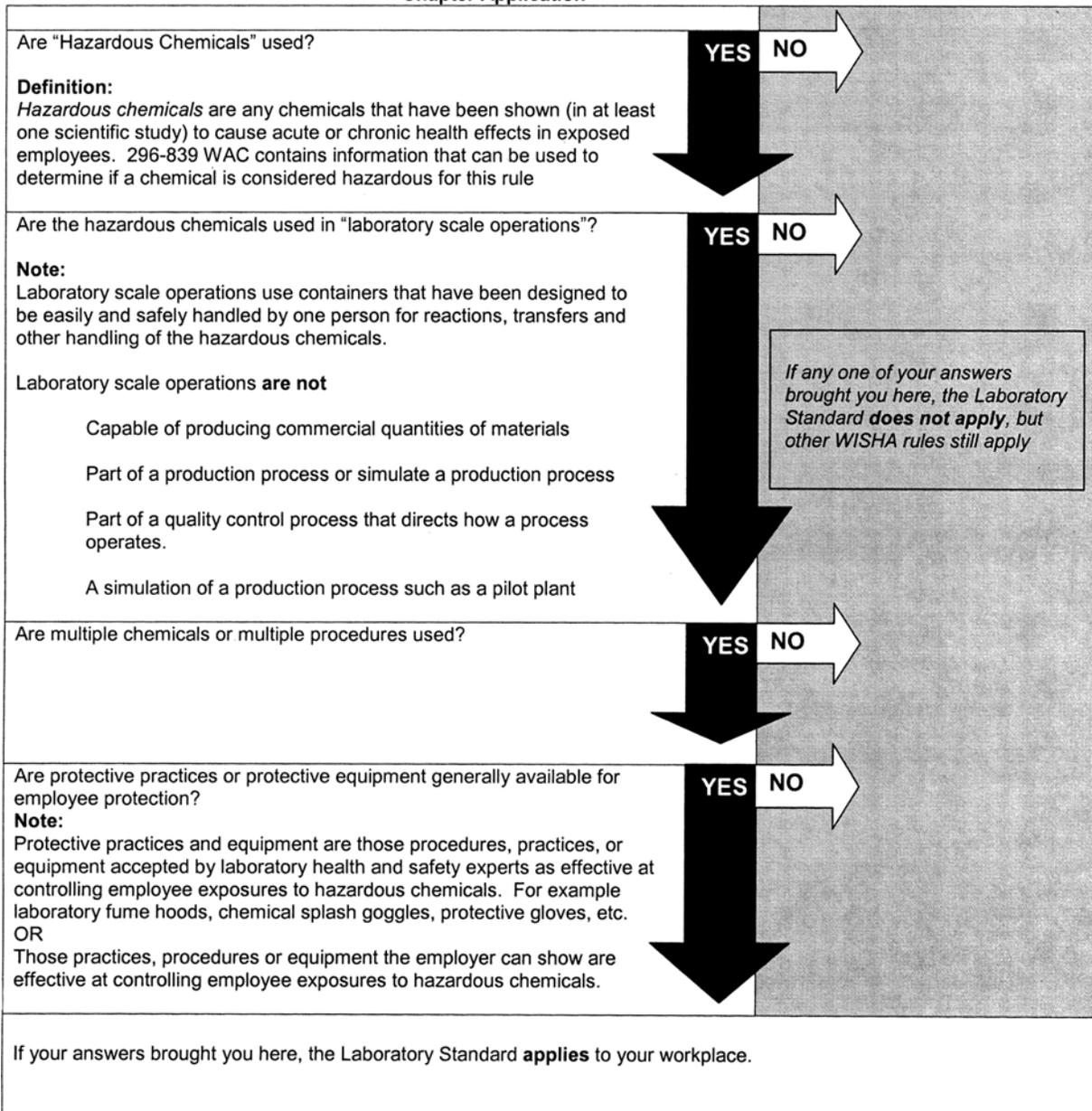
[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-062, § 296-824-800, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-824-800, filed 1/18/05, effective 3/1/05; 02-20-034, § 296-824-800, filed 9/24/02, effective 10/1/02.]

Chapter 296-828 WAC**HAZARDOUS CHEMICALS IN LABORATORIES****WAC**

296-828-100	Scope.
296-828-20005	Chemical hygiene plan.
296-828-20010	Exposure evaluation.
296-828-20015	Training.
296-828-20030	Medical evaluations.
296-828-300	Definitions.

WAC 296-828-100 Scope. This chapter applies to the laboratory use of hazardous chemicals. To determine if this chapter applies to your workplace, use Table 1.

Table 1
Chapter Application



IMPORTANT:

- When your laboratory operation is covered by this chapter, and you use any of the substances in Table 2, the following applies:
 - The exposure limits and any requirement protecting employees from skin and eye contact in the rules listed in Table 2 will still apply.
 - Where the action level (or where no action level exists, the permissible exposure limit) is exceeded for a substance listed in Table 2, the exposure evaluation and medical surveillance requirements in the substance rule will still apply.
 - You are not required to meet other requirements of the substance rule.

- To get the permissible exposure limits (PELs) for hazardous chemicals used in your laboratory, see chapter 296-841 WAC, Airborne contaminants.

Table 2
WISHA Regulated Hazardous Chemicals

<p>Acrylonitrile</p> <p>Arsenic (inorganic)</p> <p>Asbestos</p> <p>Benzene</p> <p>Butadiene</p> <p>Cadmium</p> <p>Coke ovens</p> <p>Cotton dust</p> <p>1, 2-Dibromo-3-chloropropane</p>

Table 2
WISHA Regulated Hazardous Chemicals

Ethylene oxide
Formaldehyde
Lead
Methylene chloride
Methylenedianiline
Vinyl chloride
Ionizing radiation
4-Nitrobiphenyl
Alpha-Naphthylamine
4,4' Methylene bis (2 - chloroaniline)
Methyl chloromethyl ether
3,3'-Dichlorobenzidine (and its salts)
Bis-Chloromethyl ether
Beta-Naphthylamine benzidine
4-Aminodiphenyl
Ethyleneimine
Beta-Propiolactone
2-Acetylaminofluorene
4-Dimethylaminoazobenzene
N-Nitrosodimethylamine

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-828-100, filed 2/20/07, effective 4/1/07; 06-02-060, § 296-828-100, filed 1/3/06, effective 4/1/06.]

WAC 296-828-20005 Chemical hygiene plan.

You must:

- Develop and carry out a written chemical hygiene plan (CHP) that will protect your employees from hazardous substances in the laboratory and keep exposure levels below those listed in chapter 296-841 WAC, Airborne contaminants.
 - Make sure the written plan is readily available to employees and their representatives.
 - Include the following elements in your written CHP:
 - The names or job titles of the chemical hygiene officer, other personnel responsible for implementing the CHP, or when appropriate, the members of a chemical hygiene committee.
 - Standard operating procedures that provide employee protection when working with hazardous substances.
 - Criteria for how you will select and use control measures to reduce employee exposures to hazardous chemicals, especially chemicals known to be extremely hazardous.
 - Additional employee protection for select carcinogens, reproductive toxins, and chemicals with high degree of acute toxicity. The following will be considered, when appropriate:
 - The establishment of exposure control areas.
 - Containment devices, such as fume hoods or glove boxes.
 - The safe removal of contaminated waste.
 - Procedures for decontamination.
 - Specific measures to make sure fume hoods and other protective equipment provide proper and adequate performance and are properly functioning.
 - The circumstances when specific laboratory operation, activity, or procedure requires prior approval from the employer or their designated representative before implementation.

- A description of how you are going to train and inform your employees about laboratory use of hazardous chemicals.
- A description of your provisions for medical consultations and medical examinations.
 - Review and evaluate the effectiveness of your written CHP at least annually and update as necessary.

Reference: This publication can provide you with additional information to help you with your written chemical hygiene plan:
National Research Council, Prudent Practices for Disposal of Chemicals from Laboratories, National Academy Press, Washington, DC, 1995.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-828-20005, filed 2/20/07, effective 4/1/07; 06-02-060, § 296-828-20005, filed 1/3/06, effective 4/1/06.]

WAC 296-828-20010 Exposure evaluation.

IMPORTANT:

For any of the specific substances listed in Table 2 of the scope of this chapter, you need to follow the exposure evaluation procedures found in the chapters regulating those substances if employee exposure routinely exceeds the AL or PEL. For all other employee exposures follow this section to determine exposure evaluation procedures.

You must:

- Determine if you could have a respiratory hazard as described in chapter 296-841 WAC, Respiratory hazards.

Reference: For additional requirements relating to respiratory hazards, see:
– Chapter 296-841 WAC, Respiratory hazards.
– Chapter 296-842 WAC, Respirators.
– The specific rule for your chemical.

You must:

- Provide written notification of exposure monitoring results to employees represented by your exposure evaluation, within five business days after the results become known to you.

Note:

- You can notify employees either individually or by posting the notification in areas readily accessible to all affected employees.
- Posted notifications may need information that allows affected employees to determine which monitoring results apply to them.
- Notification may be:
 - In any written form, such as hand-written or e-mail.
 - Limited to the required information, such as exposure monitoring results.

Reference: For additional requirements relating to employee exposure records, go to chapter 296-802 WAC, Employee medical and exposure records.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-828-20010, filed 1/24/07, effective 4/1/07; 06-02-060, § 296-828-20010, filed 1/3/06, effective 4/1/06.]

WAC 296-828-20015 Training.

You must:

- Inform employees about the presence of hazardous chemicals at the following times:
 - At the time of initial assignment to a work area where hazardous chemicals are present.
 - Prior to situations involving a new exposure to hazardous chemicals.
 - Train employees on all of the following:
 - Methods and observations for detecting the presence or release of hazardous substances. 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.
 - The physical and health hazards of chemicals in the work area.
 - The procedures and measures employees can use to protect themselves from hazardous substances. Examples of these include:
 - Appropriate work practices.
 - Emergency procedures.
 - Personal protective equipment.
 - Provide refresher training to fit your needs.
 - Provide information to employees on all of the following:
 - The contents of this chapter and where to find a copy.
 - Permissible exposure limits found in chapter 296-841 WAC, Respiratory hazards.
 - Any recommended exposure levels for compounds without an exposure limit in the WISHA rules. Examples include:
 - The PELs found in the National Institute for Occupational Safety and Health (NIOSH) NIOSH Pocket Guide to Chemical Hazards 2004; or
 - The American Conference of Governmental Industrial Hygienists (ACGIH®) Documentation of the Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs), 7th Ed.
 - Signs and symptoms associated with exposures to hazardous chemicals used in the laboratory.
 - Where to find a copy of:
 - Your chemical hygiene plan.
 - Material safety data sheets (MSDSs), including those received from the chemical suppliers.
 - Reference material on the hazards, safe handling, storage, and disposal of hazardous chemicals found in the laboratory.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-828-20015, filed 1/24/07, effective 4/1/07; 06-02-060, § 296-828-20015, filed 1/3/06, effective 4/1/06.]

WAC 296-828-20030 Medical evaluations.

IMPORTANT:

For any of the specific substances listed in Table 2 of the scope of this chapter, you need to follow the medical evaluation procedures found in the chapters regulating those substances if employee exposure routinely exceeds the AL or PEL. For all other employee exposures follow this section to determine medical evaluation procedures.

You must:

- (1) Make medical evaluations available when:
 - An employee develops signs or symptoms associated with a hazardous substance from laboratory exposure.
 - Any emergency situation that could cause a hazardous exposure, such as a spill, leak, or explosion, occurs.
 - A medical provider recommends a follow-up evaluation.
 - Exposure monitoring for any of the substances found in Table 2 reveals exposures routinely over the action level (AL) or in the absence of an AL the permissible exposure level (PEL).

(2) Make sure medical evaluations are provided at reasonable times and places, and at no cost to employees.

Note: This includes travel costs and wages associated with any time spent obtaining the medical evaluation.

You must:

- Provide the LHCP the following information before the medical evaluation is performed:
 - The name of the hazardous chemicals the employee may have been exposed to.
 - Any signs or symptoms of exposure the employee has.
 - A description of the conditions under which the exposure occurred.
 - The exposure monitoring results for the conditions, if available.
 - Obtain the LHCP's written opinion for each medical evaluation that includes the following:
 - Recommendations for medical follow-up.
 - Any medical conditions found that would increase the employee's risk for impairment from exposure to a hazardous chemical.
 - A statement that the employee has been informed of exposure-related medical results and conditions that require further examination or treatment.
 - A written opinion that does not contain any medical information unrelated to the employee's occupational exposures.
 - If the written opinion contains any medical information unrelated to occupational exposures, return it to the LHCP and obtain a revised version without the additional medical information.

Reference: • For additional requirements relating to employee medical records, go to chapter 296-802 WAC, Employee medical and exposure records.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-828-20030, filed 1/24/07, effective 4/1/07; 06-02-060, § 296-828-20030, filed 1/3/06, effective 4/1/06.]

WAC 296-828-300 Definitions.

Action level

An airborne concentration of a hazardous substance that is calculated as an 8-hour time-weighted average, and initiates certain requirements to be followed such as exposure monitoring or medical surveillance.

Carcinogens see "select carcinogen"

Chemical hygiene officer

An employee designated by the employer who is qualified by training or experience to provide technical guidance in the development and implementation of the chemical hygiene plan. This definition is not intended to place limitations on the designated employee's position description or job classification within the employer's organization.

Chemical hygiene plan

A written program developed and implemented by the employer that establishes procedures, equipment, personal protective equipment, and work practices to protect employees from the health hazards of the chemicals used in the laboratory.

Container

Any container, except for pipes or piping systems that contains a hazardous substance. For example it can be any of the following:

- Barrel.
- Bottle.
- Can.
- Cylinder.
- Drum.
- Reaction vessel.
- Storage tank.

Day

Any part of a calendar day.

Designated representative

Any one of the following:

- 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.

Emergency

Any event that could or does result in the unexpected, significant release of a hazardous substance. Examples of emergencies include equipment failure, container rupture, or control equipment failure.

Exposure

The contact an employee has with a hazardous substance, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry such as inhalation, ingestion, skin contact, or skin absorption.

Hazardous chemical

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.

Laboratory

A facility where the "laboratory use of hazardous substances" takes place. A workplace where relatively small amounts of hazardous substances are used on a nonproduction basis.

Laboratory-type hood

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 substances.

Laboratory scale

Work with substances in which the containers used for reactions, transfers and other handling of the substances are designed to be easily and safely manipulated by one person.

"Laboratory scale" **does not** include workplaces producing commercial quantities of materials.

Laboratory use

The handling or use of hazardous substances that includes **all** the following:

- Chemical manipulations conducted on a "laboratory scale."
- Multiple chemical procedures or chemicals are used.
- The procedures are not part of a production process, nor in any way simulate a production process.

– "Protective laboratory practices and equipment" are available and are commonly used to minimize the potential for employee exposures to hazardous substances.

Licensed healthcare professional (LHCP)

An individual whose legally permitted scope of practice allows him or her to provide some or all of the healthcare services required for medical evaluations.

Material safety data sheet (MSDS)

Written, printed, or electronic information (on paper, microfiche, or on-screen) that informs manufacturers, distributors, employers or employees about a hazardous substance, its hazards, and protective measures as required by material safety data sheet and label preparation, chapter 296-839 WAC.

Permissible exposure limits (PELs)

PELs are employee exposures to toxic substances or harmful physical agents that must not be exceeded. PELs are also specified in WISHA rules found in other chapters.

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.

Protective laboratory practices and equipment

Laboratory procedures, practices, and equipment accepted by laboratory health and safety experts as effective, that can be shown to be effective, in minimizing the potential for employee exposure to hazardous substances.

Reproductive toxin

Chemicals that affect reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

Select carcinogen

Any substance meeting one of the following criteria:

- Regulated by WISHA as a carcinogen.
- Listed in the "known to be carcinogens" category in the latest edition of the Annual Report on Carcinogens by the National Toxicity Program (NTP).
- Listed in Group I (carcinogenic to humans) in the latest editions of the International Agency for Research on Cancer (IARC) Monographs.
- Listed in either group 2A or 2B by IARC **or** in the category "reasonably anticipated to be carcinogens" by the NTP,

and causes statistically significant tumor incidence in experimental animals in accordance with any of the following criteria:

- After an inhalation exposure of six to seven hours a day; five days a week; for a significant portion of a lifetime to dosages of less than 10 mg/m³; **or**
- After repeated skin application of less than 300 mg/kg of body weight per week; **or**
- After oral dosages of less than 50 mg/kg of body weight per day.

Time-weighted average (TWA₈)

An exposure limit averaged over an 8-hour period that must not be exceeded during an employee's workday.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-828-300, filed 1/24/07, effective 4/1/07; 06-02-060, § 296-828-300, filed 1/3/06, effective 4/1/06.]

**Chapter 296-835 WAC
DIPPING AND COATING OPERATIONS (DIP TANKS)**

WAC	
296-835-11035	Prepare dip tanks before cleaning.
296-835-12015	Provide bottom drains.
296-835-12025	Provide additional fire protection for large dip tanks.

WAC 296-835-11035 Prepare dip tanks before cleaning.

You must:

- (1) Drain the contents of the tank and open any cleanout doors.
- (2) Ventilate the tank to clear any accumulated hazardous vapors.

Reference: There may be requirements that apply before an employee enters a dip tank. See chapter 296-809 WAC, Confined spaces.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-835-11035, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-15-102, § 296-835-11035, filed 7/17/02, effective 10/1/02.]

WAC 296-835-12015 Provide bottom drains.

Exemption: A bottom drain is not required if:

- The viscosity of the liquid makes it impractical to empty the tank by gravity or pumping

OR

- The dip tank has an automatic closing cover that meets the requirements of WAC 296-835-12025.

You must:

- Provide a bottom drain on all dip tanks that hold more than five hundred gallons of liquid.
- Make sure the bottom drain:
 - Is properly trapped
 - Will empty the dip tank during a fire
 - Has pipes large enough to empty the tank within five minutes
 - Uses automatic pumps if gravity draining is not practical
 - Is capable of both manual and automatic operation
 - Discharges to a safe location.

Note: Discharges to a safe location could be a:
– Safe location outside the building

OR

- Closed, properly vented salvage tank or tanks that can hold more than the dip tank.

You must:

- Make sure manual operation of the bottom drain is performed from a safe and easily accessible location.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-835-12015, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-15-102, § 296-835-12015, filed 7/17/02, effective 10/1/02.]

WAC 296-835-12025 Provide additional fire protection for large dip tanks.

You must:

- Provide at least one automatic fire extinguishing system or an automatic dip tank cover if the tank:
 - Holds one hundred fifty gallons or more of liquid
- OR**
- Has four square feet or more of liquid surface area.
- Make sure automatic fire extinguishing systems or automatic dip tank covers meet the requirements of Table 1.

Exemption: An automatic fire extinguishing system or an automatic dip tank cover is **not** required for a hardening or tempering tank that:

- Holds less than five hundred gallons
- OR**
- Has less than twenty-five square feet of liquid surface area.

Table 1: Automatic Fire Protection System Requirements

IF YOU PROVIDE:	THEN YOU MUST:
An automatic fire extinguishing system	<ul style="list-style-type: none"> • Use extinguishing materials suitable for a fire fueled by the liquid in the tank • Make sure the system protects the: <ul style="list-style-type: none"> – Tanks – Drain boards – Stock over drain boards.
A dip tank cover	<ul style="list-style-type: none"> • Make sure the cover is: <ul style="list-style-type: none"> – Closed by approved automatic devices in the event of fire – Able to be manually activated – Kept closed when the tank is not being used – Made of noncombustible material or tin-clad material with locked metal joints.

Reference: Automatic fire extinguishing systems have specific requirements. See:

- WAC 296-24-622 for automatic dry chemical extinguishing system requirements
- WAC 296-24-623 for automatic carbon dioxide extinguishing system requirements
- WAC 296-24-627 for automatic water spray extinguishing system and automatic foam extinguishing system requirements.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-835-12025, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-15-102, § 296-835-12025, filed 7/17/02, effective 10/1/02.]

Chapter 296-839 WAC

CONTENT AND DISTRIBUTION OF MATERIAL SAFETY DATA SHEETS (MSDSs) AND LABEL INFORMATION

WAC

296-839-30005 Develop or obtain material safety data sheets (MSDSs).

WAC 296-839-30005 Develop or obtain material safety data sheets (MSDSs).

You must:

- Develop or obtain a complete and accurate material safety data sheet (MSDS) for each hazardous chemical or mixture according to **ALL** of the following:

- **ALL** information in Table 8 must be completed. If there is no relevant information for a required item, this must be noted. Blank spaces are not permitted.

- Note:**
- No specific format is required for MSDSs; however, an example format (OSHA form 174) can be found online at: <http://www.osha.gov>
 - One MSDS can be developed for a group of complex mixtures (for example, jet fuels or crude oil) **IF** the health and physical hazards of the mixtures are similar (the amounts of chemicals in the mixture may vary).

- Content of MSDSs must accurately represent the available scientific evidence.

Note: You may report results of scientifically valid studies that tend to refute findings of hazards.

- MSDSs must be in English.

Note: You may develop copies of MSDSs in other languages.

You must:

- Revise an MSDS when you become aware of new and significant information regarding the hazards of a chemical, or how to protect against the hazards

- Within three months after you first become aware of the information

OR

- Before the chemical is reintroduced into the workplace if the chemical is no longer being used, produced or imported.

Table 8 Information Required on MSDSs
• The chemical's identity as it appears on the label
• The date the MSDS was prepared or updated
• A contact for additional information about the hazardous chemical and appropriate emergency procedures Include all of the following: <ul style="list-style-type: none"> – Name – Address – Telephone number of the responsible party preparing or distributing the MSDS

Table 8 Information Required on MSDSs
<ul style="list-style-type: none"> • The chemical's hazardous ingredients¹ as determined by your hazard evaluation <ul style="list-style-type: none"> – For a single substance chemical, include the chemical and common name(s) of the substance – For mixtures tested as a whole <ul style="list-style-type: none"> ■ Include the common name(s) of the mixture AND <ul style="list-style-type: none"> ■ List the chemical and common name(s) of ingredients that contribute to the known hazards – For mixtures NOT tested as a whole, list the chemical and common name(s) of hazardous ingredients <ul style="list-style-type: none"> ■ That make up 1% or more of the mixture, by weight or volume, including carcinogens (if 0.1% concentration or more, by weight or volume) – If ingredients are less than the above concentrations but may present a health risk to employees (for example, allergic reaction or exposure could exceed the permissible exposure limits, or PEL) they must be listed here
<ul style="list-style-type: none"> • Exposure limits for airborne concentrations. Include ALL of the following, when they exist: <ul style="list-style-type: none"> – WISHA or OSHA PELs² <ul style="list-style-type: none"> ■ The 8-hour time weighted average (TWA) ■ The short-term exposure limit (STEL), if available ■ Ceiling values, if available – Threshold limit values (TLVs) including 8-hour TWAs, STELs, and ceiling values – Other exposure limits used or recommended by the employer preparing the MSDS
<ul style="list-style-type: none"> • Physical and chemical characteristics <ul style="list-style-type: none"> – For example, boiling point, vapor pressure, and odor
<ul style="list-style-type: none"> • Fire, explosion data, and related information <ul style="list-style-type: none"> – For example, flashpoint, flammable and explosion limits, extinguishing media, and unusual fire or explosion hazards
<ul style="list-style-type: none"> • Physical hazards of the chemical including reactivity information <ul style="list-style-type: none"> – For example, incompatibilities, decomposition products, by-products, and conditions to avoid
<ul style="list-style-type: none"> • Health hazard information including ALL of the following: <ul style="list-style-type: none"> – Primary routes of exposure <ul style="list-style-type: none"> ■ For example, inhalation, ingestion, and skin absorption or other contact³ – Health effects (or hazards) associated with: <ul style="list-style-type: none"> ■ Short-term exposure⁴ AND <ul style="list-style-type: none"> ■ Long-term exposure⁴ – Whether the chemical is listed or described as a carcinogen or potential carcinogen in the latest editions of each of the following: <ul style="list-style-type: none"> ■ The National Toxicology Program (NTP) Annual Report on Carcinogens OR <ul style="list-style-type: none"> ■ The International Agency for Research on Cancer (IARC) Monographs as a potential carcinogen OR <ul style="list-style-type: none"> ■ WISHA or OSHA rules – Signs and symptoms of exposure⁵ – Medical conditions generally recognized as being aggravated by exposure
<ul style="list-style-type: none"> • Emergency and first-aid procedures
<ul style="list-style-type: none"> • Generally applicable precautions for safe handling and use known to the employer preparing the MSDS <ul style="list-style-type: none"> – For example, appropriate procedures for clean-up of spills and leaks, waste disposal method, precautions during handling and storing
<ul style="list-style-type: none"> • Generally applicable and appropriate control measures known to the employer preparing the MSDS, including ALL of the following: <ul style="list-style-type: none"> – Engineering controls (for example, general or local exhaust ventilation) – Work practices – Personal protective equipment (PPE) – Personal hygiene practices – Protective measures during repair and maintenance of contaminated equipment

¹The identities of some chemicals may be protected as trade secret information (see chapter 296-62 WAC, Part B-1, Trade secrets).

² WISHA PEL categories are defined, and values are provided, in chapter 296-841 WAC, Airborne contaminants.

³ A "skin notation" listed with either an ACGIH TLV or WISHA/OSHA PEL indicates that skin absorption is a primary route of exposure.

⁴Examples of:

- Short-term health effects (or hazards) include eye irritation, skin damage caused by contact with corrosives, narcosis, sensitization, and lethal dose.

- Long-term health effects (or hazards) include cancer, liver degeneration, and silicosis.

⁵Signs and symptoms of exposure to hazardous substances include those that:

- Can be measured such as decreased pulmonary function

AND

- Are subjective such as feeling short of breath.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-839-30005, filed 2/20/07, effective 4/1/07; 05-03-093, § 296-839-30005, filed 1/18/05, effective 3/1/05; 03-01-096, § 296-839-30005, filed 12/17/02, effective 6/1/03.]

Chapter 296-841 WAC AIRBORNE CONTAMINANTS

WAC

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WAC 296-841-100 Scope. This chapter applies when your employees are, or could be, exposed to an airborne hazard.

- The following are examples of airborne contaminants that may become airborne hazards in some workplaces:

- Chemicals listed in Table 3, Permissible Exposure Limits (PELs) for Airborne Contaminants

- Any substance:

- Listed in the latest edition of the NIOSH Registry of Toxic Effects of Chemical Substances

- For which positive evidence of an acute or chronic health hazard exists through tests conducted by, or known to, the employer

- That may pose a hazard to human health as stated on a material safety data sheet (MSDS) kept by, or known to, the employer

- Biological agents such as harmful bacteria, viruses or fungi

- Examples include TB aerosols and anthrax

- Pesticides

- Chemicals used as crowd control agents, such as pepper spray

- Chemicals present at clandestine drug labs.

- Airborne contaminants exist in a variety of physical forms such as dusts, fibers, fogs, fumes, mists, gases, smoke, sprays, vapors, or aerosols.

Definition:

Exposed or exposure:

The contact an employee has with a toxic substance, harmful physical agent or oxygen-deficient condition, whether or not protection is provided by respirators or other

personal protective equipment (PPE). Exposure can occur through various routes of entry, such as inhalation, ingestion, skin contact, or skin absorption.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-841-100, filed 2/20/07, effective 4/1/07; 06-08-087, § 296-841-100, filed 4/4/06, effective 9/1/06; 05-17-168, § 296-841-100, filed 8/23/05, effective 1/1/06; 04-18-079, § 296-841-100, filed 8/31/04, effective 11/1/04; 03-20-115, § 296-841-100, filed 10/1/03, effective 1/1/04.]

WAC 296-841-200 Evaluate and control employee exposures.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-841-200, filed 2/20/07, effective 4/1/07; 03-20-115, § 296-841-200, filed 10/1/03, effective 1/1/04.]

WAC 296-841-20003 Employee protective measures. Protect employees from potentially hazardous exposure while you perform your exposure evaluation, using all available resources to determine adequate protective measures.

Note: • Resources include product labels, material safety data sheets (MSDSs), manufacturer recommendations, and industry protocols.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-841-20003, filed 2/20/07, effective 4/1/07.]

WAC 296-841-20005 Exposure evaluations. (1) Conduct an exposure evaluation to determine or reasonably estimate whether an employee is or could be exposed to either of the following:

- An airborne contaminant above a permissible exposure limit (PEL) listed in Table 3;

OR

- Other airborne hazards, such as biological hazards.

Note: • When evaluating air contaminants, keep in mind that oxygen deficient conditions may also occur due to:

- Processes such as fermentation, decomposition of organic matter, or combustion of fossil fuels
- Displacement by another gas such as nitrogen or carbon dioxide
- Rules for specific substances may contain additional requirements for determining employee exposure
- Samples from a representative group of employees may be used for other employees performing the same work activities, when the duration and level of exposure are similar.

(2) Conclude that an atmosphere is immediately dangerous to life or health (IDLH) when you cannot determine or reasonably estimate employee exposure.

(3) Do all the following when you perform your evaluation:

(a) Determine the form of the airborne contaminant, such as dust, mist, gas, or biological agent.

(b) Make sure you don't use the amount of protection provided to employees by respirators as a factor in determining whether employees are exposed to an airborne hazard.

(c) Make sure any air monitoring results used to determine employee exposures are based on personal air samples taken from, or representative of, the employee's breathing zone.

- You may use area sampling to screen for the presence of an airborne contaminant; however, results from area sampling can't be used if they don't adequately represent exposure of affected employees.

(d) Include potential emergency and rescue situations that may occur, such as equipment or power failures, uncontrolled chemical reactions, fire, explosion, or human error.

(e) Include workplace conditions such as work processes, types of material, exposure control methods, work practices, and environmental conditions.

(f) Address extended work periods. For work shifts longer than eight hours, evaluate the continuous eight-hour portion of the shift expected to have the highest average exposure concentration.

(4) Use either of the following types of documentation to conclusively demonstrate that employee exposure cannot meet or exceed any PEL for the airborne contaminant during any reasonably anticipated conditions:

– Personal air samples that represent an employee's usual or worst-case exposure during the entire shift.

OR

– Specific information about products, materials, or activities that provides for an estimate of the level of employee exposure such as material safety data sheets (MSDSs), observations, previous air sampling results, other measurements, calculations, or pesticide labels.

Note: • You should use methods of sampling and analysis that have been validated by the laboratory performing the analysis.

(5) Use the following formula to evaluate employee exposure to two or more substances that have additive health effects:

$$E_m = \frac{C_1}{L_1} + \frac{C_2}{L_2} + \dots + \frac{C_n}{L_n}$$

The symbol	Is the . . .
E	Equivalent exposure for the mixture. When the value of E is greater than 1, an airborne hazard is present.
C	Concentration of a specific airborne contaminant.
L	TWA ₈ , STEL, or ceiling limit for that airborne contaminant, from Table 3, Permissible Exposure Limits (PELs) for Airborne Contaminants.

Note: • When results from your exposure evaluation indicate an airborne hazard, follow requirements in WAC 296-841-20010 through 296-841-20020 of this chapter.
 • When changes occur that increase the level of exposure to an airborne hazard, you may need to conduct a new exposure evaluation to make sure exposure controls and other protective measures are sufficient.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-841-20005, filed 2/20/07, effective 4/1/07; 04-18-079, § 296-841-20005, filed 8/31/04, effective 11/1/04; 03-20-115, § 296-841-20005, filed 10/1/03, effective 1/1/04.]

WAC 296-841-20010 Exposure controls.

IMPORTANT:

• Respirators and other personal protective equipment are **not** exposure controls. Respirators may be used to protect employees while exposure controls are being installed or when it's not feasible to use exposure controls to remove or reduce the airborne hazard.

(1) Use feasible exposure controls to reduce employee exposure to one of the following:

– A level below the permissible exposure limits (PEL) in Table 3

– A level that removes the airborne hazard, when no PEL is established

– The lowest achievable level, when exposure cannot be reduced to below the PEL or the airborne hazard can't be removed.

(2) Make sure exposure controls don't create or increase employee health hazards. For example, when ventilation systems are installed:

– Prevent contaminated exhaust air from either:

■ Reentering the building in harmful amounts

or

■ Exposing any employee to a health hazard.

– Temper make-up air, when necessary

– Prevent employee exposure to excessive air velocities.

(3) Use make-up air systems that will not interfere with the effectiveness of the exhaust air system.

– For example, make sure enough make-up air is provided to replace the amount of air exhausted.

Note: • Table 1 provides examples of possible exposure controls.

Table 1
Examples of Possible Controls

Preferred exposure controls include:	For example:
Using a different chemical (this is also known as substitution)	<ul style="list-style-type: none"> • Choose a chemical with a lower evaporation rate or vapor pressure • Choose a chemical that's not hazardous
Changing a process to decrease emissions	<ul style="list-style-type: none"> • Use hand rolling or paint dipping instead of paint spraying • Bolt items instead of welding them
Separating employees from emissions areas and sources	<ul style="list-style-type: none"> • Use control rooms • Build an enclosure around process machinery or other emissions sources • Automate a process
Using local exhaust ventilation to remove emissions at or near the source	<ul style="list-style-type: none"> • Install exhaust hoods or slots to capture emissions • Use an exhausted enclosure (like a blasting cabinet or laboratory hood)
Other exposure controls include:	For example:
Using general exhaust ventilation to dilute and remove emissions in the work area	<ul style="list-style-type: none"> • Allow natural air movement to create an adequate airflow through an area • Use mechanical fans
Note: This isn't recommended for control of highly toxic airborne contaminants such as carcinogens, where low exposures can still present a health hazard	

Modifying work practices	<ul style="list-style-type: none"> • Change the position of the employee relative to the work so fumes, vapors, or smoke aren't directed into the employee's face
Limiting the amount of time employees can spend in a contaminated area.	<ul style="list-style-type: none"> • Establish a contaminant-free area for tasks such as prep work that don't need to be done in the exposure area
Implementing an employee rotation schedule	Have employees alternate working in the exposure area so that each employee gets less overall exposure
<p>Note: This control will increase the number of employees exposed to the airborne contaminant. Due to this risk, employee rotation is NOT recommended for highly toxic airborne contaminants such as carcinogens, where low exposures can still present a health hazard.</p>	

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-841-20010, filed 2/20/07, effective 4/1/07; 04-18-079, § 296-841-20010, filed 8/31/04, effective 11/1/04; 03-20-115, § 296-841-20010, filed 10/1/03, effective 1/1/04.]

WAC 296-841-20015 Respirators. Require employees to use respirators when airborne hazards have not been removed using feasible exposure controls. For example, use respirators at any of the following times:

- While exposure controls are being evaluated or put in place
- When the airborne hazard is not completely removed
- When exposure controls are **NOT** feasible.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-841-20015, filed 2/20/07, effective 4/1/07; 03-20-115, § 296-841-20015, filed 10/1/03, effective 1/1/04.]

WAC 296-841-20020 Notification. Notify employees who are or may be exposed to airborne hazards, as specified in Table 2.

Note: • The notification may be provided either individually, to a group, or by posting of results in an appropriate location that is accessible to affected employees.

**Table 2
Notification Requirements**

Notify employees of:	As follows:
Any exposure result above a permissible exposure limit (PEL)	Within five business days, after the employee's exposure result is known to the employer
The corrective action being taken to reduce employee exposure to or below the PEL AND	Within fifteen business days, after the employee's exposure result is known to the employer

Notify employees of:	As follows:
The schedule for completion of the corrective action and any reasons why exposures cannot be lowered to below the PEL	

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-841-20020, filed 2/20/07, effective 4/1/07; 04-18-079, § 296-841-20020, filed 8/31/04, effective 11/1/04; 03-20-115, § 296-841-20020, filed 10/1/03, effective 1/1/04.]

WAC 296-841-20025 Permissible exposure limits (PELs).

IMPORTANT:

The following information applies to Table 3, Permissible Exposure Limits (PELs) for Airborne Contaminants.

- Ppm refers to parts of vapor or gas per million parts of air by volume, at 25 degrees C and 760 mm Hg pressure.
- Mg/m³ refers to milligrams of an airborne contaminant per cubic meter of air.
- F/cc refers to fibers per cubic centimeter of air.
- For a metal that is measured as the metal itself, only the CAS number for the metal is given. The CAS numbers for individual compounds of the metal are not provided. For more information about CAS registry numbers see the web site: <http://www.cas.org>.

- Short-term exposure limits (STEL) pertain to fifteen-minute exposure periods, unless another time period is noted in Table 3.

- An "X" in the "skin" column indicates the contaminant can be absorbed through the skin, either by airborne or direct contact.

- Personal protective equipment (PPE) to prevent skin contact may be needed to minimize the risk for adverse health effects when employees are exposed to these chemicals.

- Requirements for the use of gloves, coveralls, goggles, and other personal protective equipment can be found in WAC 296-800-160, Personal protective equipment (PPE).

- Nuisance dusts (also known as inert dusts) are included in the Table 3 listing, particulates not otherwise regulated (PNOR).

- The PNOR listing in Table 3 also applies to other particulate airborne contaminants for which a specific PEL is NOT listed **unless** the airborne contaminant is found to require a lower limit.

- The respirable fraction of a particulate airborne contaminant is measured by sampling with a size-selector having the following characteristics:

Mean aerodynamic diameter in micrometers	Percent passing the selector
1	97
2	91
3	74
4	50
5	30
6	17
7	9
8	5
10	1

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Abate (Temephos)	3383-96-8	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Acetaldehyde	75-07-0	100 ppm	150 ppm	—	—
Acetic acid	64-19-7	10 ppm	20 ppm	—	—
Acetic anhydride	108-24-7	—	—	5 ppm	—
Actinolite (asbestiform) (as asbestos) (see WAC 296-62-077 and chapter 296-65 WAC)	—	0.1 f/cc	1.0 f/cc (30 minutes)	—	—
Acetone	67-64-1	750 ppm	1,000 ppm	—	—
Acetonitrile	75-05-8	40 ppm	60 ppm	—	—
2-Acetylaminofluorene (see WAC 296-62-073)	53-96-3	—	—	—	—
Acetylene	74-86-2	Simple asphyxiant	—	—	—
Acetylene dichloride (1,2-Dichloroethylene)	540-59-0	200 ppm	250 ppm	—	—
Acetylene tetrabromide	79-27-6	1 ppm	3 ppm	—	—
Acetylsalicylic acid (Aspirin)	50-78-2	5 mg/m ³	10 mg/m ³	—	—
Acrolein	107-02-8	0.1 ppm	0.3 ppm	—	—
Acrylamide	79-06-1	0.03 mg/m ³	0.09 mg/m ³	—	X
Acrylic acid	79-10-7	10 ppm	20 ppm	—	X
Acrylonitrile (Vinyl cyanide) (see WAC 296-62-07336)	107-13-1	2 ppm	10 ppm	—	—
Aldrin	309-00-2	0.25 mg/m ³	0.75 mg/m ³	—	X
Allyl alcohol	107-18-6	2 ppm	4 ppm	—	X
Allyl chloride	107-05-1	1 ppm	2 ppm	—	—
Allyl glycidyl ether (AGE)	106-92-3	5 ppm	10 ppm	—	—
Allyl propyl disulfide	2179-59-1	2 ppm	3 ppm	—	—
alpha-Alumina (Aluminum oxide)	1344-28-1	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Aluminum (as Al)	7429-90-5	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Pyro powders	—	5 mg/m ³	10 mg/m ³	—	—
Welding fumes	—	5 mg/m ³	10 mg/m ³	—	—
Soluble salts	—	2 mg/m ³	4 mg/m ³	—	—
Alkyls (NOC)	—	2 mg/m ³	4 mg/m ³	—	—
Aluminum oxide (Alundum, Corundum)	7429-90-5	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
4-Aminodiphenyl (see WAC 296-62-073)	92-67-1	—	—	—	—
2-Aminoethanol (Ethanolamine)	141-43-5	3 ppm	6 ppm	—	—
2-Aminopyridine	504-29-0	0.5 ppm	1.5 ppm	—	—
Amitrole	61-82-5	0.2 mg/m ³	0.6 mg/m ³	—	—
Ammonia	7664-41-7	25 ppm	35 ppm	—	—
Ammonium chloride, fume	12125-02-9	10 mg/m ³	20 mg/m ³	—	—
Ammonium sulfamate (Ammate)	7773-06-0	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5.0 mg/m ³	10 mg/m ³	—	—
Amosite (as asbestos) (see WAC 296-62-077 and chapter 296-65 WAC)	—	0.1 f/cc	1.0 f/cc (30 minutes)	—	—
n-Amyl acetate	628-63-7	100 ppm	150 ppm	—	—
sec-Amyl acetate	626-38-0	125 ppm	156 ppm	—	—
Aniline and homologues	62-53-3	2 ppm	4 ppm	—	X
Anisidine (o, p-isomers)	29191-52-4	0.1 ppm	0.3 ppm	—	X
Anthophyllite (asbestiform) (as asbestos) (see WAC 296-62-077 and chapter 296-65 WAC)	—	0.1 f/cc	1.0 f/cc (30 minutes)	—	—
Antimony and compounds (as Sb)	7440-36-0	0.5 mg/m ³	1.5 mg/m ³	—	—
ANTU (alpha Naphthyl thiourea)	86-88-4	0.3 mg/m ³	0.9 mg/m ³	—	—
Argon	7440-37-1	Simple asphyxiant	—	—	—
Arsenic, organic compounds (as As)	7440-38-2	0.2 mg/m ³	0.6 mg/m ³	—	—

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Arsenic, inorganic compounds (as As) (when use is covered by chapter 296-848 WAC)	7440-38-2	0.01 mg/m ³	—	—	—
Arsenic, inorganic compounds (as As) (when use is not covered by chapter 296-848 WAC)	7440-38-2	0.2 mg/m ³	0.6 mg/m ³	—	—
Arsine	7784-42-1	0.05 ppm	0.15 ppm	—	—
Asbestos (see WAC 296-62-077 and chapter 296-65 WAC)	—	0.1 f/cc	1.0 f/cc (30 minutes)	—	—
Asphalt (Petroleum fumes)	8052-42-4	5 mg/m ³	10 mg/m ³	—	—
Atrazine	1912-24-9	5 mg/m ³	10 mg/m ³	—	—
Azinphos methyl (Guthion)	86-50-0	0.2 mg/m ³	0.6 mg/m ³	—	X
Azodrin (Monocrotophos)	6923-22-4	0.25 mg/m ³	0.75 mg/m ³	—	—
Barium, soluble compounds (as Ba)	7440-39-3	0.5 mg/m ³	1.5 mg/m ³	—	—
Barium sulfate	7727-43-7	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Baygon (Propoxur)	114-26-1	0.5 mg/m ³	1.5 mg/m ³	—	—
Benomyl	17804-35-2	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Benzene (see chapter 296-849 WAC)	71-43-2	1 ppm	5 ppm	—	—
Benzidine (see WAC 296-62-073)	92-87-5	—	—	—	—
p-Benzoquinone (Quinone)	106-51-4	0.1 ppm	0.3 ppm	—	—
Benzo(a) pyrene (Coal tar pitch volatiles)	65996-93-2	0.2 mg/m ³	0.6 mg/m ³	—	—
Benzoyl peroxide	94-36-0	5 mg/m ³	10 mg/m ³	—	—
Benzyl chloride	100-44-7	1 ppm	3 ppm	—	—
Beryllium and beryllium compounds (as Be)	7440-41-7	0.002 mg/m ³	0.005 mg/m ³ (30 min.)	0.025 mg/m ³	—
Biphenyl (Diphenyl)	92-52-4	0.2 ppm	0.6 ppm	—	—
Bismuth telluride, undoped	1304-82-1	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Bismuth telluride, Se-doped	—	5 mg/m ³	10 mg/m ³	—	—
Borates, tetra, sodium salts	—	—	—	—	—
Anhydrous	1330-43-4	1 mg/m ³	3 mg/m ³	—	—
Decahydrate	1303-96-4	5 mg/m ³	10 mg/m ³	—	—
Pentahydrate	12179-04-3	1 mg/m ³	3 mg/m ³	—	—
Boron oxide	1303-86-2	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Boron tribromide	10294-33-4	—	—	1 ppm	—
Boron trifluoride	6737-07-2	—	—	1 ppm	—
Bromacil	314-40-9	1 ppm	3 ppm	—	—
Bromine	7726-95-6	0.1 ppm	0.3 ppm	—	—
Bromine pentafluoride	7789-30-2	0.1 ppm	0.3 ppm	—	—
Bromochloromethane (Chlorobromomthane)	74-97-5	200 ppm	250 ppm	—	—
Bromoform	15-25-2	0.5 ppm	1.5 ppm	—	X
Butadiene (1,3-butadiene) (see WAC 296-62-07460)	106-99-0	1 ppm	5 ppm	—	—
Butane	106-97-8	800 ppm	1,000 ppm	—	—
Butanethiol (Butyl mercaptan)	109-79-5	0.5 ppm	1.5 ppm	—	—
2-Butanone (Methyl ethyl ketone)	78-93-3	200 ppm	300 ppm	—	—
2-Butoxy ethanol (Butyl cellosolve)	111-76-2	25 ppm	38 ppm	—	X
n-Butyl acetate	123-86-4	150 ppm	200 ppm	—	—
sec-Butyl acetate	105-46-4	200 ppm	250 ppm	—	—
tert-Butyl acetate	540-88-5	200 ppm	250 ppm	—	—
Butyl acrylate	141-32-2	10 ppm	20 ppm	—	—
n-Butyl alcohol	71-36-3	—	—	50 ppm	X
sec-Butyl alcohol	78-92-2	100 ppm	150 ppm	—	—

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
tert-Butyl alcohol	75-65-0	100 ppm	150 ppm	—	—
Butylamine	109-73-9	—	—	5 ppm	X
Butyl cellosolve (2-Butoxy ethanol)	111-76-2	25 ppm	38 ppm	—	—
tert-Butyl chromate (as Cr) (see WAC 296-62-08003)	1189-85-1	0.005 mg/m ³	—	0.1 mg/m ³	X
n-Butyl glycidyl ether (BGE)	2426-08-6	25 ppm	38 ppm	—	—
n-Butyl lactate	138-22-7	5 ppm	10 ppm	—	—
Butyl mercaptan	109-79-5	0.5 ppm	1.5 ppm	—	—
o-sec-Butylphenol	89-72-5	5 ppm	10 ppm	—	X
p-tert-Butyl-toluene	98-51-1	10 ppm	20 ppm	—	—
Cadmium oxide fume (as Cd) (see WAC 296-62-074 and 296-155-174)	1306-19-0	0.005 mg/m ³	—	—	—
Cadmium dust and salts (as Cd) (see WAC 296-62-074 and 296-155-174)	7440-43-9	0.005 mg/m ³	—	—	—
Calcium arsenate (see chapter 296-848 WAC)	—	0.01 mg/m ³	—	—	—
Calcium carbonate	1317-65-3	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Calcium cyanamide	156-62-7	0.5 mg/m ³	1.5 mg/m ³	—	—
Calcium hydroxide	1305-62-0	5 mg/m ³	10 mg/m ³	—	—
Calcium oxide	1305-78-8	2 mg/m ³	4 mg/m ³	—	—
Calcium silicate	1344-95-2	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Calcium sulfate	7778-18-9	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Camphor (synthetic)	76-22-2	2 mg/m ³	4 mg/m ³	—	—
Caprolactam	105-60-2	—	—	—	—
Dust	—	1 mg/m ³	3 mg/m ³	—	—
Vapor	—	5 ppm	10 ppm	—	—
Captafol (Difolatan)	2425-06-1	0.1 mg/m ³	0.3 mg/m ³	—	X
Captan	133-06-2	5 mg/m ³	10 mg/m ³	—	—
Carbaryl (Sevin)	63-25-2	5 mg/m ³	10 mg/m ³	—	—
Carbofuran (Furadon)	1563-66-2	0.1 mg/m ³	0.3 mg/m ³	—	—
Carbon black	1333-86-4	3.5 mg/m ³	7 mg/m ³	—	—
Carbon dioxide	124-38-9	5,000 ppm	30,000 ppm	—	—
Carbon disulfide	75-15-0	4 ppm	12 ppm	—	X
Carbon monoxide	630-08-0	35 ppm	200 ppm (5 min.)	1,500 ppm	—
Carbon tetrabromide	558-13-4	0.1 ppm	0.3 ppm	—	—
Carbon tetrachloride (Tetrachloromethane)	56-23-5	2 ppm	4 ppm	—	X
Carbonyl chloride (Phosgene)	7803-51-2	0.1 ppm	0.3 ppm	—	—
Carbonyl fluoride	353-50-4	2 ppm	5 ppm	—	—
Catechol (Pyrocatechol)	120-80-9	5 ppm	10 ppm	—	X
Cellosolve acetate (2-Ethoxyethylacetate)	111-15-9	5 ppm	10 ppm	—	X
Cellulose (paper fiber)	9004-34-6	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Cesium hydroxide	21351-79-1	2 mg/m ³	4 mg/m ³	—	—
Chlordane	57-74-9	0.5 mg/m ³	1.5 mg/m ³	—	X
Chlorinated camphene (Toxaphen)	8001-35-2	0.5 mg/m ³	1 mg/m ³	—	X
Chlorinated diphenyl oxide	55720-99-5	0.5 mg/m ³	1.5 mg/m ³	—	—
Chlorine	7782-50-5	0.5 ppm	—	1 ppm	—
Chlorine dioxide	10049-04-4	0.1 ppm	0.3 ppm	—	—
Chlorine trifluoride	7790-91-2	—	—	0.1 ppm	—
Chloroacetaldehyde	107-20-0	—	—	1 ppm	—
a-Chloroacetophenone (Phenacyl chloride)	532-21-4	0.05 ppm	0.15 ppm	—	—
Chloroacetyl chloride	79-04-9	0.05 ppm	0.15 ppm	—	—
Chlorobenzene (Monochlorobenzene)	108-90-7	75 ppm	113 ppm	—	—
o-Chlorobenzylidene malononitrile (OCBM)	2698-41-1	—	—	0.05 ppm	X

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Chlorobromomethane	74-97-5	200 ppm	250 ppm	—	—
2-Chloro-1, 3-butadiene (beta-Chloroprene)	126-99-8	10 ppm	20 ppm	—	X
Chlorodifluoromethane	75-45-6	1,000 ppm	1,250 ppm	—	—
Chlorodiphenyl (42% Chlorine) (PCB) (Polychlorobiphenyls)	53469-21-9	1 mg/m ³	3 mg/m ³	—	X
Chlorodiphenyl (54% Chlorine) (Polychlorobiphenyls (PCB))	11097-69-1	0.5 mg/m ³	1.5 mg/m ³	—	X
1-Chloro-2, 3-epoxypropane (Epichlorhydrin)	106-89-8	2 ppm	4 ppm	—	X
2-Chloroethanol (Ethylene chlorohydrin)	107-07-3	—	—	1 ppm	X
Chloroethylene (vinyl chloride) (See WAC 296-62-07329)	75-01-4	1 ppm	5 ppm	—	—
Chloroform (Trichloromethane)	67-66-3	2 ppm	4 ppm	—	—
1-Chloro-1-nitropropane	600-25-9	2 ppm	4 ppm	—	—
bis-Chloromethyl ether (see WAC 296-62-073)	542-88-1	—	—	—	—
Chloromethyl methyl ether (Methyl chloromethyl ether) (see WAC 296-62-073)	107-30-2	—	—	—	—
Chloropentafluoroethane	76-15-3	1,000 ppm	1,250 ppm	—	—
Chloropicrin (Nitrotrichloromethane)	76-06-2	0.1 ppm	0.3 ppm	—	—
beta-Chloroprene (2-Chloro-1, 3-butadiene)	126-99-8	10 ppm	20 ppm	—	X
o-Chlorostyrene	2039-87-4	50 ppm	75 ppm	—	—
o-Chlorotoluene	95-49-8	50 ppm	75 ppm	—	—
2-Chloro-6-trichloromethyl pyridine (Nitrapyrin)	1929-82-4	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Chlorpyrifos	2921-88-2	0.2 mg/m ³	0.6 mg/m ³	—	X
Chromic acid and chromates (as Cr) (when the compound is not covered by WAC 296-62-08003)	Varies with compound	—	—	0.1 mg/m ³	—
Chromium	—	—	—	—	—
Chromium (VI) compounds (as Cr) (when the compound is covered by WAC 296-62-08003)	—	0.005 mg/m ³	—	—	—
Chromium metal or Chromium (II) compounds Or Chromium (III) compounds	7440-47-3	0.5 mg/m ³	—	—	—
Chromyl chloride (as Cr) (see WAC 296-62-08003)	14977-61-8	0.005 mg/m ³	—	—	—
Chrysene (Coal tar pitch volatiles)	65996-93-2	0.2 mg/m ³	0.6 mg/m ³	—	—
Chrysotile (as asbestos) (see WAC 296-62-077 and chapter 296-65 WAC)	—	0.1 f/cc	1.0 f/cc (30 minutes)	—	—
Clopidol	2971-90-6	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Coal dust (less than 5% SiO ₂) Respirable fraction	—	2 mg/m ³	4 mg/m ³	—	—
Coal dust (greater than or equal to 5% SiO ₂) Respirable fraction	—	0.1 mg/m ³	0.3 mg/m ³	—	—
Coal tar pitch volatiles (benzene soluble fraction) Acridine Anthracene Benzo (a) pyrene Chrysene Phenanthrene Pyrene	65996-93-2	0.2 mg/m ³	0.6 mg/m ³	—	—
Cobalt, metal fume & dust (as Co)	7440-48-4	0.05 mg/m ³	0.15 mg/m ³	—	—

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Cobalt carbonyl (as Co)	10210-68-1	0.1 mg/m ³	0.3 mg/m ³	—	—
Cobalt hydrocarbonyl (as Co)	16842-03-8	0.1 mg/m ³	0.3 mg/m ³	—	—
Coke oven emissions (see WAC 296-62-200)	—	0.15 mg/m ³	—	—	—
Copper (as Cu)	7440-50-8	—	—	—	—
Fume	—	0.1 mg/m ³	0.3 mg/m ³	—	—
Dusts and mists	—	1 mg/m ³	3 mg/m ³	—	—
Cotton dust (raw) (waste sorting, blending, cleaning, willowing and garetting) (see WAC 296-62-14533)	—	1 mg/m ³	—	—	—
Corundum (Aluminum oxide)	7429-90-5	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Crag herbicide (Sesone, Sodium-2, 4-dichloro-phenoxyethyl sulfate)	136-78-7	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Cresol (all isomers)	1319-77-3	5 ppm	10 ppm	—	X
Crocidolite (as asbestos) (see WAC 296-62-077 and chapter 296-65 WAC)	—	0.1 f/cc	1.0 f/cc (30 minutes)	—	—
Crotonaldehyde	123-73-9; 4170-30-3	2 ppm	4 ppm	—	—
Crufomate	299-86-5	5 mg/m ³	10 mg/m ³	—	—
Cumene	98-82-8	50 ppm	75 ppm	—	X
Cyanamide	420-04-2	2 mg/m ³	4 mg/m ³	—	—
Cyanide (as CN)	Varies with compound	5 mg/m ³	10 mg/m ³	—	X
Cyanogen	460-19-5	10 ppm	20 ppm	—	—
Cyanogen chloride	506-77-4	—	—	0.3 ppm	—
Cyclohexane	110-82-7	300 ppm	375 ppm	—	—
Cyclohexanol	108-93-0	50 ppm	75 ppm	—	X
Cyclohexanone	108-94-1	25 ppm	38 ppm	—	X
Cyclohexene	110-83-8	300 ppm	375 ppm	—	—
Cyclohexylamine	108-91-8	10 ppm	20 ppm	—	—
Cyclonite (RDX)	121-82-4	1.5 mg/m ³	3.0 mg/m ³	—	X
Cyclopentadiene	542-92-7	75 ppm	113 ppm	—	—
Cyclopentane	287-92-3	600 ppm	750 ppm	—	—
Cyhexatin (Tricyclohexyltin hydroxide)	13121-70-5	5 mg/m ³	10 mg/m ³	—	—
2,4-D (Dichlorophenoxy-acetic acid)	94-75-7	10 mg/m ³	20 mg/m ³	—	—
DBCP (1,2-Dibromo-3-chloropropane) (See WAC 296-62-07342)	96-12-8	0.001 ppm	—	0.005 ppm	—
DDT (Dichlorodiphenyltri-chloroethane)	50-29-3	1 mg/m ³	3 mg/m ³	—	X
DDVP, (Dichlorvos)	62-73-7	0.1 ppm	0.3 ppm	—	X
Dasanit (Fensulfothion)	115-90-2	0.1 mg/m ³	0.3 mg/m ³	—	—
Decaborane	17702-41-9	0.05 ppm	0.15 ppm	—	X
Demeton	8065-48-3	0.01 ppm	0.03 ppm	—	X
Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	123-42-2	50 ppm	75 ppm	—	—
1, 2-Diaminoethane (Ethylenediamine)	107-15-3	10 ppm	20 ppm	—	—
Diazinon	333-41-5	0.1 mg/m ³	0.3 mg/m ³	—	X
Diazomethane	334-88-3	0.2 ppm	0.6 ppm	—	—
Diborane	19287-45-7	0.1 ppm	0.3 ppm	—	—
Dibrom (see Naled)	300-76-5	3 mg/m ³	6 mg/m ³	—	X
1, 2-Dibromo-3-chloropropane (DBCP) (see WAC 296-62-07342)	96-12-8	0.001 ppm	—	0.005 ppm	—
2-N-Dibutylamino ethanol	102-81-8	2 ppm	4 ppm	—	X
Dibutyl phosphate	107-66-4	1 ppm	2 ppm	—	—
Dibutyl phthalate	84-74-2	5 mg/m ³	10 mg/m ³	—	—
Dichloroacetylene	7572-29-4	—	—	0.1 ppm	—
o-Dichlorobenzene	95-50-1	—	—	50 ppm	—
p-Dichlorobenzene	106-46-7	75 ppm	110 ppm	—	—
3, 3'-Dichlorobenzidine (see WAC 296-62-073)	91-94-1	—	—	—	—
Dichlorodiphenyltri-chloroethane (DDT)	50-29-3	1 mg/m ³	3 mg/m ³	—	X
Dichlorodifluoromethane	75-71-8	1,000 ppm	1,250 ppm	—	—
1, 3-Dichloro-5, 5-dimethyl hydantoin	118-52-5	0.2 mg/m ³	0.4 mg/m ³	—	—

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
1, 1-Dichloroethane (Ethylidene chloride)	75-34-3	100 ppm	150 ppm	—	—
1, 2-Dichloroethane (Ethylene dichloride)	107-06-2	1 ppm	2 ppm	—	—
1, 1-Dichloroethylene (Vinylidene chloride)	75-35-4	1 ppm	3 ppm	—	—
1, 2-Dichloroethylene (Acetylene dichloride)	540-59-0	200 ppm	250 ppm	—	—
Dichloroethyl ether	111-44-4	5 ppm	10 ppm	—	X
Dichlorofluoromethane	75-43-4	10 ppm	20 ppm	—	—
Dichloromethane (Methylene chloride) (See chapter 296-859 WAC)	75-09-2	25 ppm	125 ppm	—	—
1, 1-Dichloro-1-nitroethane	594-72-9	2 ppm	10 ppm	—	—
Dichlorophenoxyacetic acid (2, 4-D)	94-75-7	10 mg/m ³	20 mg/m ³	—	—
1, 2-Dichloropropane (Propylene dichloride)	78-87-5	75 ppm	110 ppm	—	—
Dichloropropane	542-75-6	1 ppm	3 ppm	—	X
2, 2-Dichloropropionic acid	75-99-0	1 ppm	3 ppm	—	—
Dichlorotetrafluoroethane	76-14-2	1,000 ppm	1,250 ppm	—	—
Dichlorvos (DDVP)	62-73-7	0.1 ppm	0.3 ppm	—	X
Dicrotophos	141-66-2	0.25 mg/m ³	0.75 mg/m ³	—	X
Dicyclopentadiene	77-73-6	5 ppm	10 ppm	—	—
Dicyclopentadienyl iron	102-54-5	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Dieldrin	60-57-1	0.25 mg/m ³	0.75 mg/m ³	—	X
Diethanolamine	111-42-2	3 ppm	6 ppm	—	—
Diethylamine	109-89-7	10 ppm	25 ppm	—	—
2-Diethylaminoethanol	100-37-8	10 ppm	20 ppm	—	X
Diethylene triamine	111-40-0	1 ppm	3 ppm	—	X
Diethyl ether (Ethyl ether)	60-29-7	400 ppm	500 ppm	—	—
Diethyl ketone	96-22-0	200 ppm	250 ppm	—	—
Diethyl phthalate	84-66-2	5 mg/m ³	10 mg/m ³	—	—
Difluorodibromomethane	75-61-6	100 ppm	150 ppm	—	—
Difolatan (Captafol)	2425-06-1	0.1 mg/m ³	0.3 mg/m ³	—	X
Diglycidyl ether (DGE)	2238-07-5	0.1 ppm	0.3 ppm	—	—
Dihydroxybenzene (Hydroquinone)	123-31-9	2 mg/m ³	4 mg/m ³	—	—
Diisobutyl ketone (2, 6- Dimethylheptanone)	108-83-8	25 ppm	38 ppm	—	—
Diisopropylamine	108-18-9	5 ppm	10 ppm	—	X
Dimethoxymethane (Methylal)	109-87-5	1,000 ppm	1,250 ppm	—	—
Dimethyl acetamide	127-19-5	10 ppm	20 ppm	—	X
Dimethylamine	124-40-3	10 ppm	20 ppm	—	—
4-Dimethylaminoazo benzene (see WAC 296-62-073)	60-11-7	—	—	—	—
Dimethylaminobenzene (Xylidene)	1300-73-8	2 ppm	4 ppm	—	X
Dimethylaniline (N, N-Dimethylaniline)	121-69-7	5 ppm	10 ppm	—	X
Dimethylbenzene (Xylene)	1300-73-8	100 ppm	150 ppm	—	—
Dimethyl-1, 2-dibromo-2, 2-dichloroethyl phosphate (Naled)	300-76-5	3 mg/m ³	6 mg/m ³	—	X
Dimethylformamide	68-12-2	10 ppm	20 ppm	—	X
2, 6-Dimethylheptanone (Diisobutyl ketone)	108-83-8	25 ppm	38 ppm	—	—
1, 1-Dimethylhydrazine	57-14-7	0.5 ppm	1.5 ppm	—	X
Dimethyl phthalate	131-11-3	5 mg/m ³	10 mg/m ³	—	—
Dimethyl sulfate	77-78-1	0.1 ppm	0.3 ppm	—	X
Dinitolmide (3, 5-Dinitro-o-toluamide)	148-01-6	5 mg/m ³	10 mg/m ³	—	—
Dinitrobenzene (all isomers - alpha, meta and para)	528-29-0; 99-65-0; 100-25-4	0.15 ppm	0.45 ppm	—	X
Dinitro-o-cresol	534-52-1	0.2 mg/m ³	0.6 mg/m ³	—	X
3, 5-Dinitro-o-toluamide (Dinitolmide)	148-01-6	5 mg/m ³	10 mg/m ³	—	—
Dinitrotoluene	25321-14-6	1.5 mg/m ³	3 mg/m ³	—	X
Dioxane (Diethylene dioxide)	123-91-1	25 ppm	38 ppm	—	X

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Dioxathion	78-34-2	0.2 mg/m ³	0.6 mg/m ³	—	X
Diphenyl (Biphenyl)	92-52-4	0.2 ppm	0.6 ppm	—	—
Diphenylamine	122-39-4	10 mg/m ³	20 mg/m ³	—	—
Diphenylmethane diisocyanate (Methylene bisphenyl isocyanate (MDI))	101-68-8	—	—	0.02 ppm	—
Dipropylene glycol methyl ether	34590-94-8	100 ppm	150 ppm	—	X
Dipropyl ketone	123-19-3	50 ppm	75 ppm	—	—
Diquat	85-00-7	0.5 mg/m ³	1.5 mg/m ³	—	—
Di-sec, Octyl phthalate (Di-2-ethylhexylphthalate)	117-81-7	5 mg/m ³	10 mg/m ³	—	—
Disulfiram	97-77-8	2 mg/m ³	4 mg/m ³	—	—
Disulfoton	298-04-4	0.1 mg/m ³	0.3 mg/m ³	—	X
2, 6-Di-tert-butyl-p-cresol	128-37-0	10 mg/m ³	20 mg/m ³	—	—
Diuron	330-54-1	10 mg/m ³	20 mg/m ³	—	—
Divinyl benzene	1321-74-0	10 ppm	20 ppm	—	—
Emery	12415-34-8	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Endosulfan (Thiodan)	115-29-7	0.1 mg/m ³	0.3 mg/m ³	—	X
Endrin	72-20-8	0.1 mg/m ³	0.3 mg/m ³	—	X
Epichlorhydrin (1-Chloro-2, 3-epoxypropane)	106-89-8	2 ppm	4 ppm	—	X
EPN	2104-64-5	0.5 mg/m ³	1.5 mg/m ³	—	X
1, 2-Epoxypropane (Propylene oxide)	75-56-9	20 ppm	30 ppm	—	—
2, 3-Epoxy-1-propanol (Glycidol)	556-52-5	25 ppm	38 ppm	—	—
Ethane	—	Simple asphyxiant	—	—	—
Ethanethiol (Ethyl mercaptan)	75-08-1	0.5 ppm	1.5 ppm	—	—
Ethanol (Ethyl alcohol)	64-17-5	1,000 ppm	1,250 ppm	—	—
Ethanolamine (2-Aminoethanol)	141-43-5	3 ppm	6 ppm	—	—
Ethion	563-12-2	0.4 mg/m ³	1.2 mg/m ³	—	X
2-Ethoxyethanol (Glycol monoethyl ether)	110-80-5	5 ppm	10 ppm	—	X
2-Ethoxyethyl acetate (Cellosolve acetate)	111-15-9	5 ppm	10 ppm	—	X
Ethyl acetate	141-78-6	400 ppm	500 ppm	—	—
Ethyl acrylate	140-88-5	5 ppm	25 ppm	—	X
Ethyl alcohol (ethanol)	64-17-5	1,000 ppm	1,250 ppm	—	—
Ethylamine	75-04-07	10 ppm	20 ppm	—	—
Ethyl amyl ketone (5-Methyl-3-hepatone)	541-85-5	25 ppm	38 ppm	—	—
Ethyl benzene	100-41-4	100 ppm	125 ppm	—	—
Ethyl bromide	74-96-4	200 ppm	250 ppm	—	—
Ethyl butyl ketone (3-Heptanone)	106-35-4	50 ppm	75 ppm	—	—
Ethyl chloride	75-00-3	1,000 ppm	1,250 ppm	—	—
Ethylene	74-85-1	Simple asphyxiant	—	—	—
Ethylene chlorohydrin (2-Chloroethanol)	107-07-3	—	—	1 ppm	X
Ethylenediamine (1,2- Diaminoethane)	107-15-3	10 ppm	20 ppm	—	X
Ethylene dibromide	106-93-4	0.1 ppm	0.5 ppm	—	—
Ethylene dichloride (1,2-Dichloroethane)	107-06-2	1 ppm	2 ppm	—	—
Ethylene glycol	107-21-1	—	—	50 ppm	—
Ethylene glycol dinitrate	628-96-6	—	0.1 mg/m ³	—	X
Ethylene glycol monomethyl ether acetate (Methyl cellosolve acetate)	—	5 ppm	10 ppm	—	X
Ethyleneimine (see WAC 296-62-073)	151-56-4	—	—	—	X
Ethylene oxide (see chapter 296-855 WAC)	75-21-8	1 ppm	5 ppm	—	—
Ethyl ether (Diethyl ether)	60-29-7	400 ppm	500 ppm	—	—
Ethyl formate	109-94-4	100 ppm	125 ppm	—	—
Ethylidene chloride (1, 1-Dichloroethane)	107-06-2	1 ppm	2 ppm	—	—
Ethylidene norbornene	16219-75-3	—	—	5.0 ppm	—
Ethyl mercaptan (Ethanethiol)	75-08-1	0.5 ppm	1.5 ppm	—	—

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
n-Ethylmorpholine	100-74-3	5 ppm	10 ppm	—	X
Ethyl sec-amyl ketone (5-methyl-3-heptanone)	541-85-5	25 ppm	38 ppm	—	—
Ethyl silicate	78-10-4	10 ppm	20 ppm	—	—
Fenamiphos	22224-92-6	0.1 mg/m ³	0.3 mg/m ³	—	X
Fensulfothion (Dasanit)	115-90-2	0.1 mg/m ³	0.3 mg/m ³	—	—
Fenthion	55-38-9	0.2 mg/m ³	0.6 mg/m ³	—	X
Ferbam	—	—	—	—	—
Total particulate	14484-64-1	10 mg/m ³	20 mg/m ³	—	—
Ferrovandium dust	12604-58-9	1 mg/m ³	3 mg/m ³	—	—
Fluorides (as F)	Varies with compound	2.5 mg/m ³	5 mg/m ³	—	—
Fluorine	7782-41-4	0.1 ppm	0.3 ppm	—	—
Fluorotrichloromethane (see Trichlorofluoro methane)	75-69-4	—	—	1,000 ppm	—
Fonofos	944-22-9	0.1 mg/m ³	0.3 mg/m ³	—	X
Formaldehyde (see chapter 296-856 WAC)	50-00-0	0.75 ppm	2 ppm	—	—
Formamide	75-12-7	20 ppm	30 ppm	—	—
Formic acid	64-18-6	5 ppm	10 ppm	—	—
Furadon (carbofuran)	1563-66-2	0.1 mg/m ³	0.3 mg/m ³	—	—
Furfural	98-01-1	2 ppm	4 ppm	—	X
Furfuryl alcohol	98-00-0	10 ppm	15 ppm	—	X
Gasoline	8006-61-9	300 ppm	500 ppm	—	—
Germanium tetrahydride	7782-65-2	0.2 ppm	0.6 ppm	—	—
Glass, fibrous or dust	—	10 mg/m ³	20 mg/m ³	—	—
Glutaraldehyde	111-30-8	—	—	0.2 ppm	—
Glycerin mist	56-81-5	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Glycidol (2, 3-Epoxy-1-propanol)	556-52-5	25 ppm	38 ppm	—	—
Glycol monoethyl ether (2-Ethoxyethanol)	110-80-5	5 ppm	10 ppm	—	X
Grain dust (oat, wheat, barley)	—	10 mg/m ³	20 mg/m ³	—	—
Graphite, natural	7782-42-5	—	—	—	—
Respirable particulate	—	2.5 mg/m ³	5 mg/m ³	—	—
Graphite, synthetic	—	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Guthion (Azinphosmethyl)	86-50-0	0.2 mg/m ³	0.6 mg/m ³	—	X
Gypsum	13397-24-5	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Hafnium	7440-58-6	0.5 mg/m ³	1.5 mg/m ³	—	—
Helium	—	Simple asphyxiant	—	—	—
Heptachlor	76-44-8	0.5 mg/m ³	1.5 mg/m ³	—	X
Heptane (n-heptane)	142-82-5	400 ppm	500 ppm	—	—
2-Heptanone (Methyl n-amyl ketone)	110-43-0	50 ppm	75 ppm	—	—
3-Heptanone (Ethyl butyl ketone)	106-35-4	50 ppm	75 ppm	—	—
Hexachlorobutadiene	87-68-3	0.02 ppm	0.06 ppm	—	X
Hexachlorocyclopentadiene	77-47-4	0.01 ppm	0.03 ppm	—	—
Hexachloroethane	67-72-1	1 ppm	3 ppm	—	X
Hexachloronaphthalene	1335-87-1	0.2 mg/m ³	0.6 mg/m ³	—	X
Hexafluoroacetone	684-16-2	0.1 ppm	0.3 ppm	—	X
Hexane	—	—	—	—	—
n-hexane	110-54-3	50 ppm	75 ppm	—	—
other isomers	Varies with compound	500 ppm	1,000 ppm	—	—
2-Hexanone (Methyl-n-butyl ketone)	591-78-6	5 ppm	10 ppm	—	—
Hexone (Methyl isobutyl ketone)	108-10-1	50 ppm	75 ppm	—	—
sec-Hexyl acetate	108-84-9	50 ppm	75 ppm	—	—
Hexylene glycol	107-41-5	—	—	25 ppm	—
Hydrazine	302-01-2	0.1 ppm	0.3 ppm	—	X
Hydrogen	—	Simple asphyxiant	—	—	—
Hydrogenated terphenyls	61788-32-7	0.5 ppm	1.5 ppm	—	—

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Hydrogen bromide	10035-10-6	—	—	3.0 ppm	—
Hydrogen chloride	7647-01-0	—	—	5.0 ppm	—
Hydrogen cyanide	74-90-8	—	4.7 ppm	—	X
Hydrogen fluoride	7664-39-3	—	—	3 ppm	—
Hydrogen peroxide	7722-84-1	1 ppm	3 ppm	—	—
Hydrogen selenide (as Se)	7783-07-5	0.05 ppm	0.15 ppm	—	—
Hydrogen sulfide	7783-06-4	10 ppm	15 ppm	—	—
Hydroquinone	123-31-9	2 mg/m ³	4 mg/m ³	—	—
(Dihydroxybenzene)					
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)	123-42-2	50 ppm	75 ppm	—	—
2-Hydroxypropyl acrylate	99-61-1	0.5 ppm	1.5 ppm	—	X
Indene	95-13-6	10 ppm	20 ppm	—	—
Indium and compounds (as In)	7440-74-6	0.1 mg/m ³	0.3 mg/m ³	—	—
Iodine	7553-56-2	—	—	0.1 ppm	—
Iodoform	75-47-8	0.6 ppm	1.8 ppm	—	—
Iron oxide dust and fume (as Fe)	1309-37-1	—	—	—	—
Total particulate	—	5 mg/m ³	10 mg/m ³	—	—
Iron pentacarbonyl (as Fe)	13463-40-6	0.1 ppm	0.2 ppm	—	—
Iron salts, soluble (as Fe)	Varies with compound	1 mg/m ³	3 mg/m ³	—	—
Isoamyl acetate	123-92-2	100 ppm	150 ppm	—	—
Isoamyl alcohol (primary and secondary)	123-51-3	100 ppm	125 ppm	—	—
Isobutyl acetate	110-19-0	150 ppm	188 ppm	—	—
Isobutyl alcohol	78-83-1	50 ppm	75 ppm	—	—
Isooctyl alcohol	26952-21-6	50 ppm	75 ppm	—	X
Isophorone	78-59-1	4 ppm	—	5 ppm	—
Isophorone diisocyanate	4098-71-9	0.005 ppm	0.02 ppm	—	X
Isopropoxyethanol	109-59-1	25 ppm	38 ppm	—	—
Isopropyl acetate	108-21-4	250 ppm	310 ppm	—	—
Isopropyl alcohol	67-63-0	400 ppm	500 ppm	—	—
Isopropylamine	75-31-0	5 ppm	10 ppm	—	—
N-Isopropylaniline	768-52-5	2 ppm	4 ppm	—	X
Isopropyl ether	108-20-3	250 ppm	313 ppm	—	—
Isopropyl glycidyl ether (IGE)	4016-14-2	50 ppm	75 ppm	—	—
Kaolin	—	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Ketene	463-51-4	0.5 mg/m ³	1.5 mg/m ³	—	—
Lannate (Methomyl)	16752-77-5	2.5 mg/m ³	5 mg/m ³	—	—
Lead, inorganic (as Pb) (see WAC 296-62-07521 and 296-155-176)	7439-92-1	0.05 mg/m ³	—	—	—
Lead arsenate (as Pb) (see WAC 296-62-07521, 296-155-176, and chapter 296-848 WAC)	3687-31-8	0.05 mg/m ³	—	—	—
Lead chromate (as Pb) (see WAC 296-62-08003, 296-62- 07521, and 296-155-176)	7758-97-6	0.05 mg/m ³	—	—	—
Limestone	1317-65-3	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Lindane	58-89-9	0.5 mg/m ³	1.5 mg/m ³	—	X
Lithium hydride	7580-67-8	0.025 mg/m ³	0.075 mg/m ³	—	—
L.P.G. (liquified petroleum gas)	68476-85-7	1,000 ppm	1,250 ppm	—	—
Magnesite	546-93-0	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Magnesium oxide fume	1309-48-4	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Malathion	121-75-5	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	X
Maleic anhydride	108-31-6	0.25 ppm	0.75 ppm	—	—
Manganese and compounds (as Mn)	7439-96-5	—	—	5 mg/m ³	—
Manganese cyclopentadienyl tricarbonyl (as Mn)	12079-65-1	0.1 mg/m ³	0.3 mg/m ³	—	X
Manganese tetroxide and fume (as Mn)	7439-96-5	1 mg/m ³	3 mg/m ³	—	—

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Marble	1317-65-3	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
MBOCA (4, 4'-Methylene bis (2-chloro-aniline)) (see WAC 296-62-073)	101-14-4	—	—	—	X
MDA (4, 4-Methylene dianiline) (see WAC 296-62-076 and 296-155-173)	101-77-9	0.01 ppm	0.1 ppm	—	X
MDI (Methylene bisphenyl isocyanate) (Diphenylmethane diisocyanate)	101-68-8	—	—	0.02 ppm	—
MEK (Methyl ethyl ketone) (2-Butanone)	78-93-3	200 ppm	300 ppm	—	—
MEKP (Methyl ethyl ketone peroxide)	1338-23-4	—	—	0.2 ppm	—
Mercury (as Hg)	7439-97-6	—	—	—	—
Aryl and inorganic	—	0.1 mg/m ³	0.3 mg/m ³	—	X
Organo-alkyl compounds	—	0.01 mg/m ³	0.03 mg/m ³	—	X
Vapor	—	0.05 mg/m ³	0.15 mg/m ³	—	X
Mesityl oxide	141-79-7	15 ppm	25 ppm	—	—
Methacrylic acid	79-41-4	20 ppm	30 ppm	—	X
Methane	—	Simple asphyxiant	—	—	—
Methanethiol (Methyl mercaptan)	74-93-1	0.5 ppm	1.5 ppm	—	—
Methanol (Methyl alcohol)	67-56-1	200 ppm	250 ppm	—	X
Methomyl (lannate)	16752-77-5	2.5 mg/m ³	5 mg/m ³	—	—
Methoxychlor	72-43-5	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
2-Methoxyethanol (Methyl cellosolve)	109-86-4	5 ppm	10 ppm	—	X
2-Methoxyethyl acetate (Methyl cellosolve acetate)	110-49-6	5 ppm	10 ppm	—	X
4-Methoxyphenol	150-76-5	5 mg/m ³	10 mg/m ³	—	—
Methyl acetate	79-20-9	200 ppm	250 ppm	—	—
Methyl acetylene (propyne)	74-99-7	1,000 ppm	1,250 ppm	—	—
Methyl acetylene-propadiene mixture (MAPP)	—	1,000 ppm	1,250 ppm	—	—
Methyl acrylate	96-33-3	10 ppm	20 ppm	—	X
Methylacrylonitrile	126-98-7	1 ppm	3 ppm	—	X
Methylal (Dimethoxy-methane)	109-87-5	1,000 ppm	1,250 ppm	—	—
Methyl alcohol (methanol)	67-56-1	200 ppm	250 ppm	—	X
Methylamine	74-89-5	10 ppm	20 ppm	—	—
Methyl amyl alcohol (Methyl isobutyl carbinol)	108-11-2	25 ppm	40 ppm	—	X
Methyl n-amyl ketone (2-Heptanone)	110-43-0	50 ppm	75 ppm	—	—
N-Methyl aniline (Monomethyl aniline)	100-61-8	0.5 ppm	1.5 ppm	—	X
Methyl bromide	74-83-9	5 ppm	10 ppm	—	X
Methyl-n-butyl ketone (2-Hexanone)	591-78-6	5 ppm	10 ppm	—	—
Methyl cellosolve (2-Methoxyethanol)	109-86-4	5 ppm	10 ppm	—	X
Methyl cellosolve acetate (2-Methoxyethyl acetate)	110-49-6	5 ppm	10 ppm	—	X
Methyl chloride	74-87-3	50 ppm	100 ppm	—	—
Methyl chloroform (1, 1, 1-trichloroethane)	71-55-6	350 ppm	450 ppm	—	—
Methyl chloromethyl ether (chloromethyl methyl ether) (see WAC 296-62-073)	107-30-2	—	—	—	—
Methyl 2-cyanoacrylate	137-05-3	2 ppm	4 ppm	—	—
Methylcyclohexane	108-87-2	400 ppm	500 ppm	—	—
Methylcyclohexanol	25639-42-3	50 ppm	75 ppm	—	—
Methylcyclohexanone	583-60-8	50 ppm	75 ppm	—	X
Methylcyclopentadienyl manganese tricarbonyl (as Mn)	12108-13-3	0.2 mg/m ³	0.6 mg/m ³	—	X

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Methyl demeton	8022-00-2	0.5 mg/m ³	1.5 mg/m ³	—	X
Methylene bisphenyl isocyanate (MDI) (Diphenylmethane diisocyanate)	101-68-8	—	—	0.02 ppm	—
4, 4'-Methylene bis (2-chloro-aniline) (MBOCA) (see WAC 296-62-073)	101-14-4	—	—	—	X
Methylene bis (4-cyclohexylisocyanate)	5124-30-1	—	—	0.01 ppm	—
Methylene chloride (Dichloromethane) (see chapter 296-859 WAC)	75-09-2	25 ppm	125 ppm	—	—
4, 4-Methylene dianiline (MDA) (see WAC 296-62-076 and 296-155-173)	101-77-9	0.01 ppm	0.1 ppm	—	X
Methyl ethyl ketone (MEK) (2-Butanone)	78-93-3	200 ppm	300 ppm	—	—
Methyl ethyl ketone peroxide (MEKP)	1338-23-4	—	—	0.2 ppm	—
Methyl formate	107-31-3	100 ppm	150 ppm	—	—
5-Methyl-3-heptanone (Ethyl amyl ketone)	541-85-5	25 ppm	38 ppm	—	—
Methyl hydrazine (Monomethyl hydrazine)	60-34-4	—	—	0.2 ppm	X
Methyl iodide	74-88-4	2 ppm	4 ppm	—	X
Methyl isoamyl ketone	110-12-3	50 ppm	75 ppm	—	—
Methyl isobutyl carbinol (Methyl amyl alcohol)	108-11-2	25 ppm	40 ppm	—	X
Methyl isobutyl ketone (Hexone)	108-10-1	50 ppm	75 ppm	—	—
Methyl isocyanate	624-83-9	0.02 ppm	0.06 ppm	—	X
Methyl isopropyl ketone	563-80-4	200 ppm	250 ppm	—	—
Methyl mercaptan (Methanethiol)	74-93-1	0.5 ppm	1.5 ppm	—	—
Methyl methacrylate	80-62-6	100 ppm	150 ppm	—	—
Methyl parathion	298-00-0	0.2 mg/m ³	0.6 mg/m ³	—	X
Methyl propyl ketone (2-Pentanone)	107-87-9	200 ppm	250 ppm	—	—
Methyl silicate	684-84-5	1 ppm	3 ppm	—	—
alpha-Methyl styrene	98-83-9	50 ppm	100 ppm	—	—
Mevinphos (Phosdrin)	7786-34-7	0.01 ppm	0.03 ppm	—	X
Metribuzin	21087-64-9	5 mg/m ³	10 mg/m ³	—	—
Mica (Silicates)	12001-26-2	3 mg/m ³	6 mg/m ³	—	—
Respirable fraction					
Molybdenum (as Mo)	7439-98-7	—	—	—	—
Soluble compounds	—	5 mg/m ³	10 mg/m ³	—	—
Insoluble compounds	—	10 mg/m ³	20 mg/m ³	—	—
Monochlorobenzene (Chlorobenzene)	108-90-7	75 ppm	113 ppm	—	—
Monocrotophos (Azodrin)	6923-22-4	0.25 mg/m ³	0.75 mg/m ³	—	—
Monomethyl aniline (N-Methyl aniline)	100-61-8	0.5 ppm	1.5 ppm	—	X
Monomethyl hydrazine	—	—	—	0.2 ppm	—
Morpholine	110-91-8	20 ppm	30 ppm	—	X
Naled (Dibrom)	300-76-5	3 mg/m ³	6 mg/m ³	—	X
Naphtha	8030-30-6	100 ppm	150 ppm	—	X
Naphthalene	91-20-3	10 ppm	15 ppm	—	—
alpha-Naphthylamine (see WAC 296-62-073)	134-32-7	—	—	—	—
beta-Naphthylamine (see WAC 296-62-073)	91-59-8	—	—	—	—
Neon	7440-01-9	Simple asphyxiant	—	—	—
Nickel carbonyl (as Ni)	13463-39-3	0.001 ppm	0.003 ppm	—	—
Nickel (as Ni)	7440-02-0	—	—	—	—
Metal and insoluble compounds	—	1 mg/m ³	3 mg/m ³	—	—
Soluble compounds	—	0.1 mg/m ³	0.3 mg/m ³	—	—
Nicotine	54-11-5	0.5 mg/m ³	1.5 mg/m ³	—	X
Nitrapyrin (2-Chloro-6 trichloromethyl pyridine)	1929-82-4	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Nitric acid	7697-37-2	2 ppm	4 ppm	—	—

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Nitric oxide	10102-43-9	25 ppm	38 ppm	—	—
p-Nitroaniline	100-01-6	3 mg/m ³	6 mg/m ³	—	X
Nitrobenzene	98-95-3	1 ppm	3 ppm	—	X
4-Nitrobiphenyl (see WAC 296-62-073)	92-93-3	—	—	—	—
p-Nitrochlorobenzene	100-00-5	0.5 mg/m ³	1.5 mg/m ³	—	X
4-Nitrodiphenyl (see WAC 296-62-073)	—	—	—	—	—
Nitroethane	79-24-3	100 ppm	150 ppm	—	—
Nitrogen	7727-37-9	Simple asphyxiant	—	—	—
Nitrogen dioxide	10102-44-0	—	1 ppm	—	—
Nitrogen oxide (Nitrous oxide)	10024-97-2	50 ppm	75 ppm	—	—
Nitrogen trifluoride	7783-54-2	10 ppm	20 ppm	—	—
Nitroglycerin	55-63-0	—	0.1 mg/m ³	—	X
Nitromethane	75-52-5	100 ppm	150 ppm	—	—
1-Nitropropane	108-03-2	25 ppm	38 ppm	—	—
2-Nitropropane	79-46-9	10 ppm	20 ppm	—	—
N-Nitrosodimethylamine (see WAC 296-62-073)	62-75-9	—	—	—	—
Nitrotoluene	—	—	—	—	—
o-isomer	88-72-2	2 ppm	4 ppm	—	X
m-isomer	98-08-2	2 ppm	4 ppm	—	X
p-isomer	99-99-0	2 ppm	4 ppm	—	X
Nitrotrichloromethane (Chloropicrin)	76-06-2	0.1 ppm	0.3 ppm	—	—
Nitrous oxide (Nitrogen oxide)	10024-97-2	50 ppm	75 ppm	—	—
Nonane	111-84-2	200 ppm	250 ppm	—	—
Nuisance dusts (see Particulates not otherwise regulated)	—	—	—	—	—
Octachloronaphthalene	2234-13-1	0.1 mg/m ³	0.3 mg/m ³	—	X
Octane	111-65-9	300 ppm	375 ppm	—	—
Oil mist mineral (particulate)	8012-95-1	5 mg/m ³	10 mg/m ³	—	—
Osmium tetroxide (as Os)	20816-12-0	0.0002 ppm	0.0006 ppm	—	—
Oxalic acid	144-62-7	1 mg/m ³	2 mg/m ³	—	—
Oxygen	—	—	—	—	—
See requirements in other chapters such as: Chapter 296-809 WAC, Confined spaces; chapter 296-843 WAC, Hazardous waste operations; chapter 296-824 WAC, Emergency response; WAC 296-62-100, Oxygen deficient atmospheres	—	—	—	—	—
Oxygen difluoride	7783-41-7	—	—	0.05 ppm	—
Ozone	10028-15-6	0.1 ppm	0.3 ppm	—	—
Paper fiber	9004-34-6	—	—	—	—
(Cellulose)	—	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Paraffin wax fume	8002-74-2	2 mg/m ³	4 mg/m ³	—	—
Paraquat	—	—	—	—	—
Respirable fraction	4685-14-7 1910-42-5 2074-50-2	0.1 mg/m ³	0.3 mg/m ³	—	X
Parathion	56-38-2	0.1 mg/m ³	0.3 mg/m ³	—	X
Particulate polycyclic aromatic hydrocarbons (see coal tar pitch volatiles)	—	—	—	—	—
Particulates not otherwise regulated	—	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Pentaborane	19624-22-7	0.005 ppm	0.015 ppm	—	—
Pentachloronaphthalene	1321-64-8	0.5 mg/m ³	1.5 mg/m ³	—	X
Pentachlorophenol	87-86-5	0.5 mg/m ³	1.5 mg/m ³	—	X
Pentaerythritol	115-77-5	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Pentane	109-66-0	600 ppm	750 ppm	—	—
2-Pentanone (methyl propyl ketone)	107-87-9	200 ppm	250 ppm	—	—

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Perchloroethylene (tetrachloroethylene)	127-18-4	25 ppm	38 ppm	—	—
Perchloromethyl mercaptan	594-42-3	0.1 ppm	0.3 ppm	—	—
Perchloryl fluoride	7616-94-6	3 ppm	6 ppm	—	—
Perlite	—	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Petroleum distillates (Naphtha, rubber solvent)	—	100 ppm	150 ppm	—	—
Phenacyl chloride (a-Chloroacetophenone)	532-21-4	0.05 ppm	0.15 ppm	—	—
Phenol	108-95-2	5 ppm	10 ppm	—	X
Phenothiazine	92-84-2	5 mg/m ³	10 mg/m ³	—	X
p-Phenylene diamine	106-50-3	0.1 mg/m ³	0.3 mg/m ³	—	X
Phenyl ether (vapor)	101-84-8	1 ppm	3 ppm	—	—
Phenyl ether-diphenyl mixture (vapor)	—	1 ppm	3 ppm	—	—
Phenylethylene (Styrene)	100-42-5	50 ppm	100 ppm	—	—
Phenyl glycidyl ether (PGE)	122-60-1	1 ppm	3 ppm	—	—
Phenylhydrazine	100-63-0	5 ppm	10 ppm	—	X
Phenyl mercaptan	108-98-5	0.5 ppm	1.5 ppm	—	—
Phenylphosphine	638-21-1	—	—	0.05 ppm	—
Phorate	298-02-2	0.05 mg/m ³	0.2 mg/m ³	—	X
Phosdrin (Mevinphos)	7786-34-7	0.01 ppm	0.03 ppm	—	X
Phosgene (carbonyl chloride)	75-44-5	0.1 ppm	0.3 ppm	—	—
Phosphine	7803-51-2	0.3 ppm	1 ppm	—	—
Phosphoric acid	7664-38-2	1 mg/m ³	3 mg/m ³	—	—
Phosphorus (yellow)	7723-14-0	0.1 mg/m ³	0.3 mg/m ³	—	—
Phosphorous oxychloride	10025-87-3	0.1 ppm	0.3 ppm	—	—
Phosphorus pentachloride	10026-13-8	0.1 ppm	0.3 ppm	—	—
Phosphorus pentasulfide	1314-80-3	1 mg/m ³	3 mg/m ³	—	—
Phosphorus trichloride	12-2-19	0.2 ppm	0.5 ppm	—	—
Phthalic anhydride	85-44-9	1 ppm	3 ppm	—	—
m-Phthalodinitrile	626-17-5	5 mg/m ³	10 mg/m ³	—	—
Picloram	1918-02-1	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Picric acid (2, 4, 6- Trinitrophenol)	88-89-1	0.1 mg/m ³	0.3 mg/m ³	—	X
Pindone (2-Pivalyl-1, 3-indandione, Pival)	83-26-1	0.1 mg/m ³	0.3 mg/m ³	—	—
Piperazine dihydrochloride	142-64-3	5 mg/m ³	10 mg/m ³	—	—
Pival (Pindone)	83-26-1	0.1 mg/m ³	0.3 mg/m ³	—	—
Plaster of Paris	26499-65-0	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Platinum (as Pt)	7440-06-4	—	—	—	—
Metal	—	1 mg/m ³	3 mg/m ³	—	—
Soluble salts	—	0.002 mg/m ³	0.006 mg/m ³	—	—
Polychlorobiphenyls (Chlorodiphenyls)	—	—	—	—	—
42% Chlorine (PCB)	53469-21-9	1 mg/m ³	3 mg/m ³	—	X
54% Chlorine (PCB)	11097-69-1	0.5 mg/m ³	1.5 mg/m ³	—	X
Portland cement	65997-15-1	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Potassium hydroxide	1310-58-3	—	—	2 mg/m ³	—
Propane	74-98-6	1,000 ppm	1,250 ppm	—	—
Propargyl alcohol	107-19-7	1 ppm	3 ppm	—	X
beta-Propiolactone (see WAC 296-62-073)	57-57-8	—	—	—	—
Propionic acid	79-09-4	10 ppm	20 ppm	—	—
Propoxur (Baygon)	114-26-1	0.5 mg/m ³	1.5 mg/m ³	—	—
n-Propyl acetate	109-60-4	200 ppm	250 ppm	—	—
n-Propyl alcohol	71-23-8	200 ppm	250 ppm	—	X
n-Propyl nitrate	627-13-4	25 ppm	40 ppm	—	—
Propylene	—	Simple asphyxiant	—	—	—
Propylene dichloride (1, 2-Dichloropropane)	78-87-5	75 ppm	110 ppm	—	—
Propylene glycol dinitrate	6423-43-4	0.05 ppm	0.15 ppm	—	X
Propylene glycol monomethyl ether	107-98-2	100 ppm	150 ppm	—	—

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Propylene imine	75-55-8	2 ppm	4 ppm	—	X
Propylene oxide (1,2-Epoxypropane)	75-56-9	20 ppm	30 ppm	—	—
Propyne (Methyl acetylene)	74-99-7	1,000 ppm	1,250 ppm	—	—
Pyrethrum	8003-34-7	5 mg/m ³	10 mg/m ³	—	—
Pyridine	110-86-1	5 ppm	10 ppm	—	—
Pyrocatechol (Catechol)	120-80-9	5 ppm	10 ppm	—	X
Quinone (p-Benzoquinone)	106-51-4	0.1 ppm	0.3 ppm	—	—
RDX (Cyclonite)	—	1.5 mg/m ³	3 mg/m ³	—	X
Resorcinol	108-46-3	10 ppm	20 ppm	—	—
Rhodium (as Rh)	7440-16-6	—	—	—	—
Insoluble compounds, metal fumes and dusts	—	0.1 mg/m ³	0.3 mg/m ³	—	—
Soluble compounds, salts	—	0.001 mg/m ³	0.003 mg/m ³	—	—
Ronnel	299-84-3	10 mg/m ³	20 mg/m ³	—	—
Rosin core solder, pyrolysis products (as formaldehyde)	8050-09-7	0.1 mg/m ³	0.3 mg/m ³	—	—
Rotenone	83-79-4	5 mg/m ³	10 mg/m ³	—	—
Rouge	—	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Rubber solvent (naphtha)	8030-30-6	100 ppm	150 ppm	—	—
Selenium compounds (as Se)	7782-49-2	0.2 mg/m ³	0.6 mg/m ³	—	—
Selenium hexafluoride (as Se)	7783-79-1	0.05 ppm	0.15 ppm	—	—
Sesone (Crag herbicide)	136-78-7	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Sevin	63-25-2	5 mg/m ³	10 mg/m ³	—	—
(Carbaryl)	—	—	—	—	—
Silane (see Silicon tetrahydride)	7803-62-5	5 ppm	10 ppm	—	—
Silica, amorphous, precipitated and gel	112926-00-8	6 mg/m ³	12 mg/m ³	—	—
Silica, amorphous, diatomaceous earth, containing less than 1% crystalline silica	61790-53-2	—	—	—	—
Total particulate	—	6 mg/m ³	12 mg/m ³	—	—
Respirable fraction	—	3 mg/m ³	6 mg/m ³	—	—
Silica, crystalline cristobalite	—	—	—	—	—
Respirable fraction	14464-46-1	0.05 mg/m ³	0.15 mg/m ³	—	—
Silica, crystalline quartz	—	—	—	—	—
Respirable fraction	14808-60-7	0.1 mg/m ³	0.3 mg/m ³	—	—
Silica, crystalline tripoli (as quartz)	—	—	—	—	—
Respirable fraction	1317-95-9	0.1 mg/m ³	0.3 mg/m ³	—	—
Silica, crystalline tridymite	—	—	—	—	—
Respirable fraction	15468-32-3	0.05 mg/m ³	0.15 mg/m ³	—	—
Silica, fused	—	—	—	—	—
Respirable fraction	60676-86-0	0.1 mg/m ³	0.3 mg/m ³	—	—
Silicates (less than 1% crystalline silica)	—	—	—	—	—
Mica	—	—	—	—	—
Respirable fraction	12001-26-2	3 mg/m ³	6 mg/m ³	—	—
Soapstone	—	—	—	—	—
Total particulate	—	6 mg/m ³	12 mg/m ³	—	—
Respirable fraction	—	3 mg/m ³	6 mg/m ³	—	—
Talc (containing asbestos) (as asbestos) (see WAC 296-62-07705 and chapter 296-65 WAC)	—	0.1 f/cc	1.0 f/cc (30 minutes)	—	—
Talc (containing no asbestos)	—	—	—	—	—
Respirable fraction	14807-96-6	2 mg/m ³	4 mg/m ³	—	—
Tremolite (asbestiform) (as asbestos) (see WAC 296-62-07705 and chapter 296-65 WAC)	—	0.1 f/cc	1.0 f/cc (30 minutes)	—	—
Silicon	7440-21-3	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Silicon carbide	409-21-2	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Silicon tetrahydride (Silane)	7803-62-5	5 ppm	10 ppm	—	—

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Silver, metal dust and soluble compounds (as Ag)	7440-22-4	0.01 mg/m ³	0.03 mg/m ³	—	—
Soapstone	—	—	—	—	—
Total particulate	—	6 mg/m ³	12 mg/m ³	—	—
Respirable fraction	—	3 mg/m ³	6 mg/m ³	—	—
Sodium azide (as HN ₃ or NaN ₃)	26628-22-8	—	—	0.1 ppm	X
Sodium azide	7631-90-5	5 mg/m ³	10 mg/m ³	—	—
Sodium-2, 4-dichloro-phenoxyethyl sulfate (Crag herbicide)	136-78-7	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Sodium fluoroacetate	62-74-8	0.05 mg/m ³	0.15 mg/m ³	—	X
Sodium hydroxide	1310-73-2	—	—	2 mg/m ³	—
Sodium metabisulfite	7681-57-4	5 mg/m ³	10 mg/m ³	—	—
Starch	9005-25-8	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Stibine	7803-52-3	0.1 ppm	0.3 ppm	—	—
Stoddard solvent	8052-41-3	100 ppm	150 ppm	—	—
Strychnine	57-24-9	0.15 mg/m ³	0.45 mg/m ³	—	—
Styrene (Phenylethylene, Vinyl benzene)	100-42-5	50 ppm	100 ppm	—	—
Subtilisins	9014-01-1	—	0.00006 mg/m ³ (60 min.)	—	—
Sucrose	57-50-1	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Sulfotep (TEDP)	3689-24-5	0.2 mg/m ³	0.6 mg/m ³	—	X
Sulfur dioxide	7446-09-5	2 ppm	5 ppm	—	—
Sulfur hexafluoride	2551-62-4	1,000 ppm	1,250 ppm	—	—
Sulfuric acid	7664-93-9	1 mg/m ³	3 mg/m ³	—	—
Sulfur monochloride	10025-67-9	—	—	1 ppm	—
Sulfur pentafluoride	5714-22-1	—	—	0.01 ppm	—
Sulfur tetrafluoride	7783-60-0	—	—	0.1 ppm	—
Sulfuryl fluoride	2699-79-8	5 ppm	10 ppm	—	—
Sulprofos	35400-43-2	1 mg/m ³	3 mg/m ³	—	—
Systox (Demeton)	8065-48-3	0.01 ppm	0.03 ppm	—	X
2, 4, 5-T (2, 4, 5-trichlorophenoxyacetic acid)	93-76-5	10 mg/m ³	20 mg/m ³	—	—
Talc (containing asbestos) (as asbestos) (see WAC 296-62-07705 and chapter 296-65 WAC)	—	0.1 f/cc	1.0 f/cc (30 minutes)	—	—
Talc (containing no asbestos)	—	—	—	—	—
Respirable fraction	14807-96-6	2 mg/m ³	4 mg/m ³	—	—
Tantalum	—	—	—	—	—
Metal and oxide dusts	7440-25-7	5 mg/m ³	10 mg/m ³	—	—
TDI (Toluene-2, 4-diisocyanate)	584-84-9	0.005 ppm	0.02 ppm	—	—
TEDP (Sulfotep)	3689-24-5	0.2 mg/m ³	0.6 mg/m ³	—	X
Tellurium and compounds (as Te)	13494-80-9	0.1 mg/m ³	0.3 mg/m ³	—	—
Tellurium hexafluoride (as Te)	7783-80-4	0.02 ppm	0.06 ppm	—	—
Temphos (Abate)	3383-96-8	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
TEPP	107-49-3	0.004 ppm	0.012 ppm	—	X
Terphenyls	26140-60-3	—	—	0.5 ppm	—
1, 1, 1, 2-Tetrachloro-2, 2-difluoroethane	76-11-0	500 ppm	625 ppm	—	—
1, 1, 2, 2-Tetrachloro-1, 2-difluoroethane	76-12-0	500 ppm	625 ppm	—	—
1, 1, 2, 2-Tetrachloroethane	79-34-5	1 ppm	3 ppm	—	X
Tetrachloroethylene (Perchloroethylene)	127-18-4	25 ppm	38 ppm	—	—
Tetrachloromethane (Carbon tetrachloride)	56-23-5	2 ppm	4 ppm	—	X
Tetrachloronaphthalene	1335-88-2	2 mg/m ³	4 mg/m ³	—	X
Tetraethyl lead (as Pb)	78-00-2	0.075 mg/m ³	0.225 mg/m ³	—	X
Tetrahydrofuran	109-99-9	200 ppm	250 ppm	—	—
Tetramethyl lead (as Pb)	75-74-1	0.075 mg/m ³	0.225 mg/m ³	—	X
Tetramethyl succinonitrile	3333-52-6	0.5 ppm	1.5 ppm	—	X

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Tetranitromethane	509-14-8	1 ppm	3 ppm	—	—
Tetrasodium pyrophosphate	7722-88-5	5 mg/m ³	10 mg/m ³	—	—
Tetryl (2, 4, 6-trinitrophenyl-methylnitramine)	479-45-8	1.5 mg/m ³	3 mg/m ³	—	X
Thallium (soluble compounds) (as Tl)	7440-28-0	0.1 mg/m ³	0.3 mg/m ³	—	X
4, 4-Thiobis (6-tert-butyl-m-cresol)	96-69-5	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Thiodan (Endosulfan)	115-29-7	0.1 mg/m ³	0.3 mg/m ³	—	X
Thioglycolic acid	68-11-1	1 ppm	3 ppm	—	X
Thionyl chloride	7719-09-7	—	—	1 ppm	—
Thiram (see WAC 296-62-07519)	137-26-8	5 mg/m ³	10 mg/m ³	—	—
Tin (as Sn)	—	—	—	—	—
Inorganic compounds	7440-31-5	2 mg/m ³	4 mg/m ³	—	—
Tin (as Sn)	—	—	—	—	—
Organic compounds	7440-31-5	0.1 mg/m ³	0.3 mg/m ³	—	X
Tin oxide (as Sn)	21651-19-4	2 mg/m ³	4 mg/m ³	—	—
Titanium dioxide	13463-67-7	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
TNT (2, 4, 6-Trinitrotoluene)	118-96-7	0.5 mg/m ³	1.5 mg/m ³	—	X
Toluene	108-88-3	100 ppm	150 ppm	—	—
Toluene-2, 4-diisocyanate (TDI)	584-84-9	0.005 ppm	0.02 ppm	—	—
m-Toluidine	108-44-1	2 ppm	4 ppm	—	X
o-Toluidine	95-53-4	2 ppm	4 ppm	—	X
p-Toluidine	106-49-0	2.0 ppm	4 ppm	—	X
Toxaphene (Chlorinated camphene)	8001-35-2	0.5 mg/m ³	1 mg/m ³	—	X
Tremolite (asbestiform) (as asbestos) (see WAC 296-62-07705 and chapter 296-65 WAC)	—	0.1 f/cc	1.0 f/cc (30 minutes)	—	—
Tributyl phosphate	126-73-8	0.2 ppm	0.6 ppm	—	—
Trichloroacetic acid	76-03-9	1 ppm	3 ppm	—	—
1, 2, 4-Trichlorobenzene	120-82-1	—	—	5 ppm	—
1, 1, 1-Trichloroethane (Methyl chloroform)	71-55-6	350 ppm	450 ppm	—	—
1, 1, 2-Trichloroethane	79-00-5	10 ppm	20 ppm	—	—
Trichloroethylene	79-01-6	50 ppm	200 ppm	—	—
Trichlorofluoromethane (Fluorotrichloromethane)	75-69-4	—	—	1,000 ppm	—
Trichloromethane (Chloroform)	67-66-3	2 ppm	4 ppm	—	—
Trichloronaphthalene	1321-65-9	5 mg/m ³	10 mg/m ³	—	X
1, 2, 3-Trichloropropane	96-18-4	10 ppm	20 ppm	—	X
1, 1, 2-Trichloro-1, 2, 2-trifluoroethane	76-13-1	1,000 ppm	1,250 ppm	—	—
Tricyclohexyltin hydroxide (Cyhexatin)	13121-70-5	5 mg/m ³	10 mg/m ³	—	—
Triethylamine	121-44-8	10 ppm	15 ppm	—	—
Trifluorobromomethane	75-63-8	1,000 ppm	1,250 ppm	—	—
Trimellitic anhydride	552-30-7	0.005 ppm	0.015 ppm	—	—
Trimethylamine	75-50-3	10 ppm	15 ppm	—	—
Trimethyl benzene	25551-13-7	25 ppm	38 ppm	—	—
Trimethyl phosphite	121-45-9	2 ppm	4 ppm	—	—
2, 4, 6-Trinitrophenol (Picric acid)	88-89-1	0.1 mg/m ³	0.3 mg/m ³	—	X
2, 4, 6-Trinitrophenyl-methylnitramine (Tetryl)	479-45-8	1.5 mg/m ³	3 mg/m ³	—	X
2, 4, 6-Trinitrotoluene (TNT)	118-96-7	0.5 mg/m ³	1.5 mg/m ³	—	X
Triorthocresyl phosphate	78-30-8	0.1 mg/m ³	0.3 mg/m ³	—	X
Triphenyl amine	603-34-9	5 mg/m ³	10 mg/m ³	—	—
Triphenyl phosphate	115-86-6	3 mg/m ³	6 mg/m ³	—	—
Tungsten (as W)	7440-33-7	—	—	—	—
Soluble compounds	—	1 mg/m ³	3 mg/m ³	—	—
Insoluble compounds	—	5 mg/m ³	10 mg/m ³	—	—
Turpentine	8006-64-2	100 ppm	150 ppm	—	—
Uranium (as U)	7440-61-1	—	—	—	—

Table 3 "Permissible Exposure Limits (PELs) for Airborne Contaminants"

Airborne contaminant	CAS	TWA ₈	STEL	Ceiling	Skin
Soluble compounds	—	0.05 mg/m ³	0.15 mg/m ³	—	—
Insoluble compounds	—	0.2 mg/m ³	0.6 mg/m ³	—	—
n-Valeraldehyde	110-62-3	50 ppm	75 ppm	—	—
Vanadium (as V ₂ O ₅)	—	—	—	—	—
Respirable fraction	1314-62-1	0.05 mg/m ³	0.15 mg/m ³	—	—
Vegetable oil mist	—	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Vinyl acetate	108-05-1	10 ppm	20 ppm	—	—
Vinyl benzene (Styrene)	100-42-5	50 ppm	100 ppm	—	—
Vinyl bromide	593-60-2	5 ppm	10 ppm	—	—
Vinyl chloride (Chloroethylene)	75-01-4	1 ppm	5 ppm	—	—
(see WAC 296-62-07329)					
Vinyl cyanide (Acrylonitrile)	107-13-1	2 ppm	10 ppm	—	—
(see WAC 296-62-07336)					
Vinyl cyclohexene dioxide	106-87-6	10 ppm	20 ppm	—	X
Vinyl toluene	25013-15-4	50 ppm	75 ppm	—	—
Vinylidene chloride	75-35-4	1 ppm	3 ppm	—	—
(1, 1-Dichloroethylene)					
VM & P Naphtha	8032-32-4	300 ppm	400 ppm	—	—
Warfarin	81-81-2	0.1 mg/m ³	0.3 mg/m ³	—	—
Welding fumes	—	5 mg/m ³	10 mg/m ³	—	—
(total particulate)					
Wood dust	—	—	—	—	—
Nonallergenic;	—	5 mg/m ³	10 mg/m ³	—	—
(All woods except allergenics)					
Allergenics (e.g. cedar,	—	2.5 mg/m ³	5 mg/m ³	—	—
mahogany and teak)					
Xylenes (ortho, meta, and para isomers)	1330-20-7	100 ppm	150 ppm	—	—
(Dimethylbenzene)					
m-Xylene alpha, alpha-diamine	1477-55-0	—	—	0.1 mg/m ³	X
Xylidine	1300-73-8	2 ppm	4 ppm	—	X
(Dimethylaminobenzene)					
Yttrium	7440-65-5	1 mg/m ³	3 mg/m ³	—	—
Zinc chloride fume	7646-85-7	1 mg/m ³	2 mg/m ³	—	—
Zinc chromate (as Cr)	Varies with com-	0.005 mg/m ³	—	0.1 mg/m ³	—
(see WAC 296-62-08003)	compound				
Zinc oxide	1314-13-2	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Zinc oxide fume	1314-13-2	5 mg/g ³	10 mg/m ³	—	—
Zinc stearate	557-05-1	—	—	—	—
Total particulate	—	10 mg/m ³	20 mg/m ³	—	—
Respirable fraction	—	5 mg/m ³	10 mg/m ³	—	—
Zirconium compounds (as Zr)	7440-67-2	5 mg/m ³	10 mg/m ³	—	—

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-841-20025, filed 2/20/07, effective 4/1/07; 04-18-079, § 296-841-20025, filed 8/31/04, effective 11/1/04.]

WAC 296-841-300 Definitions.

Breathing zone

The space around and in front of an employee's nose and mouth, forming a hemisphere with a six to nine inch radius.

Ceiling limit

See Permissible exposure limits (PELs).

Dust

Solid particles suspended in air. Dusts are generated by handling, drilling, crushing, grinding, rapid impact, detonation, or decrepitation of organic or inorganic materials such as rock, ore, metal, coal, wood, grain, etc.

Exposed or exposure

The contact an employee has with a toxic substance, harmful physical agent or oxygen deficient condition, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry, such as inhalation, ingestion, skin contact, or skin absorption.

Fume

Solid particles suspended in air, generated by condensation from the gaseous state, generally after volatilization from molten metals, etc.

Gas

A normally formless fluid which can be changed to the liquid or solid state by the effect of increased pressure or decreased temperature or both.

General exhaust ventilation

The general movement of air out of an area or permit-required confined space by mechanical or natural means.

Immediately dangerous to life or health (IDLH)

An atmospheric condition that would:

- Cause an immediate threat to life
- or
- Cause permanent or delayed adverse health effects
- or
- Interfere with an employee's ability to escape

Mist

Liquid droplets suspended in air, generated by condensation from the gaseous to the liquid state or by breaking up a liquid into a dispersed state, such as by splashing, foaming, spraying or atomizing.

Nuisance dust (or inert dust)

Dusts that, when inhaled, have little adverse effect on the lungs **and** do not produce significant organic disease or toxic effect when exposures are kept under reasonable control.

The biological reaction to these dusts in lung tissue has the following characteristics:

- The architecture of the air spaces remains intact
- Scar tissue (collagen) isn't formed to a significant extent

- The tissue reaction is potentially reversible

Oxygen deficient

An atmosphere with an oxygen content below 19.5% by volume.

Permissible exposure limits (PEL)

The amount of an airborne chemical, toxic substance, or other harmful agent that must not be exceeded during any part of the workday.

An airborne chemical or toxic substance can have 3 PEL values:

- TWA₈. This is an 8-hour, time-weighted average limit.
- Short-term exposure limit (STEL). This is typically a 15-minute, time-weighted average limit.
- Ceiling limit (C). This is an instantaneous limit.

Short-term exposure limit (STEL)

See Permissible exposure limits (PELs).

Temper

To condition air for a specific work environment by changing its temperature or moisture content.

Time weighted average (TWA₈)

See Permissible exposure limits (PELs).

Toxic substance

Any chemical substance or biological agent, such as bacteria, virus, and fungus, which is any of the following:

- Listed in the latest edition of the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances (RTECS)
- Shows positive evidence of an acute or chronic health hazard in testing conducted by, or known to, the employer.
- The subject of a material safety data sheet kept by or known to the employer showing the material may pose a hazard to human health.

Vapor

The gaseous form of a substance that is normally in the solid or liquid state.

Ventilation

Providing, circulating or exhausting air into or out of an area or space.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-062, § 296-841-300, filed 2/20/07, effective 4/1/07; 04-18-079, § 296-841-300, filed 8/31/04, effective 11/1/04; 03-20-115, § 296-841-300, filed 10/1/03, effective 1/1/04.]

Chapter 296-842 WAC**RESPIRATORS****WAC**

296-842-100	Scope.
296-842-10505	Designate a program administrator.
296-842-110	Voluntary respirator use requirements.
296-842-11005	Make sure voluntary use of respirators is safe.
296-842-11010	Keep voluntary use program records.
296-842-12005	Develop and maintain a written program.
296-842-12010	Keep respirator program records.
296-842-13005	Select and provide appropriate respirators.
296-842-14005	Provide medical evaluations.
296-842-15005	Conduct fit testing.
296-842-16005	Provide effective training.
296-842-17005	Maintain respirators in a clean and reliable condition.
296-842-17010	Store respirators properly.
296-842-17015	Inspect and repair respirators.
296-842-18005	Prevent sealing problems with tight-fitting respirators.
296-842-18010	Make sure employees leave the use area before removing respirators.
296-842-19005	Provide standby assistance in immediately dangerous to life or health (IDLH) conditions.
296-842-20005	Make sure breathing air and oxygen meet established specifications.
296-842-20010	Prevent conditions that could create a hazardous breathing air supply.
296-842-20015	Make sure compressors do not create a hazardous breathing air supply.
296-842-21005	Keep labels readable on respirator filters, cartridges, and canisters during use.
296-842-22005	Use this medical questionnaire for medical evaluations.
296-842-22010	Follow these fit-testing procedures for tight-fitting respirators.
296-842-22015	Follow procedures established for cleaning and disinfecting respirators.
296-842-22020	Follow procedures established for seal checking respirators.
296-842-300	Definitions.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-842-105	Respirator program administrator. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. 03-20-114, § 296-842-105, filed 10/1/03, effective 1/1/04.] Repealed by 07-05-072, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-842-120	Written respirator program and recordkeeping. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. 03-20-114, § 296-842-120, filed 10/1/03, effective 1/1/04.] Repealed by 07-05-072, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-842-130	Respirator selection. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. 03-20-114, § 296-842-130, filed 10/1/03, effective 1/1/04.] Repealed by 07-05-072, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-842-140	Medical evaluations. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. 03-20-114, § 296-842-140, filed 10/1/03, effective 1/1/04.] Repealed by 07-05-072, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-842-150	Fit testing. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. 03-20-114, § 296-842-150, filed 10/1/03, effective 1/1/04.] Repealed by 07-05-072, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-842-160	Training. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. 03-20-114, § 296-842-160, filed 10/1/03, effective 1/1/04.] Repealed by 07-05-072, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
296-842-170	Maintenance. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. 03-20-114, § 296-842-170, filed 10/1/03, effective 1/1/04.] Repealed by 07-05-072, filed 2/20/07, effective 4/1/07. Statutory

- 296-842-180 Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
Safe use and removal of respirators. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. 03-20-114, § 296-842-180, filed 10/1/03, effective 1/1/04.] Repealed by 07-05-072, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
- 296-842-190 Standby requirements for immediately dangerous to life or health (IDLH) conditions. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. 03-20-114, § 296-842-190, filed 10/1/03, effective 1/1/04.] Repealed by 07-05-072, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
- 296-842-200 Air quality for self-contained breathing apparatus (SCBA) and air-line respirators. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. 03-20-114, § 296-842-200, filed 10/1/03, effective 1/1/04.] Repealed by 07-05-072, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
- 296-842-210 Labeling of air-purifying respirator filters, cartridges, and canisters. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. 03-20-114, § 296-842-210, filed 10/1/03, effective 1/1/04.] Repealed by 07-05-072, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.

296-842-220 Required procedures for respiratory protection program. [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. 03-20-114, § 296-842-220, filed 10/1/03, effective 1/1/04.] Repealed by 07-05-072, filed 2/20/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.

WAC 296-842-100 Scope. This chapter applies to all use of respirators at work.

IMPORTANT:

Before you decide to use respirators, you are required to evaluate respiratory hazards and implement control methods as outlined in chapter 296-841 WAC, Airborne contaminants.

The term "respiratory hazards" will be used throughout this chapter to refer to oxygen deficient conditions and harmful airborne hazards.

Definition:

Respirators are a type of personal protective equipment designed to protect the wearer from respiratory hazards.

You can use Table 1 for general guidance on which chapter sections apply to you.

**Table 1
Chapter sections that apply to your workplace**

If employees...	Then the sections marked with an "X" apply...					
	105	110	120	130-210	220	300
Request and are permitted to voluntarily use filtering-facepiece respirators, and are not exposed to a respiratory hazard		X				X
Request and are permitted to voluntarily use respirators that are NOT filtering-facepiece respirators, and are not exposed to a respiratory hazard	X	X			X	X
Are required to use any respirator by WISHA or the employer	X		X	X	X	X
Would use an escape respirator in an emergency	X		X	X	X	X

Reference: See WAC 296-800-160, Personal protective equipment (PPE) to find requirements for other types of PPE such as eye, hand, and head protection.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-072, § 296-842-100, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-100, filed 10/1/03, effective 1/1/04.]

WAC 296-842-10505 Designate a program administrator.

Exemption: You do not need to designate a program administrator if employees use only filtering-facepiece respirators and do so only as voluntary use.

Definition:

Voluntary use is respirator use that is requested by the employee AND permitted by the employer when **NO** respiratory hazard exists.

Designate a program administrator who has overall responsibility for your program and has sufficient training or experience to oversee program development, coordinate implementation, and conduct required evaluations of program effectiveness outlined in WAC 296-842-12005.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-072, § 296-842-10505, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-10505, filed 10/1/03, effective 1/1/04.]

WAC 296-842-110 Voluntary respirator use requirements.

IMPORTANT:

• Respirator use is NOT voluntary if a respiratory hazard, such as exposure to a substance over the permissible expo-

sure limit (PEL) or hazardous exposure to an airborne biological hazard, is present.

• To evaluate respiratory hazards in your workplace, see chapter 296-841 WAC, Respiratory hazards.

• Some requirements in this section do not apply if only filtering-facepiece respirators are used voluntarily. Some filtering-facepiece respirators are equipped with a sorbent layer for absorbing "nuisance" organic vapors. These can be used for voluntary use, but are not NIOSH certified for protection against hazardous concentrations of organic vapor.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-072, § 296-842-110, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-110, filed 10/1/03, effective 1/1/04.]

WAC 296-842-11005 Make sure voluntary use of respirators is safe.

Definition:

Voluntary use is respirator use that is requested by the employee AND permitted by the employer when **NO** respiratory hazard exists.

IMPORTANT: If you choose to require respirator use, is NOT voluntary and the required use sections of this chapter apply.

(1) Make sure voluntary respirator use does NOT:

(a) Interfere with an employee's ability to work safely, such as restricting necessary vision or radio communication

OR

(b) Create health hazards.

- Note:** Examples of health hazards include:
- Skin irritation, dermatitis, or other health effects caused by using a dirty respirator
 - Illness created by sharing contaminated respirators
 - Health effects caused by use of an unsafe air supply, such as carbon monoxide poisoning.

(2) Provide all voluntary respirator users with the advisory information in Table 2 at no cost to them.

- Note:** If you have provided employees with the advisory information required in the previous rule, WAC 296-62-07117, you do not need to provide the additional information in Table 2 to those employees.

(3) Develop and maintain a written program that includes the following:

- Exemption:** If employees use only filtering-facepiece respirators and do so only voluntarily, you do not need to develop and maintain a written program.

(a) Medical evaluation provisions as specified in WAC 296-842-140.

(b) Procedures to properly clean and disinfect respirators, according to WAC 296-842-22015, if they are reused.

(c) How to properly store respirators, according to WAC 296-842-17010, so that using them does not create hazards.

(d) Procedures to make sure there is a safe air supply, according to WAC 296-842-200, when using air-line respirators and SCBAs.

(e) Effective training to ensure respirator use does NOT create a hazard.

- Note:**
- Pay for medical evaluations, training, travel related costs, and wages. You do NOT need to pay for respirators employees use only voluntarily.
 - If you have both voluntary and required respirator users, you may choose to treat voluntary users as required users. Doing this exceeds the requirements in this section.

(4) Use Table 2 to provide information to employees who voluntarily use any type of respirator.

Table 2

Advisory Information for Employees Who Voluntarily Use Respirators
<ul style="list-style-type: none"> • Respirators protect against airborne hazards when properly selected and used. Respirator usage that is required by WISHA or your employer is not voluntary use. With required use, your employer will need to provide further training and meet additional requirements in this chapter. WISHA recommends voluntary use of respirators when exposure to substances is below WISHA permissible exposure limits (PELs) because respirators can provide you an additional level of comfort and protection. • If you choose to voluntarily use a respirator (whether it is provided by you or your employer) be aware that respirators can create hazards for you, the user. You can avoid these hazards if you know how to use your respirator properly AND how to keep it clean. Take these steps: <ul style="list-style-type: none"> – Read and follow all instructions provided by the manufacturer about use, maintenance (cleaning and care), and warnings regarding the respirator's limitations. – Choose respirators that have been certified for use to protect against the substance of concern. The National Institute for Occupational Safety and Health (NIOSH) certifies respirators. If a respirator is not certified by NIOSH, you have no guarantee that it meets minimum design and performance standards for workplace use. <ul style="list-style-type: none"> ■ A NIOSH approval label will appear on or in the respirator packaging. It will tell you what protection the respirator provides. – Keep track of your respirator so you do not mistakenly use someone else's. – DO NOT wear your respirator into: <ul style="list-style-type: none"> ■ Required use situations when you are only allowed voluntary use. ■ Atmospheres containing hazards that your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against solvent vapor, smoke or oxygen deficiency.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-11005, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-11005, filed 10/1/03, effective 1/1/04.]

WAC 296-842-11010 Keep voluntary use program records.

- Exemption:** If employees use only filtering-facepiece respirators voluntarily, you do not need to follow these record-keeping requirements.

- (1) Keep copies of:
- (a) Your current written respirator program
- (b) Written recommendations from the licensed health care professional (LHCP)
- (2) Allow records required by this section to be examined and copied by affected employees and their representatives.

- Reference:** See chapter 296-802 WAC, Employee medical and exposure records, for additional requirements that apply to medical records.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-11010, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-11010, filed 10/1/03, effective 1/1/04.]

WAC 296-842-12005 Develop and maintain a written program.

- Exemption:** This section does NOT apply to respirator use that is voluntary. See WAC 296-842-11005 for voluntary use program requirements.

(1) Develop a complete worksite-specific written respiratory protection program that includes the applicable elements listed in Table 3.

Note: Pay for respirators, medical evaluations, fit testing, training, maintenance, travel costs, and wages.

(2) Keep your program current and effective by evaluating it and making corrections. Do ALL of the following:

(a) Make sure procedures and program specifications are followed and appropriate.

(b) Make sure selected respirators continue to be effective in protecting employees. For example, if changes in work area conditions, level of employee exposure, or employee physical stress have occurred, you need to reevaluate your respirator selection.

(c) Have supervisors periodically monitor employee respirator use to make sure employees are using them properly.

(d) Regularly ask employees required to use respirators about their views concerning program effectiveness and whether they have problems with:

- Respirator fit during use
- Any effects of respirator use on work performance
- Respirators being appropriate for the hazards encountered
- Proper use under current worksite conditions
- Proper maintenance.

(e) When developing your written program include applicable elements listed in Table 3.

Table 3

Required Elements for Required-Use Respirator Programs	
<ul style="list-style-type: none"> • Selection: <ul style="list-style-type: none"> - Procedures for respirator selection - A list specifying the appropriate respirator for each respiratory hazard in your workplace - Procedures for issuing the proper type of respirator, if appropriate 	
<ul style="list-style-type: none"> • Medical evaluation provisions 	
<ul style="list-style-type: none"> • Fit-test provisions and procedures, if tight-fitting respirators are selected 	
<ul style="list-style-type: none"> • Training provisions that address: <ul style="list-style-type: none"> - Respiratory hazards encountered during: <ul style="list-style-type: none"> ■ Routine activities ■ Infrequent activities, for example, bimonthly cleaning of equipment ■ Reasonably foreseeable emergencies, for example, rescue, spill response, or escape situations - Proper use of respirators, for example, how to put on or remove respirators, and use limitations. <p>Note: You do NOT need to repeat training on respiratory hazards if employees have been trained on this in compliance with other rules such as WAC 296-800-170, employer chemical hazard communication in the WISHA safety and health core rules.</p>	
<ul style="list-style-type: none"> • Respirator use procedures for: <ul style="list-style-type: none"> - Routine activities - Infrequent activities - Reasonably foreseeable emergencies 	
<ul style="list-style-type: none"> • Maintenance: <ul style="list-style-type: none"> - Procedures and schedules for respirator maintenance covering: <ul style="list-style-type: none"> ■ Cleaning and disinfecting ■ Storage ■ Inspection and repair ■ When to discard respirators - A cartridge or canister change schedule IF air-purifying respirators are selected for use against gas or vapor contaminants AND an end-of-service-life-indicator (ESLI) is not available. In addition, provide: <ul style="list-style-type: none"> ■ The data and other information you relied on to calculate change schedule values (for example, highest contaminant concentration estimates, duration of employee respirator use, expected maximum humidity levels, user breathing rates, and safety factors) 	
<ul style="list-style-type: none"> • Procedures to ensure a safe air quantity and quality IF atmosphere-supplying respirators (air-line or SCBA) are selected 	
<ul style="list-style-type: none"> • Procedures for evaluating program effectiveness on a regular basis 	

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-12005, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-12005, filed 10/1/03, effective 1/1/04.]

WAC 296-842-12010 Keep respirator program records. (1) Keep records of your current respirator program

(2) Keep each employee's current fit test record, if fit testing is conducted. Fit test records must include:

- (a) Employee name
- (b) Test date
- (c) Type of fit-test performed

(d) Description (type, manufacturer, model, style, and size) of the respirator tested

(e) Results of fit tests, for example, for quantitative fit tests include the overall fit factor **AND** a print out, or other recording of the test.

(3) Keep training records that include employee's names and the dates trained

(4) Keep written recommendations from the LHCP.

(5) Allow records required by this section to be examined and copied by affected employees and their representatives.

Reference: See chapter 296-802 WAC, Employee medical and exposure records, for additional requirements that apply to medical records.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-12010, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-12010, filed 10/1/03, effective 1/1/04.]

WAC 296-842-13005 Select and provide appropriate respirators.

IMPORTANT:

See chapter 296-841 WAC, Airborne contaminants, for:

- Hazard evaluation requirements. Evaluation results are necessary for respirator selection.
- References to substance-specific rules that may also apply to you and have additional respirator selection requirements. These references are found in the permissible exposure limit (PEL) table.

Select and provide, at no cost to employees, appropriate respirators for routine use, infrequent use, and reasonably foreseeable emergencies (such as escape, emergency, and spill response situations) by completing the following process:

Respirator Selection Process

Step 1: If your only respirator use is for escape, skip to **Step 8** to select appropriate respirators.

Step 2: If the respiratory hazard is a biological aerosol, such as TB (tuberculosis), anthrax, psittacosis (parrot fever), or hanta virus, select a respirator appropriate for **nonemergency** activities recognized to present a health risk to workers AND skip to **Step 8**.

- If respirator use will occur during **emergencies**, skip to **Step 8** and document the analysis used to select the appropriate respirator.

- Use Centers for Disease Control (CDC) selection guidance for exposures to specific biological agents when this guidance exists. Visit <http://www.cdc.gov>.

Step 3: If the respiratory hazard is a pesticide, follow the respirator specification on the pesticide label AND skip to **Step 9**.

Step 4: Determine the expected exposure concentration for each respiratory hazard of concern. Use the results from the evaluation required by chapter 296-841 WAC, Airborne contaminants.

Step 5: Determine if the respiratory hazard is classified as IDLH; if it is NOT IDLH skip to **Step 7**.

- The respiratory hazard **IS** classified as IDLH if:
 - The atmosphere is oxygen deficient or oxygen enriched

OR

- You CANNOT measure or estimate your expected exposure concentration

OR

- Your measured or estimated expected exposure concentration is greater or equal to the IDLH value in the NIOSH *Pocket Guide to Chemical Hazards*

Note: • WISHA uses the IDLH values in the 1990 edition of the NIOSH *Pocket Guide to Hazardous Chemicals* to determine the existence of IDLH conditions. You may use more

recent editions of this guide. Visit www.cdc.gov/niosh for more information.

- If your measured or estimated expected exposure concentration is below NIOSH's IDLH values, proceed to **Step 7**.

Step 6: Select an appropriate respirator from one of the following respirators for IDLH conditions and skip to **Step 8**:

- Full-facepiece, pressure demand, self-contained breathing apparatus (SCBA) certified by NIOSH for a minimum service life of thirty minutes

OR

- Full-facepiece, pressure demand air-line respirator equipped with an auxiliary self-contained air supply

Exception: If the respiratory hazard is oxygen deficiency AND you can show oxygen concentrations can be controlled within the ranges listed in Table 4 under ALL foreseeable conditions, you are allowed to select ANY type of SCBA or air-line respirator:

Table 4
Concentration Ranges for Oxygen Deficiency

Altitude (as ft. above sea level)	Oxygen Concentration Range (as percent oxygen)
Below 3,001	16.0 - 19.5
3,001 - 4,000	16.4 - 19.5
4,001 - 5,000	17.1 - 19.5
5,001 - 6,000	17.8 - 19.5
6,001 - 7,000	18.5 - 19.5
7,001 - 8,000	19.3 - 19.5
Above 8,000 feet the exception does not apply. Oxygen-enriched breathing air must be supplied above 14,000 feet.	

Step 7: Select respirator types with assigned protection factors (APFs) from Table 5 that are appropriate to protect employees from the expected exposure concentration.

Note: • The helpful tool, using assigned protection factors (APFs) for respirator selection, found in the resource section of this chapter, utilizes the hazard-ratio approach established by ANSI Z88.2-1992 to determine which respirator types can provide a sufficient level of protection.

- If no permissible exposure limit (PEL) is established for an airborne contaminant, use relevant available information and informed professional judgment to determine an acceptable exposure limit value to use for calculating hazard ratios. For example, you may use exposure limit values established by the American Conference of Governmental Industrial Hygienists (ACGIH) [(ACGIH)].

Step 8: Consider hazards that could require selection of specific respirator types. For example, select full-facepiece respirators to prevent eye irritation or abrasive blasting helmets to provide particle rebound protection.

Note: Rules for specific substances have additional selection specifications that apply to escape and other types of respirators. Make sure you follow those additional requirements before finalizing your selection.

Step 9: Evaluate user and workplace factors that might compromise respirator performance, reliability or safety.

Examples:

- High humidity or temperature extremes in the workplace.
- Necessary voice communication.
- High traffic areas and moving machinery.
- If respirator use is for escape only, follow this step and then skip to **Step 11**.

- If the respiratory hazard is a pesticide, follow the requirements on the pesticide label and skip to **Step 11**.

- Time or distance for escape.

Step 10: Follow Table 6 requirements to select an air-purifying respirator.

- If Table 6 requirements cannot be met, you must select an appropriate air-line respirator or an SCBA.

Step 11: Make sure respirators you select are certified by the National Institute for Occupational Safety and Health (NIOSH).

- Respirators provided exclusively for escape from IDLH atmospheres must be NIOSH-certified for escape from the atmosphere in which they will be used.

- To maintain certification, make sure the respirator is used according to cautions and limitations specified on the NIOSH approval label. This includes manufacturer restrictions on cartridges and canisters.

Note: While selecting respirators, you will need to select a sufficient number of types, models or sizes to provide for fit testing. You can also consider other respirator use issues, such as accommodating facial hair with a loose fitting respirator.

Use Table 5 to identify the assigned protection factor for different types of respirators.

- These assigned protection factors are only effective when the employer implements a continuing, effective respirator program as required by this chapter, including training, fit testing, maintenance, and use requirements.

- You may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required use is independent of concentration.

Table 5
Assigned Protection Factors (APF) for Respirator Types

If the respirator is a(n) . . .	Then the APF is . . .
Air-purifying respirator with a:	
• Quarter-mask	5
• Half-facepiece. This category includes filtering facepiece and elastomeric facepiece models	10
• Full-facepiece	50
Powered air-purifying respirator (PAPR) with a:	
• Loose-fitting facepiece	25
• Half-facepiece	50
• Full-facepiece	1000
• Hood or helmet	25/1000 (see note)
Note: PAPRs with helmets/hoods may receive an APF of 1000 only when you have evidence that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater. Such evidence must be provided by the respirator manufacturer. This level of performance can best be demonstrated by performing a workplace protection factor (WPF) or simulated workplace protection factor (SWPF) study or equivalent testing.	

If the respirator is a(n) . . .	Then the APF is . . .
Air-line respirator with a:	
• Half-facepiece and designed to operate in demand mode	10
• Loose-fitting facepiece and designed to operate in continuous flow mode	25
• Half-facepiece and designed to operate in continuous-flow mode	50
• Half-facepiece and designed to operate in pressure-demand or other positive-pressure mode	50
• Full-facepiece and designed to operate in demand mode	50
• Full-facepiece and designed to operate in continuous-flow mode	1000
• Full-facepiece and designed to operate in pressure-demand or other positive-pressure mode	1000
• Helmet or hood and designed to operate in continuous-flow mode	25/1000 (see note)
Note: Air-line respirators with helmets/hoods designed to operate in continuous-flow mode may receive an APF of 1000 when you have evidence that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater. Such evidence must be provided by the respirator manufacturer. This level of performance can best be demonstrated by performing a workplace protection factor (WPF) or simulated workplace protection factor (SWPF) study or equivalent testing.	
Self-contained breathing apparatus (SCBA) with a tight fitting:	
• Half-facepiece and designed to operate in demand mode	10
• Full-facepiece and designed to operate in demand mode	50
• Full-facepiece and designed to operate in pressure-demand or other positive pressure mode (e.g., open/closed circuit)	10,000
• Helmet or hood and designed to operate in demand mode	50
• Helmet or hood and designed to operate in pressure-demand or other positive-pressure mode (e.g., open/closed circuit)	10,000
Combination respirators:	
• When using a combination respirator, such as an air-line respirator with an air-purifying filter, you must make sure the APF is appropriate to the mode of operation in which the respirator is used	
Escape respirators:	
• APFs in this table do not apply to respirators used solely for escape. To select escape respirators, go to Step 8 of this section	

Use Table 6 to select air-purifying respirators for particle, vapor, or gas contaminants.

Table 6
Requirements for Selecting Any Air-purifying Respirator

If the contaminant is a . . .	Then . . .
<ul style="list-style-type: none"> Gas OR vapor 	<ul style="list-style-type: none"> Provide a respirator with canisters or cartridges equipped with a NIOSH-certified, end-of-service-life indicator (ESLI) <p>OR</p> <ul style="list-style-type: none"> If a canister or cartridge with an ESLI is NOT available, develop a cartridge change schedule to make sure the canisters or cartridges are replaced before they are no longer effective <p>OR</p> <ul style="list-style-type: none"> Select an atmosphere-supplying respirator
<ul style="list-style-type: none"> Particle, such as a dust, spray, mist, fog, fume, or aerosol 	<ul style="list-style-type: none"> Select respirators with filters certified to be at least 95% efficient by NIOSH <ul style="list-style-type: none"> For example, N95s, R99s, P100s, or High Efficiency Particulate Air (HEPA) filters <p>OR</p> <ul style="list-style-type: none"> You may select respirators NIOSH certified as "dust and mist," "dust, fume, or mist," OR "pesticides." You can only use these respirators if particles primarily have a mass median aerodynamic diameter of at least two micrometers. <p>Note: These respirators are no longer sold for occupational use.</p>

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-13005, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-13005, filed 10/1/03, effective 1/1/04.]

WAC 296-842-14005 Provide medical evaluations.

IMPORTANT:

If you have provided an employee with a medical evaluation addressing respirator use, as required by another chapter, that evaluation will meet the requirements of this section.

Follow the medical evaluation process, Steps 1 through 7 in this section, to provide medical evaluations for employees at no cost to them.

Medical Evaluation Process

Step 1: Identify employees who need medical evaluations AND determine the frequency of evaluations from Table 7. Include employees who:

- Are required to use respirators

OR

- Voluntarily use respirators that are **not** filtering-face-piece respirators

Note: You may use a previous employer's medical evaluation for an employee if you can:

- Show the employee's previous work and use conditions were substantially similar to yours

AND

- Obtain a copy of the licensed health care professional's (LHCP's) written recommendation approving the employee's use of the respirator chosen by you.

Step 2: Identify a licensed health care professional (LHCP) to perform your medical evaluations.

Note: If you select a different LHCP, you do not need to have new medical evaluations done.

Step 3: Make sure your LHCP has the following information **before** the evaluation is completed:

- Information describing the respirators employees may use, including the weight and type.
- How the respirators will be used, including:
 - How often the respirator will be used, for example, daily, or once a month
 - The duration of respirator use, for example, a minimum of one hour, or up to twelve hours
 - The employee's expected physical work effort
 - Additional personal protective clothing and equipment to be worn
 - Temperature and humidity extremes expected during use
- A copy of your written respiratory protection program **and** this chapter.

Note:

- You may choose to send the questionnaire to the LHCP ahead of time, giving time to review it and add any necessary questions
- The LHCP determines what questions to add to the questionnaire, if any; however, questions in Parts 1-3 may not be deleted or substantially altered.

Step 4: Administer the medical questionnaire in WAC 296-842-22005 to employees, OR provide them a medical exam that obtains the same information.

Note: You may use on-line questionnaires if the questions are the same and requirements of this section are met.

• Administer the examination or questionnaire at no cost to employees:

- During the employee's normal working hours

OR

- At a time and place convenient to the employee

• Maintain employee confidentiality during examination or questionnaire administration:

- Do **not** view employee's answers on the questionnaire
- Do **not** act in a manner that may be considered a breach of confidentiality

Note: Providing confidentiality is important for securing successful medical evaluations. It helps make sure the LHCP gets complete and dependable answers on the questionnaire.

• Make sure employees understand the content of the questionnaire.

• Provide the employee with an opportunity to discuss the questionnaire or exam results with the LHCP.

Step 5: Provide follow-up evaluation for employees when:

- The LHCP needs more information to make a final recommendation

OR

- An employee gives any positive response to questions 1-8 in Part 2 OR to questions 1-6 in Part 3 of the WISHA medical evaluation questionnaire in WAC 296-842-22005.

Note: Follow-up may include:

- Employee consultation with the LHCP such as a telephone conversation to evaluate positive questionnaire responses
- Medical exams
- Medical tests or other diagnostic procedures.

Step 6: Obtain a written recommendation from the LHCP that contains only the following medical information:

- Whether or not the employee is medically able to use the respirator
- Any limitations of respirator use for the employee
- What future medical evaluations, if any, are needed

- A statement that the employee has been provided a copy of the written recommendation.

Step 7: Provide a powered, air-purifying respirator (PAPR) when the LHCP determines the employee should not wear a negative-pressure air-purifying respirator AND is able to wear a PAPR.

Reference: See WAC 296-842-130 for requirements regarding selection of air-purifying respirators.

Note:

- You may discontinue medical evaluations for an employee when the employee no longer uses a respirator.
- If you have staff conducting your medical evaluations, they may keep completed questionnaires and findings as confidential medical records, if they are maintained separately from other records.

Use Table 7 to determine medical evaluation frequency.

**Table 7
Evaluation Frequency**

Type of Evaluation:	When required:
Initial medical evaluations	<ul style="list-style-type: none"> • Before respirators are fit-tested or used in the workplace.
Subsequent medical evaluations	<ul style="list-style-type: none"> • If any of these occur: <ul style="list-style-type: none"> – Your licensed health care professional (LHCP) recommends them; for example, periodic evaluations at specified intervals. – A respirator program administrator or supervisor informs you that an employee needs reevaluation. – Medical signs or symptoms (such as breathing difficulties) are: <ul style="list-style-type: none"> ■ Observed during fit testing or program evaluation OR ■ Reported by the employee – Changes in worksite conditions such as physical work effort, personal protective clothing, or temperature that could substantially increase the employee's physiological stress.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-14005, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-14005, filed 10/1/03, effective 1/1/04.]

WAC 296-842-15005 Conduct fit testing. (1) Provide, at no cost to the employee, fit tests for ALL tight fitting respirators on the following schedule:

(a) Before employees are assigned duties that may require the use of respirators

(b) At least every twelve months after initial testing

(c) Whenever any of the following occurs:

- A different respirator facepiece is chosen such as a different type, model, style, or size

- You become aware of a physical change in an employee that could affect respirator fit. For example, you may observe, or be told about, facial scarring, dental changes, cosmetic surgery, or obvious weight changes

- An employee notifies you, or your LHCP, that the respirator fit is unacceptable. During the retest, you must give an employee reasonable opportunity to select a different respirator facepiece (size, model, etc.).

Note: You may accept a fit test completed by a previous employer **IF:**

- You obtain written documentation of the fit test
- AND**
- The results of the fit test are not more than twelve months old
- AND**
- The employee will use the same respirator (the same type, model, style, and size)
- AND**
- The fit test was conducted in a way that meets the requirements of WAC 296-842-150 and 296-842-22010.

(2) Select and use an appropriate fit-testing procedure from WAC 296-842-22010 of this chapter

(3) Use quantitative fit-test methods when a negative pressure respirator will be used in concentrations requiring a protection factor greater than 10. This includes:

- Full facepiece air-purifying respirators
- SCBAs operated in demand (negative pressure) mode
- Air-line respirators operated in demand mode.

(4) Make sure tight-fitting PAPRs, SCBAs, or air-line respirators are fit tested in negative-pressure mode. This must be done by either:

(a) Temporarily converting the respirator user's actual facepiece into a negative pressure respirator using the appropriate filters

OR

(b) Using an identical negative pressure air-purifying respirator facepiece as a surrogate for the SCBA, air-line or PAPR. The surrogate facepiece must have the same sealing surfaces as the SCBA, air-line, or PAPR.

Remove any modifications made to the respirator facepiece for fit testing and return the facepiece to the NIOSH approved configuration before the facepiece is used in the workplace.

(5) Make sure the person conducting fit testing is able to do ALL of the following:

(a) Prepare test solutions if required

- (b) Make sure equipment works properly
- (c) Perform tests properly
- (d) Recognize invalid tests
- (e) Calculate fit factors properly if required.

Note:

- No specific training program or certification is required for those who conduct fit tests.
- You should consider evaluating these individuals to determine their proficiency in the fit-testing method to be used.
- You can use an evaluation form such as the form included in the American National Standard for Respirator Fit Testing Methods, ANSI/AIHA Z88.10-2001 to determine if the individual meets these requirements. Visit www.ansi.org or www.aiha.org.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-15005, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-15005, filed 10/1/03, effective 1/1/04.]

WAC 296-842-16005 Provide effective training. (1)

Train employees, based on their duties, if they do any of the following:

- (a) Use respirators
 - (b) Supervise respirator users
 - (c) Issue, repair, or adjust respirators
- (2) Present effective training in a way that employees understand.

Note:

- Training may be provided using audiovisuals, slide presentations, formal classroom instruction, informal discussions during safety meetings, training programs conducted by outside sources, or a combination of these methods.
- You may want to have instructors available when using video or automated training methods to:
 - Encourage and provide responses to questions for the benefit of employees
 - Evaluate employees' understanding of the material
 - Provide other instructional interaction to employees.

- (3) Make sure a qualified instructor provides training
- (4) Provide training, at no cost to the employee, at these times:

- (a) Initially, before worksite respirator use begins
- (b) Periodically, within twelve months of the previous training
- (c) Additionally, when the following occur:
 - The employee has not retained knowledge or skills
 - OR**
 - Changes in the worksite, or type of respirator make previous training incomplete or obsolete.

Note:

- You may accept an employee's previous training, such as training provided by another employer, to satisfy the initial training requirement if:
 - You can demonstrate the employee received training within the past twelve months
- AND**
- The employee can demonstrate the knowledge and skills to use required respirators effectively.
- If you accept an employee's previous training to satisfy the initial training requirement, you are still responsible for providing periodic, and additional training when needed. Periodic training would need to be provided within twelve months of the employee's previous training.

- (5) Make sure employees can demonstrate the following knowledge and skills as required by their duties:

- (a) Why the respirator is necessary. Include, for example, information identifying respiratory hazards such as hazardous chemicals, the extent of the employee's exposure, and potential health effects and symptoms
- (b) The respirator's capabilities and limitations. Include, for example, how the respirator provides protection and why

air-purifying respirators cannot be used in oxygen-deficient conditions

- (c) How improper fit, use, or maintenance can compromise the respirator's effectiveness and reliability
- (d) How to properly inspect, put on, seal check, use, and remove the respirator
- (e) How to clean, disinfect, repair, and store the respirator, or how to get this done by someone else
- (f) How to use the respirator effectively in emergency situations; including what to do when a respirator fails and where emergency respirators are stored
- (g) Medical signs and symptoms that may limit or prevent the effective use of respirators such as shortness of breath or dizziness
- (h) The employer's general obligations under this chapter. For example, developing a written program, selecting appropriate respirators, and providing medical evaluations.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-16005, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-16005, filed 10/1/03, effective 1/1/04.]

WAC 296-842-17005 Maintain respirators in a clean and reliable condition. (1)

Make sure respirators are kept, at no cost to the employee, clean, sanitary and in good working order.

- (2) Clean and disinfect respirators as often as specified in Table 8 of this section.

Note:

- Use required cleaning and disinfecting procedures in WAC 296-842-22015, or the manufacturer's procedures that:
 - Result in a clean and sanitary respirator
 - Do not damage the respirator
 - Do not harm the user
- Automated cleaning and disinfecting are permitted
- Cleaning and disinfecting may be done by a central facility as long as you make sure respirators provided are clean, sanitary, and function properly.

- (3) Make sure respirators are assembled properly after cleaning or disinfecting.

**Table 8
Required Frequencies for Cleaning and Disinfecting Respirators**

If the respirator will be . . .	Then, clean and disinfect the respirator . . .
<ul style="list-style-type: none"> • Used exclusively by one employee 	<ul style="list-style-type: none"> • As often as needed to: <ul style="list-style-type: none"> – Keep it clean and functional AND – To prevent health hazards such as skin irritation
<ul style="list-style-type: none"> • Shared for nonemergency use <p>OR</p> <ul style="list-style-type: none"> • Used for fit-testing or training 	<ul style="list-style-type: none"> • Before it is worn by another employee
<ul style="list-style-type: none"> • Shared for emergency use 	<ul style="list-style-type: none"> • After each use so the respirator is immediately ready for use at all times

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-17005, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-17005, filed 10/1/03, effective 1/1/04.]

WAC 296-842-17010 Store respirators properly. (1)

Store respirators to protect them from ALL of the following:

- (a) Deformation of the facepiece or exhalation valve
- (b) Sunlight or extreme temperatures or other conditions
- (c) Contamination such as dust or damaging chemicals
- (d) Excessive moisture.

Note: Use coffee cans, sealable plastic bags, or other suitable means of protection.

(2) Follow these additional requirements for emergency respirators:

- (a) Keep respirators accessible to the work area
- (b) Store respirators in compartments or with covers clearly marked as containing emergency respirators
- (c) Follow additional storage instructions from the respirator manufacturer
- (d) Store an adequate number of emergency respirators in each area where they may be needed.

Note: Emergency respirators include mouthpiece respirators and other respirators that are limited to escape-only use by their NIOSH certification.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-17010, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-17010, filed 10/1/03, effective 1/1/04.]

WAC 296-842-17015 Inspect and repair respirators.

(1) Conduct respirator inspections as often as specified in Table 9.

(2) Make sure respirator inspections cover **all** of the following:

- (a) Respirator function
- (b) Tightness of connections
- (c) The condition of the facepiece, head straps, valves, connecting tubes, and cartridge, canisters or filters
- (d) Pliability and deterioration of elastomeric parts
- (e) Maintenance of air or oxygen cylinders
- (f) Making sure SCBA air cylinders are at ninety percent of the manufacturer's recommended pressure level
- (g) Proper functioning of SCBA regulators when air-flow is activated
- (h) Proper functioning of SCBA low-pressure warning devices when activated

(3) Certify inspections for emergency respirators by documenting the following:

- (a) Inspection date
- (b) Serial number of each respirator or other identifying information
- (c) Inspector's name or signature
- (d) Inspection findings
- (e) Required action, if problems are found.

Note:

- When documenting inspections you may either:
 - Provide the information on a tag or label and attach it to the respirator compartment
- OR**
- Include the information in an inspection report stored in paper or electronic files accessible to employees.

(4) Repair or replace any respirator that is not functioning properly **before** the employee returns to a situation where respirators are required.

If respirators fail inspection or are not functioning properly during use due to problems such as leakage, vapor or gas breakthrough, or increased breathing resistance, **ALL** of the following apply:

(a) Do **NOT** permit such respirators to be used until properly repaired or adjusted

(b) Use only NIOSH-certified parts

(c) Make sure repairs and adjustments are made by appropriately trained individuals

Use the manufacturer or a technician trained by the manufacturer to repair or adjust reducing and admission valves, regulators, and warning devices on SCBAs or air-line respirators.

(d) Follow the manufacturer's recommendations and specifications for the type and extent of repairs.

(5) Use Table 9 to determine how often to inspect respirators.

**Table 9
Required Frequencies for Respirator Inspections**

If the respirator is . . .	Then inspect . . .
A SCBA in any use	<ul style="list-style-type: none"> • Before each use AND • During cleaning OR • Monthly if NOT used
Used for nonemergencies, including day-to-day or infrequent use	<ul style="list-style-type: none"> • Inspect before each use AND • During cleaning
Used only for emergencies	<ul style="list-style-type: none"> • Check for proper function before and after each use AND • Inspect at least monthly as instructed by the manufacturer
Used for escape-only purposes	<ul style="list-style-type: none"> • Before carrying into a work place for use

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-17015, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-17015, filed 10/1/03, effective 1/1/04.]

WAC 296-842-18005 Prevent sealing problems with tight-fitting respirators.

(1) Make sure employees use the procedure in WAC 296-842-22020 to perform a user seal check each time they put on their tight-fitting respirator.

(2) Make sure you do **NOT** permit respirator use if employees have a characteristic that interferes with the respirator facepiece seal or valve function. For example, stubble, moustaches, sideburns, bangs, hairlines, or scars between the face and the sealing surface of the respirator will affect the seal.

(3) Make sure corrective glasses or personal protective equipment (PPE) do **NOT** interfere with the facepiece seal. Examples of PPE include safety glasses, goggles, faceshields, clothing, and hard hats.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-18005, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-18005, filed 10/1/03, effective 1/1/04.]

WAC 296-842-18010 Make sure employees leave the use area before removing respirators.

Make sure employees leave the use area for **any** of these reasons:

- To replace air-purifying filters, cartridges, or canisters

- When they smell or taste (detect) vapor or gas leakage from, for example, cartridges, canister, or the facepiece seal
- When they detect changes in breathing resistance
- To readjust their respirators
- To wash their faces and respirators as necessary to prevent skin or eye irritation
- If they become ill
- If they experience sensations of dizziness, nausea, weakness, breathing difficulty, coughing, sneezing, vomiting, fever, or chills.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-18010, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-18010, filed 10/1/03, effective 1/1/04.]

WAC 296-842-19005 Provide standby assistance in immediately dangerous to life or health (IDLH) conditions.

IMPORTANT:

WISHA currently uses the IDLH values in the 1990 NIOSH *Pocket Guide to Chemical Hazards* to determine the existence of IDLH conditions. You may use more recent editions of this guide. Visit www.cdc.gov/niosh for more information.

(1) Provide at least two standby employees outside the IDLH area.

- Note:** You need only one standby employee if the IDLH condition is well characterized, will remain stable AND you can show one employee can adequately do ALL of the following:
- Monitor employees in the IDLH area
 - Implement communication
 - Initiate rescue duties.

(2) Train and equip standby employees to provide effective emergency rescue. Equip them with:

- (a) A pressure-demand SCBA or a pressure-demand air-line respirator with an auxiliary SCBA, for each standby employee
- (b) Appropriate retrieval equipment, when it would help with the effective rescue of the entrant, or an equivalent means of rescue

(3) Make sure standby employees maintain visual, voice, or signal line communication with employees in the IDLH area

(4) Make sure that in the event of an emergency:

- (a) Standby employees notify you or your designee before they enter the IDLH area to provide emergency rescue
- (b) You provide necessary assistance when notified.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-19005, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-19005, filed 10/1/03, effective 1/1/04.]

WAC 296-842-20005 Make sure breathing air and oxygen meet established specifications. (1) Make sure that all SCBAs and air-line respirators are provided with safe breathing air and oxygen.

(2) Compressed breathing air must meet the following specifications for Grade D air:

- (a) Oxygen (volume/volume) within 19.5-23.5%
- (b) Hydrocarbon (condensed): NO MORE than five milligrams per cubic meter of air
- (c) Carbon **monoxide** (CO): NO MORE than ten parts per million (ppm)
- (d) Carbon **dioxide** (CO₂): NO MORE than 1,000 ppm

(e) No noticeable odor

Reference: See the American National Standards Institute - Compressed Gas Association Commodity Specification for Air (G-7.1.1989) for more information. Contact your local library to access a copy.

(3) Make sure the moisture content of the air supplied meets the following:

(a) Air supplied to respirators from cylinders must **NOT** exceed a dew point of -50°F (or -45.6°C) at 1 atmospheric pressure.

(b) Compressor supplied air must **NOT** exceed a dew point of 10°F (or 5.56°C) **BELOW** the use temperature at 1 atmospheric pressure.

(4) Cylinders of breathing air purchased or otherwise obtained from a supplier must have a certificate of analysis from the supplier verifying each cylinder's contents meet Grade D breathing air requirements and dew point standards.

(5) Compressed and liquid oxygen must meet the United States Pharmacopoeia requirements for medical or breathing oxygen.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-20005, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-20005, filed 10/1/03, effective 1/1/04.]

WAC 296-842-20010 Prevent conditions that could create a hazardous breathing air supply. (1) Use SCBA and air-line respirators safely:

– **DO NOT** supply compressed oxygen to SCBAs or air-line respirators that previously used compressed air.

Note: Compressed air leaves residues containing hydrocarbons such as oil or grease. Fire or explosion can occur if compressed oxygen makes contact with these residues.

(2) Use breathing air couplings on air-line respirators that are **NOT** compatible with couplings for nonrespirable air or other gas systems, for example, utility air used for manufacturing purposes.

(3) **DO NOT** allow asphyxiating substances to enter breathing air lines; for example, do not flush nitrogen through worksite air lines also used for breathing air.

(4) Use equipment specifically designed for oxygen service or distribution **IF** oxygen concentrations greater than 23.5% are used.

Note: Respiratory equipment NOT designed for oxygen service or distribution can create fire or explosion hazards in oxygen concentrations higher than 23.5%.

(5) Make sure cylinders used to supply breathing air for SCBAs or air-line respirators are tested and maintained as described in the federal Department of Transportation's (DOT) Shipping Container Specification Regulations, Title 49 CFR.

Note:

- Use only cylinders marked (with serial number, cylinder pressure, DOT exemption number, and test dates) according to these DOT regulations
- To find any Code of Federal Regulations (CFR) visit: www.access.gpo.gov.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-20010, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-20010, filed 10/1/03, effective 1/1/04.]

WAC 296-842-20015 Make sure compressors do not create a hazardous breathing air supply.

IMPORTANT:

• Ambient-air movers (or pumps) used to supply air to respirators must be used according to the manufacturer's instructions.

• Respirators used with ambient-air movers must be approved by NIOSH to operate within the pressure ranges of the air mover.

(1) Locate or modify compressor intakes so they will not pick up contaminated air OR exhaust gases such as carbon monoxide (CO) from:

- Fuel-powered vehicles

OR

- The internal combustion motor of the compressor

OR

• Other contaminant sources in the area, for example, a ventilation system discharge.

- Note:**
- You may need to reposition or extend the compressor's intake or engine exhaust pipe or outlet, especially if they are located near each other.
 - Be aware that exhaust gases may not adequately disperse when the compressor is operated in:
 - An enclosed space such as a small room, a corner, or near a wall

OR

- In turbulent wind conditions.

(2) Equip compressors with suitable air-purifying filters, water traps, and sorbents (such as charcoal beds) and maintain them as follows:

(a) Periodically change or clean them according to the manufacturer or supplier's instructions

(b) Keep a tag at the compressor with the following information:

- When the sorbent and filters were last replaced or cleaned

- The date of the most recent changes or cleaning

- The signature of the person authorized by the employer to perform changes or cleaning.

Note: To be sure you are providing the recommended operating pressure for respirators, you may need to install a delivery pressure gauge where the respirator's airline hose attaches to the manifold or other air outlet.

(3) Make sure the carbon monoxide (CO) level in breathing air from compressors does NOT exceed ten parts per million (ppm).

Maintain CO levels below ten ppm in oil lubricated compressors by using at least one of the following:

(a) An effective CO alarm

(b) An effective high temperature alarm AND testing the air supply often enough to prevent CO levels from exceeding ten ppm.

- Note:**
- If you do not have a reliable CO-free area available for locating your compressor intake, consider these examples of methods to prevent CO contamination of the air supply:
 - Use of continuous and effective carbon monoxide alarms and filters
 - Conduct frequent monitoring of air quality
 - Use a CO converter (converts CO to carbon dioxide).
 - How often to test depends on a number of considerations, for example:
 - Compressor age
 - Maintenance history of the compressor
 - Stability of CO readings

- If the CO or high temperature alarm cannot be heard by the employee, a flashing light or other effective alternative to an audio alarm needs to be used

- Safeguards, such as alarms, are necessary to prevent CO contamination resulting from compressor overheating. When alarms are provided, proper maintenance practices such as periodic inspections and calibration will help make sure alarms remain effective

- Any type of oil-lubricated compressor, such as screw or piston types, may produce dangerous levels of CO if overheating occurs

- Old compressors are known to leak oil due to worn parts, increasing the possibility for overheating. Newer compressors may also overheat if maintenance practices are poor. For example, poor maintenance practices may lead to disconnected or incorrectly set alarms, inoperative shut-offs, or an impaired cooling system

- You need to instruct employees to move to a safe area when the alarm sounds AND to stop using respirators.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-20015, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-20015, filed 10/1/03, effective 1/1/04.]

WAC 296-842-21005 Keep labels readable on respirator filters, cartridges, and canisters during use. Make sure the NIOSH certification labeling and color-coding on air-purifying respirator filters, cartridges, and canisters remains readable and intact during use.

Link: Color-coding specifications for manufacturers can be found in Title 42 CFR, Part 84. Visit www.cdc.gov/niosh.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-21005, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-21005, filed 10/1/03, effective 1/1/04.]

WAC 296-842-22005 Use this medical questionnaire for medical evaluations. Use the medical questionnaire in Table 10 when conducting medical evaluations.

Note: • You may use a physical exam instead of this questionnaire if the exam covers the same information as the questionnaire.

- You may use on-line questionnaires if the questions are the same and the requirements in WAC 296-842-140 of this chapter are met.

- You may choose to send the questionnaire to the LHCP ahead of time, giving time to review it and add any necessary questions.

- The LHCP determines what questions to add to the questionnaire, if any; however, questions in Parts 1-3 may not be deleted or substantially altered.

Table 10

WISHA Medical Evaluation Questionnaire	
Employer instructions:	
<ul style="list-style-type: none"> • You may use on-line questionnaires if the requirements in WAC 296-842-14005 are met. • You must tell your employee how to deliver or send the completed questionnaire to the health care provider you have selected. • You must NOT review employees' questionnaires. 	
Health care provider's instructions:	
<ul style="list-style-type: none"> • Review the information in this questionnaire and any additional information provided to you by the employer. • You may add questions to this questionnaire at your discretion; HOWEVER, questions in Parts 1-3 may not be deleted or substantially altered. 	

WISHA Medical Evaluation Questionnaire

- Follow-up evaluation is required for any positive response to questions 1-8 in Part 2, or questions 1-6 in Part 3. This might include: Phone consultations to evaluate positive responses, medical tests, and diagnostic procedures.
- When your evaluation is complete, send a copy of your written recommendation to the employer AND employee.

Employee information and instructions:

- Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you.
- Your employer or supervisor must not look at or review your answers at any time.

Part 1 - Employee Background Information**ALL employees must complete this part****Please print**

1. Today's date: _____
 2. Your name: _____
 3. Your age (to nearest year): ____
 4. Sex (circle one): Male / Female
 5. Your height: ___ft. ___in.
 6. Your weight: ____lbs.
 7. Your job title: _____
 8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include Area Code): _____
 9. The best time to call you at this number: _____
 10. Has your employer told you how to contact the health care professional who will review this questionnaire? Yes / No
 11. Check the type of respirator(s) you will be using:
 - a. ___ N, R, or P filtering-facepiece respirator (for example, a dust mask, OR an N95 filtering-facepiece respirator).
 - b. Check all that apply.
 - Half mask Full facepiece mask Helmet hood Escape
 - Nonpowered cartridge or canister Powered air-purifying cartridge respirator (PAPR)
 - Supplied-air or Air-line
 - Self contained breathing apparatus (SCBA): Demand or Pressure demand
 - Other: _____
 12. Have you previously worn a respirator? Yes / No
- If "yes," describe what type(s): _____

Part 2 - General Health Information**ALL employees must complete this part****Please circle "Yes" or "No"**

1. Do you *currently* smoke tobacco, or have you smoked tobacco in the last month? Yes / No
2. Have you *ever had* any of the following conditions?
 - a. Seizures (fits): Yes / No
 - b. Diabetes (sugar disease): Yes / No
 - c. Allergic reactions that interfere with your breathing: Yes / No
 - d. Claustrophobia (fear of closed-in places): Yes / No
 - e. Trouble smelling odors: Yes / No
3. Have you *ever had* any of the following pulmonary or lung problems?
 - a. Asbestosis: Yes / No
 - b. Asthma: Yes / No
 - c. Chronic bronchitis: Yes / No
 - d. Emphysema: Yes / No
 - e. Pneumonia: Yes / No
 - f. Tuberculosis: Yes / No
 - g. Silicosis: Yes / No
 - h. Pneumothorax (collapsed lung): Yes / No
 - i. Lung cancer: Yes / No

j. Broken ribs:	Yes	/	No
k. Any chest injuries or surgeries:	Yes	/	No
l. Any other lung problem that you have been told about:	Yes	/	No
4. Do you <i>currently</i> have any of the following symptoms of pulmonary or lung illness?			
a. Shortness of breath:	Yes	/	No
b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline:	Yes	/	No
c. Shortness of breath when walking with other people at an ordinary pace on level ground:	Yes	/	No
d. Have to stop for breath when walking at your own pace on level ground:	Yes	/	No
e. Shortness of breath when washing or dressing yourself:	Yes	/	No
f. Shortness of breath that interferes with your job:	Yes	/	No
g. Coughing that produces phlegm (thick sputum):	Yes	/	No
h. Coughing that wakes you early in the morning:	Yes	/	No
i. Coughing that occurs mostly when you are lying down:	Yes	/	No
j. Coughing up blood in the last month:	Yes	/	No
k. Wheezing:	Yes	/	No
l. Wheezing that interferes with your job:	Yes	/	No
m. Chest pain when you breathe deeply:	Yes	/	No
n. Any other symptoms that you think may be related to lung problems:	Yes	/	No
5. Have you <i>ever had</i> any of the following cardiovascular or heart problems?	Yes	/	No
a. Heart attack:	Yes	/	No
b. Stroke:	Yes	/	No
c. Angina:	Yes	/	No
d. Heart failure:	Yes	/	No
e. Swelling in your legs or feet (not caused by walking):	Yes	/	No
f. Heart arrhythmia (heart beating irregularly):	Yes	/	No
g. High blood pressure:	Yes	/	No
h. Any other heart problem that you have been told about:	Yes	/	No
6. Have you <i>ever had</i> any of the following cardiovascular or heart symptoms?			
a. Frequent pain or tightness in your chest:	Yes	/	No
b. Pain or tightness in your chest during physical activity:	Yes	/	No
c. Pain or tightness in your chest that interferes with your job:	Yes	/	No
d. In the past 2 years, have you noticed your heart skipping or missing a beat:	Yes	/	No
e. Heartburn or indigestion that is not related to eating:	Yes	/	No
f. Any other symptoms that you think may be related to heart or circulation problems:	Yes	/	No
7. Do you <i>currently</i> take medication for any of the following problems?	Yes	/	No
a. Breathing or lung problems:	Yes	/	No
b. Heart trouble:	Yes	/	No
c. Blood pressure:	Yes	/	No
d. Seizures (fits):	Yes	/	No
8. If you have used a respirator, have you <i>ever had</i> any of the following problems? (If you have never used a respirator, check the following space and go to question 9:) ____			
a. Eye irritation:	Yes	/	No
b. Skin allergies or rashes:	Yes	/	No
c. Anxiety:	Yes	/	No
d. General weakness or fatigue:	Yes	/	No
e. Any other problem that interferes with your use of a respirator?	Yes	/	No
9. Would you like to talk to the health care professional who will review this questionnaire about your answers?	Yes	/	No
Part 3 - Additional Questions for Users of Full-Facepiece Respirators or SCBAs			
Please circle "Yes" or "No"			
1. Have you <i>ever lost</i> vision in either eye (temporarily or permanently)?	Yes	/	No
2. Do you <i>currently</i> have any of these vision problems?			
a. Need to wear contact lenses:	Yes	/	No
b. Need to wear glasses:	Yes	/	No
c. Color blindness:	Yes	/	No
d. Any other eye or vision problem:	Yes	/	No
3. Have you <i>ever had</i> an injury to your ears, including a broken ear drum?	Yes	/	No
4. Do you <i>currently</i> have any of these hearing problems?			
a. Difficulty hearing:	Yes	/	No
b. Need to wear a hearing aid:	Yes	/	No
c. Any other hearing or ear problem:	Yes	/	No

5. Have you <i>ever had</i> a back injury?	Yes	/	No
6. Do you <i>currently</i> have any of the following musculoskeletal problems?			
a. Weakness in any of your arms, hands, legs, or feet:	Yes	/	No
b. Back pain:	Yes	/	No
c. Difficulty fully moving your arms and legs:	Yes	/	No
d. Pain or stiffness when you lean forward or backward at the waist:	Yes	/	No
e. Difficulty fully moving your head up or down:	Yes	/	No
f. Difficulty fully moving your head side to side:	Yes	/	No
g. Difficulty bending at your knees:	Yes	/	No
h. Difficulty squatting to the ground:	Yes	/	No
i. Climbing a flight of stairs or a ladder carrying more than 25 lbs:	Yes	/	No
j. Any other muscle or skeletal problem that interferes with using a respirator:	Yes	/	No
Part 4 - Discretionary Questions			
Complete questions in this part ONLY if your employer's health care provider says they are necessary			
1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen?	Yes	/	No
If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you are working under these conditions:	Yes	/	No
2. Have you ever been exposed (at work or home) to hazardous solvents, hazardous airborne chemicals (such as gases, fumes, or dust), OR have you come into skin contact with hazardous chemicals?	Yes	/	No
If "yes," name the chemicals, if you know them: _____			
3. Have you ever worked with any of the materials, or under any of the conditions, listed below:			
a. Asbestos?	Yes	/	No
b. Silica (for example, in sandblasting)?	Yes	/	No
c. Tungsten/cobalt (for example, grinding or welding this material)?	Yes	/	No
d. Beryllium?	Yes	/	No
e. Aluminum?	Yes	/	No
f. Coal (for example, mining)?	Yes	/	No
g. Iron?	Yes	/	No
h. Tin?	Yes	/	No
i. Dusty environments?	Yes	/	No
j. Any other hazardous exposures?	Yes	/	No
If "yes," describe these exposures: _____			
4. List any second jobs or side businesses you have: _____			
5. List your previous occupations: _____			
6. List your current and previous hobbies: _____			
7. Have you been in the military services?	Yes	/	No
If "yes," were you exposed to biological or chemical agents (either in training or combat)?	Yes	/	No
8. Have you ever worked on a HAZMAT team?	Yes	/	No
9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications)?	Yes	/	No
If "yes," name the medications if you know them: _____			
10. Will you be using any of the following items with your respirator(s)?			
a. HEPA filters:	Yes	/	No
b. Canisters (for example, gas masks):	Yes	/	No
c. Cartridges:	Yes	/	No
11. How often are you expected to use the respirator(s)?			
a. Escape-only (no rescue):	Yes	/	No
b. Emergency rescue only:	Yes	/	No
c. Less than 5 hours <i>per week</i> :	Yes	/	No
d. Less than 2 hours <i>per day</i> :	Yes	/	No
e. 2 to 4 hours per day:	Yes	/	No
f. Over 4 hours per day:			
12. During the period you are using the respirator(s), is your work effort:			
a. <i>Light</i> (less than 200 kcal per hour):	Yes	/	No
If "yes," how long does this period last during the average shift: ____hrs. ____mins.			
Examples of a light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.			
b. <i>Moderate</i> (200 to 350 kcal per hour):	Yes	/	No

If "yes," how long does this period last during the average shift: ____hrs. ____mins.
 Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

c. *Heavy* (above 350 kcal per hour): Yes / No
 If "yes," how long does this period last during the average shift: ____hrs. ____mins.
 Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you are using your respirator? Yes / No
 If "yes," describe this protective clothing and/or equipment: _____

14. Will you be working under hot conditions (temperature exceeding 77°F): Yes / No
 15. Will you be working under humid conditions: Yes / No
 16. Describe the work you will be doing while using your respirator(s): _____
 17. Describe any special or hazardous conditions you might encounter when you are using your respirator(s) (for example, confined spaces, life-threatening gases): _____
 18. Provide the following information, if you know it, for each toxic substance that you will be exposed to when you are using your respirator(s):
 Name of the first toxic substance: _____
 Estimated maximum exposure level per shift: _____
 Duration of exposure per shift: _____
 Name of the second toxic substance: _____
 Estimated maximum exposure level per shift: _____
 Duration of exposure per shift: _____
 Name of the third toxic substance: _____
 Estimated maximum exposure level per shift: _____
 Duration of exposure per shift: _____
 The name of any other toxic substances that you will be exposed to while using your respirator: _____

19. Describe any special responsibilities you will have while using your respirator(s) that may affect the safety and well being of others (for example, rescue, security). _____

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-072, § 296-842-22005, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-22005, filed 10/1/03, effective 1/1/04.]

WAC 296-842-22010 Follow these fit-testing procedures for tight-fitting respirators.

IMPORTANT:

- This section contains procedural requirements that apply during actual fit testing.
- See WAC 296-842-15005 of this chapter for fit-testing requirements that apply to your overall program.

Exemptions: This section does NOT apply to employees who:
 • Voluntarily use respirators
OR
 • Are required to use mouthpiece respirators.

- (1) Follow the procedure in Table 11 to choose a respirator for fit testing:
 - (a) Prior to conducting fit tests

AND

 - (b) Any time your employee must select a different respirator such as when a previously selected respirator fails a test
- (2) Select and follow at least one of the following fit test procedures:
 - (a) Qualitative fit-test procedures:
 - ◆ Isoamyl acetate vapor (IAA, banana oil) in Table 12
 - ◆ Saccharine aerosol in Table 13
 - ◆ Bitrex™ aerosol in Table 14

- ◆ Irritant smoke in Table 15
- (b) Quantitative fit-test procedures:
 - ◆ Ambient aerosol condensation nuclei counter such as the Portacount™, in Table 16
 - ◆ Controlled negative pressure (CNP) such as the Fit-Tester 3000™, in Table 17
 - ◆ Generated aerosol in Table 18
- (3) Make sure employees perform the appropriate fit-test exercises listed in Table 19.
- (4) Clean and maintain equipment according to the manufacturer's instructions.
- (5) Make sure during fit testing employees wear any safety equipment that could:
 - (a) Interfere with respirator fit

AND

 - (b) Be worn in the workplace. For example, chemical splash goggles.
- (6) Check, prior to fit testing, for conditions that may interfere with the respirator seal or valve functions. If you find such conditions, do NOT conduct fit testing for that individual.

Note: Examples of conditions that may interfere with the respirator seal or valve functions include:

- Moustache, stubble, sideburns, bangs, hairline, and other types of facial hair in areas where the respirator facepiece seals or that interfere with valve function
- Temple bars of corrective eyewear or headgear that extend through the face seal area.

Table 11

Procedure for Choosing a Respirator for Fit Testing
<p>1. Inform the employee:</p> <ul style="list-style-type: none"> • To choose the most comfortable respirator that provides an adequate fit • That each respirator sample represents a different size and, if more than one model is supplied, a different shape • That if fitted and used properly, the respirator chosen will provide adequate protection <p>2. Provide a mirror and show the employee how to:</p> <ul style="list-style-type: none"> • Put on the respirator • Position the respirator on the face • Set strap tension. <p>Note: This instruction does NOT take the place of the employee's formal training since it is only a review.</p> <p>3. Review with the employee how to check for a comfortable fit around the nose, cheeks and other areas on the face.</p> <ul style="list-style-type: none"> • Tell the employee the respirator should be comfortable while talking or wearing eye protection. <p>4. Have the employee hold each facepiece against the face, taking enough time to compare the fit of each. The employee can then either:</p> <ul style="list-style-type: none"> • Reject any facepiece that clearly does not feel comfortable or fit adequately <p>OR</p> <ul style="list-style-type: none"> • Choose which facepiece is most acceptable and which are less acceptable, if any. <p>Note:</p> <ul style="list-style-type: none"> • Supply as many respirator models and sizes as needed to make sure the employee finds a respirator that is acceptable and fits correctly • To save time later, during this step note the more acceptable facepieces in case the one chosen fails the fit test or proves unacceptable later. <p>5. Have the employee wear the most acceptable respirator for AT LEAST 5 minutes to evaluate comfort and fit. Do ALL of the following during this time:</p> <ul style="list-style-type: none"> • Ask the employee to observe and comment about the comfort and fit: <ul style="list-style-type: none"> – Around the nose, cheeks, and other areas on the face – When talking or wearing eye protection • Have the employee put on the respirator and adjust the straps until they show proficiency • Evaluate the respirator's general fit by checking: <ul style="list-style-type: none"> – Proper chin placement – Properly tightened straps (do NOT over tighten) – Acceptable fit across the nose bridge – Respirator size; it must span the distance from nose to chin – To see if the respirator stays in position • Have the employee complete a successful seal check as specified in WAC 296-842-22025 of this chapter

Procedure for Choosing a Respirator for Fit Testing
<p>– Prior to the seal check they must settle the respirator on their face by taking a few slow deep breaths WHILE SLOWLY:</p> <ul style="list-style-type: none"> ■ Moving their head from side-to-side <p>AND</p> <ul style="list-style-type: none"> ■ Up and down. <p>6. If the employee finds the respirator unacceptable, allow the employee to select another one and return to Step 5. Otherwise, proceed to Step 7.</p> <p>7. Before starting the fit test, you must:</p> <ul style="list-style-type: none"> • Describe the fit test including screening procedures, employee responsibilities, and test exercises <p>AND</p> <ul style="list-style-type: none"> • Make sure the employee wears the respirator AT LEAST five minutes.

Table 12

Isoamyl Acetate (Banana Oil) Vapor Test Procedure
<p>Important:</p> <ul style="list-style-type: none"> • This is a qualitative fit-test (QLFT) procedure • The success of this test depends on preserving the employee's odor sensitivity to isoamyl acetate (IAA) vapor <ul style="list-style-type: none"> – Vapor accumulations in ambient air can decrease odor sensitivity. To prevent this: <ul style="list-style-type: none"> ■ Prepare ALL solutions in a location separate from screening and test areas ■ Conduct screening and tests in separate well-ventilated rooms. For example, use an exhaust fan or laboratory hood to prevent IAA vapor from accumulating in the room air – Always use odor-free water, for example, distilled or spring water that is 25°C (77°F). • Isoamyl acetate is also known as isopentyl acetate.
Screening Preparations
<p>Important: Odor threshold screening determines if the employee can detect weak concentrations of IAA vapor.</p> <ol style="list-style-type: none"> 1. Choose an appropriate location to conduct screening. <ul style="list-style-type: none"> • Conduct screening and tests in separate well-ventilated rooms. 2. Prepare a stock solution AT LEAST weekly as follows: <ul style="list-style-type: none"> • Add one milliliter (ml) of pure IAA to 800 ml of odor-free water in a one-liter glass jar with a metal lid using a measuring dropper or pipette • Seal the jar with the lid and shake it for 30 seconds • Clean the dropper or pipette. 3. Prepare the odor test solution daily as follows: <ul style="list-style-type: none"> • Add 0.4 ml from the stock solution to 500 ml of water in a one liter glass jar with a metal lid using a clean pipette or dropper • Seal the jar with the lid and shake it for 30 seconds • Let this solution stand for 2-3 minutes so the IAA concentration above the liquid reaches equilibrium • Label this jar so you know the contents but the employee cannot know its contents, for example, "1." <p>Note: To maintain the integrity of the test, use labels that peel off easily AND periodically switch the labels.</p>

<p>Isoamyl Acetate (Banana Oil) Vapor Test Procedure</p> <p>4. Prepare a "test blank" solution as follows:</p> <ul style="list-style-type: none"> • Add 500 ml of odor-free water to a one liter glass jar with a metal lid • Seal the jar • Label the jar so you know the contents but the employee cannot know its contents. <p>5. Type or neatly print the following instructions on a card and place it on the table in front of the two test jars:</p> <p><i>"The purpose of this test is to find out if you can smell banana oil at a low concentration. While both jars contain water, one ALSO contains a small amount of banana oil.</i></p> <p><i>Make sure the lid is secure then pick up a jar and shake it for two seconds. Open the jar and sniff at the opening. Repeat this for the second jar.</i></p> <p><i>Tell the individual conducting the fit test which jar contains banana oil."</i></p>
<p align="center">Test Preparations</p>
<p>6. Choose an appropriate location to conduct fit testing.</p> <ul style="list-style-type: none"> • Conduct screening and tests in separate well-ventilated rooms. <p>7. Assemble the fit test enclosure in the room.</p> <ul style="list-style-type: none"> • Invert a clear 55-gallon drum liner over a circular 2-foot diameter frame made of plywood or other light-weight rigid material OR construct a similar enclosure using plastic sheeting • Hang the frame with the plastic covering so the top of the enclosure is about six inches above the employee's head • Attach a small hook inside top center of the enclosure • Tape a copy of the test exercises (see Table 19) to the inside of the test enclosure where the employee can read it. <p>8. Have organic vapor cartridges or equivalent on hand for each employee's chosen respirator.</p> <p>9. Have ready a 6 x 5-inch piece of paper towel or other porous absorbent single-ply material AND 0.75 ml of pure IAA. Do NOT apply IAA yet.</p> <p>Note: As an alternative to using the paper towel, you may use an IAA test swab OR ampoule if it has been demonstrated to generate an equivalent test concentration.</p>
<p align="center">Screening</p>
<p>10. Have the employee, while NOT wearing a respirator, follow the instructions on the card provided.</p> <ul style="list-style-type: none"> • If the employee correctly identifies the jar containing IAA, proceed to conduct testing (Step 11) • If the employee is NOT able to correctly identify the jar containing IAA, you must STOP and use a different fit test protocol.
<p align="center">Test</p>
<p>11. BEFORE entering the fit test room, have the employee attach cartridges, put on, properly adjust, and seal check the respirator. Have the employee enter the test enclosure.</p> <p>12. Wet the paper towel with 0.75 ml of pure IAA AND fold it in half.</p> <p>13. Pass the paper towel to the employee inside the enclosure AND instruct the employee to hang it on the hook at the top of the enclosure.</p>

<p>Isoamyl Acetate (Banana Oil) Vapor Test Procedure</p> <p>14. Wait two minutes for the IAA vapor to fill the enclosure.</p> <ul style="list-style-type: none"> • While waiting, explain the fit test, including the purpose of the test exercises, the importance of cooperation, and that you must be informed if a banana-like odor is detected during the test • You may also demonstrate the test exercises. <p>15. Have the employee perform the appropriate fit-test exercises in Table 19.</p> <ul style="list-style-type: none"> • If the employee does NOT detect IAA while performing test exercises, the fit test has been PASSED. Proceed as follows: <ul style="list-style-type: none"> – BEFORE leaving the enclosure, have the employee break the respirator seal and inhale. If they detect IAA, the test is valid – When exiting the employee must remove the paper towel and give it to the individual conducting the fit test. This prevents IAA vapor from building up in the enclosure during subsequent tests – The individual conducting the fit test must keep used paper towels in a self-sealing plastic bag to prevent area contamination • If the employee detects IAA during any test exercise, the fit test has FAILED. STOP and have the employee do the following: <ul style="list-style-type: none"> – Quickly return to the selection room to remove the respirator. This avoids decreasing the employee's odor sensitivity – Select another respirator – Repeat screening and testing <ul style="list-style-type: none"> ■ At this stage, if the employee fails the screening part of this procedure, the employee can repeat it AFTER waiting at least five minutes for odor sensitivity to return.

Table 13

<p align="center">Saccharin Aerosol Test Procedure</p>
<p align="center">Screening Preparations</p>
<p>Important:</p> <ul style="list-style-type: none"> • This is a qualitative fit-test (QLFT) procedure • Taste threshold screening determines whether the employee being tested can detect the taste of saccharin <ul style="list-style-type: none"> – The employee must NOT eat, smoke, chew gum or drink anything but plain water for at least fifteen minutes BEFORE the fit test. Sweet foods or drink consumed before the test may make the employee unable to detect saccharin during screening – Nebulizers must be thoroughly rinsed in water and shaken dry: <ul style="list-style-type: none"> ■ Each morning and afternoon OR ■ At least every four hours. • You may use commercially prepared solutions if they meet the requirements in this procedure. <p>1. Obtain a test enclosure (hood) that meets the following specifications:</p> <ul style="list-style-type: none"> • Twelve inches in diameter by fourteen inches tall

Saccharin Aerosol Test Procedure
Screening Preparations
<ul style="list-style-type: none"> • A clear front portion • Enough space inside to allow free movement of the head when a respirator is worn • A 3/4 inch (or 1.9 centimeter) hole to accommodate the nebulizer nozzle. The hole must line up in front of the wearer's nose and mouth. <p>Note:</p> <ul style="list-style-type: none"> • An enclosure similar to the 3M hood assembly, parts #FT 14 and #FT 15 combined, meets these specifications • This enclosure can also be used for testing. <p>2. Obtain and assemble two clean DeVilbiss Model 40 Inhalation Medication Nebulizers OR equivalent.</p> <p>3. Prepare the screening solution as follows:</p> <ul style="list-style-type: none"> • Dissolve 830.0 milligrams of sodium saccharin USP in 100 ml of warm distilled water OR • IF you have already prepared the fit-test solution, you can make the screening solution by adding 1 ml of this solution to 100 ml of distilled water. <p>4. Add about 1 ml of the screening solution to one of the nebulizers.</p> <ul style="list-style-type: none"> • Mark this nebulizer to distinguish it from the one to be used for fit testing.
Test Preparations
<p>5. Prepare the fit-test solution as follows:</p> <ul style="list-style-type: none"> • Add 83.0 grams of sodium saccharin to 100 ml of warm water. <p>6. Add about 1 ml of the test solution to the second nebulizer.</p> <ul style="list-style-type: none"> • Mark this nebulizer to distinguish it from the one used for screening <p>7. Have particulate filters ready for the employee's chosen respirator or have filtering-facepiece respirators ready.</p>
Screening
<p>8. Have the employee, while NOT wearing a respirator, put on the test enclosure.</p> <p>9. Instruct the employee to:</p> <ul style="list-style-type: none"> • Breathe through a slightly open mouth with tongue extended during screening AND testing • Immediately report when a sweet taste is detected. <p>10. Insert the nebulizer into the front hole of the test enclosure AND administer saccharin as follows:</p> <ul style="list-style-type: none"> • Direct the nozzle away from the employee's nose and mouth • Complete 10 squeezes in rapid succession • Each time firmly squeeze the bulb so it collapses completely, then release and allow it to fully expand. <p>11. Ask the employee if a sweet taste is detected.</p> <ul style="list-style-type: none"> • IF YES, screening is completed. Proceed to conduct testing, Step 14, AFTER you: <ul style="list-style-type: none"> – Ask the employee to remember the taste for reference during the fit test – Note the employee's taste threshold as "10" regardless of the number of squeezes actually completed • IF NO, screening must continue. Proceed to Step 12. <p>12. Repeat with 10 more squeezes. Then follow Step 11 again; EXCEPT this time note the employee's taste threshold as "20" IF a sweet taste is reported.</p>

Saccharin Aerosol Test Procedure
Screening Preparations
<ul style="list-style-type: none"> • If a sweet taste is still NOT detected, repeat with 10 more squeezes and follow Step 11 one last time; EXCEPT this time note "30" for the taste threshold IF a sweet taste is reported. <p>13. If NO sweet taste is reported after 30 squeezes, you must STOP and choose a different fit-test protocol for the employee.</p>
Test
<p>Important!</p> <ul style="list-style-type: none"> • Periodically check nebulizers to make sure they do not clog during use. A test is NOT valid if the nebulizer is clogged at the end of the test. <p>14. Have the employee attach particulate filters, put on, properly adjust, and seal check the respirator. Have the employee put on the test enclosure (hood).</p> <p>15. Instruct the employee to immediately report if a sweet taste is detected.</p> <p>16. Insert the nebulizer into the front hole of the test enclosure AND administer the same number of squeezes, either 10, 20, or 30, as noted during screening.</p> <p>17. Have the employee perform the appropriate fit-test exercises as described in Table 19. During this step:</p> <ul style="list-style-type: none"> • Replenish the aerosol in the hood EVERY 30 seconds using 1/2 the number of squeezes used in Step 16, either 5, 10, or 15 • The employee must report if a sweet taste is detected: <ul style="list-style-type: none"> – If NO saccharin is tasted, the test has been PASSED <ul style="list-style-type: none"> ■ If saccharin is tasted the test has FAILED, have the employee select another respirator AND ■ Repeat screening and testing.

Table 14

Bitrex™ Aerosol Test Procedure
<p>Important!</p> <ul style="list-style-type: none"> • This is a qualitative fit-test (QLFT) procedure • Bitrex™ (denatonium benzoate) is routinely used as a taste aversion agent in household liquids that children should not drink and is endorsed by the American Medical Association, the National Safety Council, and the American Association of Poison Control Centers • The employee must NOT eat, smoke, chew gum or drink anything but plain water for at least fifteen minutes BEFORE the fit test.
Screening Preparations
<p>Important!</p> <ul style="list-style-type: none"> • Taste threshold screening determines whether the employee being tested can detect the taste of Bitrex™ • Nebulizers must be thoroughly rinsed in water and shaken dry: <ul style="list-style-type: none"> – Each morning and afternoon OR – At least every four hours. • You may use commercially prepared solutions if they meet the requirements in this procedure.

Bitrex™ Aerosol Test Procedure
<p>1. Obtain a test enclosure that meets the following specifications:</p> <ul style="list-style-type: none"> • Twelve inches in diameter by fourteen inches tall • A clear front portion • Enough space inside the front to allow free movement of the head when a respirator is worn • 3/4 inch (or 1.9 centimeter) hole to accommodate the nebulizer nozzle. The hole must line up in front of the wearer's nose and mouth. <p>Note:</p> <ul style="list-style-type: none"> • An enclosure similar to the 3M hood assembly, parts #FT 14 and #FT 15 combined, meets these specifications • This enclosure can also be used for testing. <p>2. Obtain and assemble two clean DeVilbiss Model 40 Inhalation Medication Nebulizers OR equivalent:</p> <p>3. Prepare the screening solution as follows:</p> <ul style="list-style-type: none"> • Make up a 5% salt solution by dissolving 5.0 grams of salt (sodium chloride) into 100 ml of distilled water • Dissolve 13.5 milligrams of Bitrex™ in the salt solution. <p>4. Add about 1 ml of the screening solution to one of the nebulizers.</p> <ul style="list-style-type: none"> • Mark this nebulizer to distinguish it from the one to be used for fit testing.
Test Preparations
<p>5. Prepare the fit test solution.</p> <ul style="list-style-type: none"> • Dissolve 10.0 grams of salt (sodium chloride) into 200 ml of distilled water • Add 337.5 milligrams of Bitrex™ to the warmed salt solution. <p>6. Add about 1 ml of the test solution to the second nebulizer.</p> <ul style="list-style-type: none"> • Mark this nebulizer to distinguish it from the one used for screening. <p>7. Have particulate filters ready for the employee's chosen respirator or have filtering-facepiece respirators ready.</p>
Screening
<p>Important: The employee must NOT eat, smoke, chew gum or drink anything but plain water for at least fifteen minutes BEFORE the screening and test</p> <p>8. Have the employee, while NOT wearing a respirator, put on the test enclosure.</p> <p>9. Instruct the employee to:</p> <ul style="list-style-type: none"> • Breath through a slightly opened mouth with tongue extended during screening AND testing • Immediately report when a bitter taste is detected. <p>10. Insert the nebulizer into the front hole of the test enclosure AND administer Bitrex™ as follows:</p> <ul style="list-style-type: none"> • Direct the nozzle away from the employee's nose and mouth • Complete 10 squeezes in rapid succession • Each time firmly squeeze the bulb so it collapses completely, then release and allow it to fully expand. <p>11. Ask the employee whether a bitter taste is detected.</p> <ul style="list-style-type: none"> • If YES, screening is completed. Proceed to conduct testing, Step 14, AFTER you: <ul style="list-style-type: none"> – Ask the employee to remember the taste for reference during the fit test

Bitrex™ Aerosol Test Procedure
<ul style="list-style-type: none"> – Note the employee's taste threshold as "10," regardless of the number of squeezes actually completed • If NO, screening must continue. Proceed to Step 12. <p>12. Repeat with 10 more squeezes. Then follow Step 11 again; EXCEPT this time note the employee's taste threshold as "20" IF a bitter taste is reported.</p> <ul style="list-style-type: none"> • If a bitter taste is still NOT detected repeat with 10 more squeezes and follow Step 11 one last time; EXCEPT this time note "30" for the taste threshold IF a bitter taste is reported. <p>13. If NO bitter taste is reported after 30 squeezes, you must STOP and choose a different fit-test protocol for the employee.</p>
Test
<p>14. Have the employee attach particulate filters, put on, properly adjust, and seal check the respirator. Have the employee put on the test enclosure.</p> <p>15. Instruct the employee to:</p> <ul style="list-style-type: none"> • Breathe through a slightly opened mouth with tongue extended during screening AND testing • Immediately report when a bitter taste is detected. <p>16. Insert the nebulizer into the front hole of the test enclosure AND administer the same number of squeezes, either 10, 20, or 30, as noted during screening.</p> <p>17. Have the employee perform the appropriate fit-test exercises as described in Table 19. During this step:</p> <ul style="list-style-type: none"> • Replenish the aerosol in the hood EVERY 30 seconds using 1/2 the number of squeezes used in Step 16, either 5, 10, or 15 • The employee must report if a bitter taste is detected: <ul style="list-style-type: none"> – If NO Bitrex™ is tasted, the test has been PASSED – If Bitrex™ is tasted the test has FAILED.. Have the employee: <ul style="list-style-type: none"> ■ Select another respirator <p style="text-align: center;">AND</p> <ul style="list-style-type: none"> ■ Repeat all screening and testing steps.

Table 15

Irritant Smoke (Stannic Chloride) Test Procedure
<p>Important:</p> <ul style="list-style-type: none"> • DO NOT USE A TEST ENCLOSURE OR HOOD FOR THIS FIT TEST! • This is a qualitative fit-test (QLFT) procedure • During this test an employee is exposed to irritating smoke containing hydrochloric acid produced by a stannic chloride ventilation smoke tube to detect leakage. The smoke will irritate eyes, lungs, and nasal passages • Employee sensitivity varies, and certain employees may respond more intensely than others exposed to irritant smoke. The individual conducting the fit test must take precautions to minimize the employees' exposure to irritant smoke • Conduct fit testing in an area with adequate ventilation to prevent exposure of the individual conducting the fit test and build-up of irritant smoke in the ambient air.

Irritant Smoke (Stannic Chloride) Test Procedure
Screening AND Test Preparations
<p>Important: Sensitivity screening is necessary to determine whether the employee can detect a weak concentration of irritant smoke AND whether any gross facepiece leakage is detected.</p> <ol style="list-style-type: none"> Obtain only stannic chloride (ventilation) smoke tubes, AND an aspirator squeeze bulb OR use a low-flow air pump set to deliver 200 milliliters of air flow per minute. Equip the employee's chosen respirator with P100 series filters if a negative pressure air-purifying respirator will be tested. If a powered air-purifying respirator (PAPR) will be tested equip the respirator with high-efficiency particulate air (HEPA) filters.
Screening
<p>Important! When performing sensitivity screening checks use only the MINIMUM amount of smoke necessary to elicit a response from the employee.</p> <ol style="list-style-type: none"> Advise the employee that the smoke can be irritating to eyes, lungs, and nasal passages AND instruct the employee to keep eyes closed while exposed. Break both ends of the ventilation smoke tube AND fit a short piece of plastic tubing, for example, two-to-six inches of tygon tubing, over one end to prevent exposure to the sharp end of the tube. Connect the other end to an aspirator bulb or a low-flow air pump set to deliver a flow of 200 ml per minute. While the employee is NOT wearing a respirator, have the employee smell a weak concentration of irritant smoke to become familiar with its irritating properties. <ul style="list-style-type: none"> Carefully direct a small amount of irritant smoke toward the employee.
Test
<p>Test 6. Have the employee attach respirator filters, put on, adjust, and seal check the respirator without assistance. The employee must be proficient at these tasks.</p> <ol style="list-style-type: none"> Remind the employee to keep eyes closed during testing. Direct a stream of irritant smoke toward the respirator's face seal area as follows: <ul style="list-style-type: none"> Begin at least 12 inches from the facepiece AND move the smoke around the whole perimeter of the mask Gradually make two more passes around the perimeter of the facepiece, moving to within 6 inches of the respirator STOP at any time the employee detects smoke in the facepiece. If this occurs a different respirator will need to be chosen and tested, beginning with sensitivity screening. Have the employee perform appropriate fit-test exercises in Table 19 IF the employee has NOT had an involuntary response such as evidence of coughing, flinching, or other response, OR detected smoke in the facepiece. <ul style="list-style-type: none"> Continue to direct smoke from a distance of 6 inches around the facepiece perimeter <ul style="list-style-type: none"> If smoke is detected at any time the test has FAILED. A different respirator must be chosen and tested, starting with sensitivity screening If NO smoke is detected proceed to Step 10.

Irritant Smoke (Stannic Chloride) Test Procedure
<ol style="list-style-type: none"> Have the employee remove the respirator AND perform another sensitivity screening check as follows: <ul style="list-style-type: none"> Continue to use the smoke tube used for fit testing Carefully direct a SMALL amount of irritant smoke toward the employee <ul style="list-style-type: none"> The test has been PASSED IF the employee responds to the smoke The fit test is VOIDED IF the employee does NOT respond to the smoke.

Table 16

Ambient Aerosol Condensation Nuclei Counter (Portacount™) Test Procedure
<p>Important:</p> <ul style="list-style-type: none"> This is a quantitative (QNFT) fit-test procedure This method uses a particle counting instrument that measures and compares the particle concentration both inside and outside the respirator facepiece while the employee performs a series of test exercises Particles in the ambient air are used as the test aerosol.
Test Preparations
<ol style="list-style-type: none"> Obtain a test instrument such as a Portacount™. Have probed respirators available for each respirator model and size the employer uses, OR have a sampling adapter available if the employee's actual or chosen respirator will be tested. <p>Note:</p> <ul style="list-style-type: none"> A probed respirator has a special fitting installed on the facepiece designed to connect with the end of the test instrument's plastic sampling tube so that air samples can be taken inside the facepiece. Probed respirators can be obtained from the respirator manufacturer, or distributor, AND can only be used for fit-testing purposes Contact TSI Inc., OR the respirator's manufacturer to obtain probed respirators or facepiece sampling adapters. Follow the test instrument manufacturer's instructions for test preparation, including particle, zero, and system checks. Make sure the instrument's pass OR fail criterion is programmed to the following MINIMUM performance levels: <ul style="list-style-type: none"> For half-facepiece respirators, an overall minimum fit factor of 100 as a passing level For full-facepiece respirators, an overall minimum fit factor of 500 as a passing level Have high-efficiency particulate air (HEPA) filters, OR other respirator filters available that are capable of preventing significant penetration by particles generated by the test instrument such as, P100 or N95 series filters. <ul style="list-style-type: none"> If you will use a sampling adapter instead of probed respirators be sure to have the correct type for the respirators chosen.
Test
<ol style="list-style-type: none"> Properly attach the sampling line to the facepiece probe or sampling adapter.

<p>6. Have the employee attach respirator filters, put on, properly adjust, and wear the respirator five minutes BEFORE the fit test. During this time you and the employee must evaluate the respirator's general fit by checking:</p> <ul style="list-style-type: none"> • Proper chin placement • Properly tightened straps (do NOT over tighten) • Acceptable fit across the nose bridge • Respirator size. It must span the distance from nose to chin • To see if the respirator stays in position. <p>Note: Wearing the respirator for five minutes permits the employee to make certain the respirator is comfortable AND allows for purging of ambient particles trapped inside the facepiece.</p> <p>7. Have the employee perform a seal check. Make sure the sampling line is crimped to avoid leakage during the seal check. If NO leakage is detected, proceed to Step 8. If leakage is detected:</p> <ul style="list-style-type: none"> • Determine the cause <p>AND</p> <ul style="list-style-type: none"> • If leakage is due to a poorly fitting facepiece, have the employee: <ul style="list-style-type: none"> – Choose another respirator size or model <p>AND</p> <ul style="list-style-type: none"> – Start again at Step 6. <p>8. Start the fit test cycle.</p> <ul style="list-style-type: none"> • Follow the manufacturer's instructions for operating the test instrument • Have the employee perform the appropriate fit-test exercises in Table 19 <ul style="list-style-type: none"> – The test instrument will automatically stop and calculate the overall fit factor. Use this result to determine whether or not the test is passed <ul style="list-style-type: none"> ■ The test has been PASSED if the overall fit factor is at least 100 for a half facepiece, OR 500 for a full facepiece ■ The test has FAILED if the overall fit factor is below 100 for a half facepiece or 500 for a full facepiece. <p>Note: If the test has failed, have the employee select another respirator model or size following Table 11 AND repeat this procedure.</p>

Table 17

<p>Controlled Negative Pressure (CNP) Test Procedure</p> <p>Important!</p> <ul style="list-style-type: none"> • This is a quantitative fit-test (QNFT) procedure • This method determines respirator fit by measuring how much the facepiece leaks when it is subject to a slight negative pressure AFTER various premeasurement activities • Instruments used must have a nonadjustable test pressure of 15.0 mm water pressure • Measurements occur while employees remain still AND hold their breath for 10 seconds

<p>Controlled Negative Pressure (CNP) Test Procedure</p> <ul style="list-style-type: none"> • No test aerosols are used. Respirator cartridges are not needed for this test. Sampling manifolds that replace the filter cartridges are available from the instrument manufacturer, and allow fit testing of an employee's own respirator.
<p>Test Preparations</p> <ol style="list-style-type: none"> 1. Make sure the individual conducting the fit test is thoroughly trained to perform this test. 2. Obtain a CNP test instrument such as a FitTester 3000™. Make sure: <ul style="list-style-type: none"> • Defaults are set at: <ul style="list-style-type: none"> – -15mm (-0.58 inches) of water test pressure AND – A modeled inspiratory flow rate of 53.8 liters per minute • It has an effective audio warning device that signals when employees fail to hold their breath. <p>Note:</p> <ul style="list-style-type: none"> • You are not required to obtain test recording and printing equipment such as computers OR printers. Hand recording results is acceptable • To see default settings, check the instrument's "REDON protocol." 3. Obtain facepiece adapters appropriate for each test respirator. <p>Note:</p> <ul style="list-style-type: none"> • Adapters are either a one-piece (for SCBA facepieces), OR two-piece (for dual cartridge facepieces) device providing a manifold and breathing valve system. For positive pressure respirators, you will need to obtain an additional fitting, available from the respirator manufacturer, to convert the facepiece to negative pressure • To obtain adapters, contact the CNP instrument's distributor, Occupational Health Dynamics, OR the respirator manufacturer.
<p>Test</p> <p>Important!</p> <ul style="list-style-type: none"> • The respirator must not be adjusted once the fit-test exercises begin. Any adjustment voids the test and the test must be repeated. • After the test, you must ask the employee about the comfort of the respirator AND if the respirator has become unacceptable, another size or model must be chosen and tested. <ol style="list-style-type: none"> 4. Explain the test procedure to the employee. 5. Train the employee on how to hold a breath for at least 10 seconds. 6. Prepare the respirator for the fit test as follows: <ul style="list-style-type: none"> • Remove or prop open the inhalation valves. If a breathing tube is present, disconnect it • Replace cartridges, if present, with the manifold and breathing valve adapter <ul style="list-style-type: none"> – For positive pressure facepieces, mount the manufacturer's additional fitting followed by the manifold-breathing valve adapter • Connect the respirator to the CNP device according to the CNP instrument manufacturer's directions. 7. Have the employee put on, adjust, and seal check the respirator without assistance.

Controlled Negative Pressure (CNP) Test Procedure

8. Turn on the instrument AND have the employee stand and perform the fit-test exercises in Table 19.
9. Once test exercises are completed, ask the employee about facepiece comfort. If the employee states the respirator is unacceptable, repeat the fit test using another model.
10. Determine the overall fit factor for each employee by calculating the harmonic mean of the fit-testing as follows:

$$\text{Overall fit factor} = \frac{n}{1/ffE1 + 1/ffE2 + 1/ffE3 \dots + 1/ffEn}$$

- The test is **PASSED IF** the overall fit factor obtained is at least 100 for a half facepiece, or at least 500 for a full facepiece
- The test has **FAILED IF** the fit factor is less than 100 for a half facepiece; 500 for a full facepiece
 - If the test has **FAILED** you must have the employee select another respirator model or size following the steps in Table 11 AND repeat this procedure, starting at Step 6.

Table 18

Generated Aerosol Test Procedure**Important:**

- This is a quantitative (QNFT) fit-test procedure
- In this method, a test aerosol is used to challenge the facepiece seal while aerosol concentrations inside and outside the facepiece are measured during test exercises
- Special equipment is needed to generate, disperse, detect, and measure test aerosols.

Test Preparations

1. Test aerosol.
 - Use a particulate, for example, corn oil, polyethylene glycol 400, di-2-ethyl hexyl sebacate, or sodium chloride.
 2. Instrumentation.
 - Do **ALL** the following:
 - Obtain and use aerosol generation, dilution, and measurement systems appropriate for particulates
 - Use an aerosol-generating instrument that will maintain test concentrations within a 10% variation
 - Select a sampling instrument that allows for a computer record or strip chart record to be created
 - The record must show the rise and fall of test agent concentration during each inhalation and exhalation at fit factors of at least 2000.
 - Note:** Integrators, or computers that integrate the amount of test agent penetration leakage into the respirator for each exercise, may be used if a record of the readings is made.
 - Minimize the time interval between the activity and the recording of the activity so you can clearly connect what you see to what is being recorded. For example, use a small diameter and length of sampling line.
 3. Test enclosure.
 - Do **ALL** the following:
 - Make sure the enclosure is equipped and constructed to effectively:
 - Maintain a uniform concentration of the test agent inside the enclosure. For example, the enclosure must be large enough to allow **ALL** employees freedom of movement during testing **WITHOUT** disturbing the test concentration or measurement instrument
 - Keep the test agent from contaminating the air outside the enclosure. For example, use a HEPA filter to purify exhausted air
 - Allow the individual conducting the fit test to view the employee during the test
 - Make sure the tubing used to collect samples from the enclosure AND respirator is the same material, diameter, AND length. This makes the effect of aerosol loss caused by deposition in each sample line equal
 - If sodium chloride is used, relative humidity inside the enclosure must be kept below 50%.
 4. Prepare test respirators.
 - Do **ALL** the following:
 - Inspect test respirators regularly for missing parts AND damage
 - Keep test respirators in proper working order
 - Make sure in-mask sampling probes are:
 - Designed and installed so the air sample will be drawn from the employee's breathing zone; midway between the nose and mouth
- AND

Generated Aerosol Test Procedure

- The probe extends inside the facepiece at least 1/4 inch
- Make sure sampling ports such as probes, or adapters on respirators are constructed and installed so they do **NOT**:
 - Block air flow into the sampling line
 - Leak
 - Interfere with the respirator's fit or performance
- Have high efficiency particulate air (HEPA) filters **OR** P100 series filter available
 - Replace filters when increased breathing resistance is detected **OR** when the test agent has altered the filter material's integrity.

Test

Important!

- Throughout the test, maintain the employee's exposure to any test agent below the established exposure limit. Exposures allowed must be based on exposure time and exposure limit duration
 - If a single peak penetration exceeds 5% for half facepieces **OR** 1% for full facepieces:
 - **STOP** the test
 - AND**
 - Have the employee select another respirator for testing.
5. Have the employee attach filters, put on, adjust, and seal check the respirator.
 - Be sure to crimp the sampling line to avoid pressure leaks during the seal check
 - AND**
 - Have the employee adjust the respirator straps, without assistance, so the fit is comfortable. Do **NOT** over tighten.
 6. **OPTIONAL Step.** To save time conduct a screening test to quickly identify poorly fitting respirators.
 - Note:**
 - You may use a qualitative screening test **OR** an ambient aerosol condensation nuclei counter instrument in the count mode.
 7. Make sure test aerosol concentration is reasonably stable.
 - If a canopy or shower curtain enclosure is used, determine stability of the test aerosol concentration **AFTER** the employee enters the enclosure.
 8. Have the employee enter the test enclosure and connect the respirator to the sample lines.
 9. Immediately after entering the enclosure measure test aerosol concentration inside the respirator.
 - Make sure the peak penetration does **NOT** exceed 5% for half facepieces, **OR** 1% for full facepieces.
 10. Have employee perform the appropriate fit-test exercises in Table 19.
 - Do **NOT** adjust the respirator once exercises begin.
 11. Calculate the overall fit factor as specified in Steps 12-13. The fit test is:
 - **PASSED IF** the minimum fit factor of 100 for half facepieces **OR** 500 for full facepieces is obtained
 - OR**
 - IF a passing fit factor is **NOT** obtained, the test has **FAILED** and you must have the employee select and test another respirator.

Calculations

Important!

- Do **NOT** count the grimace exercise measurements during these calculations
 - Take into account the limitations of instrument detection when determining fit factors.
12. Calculate individual fit factors for **EACH** exercise by applying the following:

Exercise fit factor (ffE) = $\frac{\text{Average test enclosure concentration}}{\text{Test aerosol concentration inside the respirator}}$

 - To determine the average test enclosure concentration use one of the following methods:
 - Arithmetic average of the concentration before and after each **test** (an average of two values per entire test)
 - Arithmetic average of concentration before and after each **exercise** (an average of two values per exercise)
 - True average measured continuously during the respirator sample
 - Determine the test aerosol concentration inside the respirator in one of the following ways:
 - Average peak penetration values. Determine aerosol penetration for each exercise by:
 - Using integrators or computers that calculate the actual test agent penetration
 - OR**
 - Average the peak heights shown on the strip chart recording, graph, or by computer integration
 - Maximum peak penetration. Use strip chart recordings to determine the highest peak penetration for each exercise and use this value
 - Area under the peaks. Use computerized integration or other appropriate calculations to integrate the area under individual peaks for each exercise.
 13. Using individual exercise fit factors (ffE) calculate the **overall fit factor** by doing **ALL** of the following:
 - Convert each exercise fit factor to a penetration value

Generated Aerosol Test Procedure

- Determine the average penetration value
 - Convert the average penetration value back to a fit factor
- OR**
Use this equation to calculate the **overall fit factor**:

$$\text{Overall fit factor} = \frac{n}{1/ffE1 + 1/ffE2 + 1/ffE3 \dots + 1/ffEn}$$

Table 19**Fit-Test Exercises****Important:**

- This list applies when you use any fit test
- Employees tested must perform **ALL** exercises marked with an "X" as described for the fit-test procedure used
 - Once exercises begin, any adjustments made void the test **AND** you must begin again
 - After test exercises are completed, you must ask the employee about the comfort of the respirator. If it has become unacceptable, have the employee choose another one for testing
- When the controlled negative pressure procedure is used, **STOP and repeat** the test if the employee adjusts the respirator **OR** takes a breath and fails to hold it for 10 seconds
- Controlled negative pressure tests conducted according to the method published in 29 CFR 1910.134, Appendix A are an acceptable alternative to the method outlined below.

Description of Required Fit-Test Exercises	Fit-Test Procedures		
	Qualitative Procedures	Quantitative Procedures; EXCEPT the CNPP	Controlled Negative Pressure Procedure (CNPP)
• Normal breathing – Breathe normally, while standing for one minute	X	X	
• Deep breathing – Breathe slowly and deeply while standing for one minute – Take caution to avoid hyperventilating	X	X	
• Head side to side – Slowly turn head from side to side while standing for one minute, pausing at each extreme position to inhale – Be careful to NOT bump the respirator	X	X	
• Head up and down – Slowly move head up and down while standing for one minute, inhaling in the up position – Be careful to NOT bump the respirator	X	X	
• Talking – Talk slowly and loud enough to be heard clearly by the individual conducting fit testing for one minute. Choose ONE of the following: ■ Read from a prepared text such as the Rainbow Passage! ■ Count backward from 100 ■ Recite a memorized poem or song.	X	X	
• Grimace – Smile or frown for fifteen seconds.		X	
• Bending over – Bend over to touch toes while standing. Repeat at a comfortable pace for one minute OR – Jog in place for one minute if the test enclosure, such as a hood, does not permit bending over	X	X	
• Normal breathing – Breathe normally while standing for one minute	X	X	
• Face forward			

Fit-Test Exercises			
<ul style="list-style-type: none"> – Premeasurement activity: Stand and breath normally, without talking, for 30 seconds – Measurement position: Face forward while holding breath for 10 seconds 			X
<ul style="list-style-type: none"> • Bending over <ul style="list-style-type: none"> – Premeasurement activity: While standing, bend at the waist, as if to touch toes – Measurement position: Hold the bending position with face parallel to the floor while holding breath for 10 seconds 			X
<ul style="list-style-type: none"> • Head shaking <ul style="list-style-type: none"> – Premeasurement activity: Vigorously shake head from side to side for about 3 seconds while shouting – Measurement position: Face forward, while holding breath for 10 seconds 			X
<ul style="list-style-type: none"> • Redon-1 <ul style="list-style-type: none"> – Premeasurement activity: Loosen all facepiece straps and remove the respirator completely, then put it back on – Measurement position: Face forward while holding breath for 10 seconds 			X
<ul style="list-style-type: none"> • Redon-2 <ul style="list-style-type: none"> – Repeat the premeasurement activity and measurement position described in Redon-1 			X

¹The Rainbow Passage:
 "When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow."

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-22010, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-22010, filed 10/1/03, effective 1/1/04.]

WAC 296-842-22015 Follow procedures established for cleaning and disinfecting respirators. Follow the procedure in Table 20 for cleaning and disinfecting respirators.

**Table 20
 Respirator Cleaning Procedure**

Step	Task
1.	Remove filters, cartridges, canisters, speaking diaphragms, demand and pressure valve assemblies, hoses, or any components recommended by the manufacturer. <ul style="list-style-type: none"> • Discard or repair any defective parts.
2.	Wash components in warm (43°C (110°F) maximum) water with a mild detergent or with a cleaner recommended by the manufacturer <ul style="list-style-type: none"> • A stiff bristle (not wire) brush may be used to help remove the dirt • If the detergent or cleaner does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following: <ul style="list-style-type: none"> – A bleach solution (concentration of 50 parts per million of chlorine). Make this by adding approximately one milliliter of laundry bleach to one liter of water at 43°C (110°F) – A solution of iodine (50 parts per million iodine). Make this in two steps: <ul style="list-style-type: none"> ■ First, make a tincture of iodine by adding 6-8 grams of solid ammonium iodide and/or potassium iodide to 100 cc of 45% alcohol approximately ■ Second, add 0.8 milliliters of the tincture to one liter of water at 43°C (110°F) to get the final solution – Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
3.	Rinse components thoroughly in clean, warm (43°C (110°F) maximum), preferably, running water. Note: The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces could cause dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts, if not completely removed.

Step	Task
4.	Drain components.
5.	Air-dry components or hand dry components with a clean, lint-free cloth.
6.	Reassemble the facepiece components. • Replace filters, cartridges, and canisters, if necessary (for testing).
7.	Test the respirator to make sure all components work properly.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-072, § 296-842-22015, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-22015, filed 10/1/03, effective 1/1/04.]

WAC 296-842-22020 Follow procedures established for seal checking respirators.

IMPORTANT:

• User seal checks are **NOT** a substitute for fit tests. See WAC 296-842-22010 for fit test procedures.

• You may use a seal check procedure recommended by the respirator manufacturer **INSTEAD** of the procedure outlined in Table 21 if you can demonstrate the procedure is based on a scientific study that, for example, demonstrates the procedure effectively identifies respirators that fit poorly when put on or adjusted.

Make sure employees perform a user seal check as outlined in Table 21, **EACH TIME** the respirator is worn, to make sure the seal is adequate.

Table 21

User Seal Check Procedure
<p>Important information for employees:</p> <ul style="list-style-type: none"> • You need to conduct a seal check each time you put your respirator on BEFORE you enter the respirator use area. The purpose of a seal check is to make sure your respirator (which has been previously fit tested by your employer) is properly positioned on your face to prevent leakage during use and to detect functional problems • The procedure below has two parts; a positive pressure check and a negative pressure check. You must complete both parts each time. It should only take a few seconds to perform, once you learn it ◆ If you cannot pass both parts, your respirator is NOT functioning properly, see your supervisor for further instruction.
<p>Positive pressure check:</p> <ol style="list-style-type: none"> 1. Remove exhalation valve cover, if removable. 2. Cover the exhalation valve completely with the palm of your hand WHILE exhaling gently to inflate the facepiece slightly. 3. The respirator facepiece should remain inflated (indicating a build-up of positive pressure and NO outward leakage). <ul style="list-style-type: none"> • If you detect NO leakage, replace the exhalation valve cover (if removed), and proceed to conduct the negative pressure check • If you detect evidence of leakage, reposition the respirator (after removing and inspecting it), and try the positive pressure check again.
<p>Negative pressure check:</p> <ol style="list-style-type: none"> 4. Completely cover the inhalation opening(s) on the cartridges or canister with the palm(s) of your hands WHILE inhaling gently to collapse the facepiece slightly.

User Seal Check Procedure

• If you cannot use the palm(s) of your hands to effectively cover the inhalation openings on cartridges or canisters, you may use:

– Filter seal(s) (if available)

OR

– Thin rubber gloves.

5. Once the facepiece is collapsed, hold your breath for 10 seconds **WHILE** keeping the inhalation openings covered.

6. The facepiece should remain slightly collapsed (indicating negative pressure and **NO** inward leakage).

• If you detect **NO** evidence of leakage, the tightness of the facepiece is considered adequate, the procedure is completed, and you may now use the respirator

• If you detect leakage, reposition the respirator (after removing and inspecting it) and repeat **BOTH** the positive and negative fit checks.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-05-072, § 296-842-22020, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-22020, filed 10/1/03, effective 1/1/04.]

WAC 296-842-300 Definitions.

Air-purifying respirator (APR)

A respirator equipped with an air-purifying element such as a filter, cartridge, or canister, **OR** having a filtering facepiece, for example, a dust mask.

The element or filtering facepiece is designed to remove specific contaminants, such as particles, vapors, or gases, from air that passes through it.

Air-line respirator

An atmosphere-supplying respirator for which breathing air is drawn from a source separate from and not worn by the user, such as:

- A cylinder or a tank
- A compressor
- An uncontaminated environment.

Air supplied respirator (see air-line respirator)

Assigned protection factor (APF)

Indicates the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when you implement a continuing, effective respiratory protection program as specified by this chapter. For example, an effective program makes sure the respirator is:

- Functioning properly

AND

- Fitted to the user

AND

- Worn by trained individuals

AND

• Used with the limitations specified on the NIOSH approval label.

Atmosphere-supplying respirator

A respirator that supplies the user with breathing air from sources, such as:

- A cylinder or a tank
- A compressor
- An uncontaminated environment.

Breathing air

Air supplied to an atmosphere-supplying respirator. This air meets the specifications found in WAC 296-842-200.

Canister or cartridge (air-purifying)

Part of an air-purifying respirator that consists of a container holding materials such as fiber, treated charcoal, or a combination of the two, that removes contaminants from the air passing through the cartridge or canister.

Cartridge respirator (see also air-purifying respirator)

An air-purifying respirator equipped with one or more cartridges. These respirators have a facepiece made from silicone, rubber OR other plastic-like materials.

Demand respirator

An atmosphere-supplying respirator that sends breathing air to the facepiece only when suction (negative pressure) is created inside the facepiece by inhalation. Demand respirators are "negative pressure" respirators.

Dust mask

A name used to refer to filtering-facepiece respirators. Dust masks may or may not be NIOSH certified. See filtering facepiece.

Emergency respirator

Respirators suitable for rescue, escape, or other activities during emergency situations.

Emergency situation

Any occurrence that could OR does result in a significant uncontrolled release of an airborne contaminant. Causes of emergency situations include, but are not limited to, equipment failure, rupture of containers, or failure of control equipment.

End-of-service-life indicator (ESLI)

A system that warns the air-purifying respirator user that cartridges or canisters must be changed. An example of an ESLI is a dot on the respirator cartridge that changes color.

Escape-only respirator

A respirator that can only be used to exit during emergencies. Look for this use limitation on the respirator's NIOSH approval label.

Exposed, or exposure

The contact an employee has with a toxic substance, harmful physical agent, or oxygen deficient condition. Exposure can occur through various routes of entry, such as inhalation, ingestion, skin contact, or skin absorption.

Filter

Fibrous material that removes dust, spray, mist, fume, fog, smoke particles, OR other aerosols from the air.

Filtering-facepiece respirator

A tight-fitting, half-facepiece, negative-pressure, particulate air-purifying respirator with the facepiece MAINLY composed of filter material. These respirators do not use cartridges or canisters and may have sealing surfaces composed of rubber, silicone or other plastic-like materials. They are sometimes referred to as "dust masks."

Fit factor

A number providing an estimate of fit for a particular respiratory inlet covering to a specific individual during quantitative fit testing.

Fit test (see also qualitative fit test and quantitative fit test)

Fit testing is an activity where the facepiece seal of a respirator is challenged, using a WISHA accepted procedure, to determine if the respirator provides an adequate seal.

Full-facepiece respirator

A tight-fitting respirator that covers the wearer's nose, mouth, and eyes.

Gas mask

An air-purifying respirator equipped with one or more canisters. These respirators have a facepiece made from silicone, rubber OR other plastic-like materials.

Half-facepiece respirator

A tight-fitting respirator that only covers the wearer's nose and mouth.

Helmet

The rigid part of a respirator that covers the wearer's head AND also provides head protection against impact or penetration.

High-efficiency particulate air filter (HEPA)

A powered air purifying respirator (PAPR) filter that removes at least 99.97% of monodisperse dioctyl phthalate (DOP) particles with a mean particle diameter of 0.3 micrometer from contaminated air.

Note: Filters designated, under 42 CFR Part 84, as an "N100," "R100," or "P100" provide the same filter efficiency (99.97%) as HEPA filters.

Hood

The part of a respirator that completely covers the wearer's head and neck AND may also cover some or all of the shoulders and torso.

Immediately dangerous to life or health (IDLH)

An atmospheric condition that would:

- Cause an immediate threat to life

OR

- Cause permanent or delayed adverse health effects

OR

- Interfere with an employee's ability to escape.

Licensed health care professional (LHCP)

An individual whose legally permitted scope of medical practice allows him or her to provide SOME OR ALL of the health care services required for respirator users' medical evaluations.

Loose-fitting facepiece

A respiratory inlet covering that is designed to form a partial seal with the face.

Negative-pressure respirator

Any tight-fitting respirator in which the air pressure inside the facepiece is less than the air pressure outside the respirator during inhalation.

NIOSH

The National Institute for Occupational Safety and Health. NIOSH is the federal agency that certifies respirators for occupational use.

Oxygen deficient

An atmosphere with an oxygen content below 19.5% by volume.

Permissible exposure limit (PEL)

Permissible exposure limits (PELs) are employee exposures to toxic substances or harmful agents that must not be exceeded. PELs are specified in applicable WISHA chapters.

Positive-pressure respirator

A respirator in which the air pressure inside the respiratory-inlet covering is greater than the air pressure outside the respirator.

Powered air-purifying respirators (PAPRs)

An air-purifying respirator equipped with a blower that draws ambient air through cartridges or canisters. These respirators, as a group, are **NOT** classified as positive pressure respirators and must not be used as such.

Pressure-demand respirator

A positive-pressure atmosphere-supplying respirator that sends breathing air to the respiratory inlet covering when the positive pressure is reduced inside the facepiece by inhalation or leakage.

Qualitative fit test (QLFT)

A test that determines the adequacy of respirator fit for an individual. The test relies on the employee's ability to detect a test substance. Test results are either "pass" or "fail."

Quantitative fit test (QNFT)

A test that determines the adequacy of respirator fit for an individual. The test relies on specialized equipment that performs numeric measurements of leakage into the respiratory inlet covering. Test results are used to calculate a "fit factor."

Respiratory hazard

Harmful airborne hazards and oxygen deficiency that are addressed in chapter 296-841 WAC, Respiratory hazards.

Required use

Respirator use:

- That is necessary to protect employees from respiratory hazards

OR

- That the employer decides to require for his or her own reasons. For example, the employer decides to follow more rigorous exposure limits

Respirator

A type of personal protective equipment designed to protect the wearer from harmful airborne hazards, oxygen deficiency, or both.

Respiratory inlet covering

The part of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source or both. The respiratory inlet covering may be a facepiece, helmet, hood, suit, or mouthpiece respirator with nose clamp.

Seal check

Actions conducted by the respirator user each time the respirator is put on, to determine if the respirator is properly seated on the face.

Self-contained breathing apparatus (SCBA)

An atmosphere-supplying respirator designed for the breathing air source, to be carried by the user.

Service-life

The period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer. For example, the period of time that sorbent car-

tridge is effective for removing a harmful substance from the air.

Sorbent

Rigid, porous material, such as charcoal, used to remove vapor or gas from the air.

Supplied-air respirator (see air-line respirator)**Tight-fitting facepiece**

A respiratory inlet covering forming a complete seal with the face OR neck. Mouthpiece respirators are not tight-fitting facepieces.

Voluntary use

Respirator use that is requested by the employee **AND** permitted by the employer when **NO** respiratory hazard exists.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-842-300, filed 2/20/07, effective 4/1/07; 03-20-114, § 296-842-300, filed 10/1/03, effective 1/1/04.]

Chapter 296-843 WAC**HAZARDOUS WASTE OPERATIONS****WAC**

296-843-12005 Develop and maintain a written site-specific health and safety plan (HASP).

WAC 296-843-12005 Develop and maintain a written site-specific health and safety plan (HASP).

Reference: If your overall program required under WAC 296-800-140, Accident prevention program (APP), meets requirements of this chapter, you do not need to duplicate those portions of your APP in the site-specific health and safety plan (HASP).

You must:

- Develop a written HASP for each hazardous waste site, **BEFORE** beginning hazardous waste operations, that includes at least the following:

Hazard analysis:

- Identification and evaluation of on-site safety and health hazards.
- A safety and health risk (hazard) analysis for each site task and operation that is identified in the comprehensive work plan.

Organization chart:

- An organizational structure that reflects current site operations, including the following:

- Establish and identify the chain of command.

- Identify the site safety and health supervisor and other personnel responsible for employee safety and health.

- Specify the overall responsibilities of supervisors and employees.

- Include the name and title of the person with responsibility and authority to direct all hazardous waste operations.

- Include a site safety and health supervisor responsible for developing and implementing the HASP and verifying compliance.

- Identify the functions and responsibilities of all personnel needed for hazardous waste operations and emergency response.

- Identify site specific lines of authority, responsibility, and communication.

Comprehensive work plan:

– A written comprehensive work plan of tasks, objectives, logistics, and resources for site operations, including the following:

■ Addresses anticipated clean-up activities and normal operating procedures unless that information is already available in another document.

■ Defines work tasks and objectives.

■ Describes how the work tasks and objectives will be accomplished.

■ Establishes the personnel requirements to implement the work plan.

■ Provides for implementation of training, briefings, and information as required by WAC 296-843-200.

Site control plan:

– An up-to-date site control plan before clean-up operations begin to minimize employee exposure to hazardous substances and including the following (unless it's available in another document):

■ A site map.

■ Establish site work zones.

■ How the "buddy system" is used.

■ The site communications plan, including how employees are alerted during emergencies.

■ The site's standard operating procedures (SOPs) or safe work practices.

■ Identification of the nearest medical assistance.

Personal protective equipment:

– A PPE plan that addresses all of the following:

■ Site hazards and activities.

■ Methods to evaluate the effectiveness of the PPE plan.

■ Criteria for selecting and fitting PPE, including work duration, use limitations of particular PPE, and medical considerations such as temperature extremes and heat stress.

■ Training on PPE use.

■ Procedures for putting on and taking off PPE.

■ PPE inspection procedures prior to, during, and after use.

■ Decontamination and disposal of PPE.

■ Maintenance and storage of PPE.

Additional elements:

– A sampling and monitoring plan (see WAC 296-843-130) that includes sampling of drums and containers.

– Site control measures (see WAC 296-843-140).

– Decontamination procedures (see WAC 296-843-150).

– Spill containment plans (see WAC 296-843-180, Drum and container handling).

– Standard operating procedures for sampling, managing, and handling drums and containers (see WAC 296-843-180).

– Entry procedures for tanks or vaults (see chapter 296-809 WAC, Confined spaces).

– A training, briefings, and information plan (see WAC 296-843-200).

– A medical surveillance plan (see WAC 296-843-210), that includes site-specific medical surveillance requirements.

– Sanitation (see WAC 296-155-140).

– Lighting (see WAC 296-800-210).

– Excavations (see chapter 296-155 WAC, Part N, Excavation, trenching and shoring).

– Any relationship or interaction between other programs and the site-specific program.

Note: The emergency response plan required by WAC 296-843-160, Emergency response for hazardous waste sites, is also included as a separate section in the HASP.

You must:

• Keep a copy of your HASP on site.

Reference: For more information, see WAC 296-843-220, Recordkeeping and information access.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-843-12005, filed 1/24/07, effective 4/1/07; 04-02-053, § 296-843-12005, filed 1/5/04, effective 5/1/04.]

Chapter 296-848 WAC**ARSENIC****WAC**

296-848-20060	Exposure evaluations.
296-848-30005	Training.
296-848-30030	Medical evaluations.
296-848-40020	Exposure controls.
296-848-40045	Respirators.
296-848-60010	Health information about inorganic arsenic.
296-848-60020	Medical guidelines.

WAC 296-848-20060 Exposure evaluations.**IMPORTANT:**

• This section applies when workplace operations create potential airborne exposure to inorganic arsenic.

• When you conduct an exposure evaluation in a workplace where an employee uses a respirator, the protection provided by the respirator is not considered.

• Following this section will fulfill the requirements to identify and evaluate respiratory hazards found in chapter 296-841 WAC, Airborne contaminants.

You must:

(1) Conduct an employee exposure evaluation to accurately determine airborne concentrations of inorganic arsenic by completing Steps 1 through 5 of the Exposure Evaluation Process, each time any of the following apply:

• No evaluation has been conducted.

• Changes have occurred in any of the following areas that may result in new or increased exposures:

– Production.

– Processes.

– Exposure controls such as ventilation systems or work practices.

– Personnel.

• You have any reason to suspect new or increased exposure may occur.

(2) Provide affected employees and their designated representatives an opportunity to observe exposure monitoring during Step 4 of the Exposure Evaluation Process.

• Make sure observers do not interfere with exposure measurements.

• Make sure observers are entitled to:

– An explanation of your exposure measurement and monitoring procedures;

– Observe all tasks of exposure measurement performed at the workplace;

AND

– Receive a copy of the exposure measurement results when you obtain them; or are allowed to record the exposure measurement results, if made during observations.

- Make sure observers who enter areas with inorganic arsenic exposure:

- Are provided with and use the same protective clothing, respirators, and other personal protective equipment (PPE) that employees working in the area are required to use;

AND

- Follow safety and health requirements that apply.

Exposure Evaluation Process

IMPORTANT:

Following the Exposure Evaluation Process is not necessary when you have documentation conclusively demonstrating inorganic arsenic exposures for a particular operation and material, cannot exceed the action level (AL) during any conditions reasonably anticipated. Documentation can be based on quantitative information such as soil test results OR qualitative information such as observations of how inorganic arsenic-containing materials are handled.

- Retain this documentation for as long as you rely on it.

Step 1: Identify all employees who have potential airborne exposure to inorganic arsenic in your workplace.

Step 2: Select employees from those identified in Step 1 who will have their eight-hour exposures monitored.

- Make sure the exposures of the employees selected represent eight-hour exposures for all employees identified in Step 1, including each job classification, work area, and shift.

Note: • A written description of the procedure used for obtaining representative employee exposure monitoring results needs to be kept as part of your exposure records required by this chapter in Exposure records, WAC 296-848-20090. This description can be created while completing Steps 2 through 4 of this exposure evaluation process.

Step 3: Determine how you'll obtain employee exposure monitoring results.

- Select and use a method that meets the following criteria for accuracy:

- $\pm 25\%$, with a confidence level of 95%, when concentrations are potentially at or above an eight-hour time-weighted average of 10 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$);

OR

- $\pm 35\%$, with a confidence level of 95%, when concentrations are potentially between the eight-hour time-weighted averages of 5 $\mu\text{g}/\text{m}^3$ and 10 $\mu\text{g}/\text{m}^3$.

Note: • Here are examples of methods that meet this accuracy requirement:

- OSHA Method ID105 found by going to <http://www.osha.gov/dts/sltc/methods/toc.html>.
- NIOSH method 7901 found by going to <http://www.cdc.gov/niosh/homepage.html> and linking to the NIOSH Manual of Analytical Methods.

Step 4: Obtain employee exposure monitoring results by collecting air samples representing employees identified in Step 1.

- Sample at least one shift representative of the eight-hour exposure, for each employee selected in Step 2.

- Make sure samples are collected from each selected employee's breathing zone.

Note: • You may use any sampling method that meets the accuracies specified in Step 3. Examples of these methods include:

- Real-time monitors that provide immediate exposure monitoring results.

- Equipment that collects samples that are sent to a laboratory for analysis.

- The following are examples of methods for collecting samples representative of eight-hour exposures.

- Collect one or more continuous samples, for example, a single eight-hour sample or four two-hour samples.

- Take a minimum of 4 to 7 brief samples, such as fifteen-minute samples, during the work shift and at times selected randomly.

- For work shifts longer than eight hours, monitor the continuous eight-hour portion of the shift expected to have the highest average exposure concentration.

Step 5: Have the samples you collected analyzed to obtain monitoring results representing eight-hour exposures.

- Go to the Scope of this chapter, WAC 296-848-100, and compare employee exposure monitoring results to the values found in Step 1 and follow Step 2 to determine if additional sections of this chapter apply.

Note:

- You may contact your local WISHA consultant for help:
 - Interpreting data or other information.
 - Determining eight-hour employee exposure monitoring results.
- To contact a WISHA consultant:
 - Go to the Safety and health core rules, chapter 296-800 WAC;

AND

- Find the Resources section, and under "Other Resources," find *Service Locations for Labor and Industries*.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-06-005, § 296-848-20060, filed 2/22/07, effective 4/1/07; 05-01-173, § 296-848-20060, filed 12/21/04, effective 5/1/05.]

WAC 296-848-30005 Training.

You must:

- Train employees:

- Who are exposed above the action level (AL) of 5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air;

OR

- Who could experience eye or skin irritation from exposure.

- Provide training:

- At the time of initial assignment;

AND

- At least every twelve months after initial training.

- Make sure training and information includes all of the following:

- A review of WAC 296-848-100 through 296-848-40045, and 296-848-500.

- The following health information about inorganic arsenic:

- Inorganic arsenic is a poison and can affect your body if it's swallowed or inhaled.

- Exposure to airborne concentrations of inorganic arsenic may cause lung cancer and can be a skin irritant.

- Arsenic trichloride can be absorbed readily through your skin and is especially dangerous.

- Wash hands thoroughly before eating or smoking to help minimize your risk for swallowing inorganic arsenic.

- The purpose for medical evaluations and a description of how you are fulfilling the medical evaluation requirements of this chapter found in Medical evaluations, WAC 296-848-30030.

- Make a copy of this chapter readily available to all employees required to be trained under this section.

Reference: • To see additional training and information requirements in other chapters, go to the:

- Respirators rule, chapter 296-842 WAC.

- Safety and health core rules, chapter 296-800 WAC, and find the section titled, Inform and train your employees about hazardous chemicals in your workplace, WAC 296-800-17030.
- When following these requirements, include specific information about potential exposures to inorganic arsenic, such as the types of operations, locations, quantities, exposure sources, exposure controls, inorganic arsenic use, and storage.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-153, § 296-848-30005, filed 1/23/07, effective 6/1/07; 05-01-173, § 296-848-30005, filed 12/21/04, effective 5/1/05.]

WAC 296-848-30030 Medical evaluations.

IMPORTANT:

• Medical evaluations conducted under this section will satisfy the medical evaluation requirement found in another chapter, Respirators, chapter 296-842 WAC.

You must:

• Make medical evaluations available to current employees who have been, are, or will be exposed to inorganic arsenic concentrations above the AL:

- At least thirty days in any twelve-month period;

OR

- A total of ten years or more of combined employment with you or previous employers with at least thirty days of exposure per year.

• Make medical evaluations available at no cost to employees.

- Pay all costs, including travel costs and wages associated with any time spent outside of the employee's normal work hours.

• Make medical evaluations available at reasonable times and places.

• Make medical evaluations available by completing Steps 1 through 6 of the Medical Evaluation Process for each employee covered.

- Note:**
- Employees who wear respirators need to be medically evaluated to make sure the respirator will not harm them, before they are assigned work in areas requiring respirators. Employees who decline to receive medical examination and testing to monitor for health effects caused by inorganic arsenic are not excluded from receiving a separate medical evaluation for a respirator use.
 - If employers discourage participation in medical monitoring for health effects caused by inorganic arsenic, or in any way interfere with an employee's decision to continue with this program, this interference may represent unlawful discrimination under RCW 49.17.160, Discrimination against employee filing, instituting proceeding, or testifying prohibited—Procedure—Remedy.

Helpful tool:

Declination form for nonemergency related medical evaluations.

You may use this optional form to document employee decisions to decline participation in the medical evaluation process for exposure to inorganic arsenic. To see this form, go to the Resources section within this chapter.

Medical Evaluation Process

Step 1: Identify employees who qualify, as stated above, for medical evaluations.

Step 2a: Make medical evaluations available for employees identified in Step 1 at the following times:

- Initially, when employees are assigned to work in an area where exposure monitoring results are, or will likely be, above the action level for at least thirty days in a twelve-month period.

- Periodically as specified in Table 3.

• When employment with exposure ends, if the employee has not had an evaluation within the six-month period before exposure ends. Include in these evaluations the same content as specified in Table 4 for initial evaluations, excluding a chest X ray.

**Table 3
Frequencies for Periodic Medical Evaluations**

For:	Provide periodic medical evaluations every:
Employees less than forty-five years old with less than ten years of exposure above the AL	Twelve months;
Employees forty-five or older; AND Employees with more than ten years of exposure above the AL	Six months; AND Twelve months to obtain a fourteen by seventeen-inch posterior-anterior chest X ray for monitoring purposes, unless the LHCP has determined a different frequency for periodic X rays.

Step 2b: Provide appropriate medical examination and emergency treatment when an employee identified in Step 1 develops signs or symptoms commonly associated with inorganic arsenic exposure.

Step 3: Select a licensed health care professional (LHCP) who will conduct or supervise examinations and procedures.

Step 4: Make sure the LHCP receives all of the following before the medical evaluation is performed:

- A copy of this chapter.
- A description of the duties of the employee being evaluated and how these duties relate to inorganic arsenic exposure.
- The anticipated or representative exposure monitoring results for the employee being evaluated.
- A description of the personal protective equipment (PPE) each employee being evaluated uses or will use.
- Information from previous employment-related examinations when this information is not available to the examining LHCP.
- Instructions that the written opinions the LHCP provides you be limited to the following information:
 - Results from examinations and tests.
 - The LHCP's opinion about whether or not medical conditions were found that would increase the employee's risk for impairment from exposure to inorganic arsenic.
 - Any recommended limitations for:
 - Inorganic arsenic exposure;
 - AND**
 - Use of respirators or other PPE.
 - A statement that the employee has been informed of medical results and medical conditions caused by inorganic arsenic exposure requiring further examination or treatment.

Step 5: Make the medical evaluation available to the employee. Make sure it includes the content listed in Table 4, Content of Medical Evaluations.

Step 6: Obtain the LHCP's written opinion for the employee's medical evaluation and give a copy to the employee.

- Make sure the written opinion is limited to the information specified for written opinions in Step 4.

Note: If the written opinion contains specific findings or diagnoses unrelated to occupational exposure, send it back and obtain a revised version without the additional information.

Table 4
Content of Medical Evaluations

When conducting:	Include:
An initial evaluation	<ul style="list-style-type: none"> • A work history and medical history including: <ul style="list-style-type: none"> – Smoking history. – The presence and degree of respiratory symptoms such as breathlessness, cough, sputum production, and wheezing. • A physical examination that includes: <ul style="list-style-type: none"> – A fourteen by seventeen-inch posterior-anterior chest X ray and the International Labor Office UICC/Cincinnati (ILO U/C) rating. – A nasal and skin examination. • Additional examinations the licensed healthcare professional (LHCP) believes appropriate based on the employee's exposure to inorganic arsenic or respirator use.
Periodic evaluations for employees less than forty-five years old with less than ten years of exposure above the action level (AL)	<ul style="list-style-type: none"> • The same content as specified for initial evaluations repeated every twelve months.
Periodic evaluations for employees: <ul style="list-style-type: none"> • Forty-five or older; OR <ul style="list-style-type: none"> • With more than ten years of exposure above the AL 	<ul style="list-style-type: none"> • The following content repeated every six months: <ul style="list-style-type: none"> – A work history and medical history including: <ul style="list-style-type: none"> ■ Smoking history. ■ The presence and degree of respiratory symptoms such as breathlessness, cough, sputum production, and wheezing. – A physical examination that includes a nasal and skin examination. – Additional examinations the LHCP believes appropriate based on the employee's exposure to inorganic arsenic or respirator use.

Table 4
Content of Medical Evaluations

When conducting:	Include:
	<ul style="list-style-type: none"> • A physical examination, repeated every twelve months, that obtains a fourteen by seventeen-inch posterior-anterior chest X ray and the International Labor Office UICC/Cincinnati (ILO U/C) rating.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-153, § 296-848-30030, filed 1/23/07, effective 6/1/07; 05-01-173, § 296-848-30030, filed 12/21/04, effective 5/1/05.]

WAC 296-848-40020 Exposure controls.

IMPORTANT:

- Use of employee rotation to control exposures is not advisable since inorganic arsenic is a known carcinogen.
- Respirators and other personal protective equipment (PPE) do not substitute for feasible exposure controls.

You must:

- Use feasible exposure controls to reduce exposures to or below the permissible exposure limit (PEL), or as low as achievable.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-06-005, § 296-848-40020, filed 2/22/07, effective 4/1/07; 05-01-173, § 296-848-40020, filed 12/21/04, effective 5/1/05.]

WAC 296-848-40045 Respirators.

IMPORTANT:

• The requirements in this section are in addition to the requirements found in other chapters:

- Airborne contaminants, chapter 296-841 WAC.
- Respirators, chapter 296-842 WAC.

You must:

- Provide respirators and require that employees use them in circumstances where exposure is above the permissible exposure limit (PEL), including any of the following circumstances:

- Employees are in an exposure control area.
- Feasible exposure controls are being put in place.
- Where you determine that exposure controls are not feasible.

– Feasible exposure controls do not reduce exposures to, or below, the PEL.

- Emergencies.

- Provide high-efficiency particulate air (HEPA) filters or N-, R-, or P-100 filters for powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators.

- Provide a powered air-purifying respirator (PAPR) to employees required to use respirators when:

- The employee chooses to use this type of respirator or a licensed health care professional (LHCP) recommends this type of respirator in their written opinion.

AND

- It will provide proper protection.

- Follow these additional specifications for inorganic arsenic compounds with significant vapor pressure such as arsenic trichloride and arsenic phosphide:

- Select front- or back-mounted gas masks equipped with HEPA filters and acid gas canisters or any full facepiece

supplied-air respirator, when concentrations are at or below 500 mg/m³.

– Select for powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators equipped with HEPA (or equivalent) filters and acid gas cartridges when concentrations are at or below 100.

• Prohibit the use of half-facepiece respirators for protection against arsenic trichloride. This is because arsenic trichloride is corrosive and rapidly absorbed through the skin.

Note: When selecting air-purifying respirators for protection against inorganic arsenic, you'll need to consider whether other contaminants could be present at levels above permissible exposure limits and determine if a combination filter/gas-sorbent cartridge or canister is appropriate.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-848-40045, filed 2/20/07, effective 4/1/07; 05-01-173, § 296-848-40045, filed 12/21/04, effective 5/1/05.]

WAC 296-848-60010 Health information about inorganic arsenic.

• Make this section readily available to employees as required in Training, WAC 296-848-30005.

• Provide this section to the licensed health care professional (LHCP) as required in Step 4 of the medical evaluation process found in Medical evaluations, WAC 296-848-30030.

Table 5

General Health Information About Inorganic Arsenic

<p>What is inorganic arsenic?</p> <p>In this chapter, "inorganic arsenic" means:</p> <ul style="list-style-type: none"> – The element arsenic; – Arsenic-containing compounds that don't contain the element carbon; – Copper aceto-arsenite. <p>Arsine is a gaseous inorganic arsenic compound not addressed by requirements in this chapter. It's addressed in a separate chapter, Respiratory hazards, chapter 296-841 WAC.</p>
<p>How does inorganic arsenic get into my body?</p> <p>Inorganic arsenic enters your body when you:</p> <ul style="list-style-type: none"> – Breathe in (inhale) airborne particles such as dusts, fume, sprays, or other aerosols that contain inorganic arsenic. You will also inhale inorganic arsenic particles when you smoke tobacco products that have become contaminated from contact with inorganic arsenic at work. Some compounds, including arsenic trichloride, can be inhaled as a vapor; – Swallow (ingest) food, drink, cosmetics such as lip balm, sweat and other substances that become contaminated from contact with inorganic arsenic at work. <p>Inorganic arsenic particles brought home on your clothes, shoes, or body can be inhaled or ingested by household members.</p> <p>Some inorganic arsenic compounds enter your body when eye or skin contact occurs. Arsenic trichloride is one example of a compound that is readily absorbed through the eyes and skin.</p>
<p>What happens after inorganic arsenic enters my body?</p> <p>Once inorganic arsenic enters your body, some of it is changed into a less harmful organic form by the liver. Both the organic and inorganic forms leave your body in urine.</p>

Table 5

General Health Information About Inorganic Arsenic

<p>Most of the arsenic will be gone within several days, although some will remain in your body for several months and even longer.</p>
<p>Why is medical monitoring necessary?</p> <p>Although exposure to inorganic arsenic is associated with various health effects, the most serious health effects are lung and skin cancer. The medical monitoring requirements in this chapter are established to minimize your risk for these diseases.</p> <p>To learn more about the medical monitoring process, see Medical evaluation, WAC 296-848-30030.</p>
<p>What health effects and symptoms are linked with exposure to inorganic arsenic?</p> <p>Exposure to inorganic arsenic is associated with various health effects ranging from temporary local effects such as skin irritation to lasting systematic effects due to gradual (chronic) or sudden (acute) poisoning. Such effects should not occur if the requirements in this chapter are followed.</p> <p>Skin Health Effects:</p> <p>Arsenic trioxide, arsenic trichloride, and other trivalent compounds can cause skin irritation from direct contact.</p> <ul style="list-style-type: none"> – The following moist mucous membranes are most sensitive to irritation: <ul style="list-style-type: none"> ■ Eye and inner eyelid (conjunctiva); ■ Linings inside the nose, mouth, and respiratory system. – Other sites most vulnerable irritation also include: <ul style="list-style-type: none"> ■ Eyelids; ■ Angles (the space between 2 planes) of the ears, nose, and mouth; ■ Moist and macerated (softened by moisture) areas of skin; ■ Wrists; ■ Genitalia, if personal hygiene is poor. <p>Inorganic arsenic is also capable of causing keratoses (small corns or warts), especially on palms and soles. Trivalent arsenic compounds are corrosive to skin:</p> <ul style="list-style-type: none"> – Brief contact won't cause irritation, but prolonged contact causes localized engorgement (hyperemia) which later forms vesicular (blister-like) or pustular (pimple-like) eruptions. – Exposure can create perforations (holes) in the nasal septum (the tissue dividing the nasal cavity in half). <p>Arsenic trioxide and arsenic pentoxide exposure have been linked to skin sensitization (acquired sensitivity or allergy) and contact dermatitis (inflammation due to allergic or irritant reaction).</p> <p>Acute Poisoning Effects:</p> <p>Acute poisoning is usually linked to ingestion, not inhalation, of inorganic arsenic. Cases of acute poisoning rarely occur in occupational settings and inhalation-related cases are exceedingly rare.</p> <p>When acute poisoning is due to ingestion, the following gastrointestinal symptoms develop within 1/2 to 4 hours:</p>

Table 5

General Health Information About Inorganic Arsenic

<ul style="list-style-type: none"> - Tightening (constriction) of the throat followed by difficulty or inability to swallow (dysphagia), pain in the region above the belly button (epigastric pain), vomiting, and watery diarrhea. Blood may appear in vomit and stools; - Shock may develop due to severe fluid loss when the amount of inorganic arsenic swallowed is sufficiently high. Death can occur in 24 hours. <p>When acute poisoning is due to inhalation:</p> <ul style="list-style-type: none"> - The following symptoms develop first: <ul style="list-style-type: none"> ■ Cough; ■ Chest pain; ■ Shortness of breath (dyspnea); ■ Giddiness; ■ Headache; ■ Extreme general weakness. - Gastrointestinal symptoms will follow. <p>Chronic Poisoning Effects:</p> <p>Cases of chronic poisoning caused by ingestion are also rare. Symptoms are:</p> <ul style="list-style-type: none"> - Weight loss; - Nausea and diarrhea alternating with constipation; - Skin pigmentation and eruptions; - Hair loss; - Numbness in hands and feet, "pins and needles" sensation, muscle weakness, and other symptoms resulting from peripheral neuritis; - Horizontal white lines (striations) on fingernails and toenails. <p>Inhalation of inorganic arsenic is the most common cause of chronic poisoning in occupational settings. Symptoms associated with this condition are divided into 3 phases.</p> <ul style="list-style-type: none"> - 1st phase, earliest symptoms: <ul style="list-style-type: none"> ■ Weakness; ■ Loss of appetite; ■ Some nausea; ■ Occasional vomiting; ■ Sense of heaviness in the stomach; ■ Some diarrhea. - 2nd phase symptoms: <ul style="list-style-type: none"> ■ Inflammation of the eyes and inner eyelid (conjunctivitis); ■ Inflammation, accompanied by an abundant discharge from mucous membranes (a catarrhal state) of the nose, larynx, and respiratory passage; ■ Symptoms associated with the common cold (Coryza), hoarseness, and mild tracheobronchitis may occur; ■ Skin lesions are common (eczematoid and allergic in type). Perforations (holes) in the nasal septum (the tissue dividing the nasal cavity in half) are the most typical lesions of the upper respiratory tract. - 3rd phase symptoms (related to peripheral neuritis): <ul style="list-style-type: none"> ■ Numbness in hands and feet, "pins and needles" sensation, muscle weakness.

Table 5

General Health Information About Inorganic Arsenic

<ul style="list-style-type: none"> ■ In severe cases, motor paralysis occurs: Initially affecting the toe extensors and the peronei (outer portion of the lower leg). ■ "Wrist drop" or "foot drop" (resulting from paralysis of flexor muscles of feet and hands) only occurs in the most severe cases.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-153, § 296-848-60010, filed 1/23/07, effective 6/1/07.]

WAC 296-848-60020 Medical guidelines.

- Make this section readily available to employees as required in Training, WAC 296-848-30005.
- Provide this section to the licensed health care professional (LHCP) as required in Step 4 of the medical evaluation process found in Medical evaluations, WAC 296-848-30030.

**Table 6
Medical Guidelines**

For Evaluating Employees With Exposure

<p>Part 1: DOSH's Requirements</p> <p>In addition to requiring employers to train employees and protect them from inorganic arsenic exposure, this chapter (the Arsenic rule) requires employers to monitor their employees' health with assistance from licensed health care professionals (LHCPs).</p> <ul style="list-style-type: none"> • For employees who will use respirators, the LHCP will also need to provide the employer with a written medical opinion clearing the employee for workplace respirator use. <p>These guidelines were designed to support an informed partnership between the LHCP and the employer when monitoring the health of employees exposed to inorganic arsenic.</p> <p>The employer initiates this partnership by providing the LHCP with a copy of the chapter and other supporting information about the employee and job conditions. The LHCP can then become familiar with the medical monitoring requirements found in WAC 296-848-30030 and 296-848-30080, which address:</p> <ul style="list-style-type: none"> • Frequency and content for routine (initial and periodic) medical examinations and consultations; • Emergency and other unplanned medical follow-up; • Medical opinions; • Medical records retention and content.
<p>Part 2: Inorganic Arsenic Toxicology</p> <p>Health information about inorganic arsenic, WAC 296-848-50020 provides basic information about the health effects and symptoms associated with inorganic arsenic exposure.</p> <p>In addition, consider the following information:</p> <p>Acute Poisoning</p> <p>Exfoliative dermatitis and peripheral neuritis may develop in patients who survive health effects due to acute poisoning (by ingestion).</p> <p>Acute toxic symptoms of trivalent arsenical poisoning are caused by severe inflammation of the mucous membranes and greatly increased permeability of the blood capillaries.</p>

Table 6
Medical Guidelines
For Evaluating Employees With Exposure

<p>Acute and Chronic Poisoning</p> <p>In cases of acute and chronic poisoning, toxic effects to the myocardium (the middle layer of the heart) reported on EKG changes are now largely discounted and are attributed to electrolyte disturbances concomitant with arsenicalism. Arsenic has a depressant effect upon bone marrow, with disturbances of both red blood cell production (erythropoiesis) and myelopoiesis.</p> <p>Chronic Poisoning</p> <p>Cases of chronic poisoning caused by ingestion are generally linked to patients taking prescribed medications. However, sputum from inhaled inorganic arsenic can be swallowed in addition to other ingested inorganic arsenic due to hand-to-mouth transfer.</p> <p>Skin lesions are usually melanotic and keratotic and may occasionally take the form of an intradermal cancer of the squamous cell type, but without infiltrative properties. Chronic hepatitis and cirrhosis have been described. Liver damage is still debated and as yet the question is unanswered.</p> <p>Polyneuritis may be the prominent feature, but more frequently there are numbness and parasthenias of "glove and stocking" distribution. Horizontal white lines (striations) on the fingernails and toenails are commonly seen and are considered a diagnostic accompaniment of arsenical polyneuritis.</p> <p>References:</p> <ul style="list-style-type: none"> • Other sources for toxicology information include: <ul style="list-style-type: none"> – ToxFAQs™ and the Toxicological Profile for Arsenic. Both of these free documents are available from the Agency for Toxic Substances and Disease Registry (ATSDR) and can be obtained by: <ul style="list-style-type: none"> ■ Visiting http://www.atsdr.cdc.gov/toxprofiles OR ■ Calling 1-888-422-8737. – A variety of technical resources on arsenic, available from the National Institutes for Occupational Safety and Health (NIOSH) by visiting http://www.cdc.niosh/topics/chemicals.html
<p>Part 3: Clinical Evaluation of Employees Exposed to Inorganic Arsenic</p> <p>IMPORTANT:</p> <ul style="list-style-type: none"> • When an employee will use a respirator during work, the LHCP will need to determine whether the employee can safely wear a respirator and what limitations, if any, apply. <p>Guidance for Physical Examinations</p> <p>In addition to its immediate diagnostic usefulness, a patient's initial examination will provide a baseline for comparing future test results.</p> <p>This chapter establishes the minimum content for medical examinations. Additional tests such as lateral and oblique X rays or pulmonary function test may be useful.</p>

Table 6
Medical Guidelines
For Evaluating Employees With Exposure

<p>You should also include palpation of superficial lymph nodes and a complete blood count when employees are exposed to any of the following compounds:</p> <ul style="list-style-type: none"> – Copper aceto-arsenite; – Potassium arsenite; – Sodium arsenite; – Other arsenicals associated with lymphatic cancer. <p>Arsenic trioxide and other inorganic arsenical dusts don't give rise to radiological evidence or pneumoconiosis.</p>
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[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-153, § 296-848-60020, filed 1/23/07, effective 6/1/07.]

Chapter 296-849 WAC
BENZENE

WAC	
296-849-100	Scope.
296-849-11030	Exposure evaluations.
296-849-11050	Training.
296-849-12030	Medical evaluations.
296-849-13005	Exposure control plan.
296-849-13020	Exposure controls.
296-849-13045	Respirators.
296-849-60010	Health information about benzene.
296-849-60020	Medical guidelines for benzene.

WAC 296-849-100 Scope. This chapter applies to all occupational exposure to benzene.

Definition:

Exposure is the contact an employee has with benzene, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry such as inhalation, ingestion, skin contact, or skin absorption.

Exemptions:

- This chapter does not apply to any of the following:
- Liquids, vapors, mixtures in containers or pipelines, and gas in natural gas processing plants when benzene content is 0.1% or less.
 - Gasoline and other fuels containing benzene once they leave the final bulk wholesale facility and are being:
 - Transported;
 - Sold;
 - Distributed;
 - Stored;
 - Dispensed either:
 - Outdoors;
 - OR
 - Indoors four hours or less a day.
 - Used as a fuel.
 - Oil and gas drilling, production, and servicing operations.
 - Solid materials that contain only trace amounts of benzene.
 - Coke ovens.

All requirements in this chapter will not apply to every workplace with an occupational exposure. The following will show you which requirements apply to your workplace.

Step 1: If any of your work tasks are listed in Table 1, follow Table 1.

- Go to Step 2a if you have additional work tasks or other exposures that are not covered in Table 1.

Table 1
Requirements that Apply to Specific Tasks

If employees do any of the following:	Then the only requirements in this chapter that apply to those tasks are:
Load and unload benzene at bulk storage facilities that use vapor control systems for all loading and unloading operations.	<ul style="list-style-type: none"> The labeling requirement found in Preventive practices, WAC 296-849-11010.
Perform tasks around sealed transport pipelines carrying gasoline, crude oil, or other liquids containing more than 0.1% benzene.	<ul style="list-style-type: none"> This requirement found in Training, WAC 296-849-11050: <ul style="list-style-type: none"> Make sure training and information includes specific information on benzene for each hazard communication training topic. For the list of hazard communication training topics, go to the Safety and health core rules, chapter 296-800 WAC, and find Inform and train your employees about hazardous chemicals in your workplace, WAC 296-800-17030.
Work with, or around, sealed containers of liquids containing more than 0.1% benzene.	<ul style="list-style-type: none"> Emergency requirements found in Medical evaluations, WAC 296-849-12030. Requirements found in Medical records, WAC 296-849-12080. Respirator requirements found in Respirators, WAC 296-849-13045.

Step 2a: Follow requirements in the basic rules sections, WAC 296-849-11010 through 296-849-11090, for tasks **not** listed in Table 1.

- This includes completing an exposure evaluation, as specified in Exposure evaluations, WAC 296-849-11030, to:
 - Obtain employee fifteen-minute and eight-hour exposure monitoring results of airborne benzene;

AND

– Determine if employee exposure monitoring results are above, at, or below these values:

- Eight-hour time-weighted average (TWA₈). 1 parts per million (ppm).
- Fifteen-minute short-term exposure limit (STEL). 5 ppm.
- Eight-hour action level (AL). 0.5 ppm.

Step 2b: Use employee exposure monitoring results from Step 2a and follow Table 2 to find out which additional sections of this chapter apply to your workplace.

Table 2
Section Application

If employee exposure monitoring results are:	Then continue to follow the basic rules, and these additional requirements:
<ul style="list-style-type: none"> Above the TWA₈ or STEL 	<ul style="list-style-type: none"> Exposure and medical monitoring, WAC 296-849-12010 through 296-849-12080; AND Exposure control areas, WAC 296-849-13005 through 296-849-13045.
<ul style="list-style-type: none"> At or below the TWA₈ or STEL; AND At or above AL 	<ul style="list-style-type: none"> Exposure and medical monitoring, WAC 296-849-12005 through 296-849-12080.
<ul style="list-style-type: none"> Below the AL and STEL 	<ul style="list-style-type: none"> No additional requirements apply.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-849-100, filed 1/24/07, effective 4/1/07; 05-13-152, § 296-849-100, filed 6/21/05, effective 8/1/05; 05-01-172, § 296-849-100, filed 12/21/04, effective 3/1/05.]

WAC 296-849-11030 Exposure evaluations.

IMPORTANT:

- When you conduct an exposure evaluation in a workplace where an employee uses a respirator, the protection provided by the respirator is not considered.
 - Following this section will fulfill the requirements to identify and evaluate respiratory hazards found in chapter 296-841 WAC, Airborne contaminants.

You must:

- Conduct an employee exposure evaluation to accurately determine airborne concentrations of benzene by completing Steps 1 through 7 of the exposure evaluation process, each time any of the following apply:
 - No evaluation has been conducted.
 - You have up to thirty days to complete an evaluation once benzene is introduced into your workplace.
 - Changes have occurred in any of the following areas that may result in new or increased exposures:
 - Production.
 - Processes.
 - Exposure controls such as ventilation systems or work practices.
 - Personnel.
 - You have any reason to suspect new or increased exposure may occur.
 - Spills, leaks, or other releases have been cleaned up.

Note: As part of your exposure evaluation after cleanup, you will make sure exposure monitoring results have returned to prerule levels.

Exposure evaluation process.

IMPORTANT:

- If you are evaluating employee exposures during cleaning and repair of barges and tankers that contained benzene:
 - Collect samples that effectively measure benzene concentrations that employees may be exposed to;

AND

– Skip to Step 7.

• Following the exposure evaluation process is not necessary when you have documentation conclusively demonstrating benzene exposures for a particular operation and material cannot exceed the action level (AL) during any conditions reasonably anticipated.

– Documentation can be based on data or qualitative information, such as information about:

- The material.
- How the material is handled.
- The work conditions.

– Retain this documentation for as long as you rely on it.

Step 1: Identify all employees who have potential airborne exposure to benzene in your workplace.

Step 2: Identify operations where fifteen-minute exposures could exceed benzene's short-term exposure limit (STEL) of 5 parts per million (ppm).

• Include operations where it is reasonable to expect high, fifteen-minute exposures, such as operations where:

- Tanks are opened, filled, unloaded, or gauged.
- Containers or process equipment are opened.
- Benzene is used as a solvent for cleaning.

Note: You may use monitoring devices such as colorimetric indicator tubes or real-time monitors to screen for activities where employee exposure monitoring results could be high.

Step 3: Select employees from those working in the operations you identified in Step 2 who will have their fifteen-minute exposures measured.

Step 4: Select employees from those identified in Step 1 who will have their eight-hour exposures monitored.

• Make sure the exposures of the employees selected represent eight-hour exposures for **all** employees identified at Step 1, including each job classification, work area, and shift.

Note: A written description of the procedure used for obtaining representative employee exposure monitoring results needs to be kept as part of your exposure records required by this chapter in Exposure records, WAC 296-849-11090. This description can be created while completing Steps 3 through 6 of this exposure evaluation process.

Step 5: Determine how you will obtain employee monitoring results.

• Select and use a method that is accurate to $\pm 25\%$, with a confidence level of 95%.

Note:

- Here are examples of methods that meet this accuracy requirement:
 - OSHA Method 12 for air samples, found by going to <http://www.osha.gov/dts/sltc/methods/toc.html>.
 - NIOSH Method 1500, found by going to <http://www.cdc.gov/niosh/homepage.html> and link to the *NIOSH Manual of Analytical Methods*.

Step 6: Obtain employee exposure monitoring results by collecting air samples representing employees identified at Step 1.

• Collect fifteen-minute samples from employees selected at Step 3.

• Sample at least one shift representative of the eight-hour exposure for each employee selected at Step 4.

• Make sure samples are collected from each selected employee's breathing zone.

• Collecting area samples is permitted after emergency releases.

Note:

- You may use any sampling method that meets the accuracy specified in Step 5. Examples of these methods include:

- Real-time monitors that provide immediate exposure monitoring results.
- Equipment that collects samples that are sent to a laboratory for analysis.

- The following are examples of methods of monitoring representative of eight-hour exposures:

- Collect one or more continuous samples, for example, a single eight-hour sample or four two-hour samples.

- Take a minimum of five brief samples, such as fifteen-minute samples, during the work shift and at times selected randomly.

- For work shifts longer than eight hours, monitor the continuous eight-hour portion of the shift expected to have the highest average exposure concentration.

Step 7: Have the samples you collected analyzed to obtain monitoring results representing eight-hour and fifteen-minute exposures.

• Go to the scope of this chapter, WAC 296-849-100, and compare employee exposure monitoring results to the **values** found in Step 2a and follow Step 2b to determine if additional sections of this chapter apply.

Note:

- You may contact your local WISHA consultant for help:
 - Interpreting data or other information.
 - Obtaining eight-hour or fifteen-minute employee exposure monitoring results.
- To contact a WISHA consultant:
 - Go to another chapter, the Safety and health core rules, chapter 296-800 WAC, and find the resources section, and under "other resources," find service location for labor and industries.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-849-11030, filed 2/20/07, effective 4/1/07; 05-13-152, § 296-849-11030, filed 6/21/05, effective 8/1/05; 05-01-172, § 296-849-11030, filed 12/21/04, effective 3/1/05.]

WAC 296-849-11050 Training.

You must:

• Provide training and information to employees:

– At the time of initial assignment to a work area where benzene is present;

AND

– At least every twelve months after initial training for employees exposed to airborne concentrations at or above the action level (AL) of 0.5 parts per million (ppm).

• Make sure training and information includes all of the following:

– Specific information on benzene for each hazard communication training topic. For the list of hazard communication training topics, go to the Safety and health core rules, chapter 296-800 WAC, and find Inform and train your employees about hazardous chemicals in your workplace, WAC 296-800-17030;

AND

– An explanation of the contents of this chapter and guidance about where to find a copy of it;

AND

– A description of the medical evaluation requirements of this chapter found in:

- Medical evaluations, WAC 296-849-12030;

AND

- Medical removal, WAC 296-849-12050.

Reference: To see additional training and information requirements in other chapters, go to the:

- Respirators rule, chapter 296-842 WAC, and find the Training section, WAC 296-842-16005.

- Safety and health core rules, chapter 296-800 WAC, and find the section titled, Inform and train your employees about hazardous chemicals in your workplace, WAC 296-800-17030.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-153, § 296-849-11050, filed 1/23/07, effective 6/1/07; 05-01-172, § 296-849-11050, filed 12/21/04, effective 3/1/05.]

WAC 296-849-12030 Medical evaluations.

IMPORTANT:

Medical evaluations conducted under this section will satisfy the medical evaluation requirement found in Respirators, chapter 296-842 WAC.

You must:

- Provide the relevant medical follow-up specified in Tables 4 and 5 to any employee exposed to benzene during an emergency.
- Make medical evaluations available to current employees who meet the following criteria:
 - Potential or actual exposure to benzene at or above the action level (AL) for at least thirty days in any twelve-month period.
 - Potential or actual exposure to benzene at or above either permissible exposure limit (PEL) for at least ten days in a twelve-month period.
 - Past exposure to concentrations above 10 ppm benzene for at least thirty days in a twelve-month period before November 11, 1988.
 - Current or past work as a tire building machine operator using solvents containing more than 0.1% benzene during tire building operations.

You must:

- Make medical evaluations available at no cost to employees.
 - Pay all costs, including travel costs and wages associated with any time spent outside of the employee's normal work hours;
- Make medical evaluations available at reasonable times and places;
- Make medical evaluations available by completing Steps 1 through 6 of the medical evaluation process for each employee covered.

Note:

- Employees who wear respirators need to be medically evaluated to make sure the respirator will not harm them, before they are assigned work in areas requiring respirators. Employees who decline to receive medical examination and testing to monitor for health effects caused by benzene are not excluded from receiving a separate medical evaluation for a respirator use.
- If employers discourage participation in medical monitoring for health effects caused by benzene, or in any way interfere with an employee's decision to continue with this program, this interference may represent unlawful discrimination under RCW 49.17.160, Discrimination against employee filing, instituting proceeding, or testifying prohibited—Procedure—Remedy.

Helpful tool:

Declination form for nonemergency related medical evaluations.

- You may use this optional form to document employee decisions to decline participation in the medical evaluation process for exposure to benzene.

Medical evaluation process:

- Step 1:** Identify employees who qualify, as stated above, for medical evaluations.

Step 2: Make medical evaluations available for employees identified in Step 1 at the following times:

- Initially, before the employee starts a job or task assignment where benzene exposure will occur.
- Every twelve months from the initial medical evaluation.
- Whenever the employee develops signs or symptoms commonly associated with toxic benzene exposure.
- After benzene exposure from an emergency.

Step 3: Select a licensed health care professional (LHCP) who will conduct or supervise medical evaluations and make sure:

- Individuals who conduct pulmonary function tests have completed a training course in spirometry sponsored by an appropriate governmental, academic, or professional institution, if they are not licensed physicians;

AND

- Your LHCP uses an accredited laboratory, such as one accredited by a nationally or state-recognized organization, to conduct laboratory tests.

Step 4: Make sure the LHCP receives all of the following before the medical evaluation is performed:

- A copy of this chapter.
- A description of the duties of the employee being evaluated and how these duties relate to benzene exposure.
- The anticipated or representative exposure monitoring results for the employee being evaluated.
- A description of the personal protective equipment (PPE) each employee being evaluated uses or will use.
- Information from previous employment-related examinations when this information is not available to the examining LHCP.
- Instructions that the written opinions the LHCP provides, be **limited to** the following information:
 - Specific records, findings, or diagnosis relevant to the employee's ability to work around benzene.
 - The occupationally relevant results from examinations and tests.
 - A statement about whether or not medical conditions were found that would increase the employee's risk for impairment from exposure to benzene.
 - Any recommended limitations for benzene exposure.
 - Whether or not the employee can use respirators and any recommended limitations for respirator or other PPE use.
 - A statement that the employee has been informed of medical results and medical conditions caused by benzene exposure requiring further explanation or treatment.

Step 5: Provide the medical evaluation to the employee. Make sure it includes the content listed in Table 4, Content of medical evaluations, and Table 5, Medical follow-up requirements.

Step 6: Obtain the LHCP's written opinion for each employee's medical evaluation and give a copy to the employee within fifteen days of the evaluation date.

- Make sure the written opinion is limited to the information specified for written opinions in Step 4.

Note:

If the written opinion contains specific findings or diagnoses unrelated to occupational exposure, send it back and obtain a revised version without the additional information.

IMPORTANT:

These tables apply when conducting medical evaluations, including medical follow-up for employees exposed to benzene during emergencies.

**Table 4
Content of Medical Evaluations**

When conducting	Include
An initial evaluation	<ul style="list-style-type: none"> • A detailed history including: <ul style="list-style-type: none"> – Past work exposure to benzene or other hematological toxins; – Exposure to marrow toxins outside of current employment; – Exposure to ionizing radiation; – Family history of blood dyscrasias including hematological neoplasms; – History of blood dyscrasias including genetic hemoglobin abnormalities, bleeding abnormalities, and abnormal function of formed blood elements; – History of renal or liver dysfunction; – History of medications routinely taken. • A complete physical examination: <ul style="list-style-type: none"> – Include a pulmonary function test and specific evaluation of the cardiopulmonary system if the employee is required to use a respirator for at least thirty days a year. • A complete blood count including a: <ul style="list-style-type: none"> – Leukocyte count with differential; – Quantitative thrombocyte count; – Hematocrit; – Hemoglobin; – Erythrocyte count and indices (MCV, MCH, MCHC). • Additional tests the examining LHCP determines are necessary based on alterations in the components of the blood or other signs that may be related to benzene exposure. • Medical follow-up as required in Table 5.

When conducting	Include
Annual evaluations	<ul style="list-style-type: none"> • An updated medical history covering: <ul style="list-style-type: none"> – Any new exposure to potential marrow toxins; – Changes in medication use; – Any physical signs associated with blood disorders. • A complete blood count including a: <ul style="list-style-type: none"> – Leukocyte count with differential; – Quantitative thrombocyte count; – Hematocrit; – Hemoglobin; – Erythrocyte count and indices (MCV, MCH, MCHC). • Additional tests that the examining LHCP determines necessary, based on alterations in the components of the blood or other signs that may be related to benzene exposure. • A pulmonary function test and specific evaluation of the cardiopulmonary system every three years if the employee is required to use a respirator for at least thirty days a year. • Medical follow-up as required in Table 5.
Evaluations triggered by employee signs and symptoms commonly associated with the toxic effects of benzene exposure	<ul style="list-style-type: none"> • An additional medical examination that addresses elements the examining LHCP considers appropriate.
Evaluations triggered by employee exposure during an emergency	<ul style="list-style-type: none"> • A urinary phenol test performed on the exposed employee's urine sample within seventy-two hours of sample collection. <ul style="list-style-type: none"> – The urine sample must be collected at the end of the work shift associated with the emergency; – The urine specific gravity must be corrected to 1.024. • Medical follow-up as required in Table 5. <p>Reference: Employees who are not covered by medical evaluation requirements in this chapter may be covered by medical evaluation requirements in other chapters such as Emergency response, chapter 296-824 WAC.</p>

Table 5
Medical Follow-up Requirements

If	Then
<ul style="list-style-type: none"> • The complete blood count test result is normal. 	<ul style="list-style-type: none"> • No further evaluation is required.
<ul style="list-style-type: none"> • The complete blood count test shows any of the following abnormal conditions: <ul style="list-style-type: none"> – A leukocyte count less than 4,000 per mm³ or an abnormal differential count; <p style="text-align: center;">OR</p> – A thrombocyte (platelet) count that is either: <ul style="list-style-type: none"> ■ More than 20% below the employee's most recent values; OR ■ Outside the normal limit (95% C.I.) according to the laboratory; OR – The hematocrit or hemoglobin level is either of the following, and can not be explained by other medical reasons: <ul style="list-style-type: none"> ■ Below the normal limit (outside the 95% C.I.), as determined by the laboratory for the particular geographical area; OR ■ Persistently decreasing compared to the employee's preexposure levels. 	<ul style="list-style-type: none"> • Repeat the complete blood count within two weeks: <ul style="list-style-type: none"> – If the abnormal condition persists, refer the employee to a hematologist or an internist for follow-up medical examination and evaluation, unless the LHCP has good reason to believe it is unnecessary; – The hematologist or internist will determine what follow-up tests are necessary; <p style="text-align: center;">AND</p> • Follow the requirements found in Medical removal, WAC 296-849-12050.
<p>Results from the urinary phenol test conducted during an emergency evaluation show phenol levels less than 75 mg/L.</p>	<ul style="list-style-type: none"> • No further evaluation is required.

If	Then
<p>Results from the urinary phenol test conducted during an emergency evaluation show phenol levels equal or more than 75 mg/L.</p>	<ul style="list-style-type: none"> • Provide a complete blood count monthly for three months. Include a: <ul style="list-style-type: none"> – Leukocyte count with differential; – Thrombocyte count; – Erythrocyte count; <p style="text-align: center;">AND</p> • If any of the abnormal conditions previously listed in this table for complete blood count results are found: <ul style="list-style-type: none"> – Provide the employee with periodic examinations, if directed by the LHCP; <p style="text-align: center;">AND</p> – Refer the employee to a hematologist or an internist for follow-up medical examination and evaluation unless the LHCP has good reason to believe a referral is unnecessary; <p style="text-align: center;">AND</p> – Follow the requirements found in Medical removal, WAC 296-849-12050; <p style="text-align: center;">AND</p> – The hematologist or internist will determine what follow-up tests are necessary.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-153, § 296-849-12030, filed 1/23/07, effective 6/1/07; 05-13-152, § 296-849-12030, filed 6/21/05, effective 8/1/05; 05-01-172, § 296-849-12030, filed 12/21/04, effective 3/1/05.]

WAC 296-849-13005 Exposure control plan.

Exemption: This section does not apply to the cleaning and repair of barges and tankers that contained benzene.

You must:

- Establish and implement a written exposure control plan for exposure control areas that include a schedule for developing and implementing feasible exposure controls to reduce benzene exposure to, or below, the PELs.

Note: Respirators and other personal protective equipment (PPE) help protect employees from exposures, but are **not** substitutes for feasible exposure controls.

You must:

- Review and update your exposure control plan as needed, based on the most recent exposure evaluation results.
- Provide a copy of your exposure control plan to affected employees and their designated representatives when they ask to review or copy it.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-849-13005, filed 2/20/07, effective 4/1/07; 05-01-172, § 296-849-13005, filed 12/21/04, effective 3/1/05.]

WAC 296-849-13020 Exposure controls.

IMPORTANT:

Respirators and other personal protective equipment (PPE) do **not** substitute for feasible exposure controls.

You must:

- Use feasible exposure controls to reduce exposures, as specified in Table 6.

**Table 6
Exposure Control Requirements**

If:	Then you must use feasible controls to:
You have operations where employees clean and repair barges or tankers which have contained benzene	Keep all employee exposure concentrations below 10 parts per million (ppm).
You can document that benzene is used for less than thirty days a year in the workplace	Reduce eight-hour employee exposure monitoring results to a time-weighted average of 10 ppm or less. Note: If employee exposure monitoring results are between 1 and 10 ppm, you are permitted to use respirators or a combination of respirators and feasible controls to protect employees.
Employees are exposed to benzene above a PEL for at least thirty days a year	Reduce eight-hour employee exposure concentrations to the TWA ₈ of 1 ppm or less; AND Reduce fifteen-minute employee exposure concentrations to the STEL of 5 ppm or less.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-062, § 296-849-13020, filed 2/20/07, effective 4/1/07; 05-01-172, § 296-849-13020, filed 12/21/04, effective 3/1/05.]

WAC 296-849-13045 Respirators.

IMPORTANT:

These requirements are in addition to the requirements found in other chapters:

- Airborne contaminants, chapter 296-841 WAC;
- Respirators, chapter 296-842 WAC.

You must:

- Provide respirators and require that employees use them in circumstances where exposure is above either permissible exposure limit (PEL) for benzene, including any of the following circumstances:
 - Employees are in an exposure control area;
 - Feasible exposure controls are being put in place;
 - Where you determine that exposure controls are not feasible;

- Feasible exposure controls do not reduce exposures to, or below, a PEL;

- Emergencies.

- Provide employees, for escape, either:

- Any full-facepiece organic vapor gas mask;

OR

- Any full-facepiece self-contained breathing apparatus (SCBA);

OR

- A hood-style SCBA that operates in positive-pressure mode.

- Use organic vapor cartridges or canisters on powered air-purifying respirators (PAPRs) and negative-pressure air-purifying respirators.

- Use only chin-style canisters on full-facepiece gas masks.

Note: When other contaminants present a hazard, then you will need to use a filter or other combination sorbent cartridge that removes the additional contaminants.

You must:

- Make sure respirator cartridges or canisters are replaced at the beginning of each work shift, or sooner if their service life has expired.

- Make sure canisters on air-purifying respirators have a minimum service life of four hours when tested under these conditions:

- A benzene concentration of 150 ppm;

- A temperature of 25°C;

- A relative humidity of 85%;

- A flow rate of one of the following:

- 64 liters per minute (lpm) for nonpowered air-purifying respirators;

- 115 lpm for **tight**-fitting PAPRs;

- 170 lpm for **loose**-fitting PAPRs.

- Provide an employee a respirator with low breathing resistance, such as a PAPR or an air-line respirator when the:
 - Employee cannot use a negative-pressure respirator;

OR

- A licensed health care professional's (LHCP's) written opinion allows this type of respirator.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-849-13045, filed 2/20/07, effective 4/1/07; 05-13-152, § 296-849-13045, filed 6/21/05, effective 8/1/05; 05-01-172, § 296-849-13045, filed 12/21/04, effective 3/1/05.]

WAC 296-849-60010 Health information about benzene.

- Include an explanation of the contents of this section to employees as required in Training, WAC 296-849-11050.

- Provide a copy of this section to the licensed health care professional (LHCP) as required in Step 4 of the medical evaluation process found in Medical evaluations, WAC 296-849-12030.

**Table 7
General Health Information About Benzene**

What is benzene?
Benzene is a clear, colorless liquid with a pleasant, sweet odor. It evaporates into air very quickly. The odor of benzene does not provide adequate warning of its hazard. In this chapter, "benzene " means:

Table 7
General Health Information About Benzene

<ul style="list-style-type: none"> – Liquid benzene, benzene vapor, and benzene in liquid mixtures and the vapor released by these liquids. The CAS Registry Number that identifies benzene is 71-43-2. <p>Synonyms for benzene include: Benzol, benzole, coal naphtha, cyclohexatriene, phenyl hydride, pyrobenzol. Benzin, petroleum benzin, and benzine are chemicals that do not contain benzene.</p>
How am I exposed to benzene?
<p>Benzene exposure occurs when you:</p> <ul style="list-style-type: none"> – Breath in (inhale) vapor or liquid particles (from actions such as spraying or splashing) containing benzene; – Have skin or eye contact with liquid or vapor containing benzene. Benzene is absorbed through the skin. Absorption occurs more rapidly with abraded skin or when benzene is present in solvents (as an ingredient or contaminant) which are readily absorbed; – Swallow (ingest) benzene.
What happens after I'm exposed to benzene?
<p>Some benzene that enters your body will be absorbed into the bloodstream. Once in the bloodstream, benzene travels throughout your body and can be temporarily stored in the bone marrow and fat.</p> <p>Benzene is converted to products, called metabolites, in the liver and bone marrow. Some of the harmful effects of benzene exposure are caused by these metabolites.</p> <p>Most of the metabolites of benzene leave the body in the urine within 48 hours after exposure.</p>
Why is medical monitoring necessary?
<p>Medical monitoring is necessary to detect changes in your body's blood-forming system, including the bone marrow. These changes can occur due to repeated or prolonged, unprotected exposure to benzene, even at relatively low concentrations. Such changes can lead to various blood disorders, ranging from anemia to leukemia, an irreversible, fatal disease. Many of these disorders may occur without symptoms.</p> <p>Benzene is classified as a confirmed human carcinogen (Group 1) by the International Agency for Research on Cancer (IARC).</p> <p>To learn more about the medical monitoring process, see Medical evaluation, WAC 296-849-12030.</p>
What health effects are linked to benzene exposure?
<p>Unprotected exposure to benzene is associated with various health effects including symptoms and diseases associated with either short-term (acute) exposure or long-term exposure (chronic).</p> <p>Acute effects from inhaling high vapor concentrations: An initial stimulatory effect on the central nervous system (brain and spinal cord) can occur, characterized by exhilaration, nervous excitation (irritability), and/or giddiness. This may be followed by a period of depression, drowsiness, or fatigue.</p> <p>Headache, dizziness, nausea, or a feeling of intoxication may develop.</p>

Table 7
General Health Information About Benzene

<p>A sensation of tightness in the chest may occur, accompanied by breathlessness. Ultimately the victim may lose consciousness.</p> <p>In severe inhalation cases, tremors, convulsions, and death may follow due to respiratory paralysis or circulatory collapse in a few minutes to several hours.</p> <p>Acute effects from inhaling liquid benzene: Aspiration of small amounts of liquid benzene immediately causes pulmonary edema (excessive accumulation of fluid in lung tissues) and hemorrhage of pulmonary tissue.</p> <p>Skin contact: Direct contact may cause redness (erythema). Benzene has a defatting action on skin. Repeated or prolonged contact may result in any of the following:</p> <ul style="list-style-type: none"> – Primary irritation; – Dry skin; – Scaling dermatitis (inflammation); – Development of secondary skin infections. <p>Effects on the eyes and mucous membranes: Localized effects from vapor or liquid contact on the eye are slight. High concentrations of benzene are irritating to eyes (causing a stinging sensation) and mucous membranes of the nose and respiratory tract.</p> <p>Effects due to prolonged exposure: The blood forming (hematopoietic) system is the main target for benzene's toxic effects. These effects can vary from anemia to leukemia, an irreversible, fatal disease. Many of the toxic effects may occur without symptoms.</p> <p>Most importantly, prolonged exposure to small quantities of benzene vapor is damaging to the blood forming system. This damage has occurred at concentrations of benzene that may not cause irritation of mucous membranes or unpleasant sensory effects.</p> <p>Early signs and symptoms are varied and often not readily noticed and nonspecific. These include:</p> <ul style="list-style-type: none"> – Subjective complaints of headache, dizziness, and loss of appetite may precede or follow clinical signs; – Rapid pulse and low blood pressure, in addition to a physical appearance of anemia, may accompany a subjective complaint of shortness of breath and excessive tiredness. <p>Other symptoms may occur as the condition progresses:</p> <ul style="list-style-type: none"> – Bleeding from the nose, gums, or mucous membranes; AND – Development of purpuric spots (small bruises).

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-153, § 296-849-60010, filed 1/23/07, effective 6/1/07.]

WAC 296-849-60020 Medical guidelines for benzene.

- Include an explanation of the contents of this section to employees as required in Training, WAC 296-849-11050.
- Provide a copy of this section to the licensed health care professional (LHCP) as required in Step 4 of the medical evaluation process found in Medical evaluations, WAC 296-849-12030.

Table 8

Medical Guidelines For Evaluating Employees Exposed to Benzene

<p>Part 1: Becoming familiar with medical requirements in this chapter</p> <p>In addition to requiring employers to train employees and protect them from exposure to benzene, this chapter (the Benzene rule) requires employers to monitor their employees' health with assistance from licensed health care professionals (LHCPs).</p> <ul style="list-style-type: none"> For employees who will use respirators, the LHCP will also need to provide the employer with a written medical opinion clearing the employee for workplace respirator use. <p>These guidelines were designed to support an informed partnership between the LHCP and the employer when monitoring the health of employees exposed to benzene. The employer initiates this partnership by providing the LHCP with a copy of the chapter and other supporting information about the employee and job conditions. The LHCP can then become familiar with the medical monitoring requirements found in WAC 296-849-12030 through 296-849-12080, which address:</p> <ul style="list-style-type: none"> Frequency and content for routine (initial and periodic) medical examinations and consultations; Emergency and other unplanned medical follow-up; Medical opinions; Employee medical removal; Medical records retention and content.
<p>Part 2: Benzene toxicology</p> <p>Benzene is primarily an inhalation hazard. Systematic absorption may cause depression of the hematopoietic system, pancytopenia, aplastic anemia, and leukemia. Clinical evidence of leukopenia, anemia, and thrombocytopenia, singly or in combination, has been frequently reported among the first signs.</p> <p>Health information about benzene, WAC 296-848-50010, provides basic information about the health effects and symptoms associated with benzene exposure.</p> <p>Reference:</p> <ul style="list-style-type: none"> Other sources for toxicology information include: <ul style="list-style-type: none"> ToxFAQs™ and the Toxicological Profile for Benzene. This free document is available from the Agency for Toxic Substances and Disease Registry (ATSDR) and can be obtained by: <ul style="list-style-type: none"> Visiting http://www.atsdr.cdc.gov/toxprofiles OR <ul style="list-style-type: none"> Calling 1-888-422-8737 A variety of technical resources on benzene from the National Institutes for Occupational Safety and Health (NIOSH) by visiting http://www.cdc.niosh/topics/chemicals.html
<p>Part 3: Treatment of acute toxic effects</p> <p>When providing assistance to someone contaminated with benzene, make sure you are adequately protected and do not risk being overcome by benzene vapor. Remove the patient from exposure immediately. Give oxygen or artificial resuscitation, if indicated.</p>

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<p>Flush eyes, wash skin if contaminated and remove all contaminated clothing.</p> <p>Recovery from mild exposures is usually rapid and complete. Symptoms of intoxication may persist following severe exposures.</p>
<p>Part 4: Preventive considerations</p> <p>The principal effects of benzene exposure which form the basis for the requirements in this chapter are pathological changes in the hematopoietic system, reflected by changes in the peripheral blood and manifesting clinically as pancytopenia, aplastic anemia, and leukemia.</p> <p>Consequently, the medical monitoring program is designed to observe, on a regular basis, blood indices for early signs of these effects, and although early signs of leukemia are not usually available, emerging diagnostic technology and innovative regimes make consistent surveillance for leukemia, as well as other hematopoietic effects, essential. Symptoms and signs of benzene toxicity can be nonspecific. Only a detailed history and appropriate investigative procedure will enable a physician to rule out or confirm conditions that place the employee at increased risk. Bone marrow may appear normal, aplastic, or hyperplastic, and may not, in all situations, correlate with peripheral blood forming tissues. Because of variations in the susceptibility to benzene morbidity, there is no "typical" blood picture.</p> <p>The onset of effects of prolonged benzene exposure may be delayed for many months or years after the actual exposure has ceased and identification or correlation with benzene exposure must be sought out in the occupational history. There are special provisions for medical tests in the event of hematologic abnormalities or for emergency situations.</p> <ul style="list-style-type: none"> This chapter specifies that blood abnormalities that persist must be referred "unless the physician has good reason to believe such referral is unnecessary." Examples of conditions that could make a referral unnecessary despite abnormal blood limits are iron or folate deficiency, menorrhagia, or blood loss due to some unrelated medical abnormality. Blood values that require referral to a hematologist or internist are noted under Part 5: Hematology guidelines.
<p>Part 5: Hematology guidelines</p> <p>The following guidelines are established to assist the examining LHCP with regard to which laboratory tests are necessary and when to refer an employee to the specialist. A minimum battery of tests is to be performed using strictly standardized methods.</p> <p>Basic tests</p> <ul style="list-style-type: none"> The following must be determined by an accredited laboratory: <ul style="list-style-type: none"> Red and white cell counts; Platelet counts; White blood cell differential; Hematocrit; Red cell indices.

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- The normal ranges for the red cell and white cell counts are influenced by altitude, race, and sex, and therefore should be determined by the accredited laboratory in the specific area where the tests are performed.
- Either a decline from an absolute normal or an individual's baseline to a subnormal value or a rise to a supra-normal value, are indicative of potential toxicity, particularly if all blood parameters decline.
 - The normal total white blood count is approximately 7,200/mm³ plus or minus 3,000;
 - For cigarette smokers the white count may be higher and the upper range may be 2,000 cells higher than normal for the laboratory;
 - In addition, infection, allergies and some drugs may raise the white cell count;
 - The normal platelet count is approximately 250,000 with a range of 140,000 to 400,000. Counts outside this range should be regarded as possible evidence of benzene toxicity.
- Certain abnormalities found through routine screening are of greater significance in the benzene-exposed worker and **require prompt consultation with a specialist**, namely:
 - Thrombocytopenia;
 - A trend of decreasing white cell, red cell, or platelet indices in an individual over time is more worrisome than an isolated abnormal finding at one test time. The importance of trend highlights the need to compare an individual's test results to baseline and/or previous periodic tests;
 - A constellation or pattern of abnormalities in the different blood indices is of more significance than a single abnormality. A low white count not associated with any abnormalities in other cell indices may be a normal statistical variation, whereas if the low white count is accompanied by decreases in the platelet and/or red cell indices, such a pattern is more likely to be associated with benzene toxicity and merits thorough investigation;
 - Anemia, leukopenia, macrocytosis or an abnormal differential white blood cell count should alert the physician to further investigate and/or refer the patient if repeat tests confirm the abnormalities. If routine screening detects an abnormality, follow-up tests which may be helpful in establishing the etiology of the abnormality are the peripheral blood smear and the reticulocyte count;
 - The extreme range of normal for reticulocytes is 0.4 to 2.5 percent of the red cells, the usual range being 0.5 to 1.2 percent of the red cells, but the typical value is in the range of 0.8 to 1.0 percent;

Table 8
Medical Guidelines For Evaluating Employees Exposed to Benzene

- A decline in reticulocytes to levels of less than 0.4 percent is to be regarded as possible evidence (unless another specific cause is found) of benzene toxicity requiring accelerated surveillance. An increase in reticulocyte levels to about 2.5 percent may also be consistent with (but is not as characteristic of) benzene toxicity.

Additional tests

1. Peripheral blood smears:

- Collecting the sample: As with reticulocyte count, the smear should be with fresh uncoagulated blood obtained from a needle tip following venipuncture or from a drop of earlobe blood (capillary blood). If necessary, the smear may, under certain limited conditions, be made from a blood sample anticoagulated with EDTA (but never with oxalate or heparin).
- Prepping the smear: When the smear is to be prepared from a specimen of venous blood which has been collected by a commercial Vacutainer type tube containing neutral EDTA, the smear should be made as soon as possible after the venesection. A delay of up to twelve hours is permissible between the drawing of the blood specimen into EDTA and the preparation of the smear if the blood is stored at refrigerator (not freezing) temperature.
- Minimum mandatory observations:
 - The differential white blood cell count;
 - Description of abnormalities in the appearance of red cells;
 - Description of any abnormalities in the platelets;
 - A careful search must be made throughout of every blood smear for immature white cells such as band forms (in more than normal proportion, i.e., over 10 percent of the total differential count), any number of metamyelocytes, myelocytes, or myeloblasts. Any nucleate or multinucleated red blood cells should be reported. Large "giant" platelets or fragments of megakaryocytes must be recognized;
 - An increase in the proportion of band forms among the neutrophilic granulocytes is an abnormality deserving special mention, for it may represent a change which should be considered as an early warning of benzene toxicity in the absence of other causative factors (most commonly infection). Likewise, the appearance of metamyelocytes, in the absence of another probable cause, is to be considered a possible indication of benzene-induced toxicity;

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Medical Guidelines For Evaluating Employees Exposed to Benzene

- An upward trend in the number of basophils, which normally do not exceed about 2.0 percent of the total white cells, is to be regarded as possible evidence of benzene toxicity. A rise in the eosinophil count is less specific but also may be suspicious of toxicity if it rises above 6.0 percent of the total white count;
- The normal range of monocytes is from 2.0 to 8.0 percent of the total white count with an average of about 5.0 percent. About 20 percent of individuals reported to have mild but persisting abnormalities caused by exposure to benzene show a persistent monocytosis. The findings of a monocyte count which persists at more than 10 to 12 percent of the normal white cell count (when the total count is normal) or persistence of an absolute monocyte count in excess of 800/mm³ should be regarded as a possible sign of benzene-induced toxicity;
- A less frequent but more serious indication of benzene toxicity is the finding in the peripheral blood of the so-called "pseudo" (or acquired) Pelger-Huet anomaly. In this anomaly many, or sometimes the majority, of the neutrophilic granulocytes possess two round nuclear segments - less often one or three round segments - rather than three normally elongated segments. When this anomaly is not hereditary, it is often but not invariably predictive of subsequent leukemia. However, only about two percent of patients who ultimately develop acute myelogenous leukemia show the acquired Pelger-Huet anomaly. Other tests that can be administered to investigate blood abnormalities are discussed below; however, such procedures should be undertaken by the hematologist.

2. Sucrose water test and Ham test:

- An uncommon sign, which cannot be detected from the smear, but can be elicited by a "sucrose water test" of peripheral blood, is transient paroxysmal nocturnal hemoglobinuria (PNH), which may first occur insidiously during a period of established aplastic anemia, and may be followed within one to a few years by the appearance of rapidly fatal acute myelogenous leukemia. Clinical detection of PNH, which occurs in only one or two percent of those destined to have acute myelogenous leukemia, may be difficult; if the "sucrose water test" is positive, the somewhat more definitive Ham test, also known as the acid-serum hemolysis test, may provide confirmation.

Important clinical findings

Table 8
Medical Guidelines For Evaluating Employees Exposed to Benzene

1. Individuals documented to have developed acute myelogenous leukemia years after initial exposure to benzene may have progressed through a preliminary phase of hematologic abnormality. In some instances pancytopenia (i.e., a lowering in the counts of all circulating blood cells of bone marrow origin, but not to the extent implied by the term "aplastic anemia") preceded leukemia for many years.
 - Depression of a single blood cell type or platelets may represent a harbinger of aplasia or leukemia. The finding of two or more cytopenias, or pancytopenia in a benzene-exposed individual, must be regarded as highly suspicious of more advanced although still reversible, toxicity.
 - "Pancytopenia" coupled with the appearance of immature cells (myelocytes, myeloblasts, erythroblasts, etc.), with abnormal cells (pseudo Pelger-Huet anomaly, atypical nuclear heterochromatin, etc.), or unexplained elevations of white blood cells must be regarded as evidence of benzene overexposure unless proved otherwise.
 - Many severely aplastic patients manifested the ominous findings of:
 - 5 to 10 % myeloblasts in the marrow;
 - Occasional myeloblasts and myelocytes in the blood;
 - 20 to 30 monocytes.
 - It is evident that isolated cytopenias, pancytopenias, and even aplastic anemias induced by benzene may be reversible and complete recovery has been reported on cessation of exposure. However, since any of these abnormalities is serious, the employee must immediately be removed from any possible exposure to benzene vapor.
 - Certain tests may substantiate the employee's prospects for progression or regression. One such test would be an examination of the bone marrow, but the decision to perform a bone marrow aspiration or needle biopsy is made by the hematologist.
2. The findings of basophilic stippling in circulating red blood cells (usually found in one to five percent of red cells following marrow injury), and detection in the bone marrow of what are termed "ringed sideroblasts" must be taken seriously, as they have been noted in recent years to be premonitory signs of subsequent leukemia.
3. Recently peroxidase-staining of circulating or marrow neutrophil granulocytes, employing benzidine dihydrochloride, have revealed the disappearance of, or diminution in, peroxidase in a sizable proportion of the granulocytes, and this has been reported as an early sign of leukemia. However, relatively few patients have been studied to date. Granulocyte granules are normally strongly peroxidase positive. A steady decline in leukocyte alkaline phosphatase has also been reported as suggestive of early acute leukemia.

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<p>– Peroxidase and alkaline phosphatase staining are usually undertaken when the index of suspicion for leukemia is high.</p> <p>4. Exposure to benzene may cause an early rise in serum iron, often but not always associated with a fall in the reticulocyte count. Thus, serial measurements of serum iron levels may provide a means of determining whether or not there is a trend representing sustained suppression of erythropoiesis.</p> <p>5. Measurement of serum iron, determination of peroxidase and of alkaline phosphatase activity in peripheral granulocytes can be performed in most pathology laboratories.</p>
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[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-153, § 296-849-60020, filed 1/23/07, effective 6/1/07.]

Chapter 296-855 WAC
ETHYLENE OXIDE

WAC

296-855-20050	Exposure evaluations.
296-855-40030	Exposure controls.
296-855-40040	Respirators.

WAC 296-855-20050 Exposure evaluations.

IMPORTANT:

This section applies when there is a potential for airborne exposure to ethylene oxide (EtO) in your workplace.

When you conduct an exposure evaluation in a workplace where an employee uses a respirator, the protection provided by the respirator is not considered.

Following this section will also meet the requirements to identify and evaluate respiratory hazards found in chapter 296-841 WAC, Airborne contaminants.

You must:

- Conduct an employee exposure evaluation to accurately determine airborne concentrations of EtO by completing Steps one through seven of the exposure evaluation process, each time any of the following apply:

- No evaluation has been conducted.

- Changes have occurred in any of the following areas that may result in new or increased employee exposures:

- Production.

- Processes.

- Personnel.

- Exposure controls such as ventilation systems or work practices.

- You have any reason to suspect new or increased employee exposure may occur.

- Provide affected employees and their designated representatives an opportunity to observe any exposure monitoring during Step six of the exposure evaluation process.

- Make sure observers entering areas with EtO exposure:
 - Are provided with and use the same protective clothing, respirators, and other personal protective equipment (PPE) that employees working in the area are required to use;

AND

- Follow all safety and health requirements that apply.

Exposure evaluation process

Step one: Identify all employees who have potential exposure to airborne ethylene oxide (EtO) in your workplace.

Step two: Identify operations where employee exposures could exceed EtO's fifteen-minute short-term exposure limit (STEL) of five parts per million (ppm).

Step three: Select employees from those working in the operations you identified in Step two who will have their STEL exposures measured.

Step four: Select employees from those identified in Step one who will have their eight-hour exposures monitored.

- Make sure the exposures of the employees selected represent eight-hour exposures for all employees identified in Step one including each job classification, work area, and shift.

- If you expect all employee exposures to be below the action level (AL), you can choose to limit your selection to those employees reasonably believed to have the highest exposures. If you find these employees' exposure to be above the AL, then you'll need to repeat Step four to represent all employees identified in Step one.

Note: You can use Steps three through six of this process to create a written description of the procedure used for obtaining representative employee exposure monitoring results, which is a requirement in Exposure records, WAC 296-855-20070.

Exemption: • You can skip Steps four through seven if you have documentation conclusively demonstrating that employee exposure for a particular material and the operation where it's used, cannot exceed the AL or STEL during any conditions reasonably anticipated.

- Such documentation can be based on observations, data, calculations, and previous air monitoring results. Previous air monitoring results:

- Must meet the accuracy required by Step five.

- May be from outside sources, such as industry or labor studies.

- Must be based on data that represents conditions being evaluated in your workplace.

Step five: Determine how you will obtain accurate employee exposure monitoring results. Select and use an air monitoring method with a confidence level of ninety-five percent, that's accurate to:

- ±twenty-five percent when concentrations are potentially above the AL or eight-hour time-weighted average of one part per million (ppm).

- ±thirty-five percent when concentrations are potentially above the AL of 0.5 ppm or the STEL of five ppm.

Note: Here are examples of air monitoring methods that meet this accuracy requirement:

- OSHA Method thirty found by going to: <http://www.osha.gov/dts/sltc/methods/toc.html>.

- NIOSH Method thirty eight hundred found by going to: <http://www.cdc.gov/niosh/homepage.html> and linking to the NIOSH Manual of analytical methods.

Step six: Obtain employee monitoring results by collecting air samples representing employees identified in Steps three and four.

- Collect STEL samples for employees and operations selected in Step three.

- Collect samples representing the eight-hour exposure, for at least one shift, for each employee selected in Step four.

- Note:**
- Make sure samples are collected from each selected employee's breathing zone.
 - You may use any sampling method that meets the accuracy specified in Step five. Examples of these methods include:
 - Real-time monitors that provide immediate exposure monitoring results.
 - Equipment that collects samples that are sent to a laboratory for analysis.
 - The following are examples of methods for collecting samples representative of eight-hour exposures.
 - Collect one or more continuous samples, such as a single eight-hour sample or four two-hour samples.
 - Take a minimum of five brief samples, such as five fifteen-minute samples, during a work shift at randomly selected times.
 - For work shifts longer than eight hours, monitor the continuous eight-hour portion of the shift expected to have the highest average exposure concentration.

Step seven: Have the samples you collected analyzed to obtain monitoring results for eight-hour and STEL exposures.

- Determine if employee exposure monitoring results are above or below the following values:
 - Eight-hour time-weighted average (TWA₈) of one ppm.
 - Fifteen-minute short-term exposure limit (STEL) of five ppm.
 - Eight-hour action level (AL) of 0.5 ppm.

- Note:**
- You may contact your local WISHA consultant for help:
 - Interpreting data or other information.
 - Determining eight-hour or fifteen-minute employee exposure monitoring results.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-06-005, § 296-855-20050, filed 2/22/07, effective 4/1/07; 05-17-168, § 296-855-20050, filed 8/23/05, effective 1/1/06.]

WAC 296-855-40030 Exposure controls.

IMPORTANT:

The use of an employee rotation schedule to control employee exposure to ethylene oxide (EtO) is prohibited.

Respirators and other personal protective equipment (PPE) are not exposure controls.

You must:

- Use feasible exposure controls to:
 - Reduce exposure to, or below, the permissible exposure limit (PELs);

OR

- To reduce exposure to the lowest achievable level above the PELs.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-06-005, § 296-855-40030, filed 2/22/07, effective 4/1/07; 05-17-168, § 296-855-40030, filed 8/23/05, effective 1/1/06.]

WAC 296-855-40040 Respirators.

IMPORTANT:

The requirements in this section are in addition to the requirements found in another chapter, Respirators, chapter 296-842 WAC.

Medical evaluations meeting all requirements of WAC 296-855-30030, will fulfill the medical evaluation requirement found in another chapter, Respirators, chapter 296-842 WAC.

You must:

- Provide respirators and require that employees use them in circumstances where exposure is above either PEL, such as when:
 - Feasible exposure controls are being put in place.
 - Employees conduct work operations such as maintenance and repair activities or vessel cleaning for which exposure controls are not feasible.
 - Feasible exposure controls do not reduce exposures to or below the PELs.
 - Employees are responding to emergencies.
 - Ensure all respirator use is accompanied by eye protection either through the use of full-facepiece respirators, hoods, or chemical goggles.
 - Develop, implement, and maintain a respirator program that meets the requirements of another chapter, Respirators, chapter 296-842 WAC.
 - Select and provide to employees appropriate respirators according to this section and WAC 296-842-13005 in the respirator rule.
 - Limit selection and use of respirators, including escape respirators, to those with a full-facepiece or another type of respirator providing eye protection. This is necessary to prevent eye irritation or injury from EtO exposure.
 - Equip full-facepiece air-purifying respirators, including escape respirators, with a front- or back-mounted canister certified for protection against ethylene oxide.

- Feasible exposure controls are being put in place.
- Employees conduct work operations such as maintenance and repair activities or vessel cleaning for which exposure controls are not feasible.
- Feasible exposure controls do not reduce exposures to or below the PELs.
- Employees are responding to emergencies.
- Ensure all respirator use is accompanied by eye protection either through the use of full-facepiece respirators, hoods, or chemical goggles.
 - Develop, implement, and maintain a respirator program that meets the requirements of another chapter, Respirators, chapter 296-842 WAC.
 - Select and provide to employees appropriate respirators according to this section and WAC 296-842-13005 in the respirator rule.
 - Limit selection and use of respirators, including escape respirators, to those with a full-facepiece or another type of respirator providing eye protection. This is necessary to prevent eye irritation or injury from EtO exposure.
 - Equip full-facepiece air-purifying respirators, including escape respirators, with a front- or back-mounted canister certified for protection against ethylene oxide.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-855-40040, filed 2/20/07, effective 4/1/07; 05-17-168, § 296-855-40040, filed 8/23/05, effective 1/1/06.]

Chapter 296-856 WAC

FORMALDEHYDE

WAC

296-856-40030 Respirators.

WAC 296-856-40030 Respirators.

IMPORTANT:

- The requirements in this section are in addition to the requirements found in the following separate chapters:
 - Respiratory hazards, chapter 296-841 WAC.
 - Respirators, chapter 296-842 WAC.
 - Medical evaluations meeting all requirements of Medical and emergency evaluations, WAC 296-856-30020, will fulfill the medical evaluations requirements found in Respirators, chapter 296-842 WAC, a separate chapter.

You must:

- Develop, implement, and maintain a respirator program as required by chapter 296-842 WAC, Respirators.
 - Require that employees use respirators in any of the following circumstances:
 - Employees are in an exposure control area.
 - Feasible exposure controls are being put in place.
 - Where you determine that exposure controls are not feasible.
 - Feasible exposure controls do not reduce exposures to, or below, the PEL.
 - Employees are performing tasks presumed to have exposures above the PEL.
 - Emergencies.
 - Select, and provide to employees, appropriate respirators as specified in this section and in WAC 296-842-13005 in the respirator rule.

- Equip full-facepiece air-purifying respirators with cartridges or canisters approved for protection against formaldehyde.

- Provide to employees, for escape, one of the following respirator options:

- A self-contained breathing apparatus operated in demand or pressure-demand mode;

OR

- A full-facepiece air-purifying respirator equipped with a chin-style, or front- or back-mounted industrial size canister or cartridge.

- Make sure all air-purifying respirator use is accompanied by eye protection either through the use of full-facepiece models or effective, gas-proof chemical goggles.

- Provide employees with powered air-purifying respirators (PAPRs) when:

- The employee has difficulty using a negative pressure respirator or a LHCP recommends this type of respirator;

AND

- The employee chooses to use this type of respirator.

- Replace the chemical cartridges or canisters on air-purifying respirators;

- When indicated by NIOSH-approved, end-of-service-life indicators if these are used;

OR

- When NIOSH-approved ESLIs aren't used:

- At times specified by your cartridge change schedule;

OR

- At the end of the work shift, when this occurs before the time indicated by your cartridge change schedule.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-05-072, § 296-856-40030, filed 2/20/07, effective 4/1/07; 06-08-087, § 296-856-40030, filed 4/4/06, effective 9/1/06.]

Chapter 296-860 WAC

RAILROAD CLEARANCES AND WALKWAYS IN PRIVATE RAIL YARDS AND PLANTS

(Formerly chapter 296-28 WAC)

WAC

296-860-100	Scope.
296-860-20020	Construct and maintain rail yard walkways for employee safety.
296-860-20040	Maintain overhead clearances.
296-860-20050	Maintain side clearances.

WAC 296-860-100 Scope.

IMPORTANT:

This chapter applies to all railroad clearances and walkways in rail yards and plants including logging railroad yards such as mill yards, maintenance yards and sorting yards.

If you are uncertain about which WISHA requirements to follow, you must comply with those that best protect employees' safety and health. Contact your local L&I office if you need assistance in making this decision.

Exemptions:

- These exemptions apply to chapter 296-860 WAC, Railroad clearances and walkways in private rail yards and plants, and do not require a department variance:

- You may move the following equipment, using less than the minimum standard clearances, if the situation is

unavoidable and you have taken all reasonable steps to protect your employees:

- Track construction or maintenance materials

- Special work equipment used for railroad construction, maintenance or operations

- Any railroad equipment during emergencies.

- You may have overhead or side clearances less than the minimum standard clearances required in this chapter if they were legally created before April 3, 1961.

Note: If a building, structure, or facility constructed before April 3, 1961, is relocated or reconstructed, the clearance requirements in this chapter apply unless the department grants a variance.

- Tracks built before April 3, 1961:

- May be extended according to the legal track clearance requirements in effect when they were originally constructed

- Are exempt from the track clearance requirements in WAC 296-860-20060, Table 5.

- Chapter 296-54 WAC, Safety standards—Logging operations, regulates all logging railroads or any rail operations related to logging, except for yard clearances.

Other rules that may apply to your workplace

The *WISHA Safety & Health Core Rules* book, chapter 296-800 WAC, contains the basic requirements that apply to employers in Washington. It also contains:

- An introduction that lists important information you should know, including a section on building, fire and electrical codes

- A resource section that includes a complete list of all WISHA rules

Other WISHA rules may apply to you, depending upon the activities and operations of your workplace. Contact your local L&I office if you are uncertain about which WISHA requirements pertain to you.

- To access the *Safety & Health Core Rules* book online: <http://www.lni.wa.gov/wisha/corerules/default.htm>

- For a CD or paper copy contact us:

Labor and Industries

P.O. Box 44620

Olympia, WA 98504-4620

Telephone: 1-800-4be-safe (1-800-423-7233)

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-860-100, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-17-106, § 296-860-100, filed 8/21/02, effective 10/1/02.]

WAC 296-860-20020 Construct and maintain rail yard walkways for employee safety.

Important:

- You have two years from October 01, 2002, (the effective date of this rule), to comply with the construction requirements of this section, unless the department determines during an inspection that your walkways create a serious safety hazard.

- If you are not sure a serious safety hazard exists in your workplace, you can request a free consultation from the department by calling your local L&I office.

Construction of walkways

You must:

- Build walkways in rail yard areas where employees regularly work on the ground.

- Construct rail yard walkways that can be maintained in a safe condition:
 - With reasonably smooth walking surfaces
 - That will not interfere with track drainage.
- Use any of the following materials when constructing your walkway:
 - Crushed material that does not exceed 1 1/2 inches in size. For this rule, "1 1/2 inches in size" means one of the following (percentages refer to weight measurement and sieve size standard in the industry):

Percentage of material passing through a sieve opening	Sieve opening size
100	1 1/2 inch square
90 - 100	1 inch square
40 - 80	3/4 inch square
15 - 60	1/2 inch square
0 - 30	3/8 inch square
0 - 10	#4
0 - 5	#8
0 - 0.5	#200

Smaller crushed material is preferred and should be used where drainage and durability is not an issue. Crushed material that is 3/4 inch or less in size is recommended for switching leads in yards.

- Asphalt, concrete, planking, grating, or other similar material.
 - Natural materials such as gravel or dirt.
- You must:**
 - Construct walkways wide enough for employees to safely perform their duties
 - Construct walkways with a grade or slope in any direction with not more than one inch of elevation for each eight inches of horizontal length, unless it is geographically impractical.

Maintenance of walkways

- You must:**
 - Keep all walkways clear of vegetation, debris, mud, or other obstructions that create a potential hazard for employees.

- Remove all standing water from all walkways as soon as reasonably possible.
- Reopen walkways temporarily closed for a construction project within thirty days after the project is completed.

You must:

- Repair walkways that have been damaged and temporarily closed because of an emergency within thirty days after the emergency ends.

Definition:

Emergency: Any unforeseen occurrence endangering life, limb, or property.

- Obtain a department variance before permanently removing any bridge or trestle walkway from use after October 1, 2002 (the effective date of this rule).

Note: The requirements for filing a variance are located in the Safety and health core rules and chapter 296-900 WAC, Administrative rules.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-860-20020, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-17-106, § 296-860-20020, filed 8/21/02, effective 10/1/02.]

WAC 296-860-20040 Maintain overhead clearances.

Exemption:

Engine houses and car shops are exempt from the overhead clearance requirements of this section.

You must:

- Make sure overhead railroad clearances are at least twenty-two feet six inches unless a clearance requirement found in Table 1 applies.

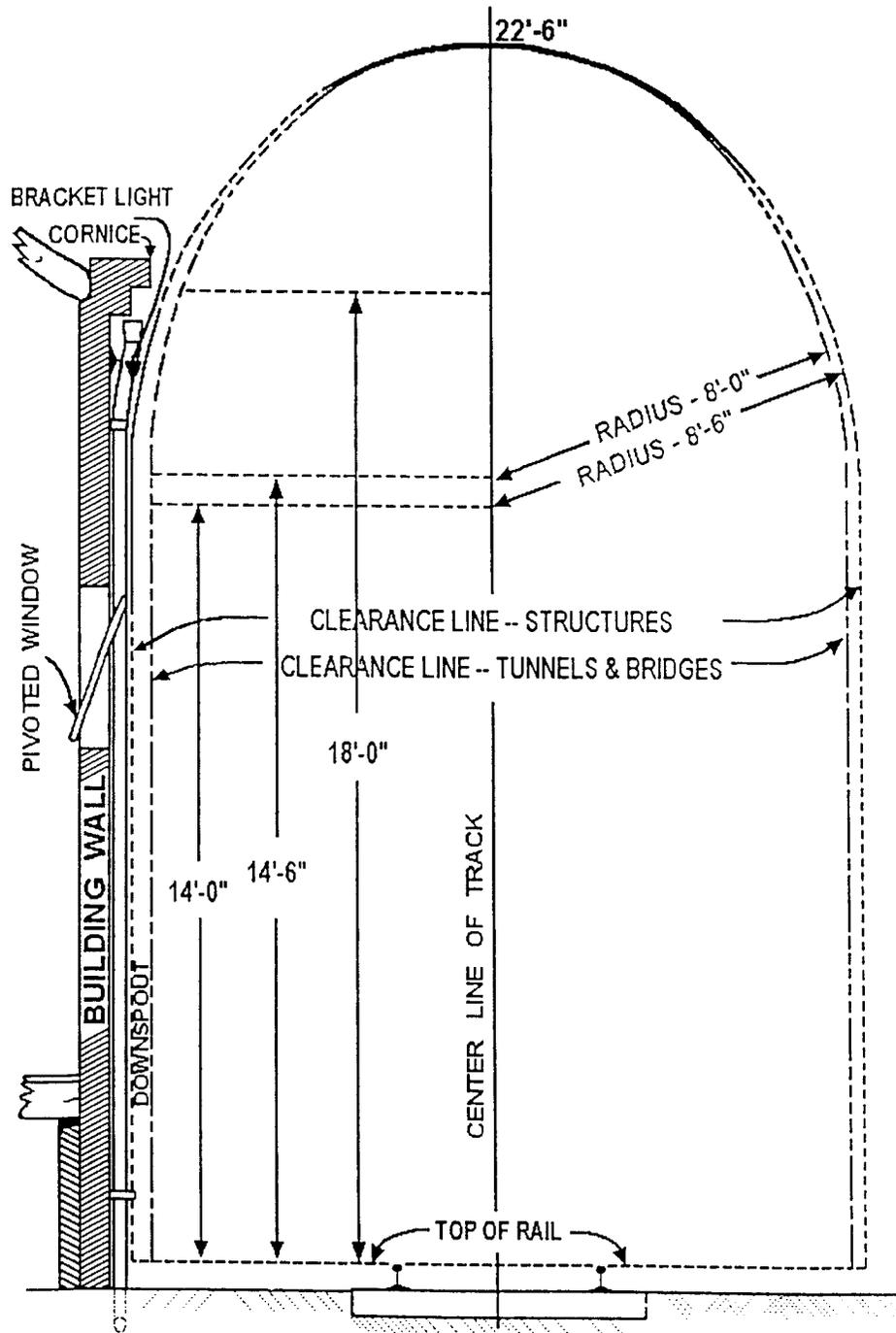
Note:

- Clearance requirements are based on the assumption that generally used rail equipment in private yards and plants is no more than ten feet ten inches wide by fifteen feet six inches high.
- WAC 296-860-20070 regulates the use of any rail equipment that exceeds the above dimensions.
- Minimum vertical clearances for all overhead wires are specified in Parts 1, 2, and 3 of the National Electrical Safety Code (NESC) as referenced in WAC 296-45-045, electrical workers safety rules, NESC applicable. See NESC 231 and 232.

Table 1 - Minimum Overhead Clearances for Buildings, Structures, Tunnels, and Bridges

If your overhead clearance involves:	Then the minimum overhead clearance requirements are:
An entirely enclosed building	18 feet when tracks end inside an entirely enclosed building. Also: <ul style="list-style-type: none"> • The department must approve any reduction from 22 feet 6 inches before the reduction takes place. • If an overhead clearance is less than 22 feet 6 inches, all cars, locomotives or other equipment must come to a full stop before entering the building. • See Illustration 1.
All other structures	Defined by the half-circumference of a circle whose: <ul style="list-style-type: none"> • Radius is 8 feet 6 inches AND • Center is located on a line perpendicular to the track's centerline and 14 feet above the top of the highest rail. • See Illustration 1.
Tunnels, over-crossings, and bridges	Defined by the half-circumference of a circle whose: <ul style="list-style-type: none"> • Radius is 8 feet AND • Center is located on a line perpendicular to the track's centerline and 14 feet 6 inches above the top of the highest rail. • See Illustration 1.

Illustration 1 - Minimum Overhead Clearances for Buildings, Structures, Tunnels, and Bridges



[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-860-20040, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050, 02-17-106, § 296-860-20040, filed 8/21/02, effective 10/1/02.]

WAC 296-860-20050 Maintain side clearances.

You must:

- Make sure side clearances are at least eight feet six inches from the track centerline unless clearance requirements found in Tables 2, 3, or 4 apply.

Note: All side clearances in Tables 2, 3, and 4 that reference "the track centerline" are based on the assumption that private rail operations generally use track that is standard gauge width (4 feet 8 1/2 inches).

Table 2 - Minimum Side Clearance for Platforms

If Your Platform Type is:	Then the Minimum Clearance Requirements Between the Track Centerline and a Platform Edge are:
Type 1 Platforms with heights of 8 inches or less above the top of the rail.	4 feet 8 inches See Illustration 2.
Type 2 Platforms with heights of 4 feet or less above the top of the rail.	7 feet 3 inches See Illustration 2.
Type 3 Platforms with heights of 4 feet 6 inches or less above the top of the rail and the platforms are used primarily for loading and/or unloading refrigerator cars.	8 feet See Illustration 2.
Type 4 Icing platforms and supports.	7 feet 3 inches See Illustration 2.
Type 5 Retractable platforms attached to permanent structures.	When not in use, use the clearance requirements for a platform of its height.
Type 6 Platforms that are a combination of Types 1 through 3. (Only Types 1 through 3 platforms can be combined.)	Platforms may be combined if the Type 1 platform has a level surface no more than 4 feet 8 inches from the track centerline to the face of the platform wall with which it is combined.

Illustration 2 - Minimum Side Clearances for Platforms

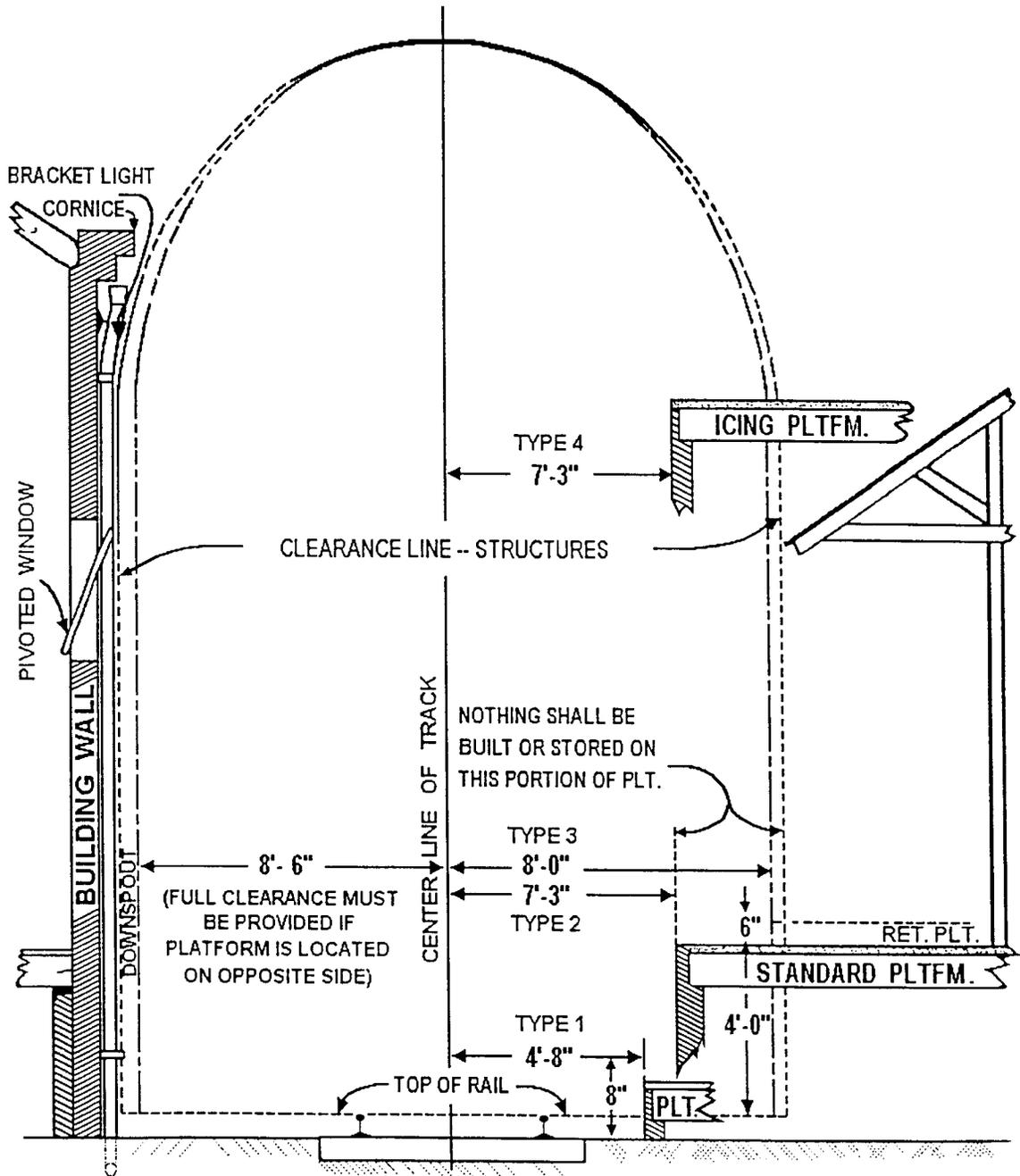


Table 3 - Minimum Side Clearances for Bridges, Tunnels and Related Structures

- Exemption:** • Except for handrail and water barrel clearances, the clearance requirements in Table 3 do not apply to bridge decks where railroad employees couple or uncouple cars on a switching lead unless the department approves them.
- Note:** • The requirements for filing a variance are located in the Safety and health core rules and chapter 296-900 WAC, Administrative rules.

If your side clearance requirement involves:	Then the minimum side clearance requirements between the track centerline and the bridge, tunnel or related structure are:
Bridge and tunnel sides - lower section	8 feet
Bridge and tunnel sides - upper section	Defined by the half-circumference of a circle whose: <ul style="list-style-type: none"> • Radius is 8 feet AND

<p>If your side clearance requirement involves:</p>	<p>Then the minimum side clearance requirements between the track centerline and the bridge, tunnel or related structure are:</p>
	<ul style="list-style-type: none"> • Center is located on a line perpendicular to the track's centerline and 14 feet 6 inches above the top of the highest rail. • See Illustration 3.
<p>Related structures on bridges and in tunnels - lower section structures (or portions of them) that are no more than 4 feet above the top of the rail. For example:</p> <ul style="list-style-type: none"> • Refuge platforms on bridges and trestles. • Water columns, oil columns, and block signals. • Cattle chutes. 	<p>Defined by lines extending:</p> <ul style="list-style-type: none"> • 5 feet laterally from the track centerline to a point level with the top of the rail and then diagonally upward to another point 4 feet above the top of the rail AND • 8 feet laterally from the track centerline to a point 4 feet above the top of the rail. • See Illustration 3A. The shaded portion of the illustration designates the area that must be free of refuge platforms, water columns, oil columns, block signals and cattle chutes.
<p>Hand rails and water barrels</p>	<p>7 feet 6 inches</p>
<p>Fences of cattle guards</p>	<p>6 feet 9 inches</p>

Illustration 3 - Minimum Side Clearances for Bridges, Tunnels and Related structures

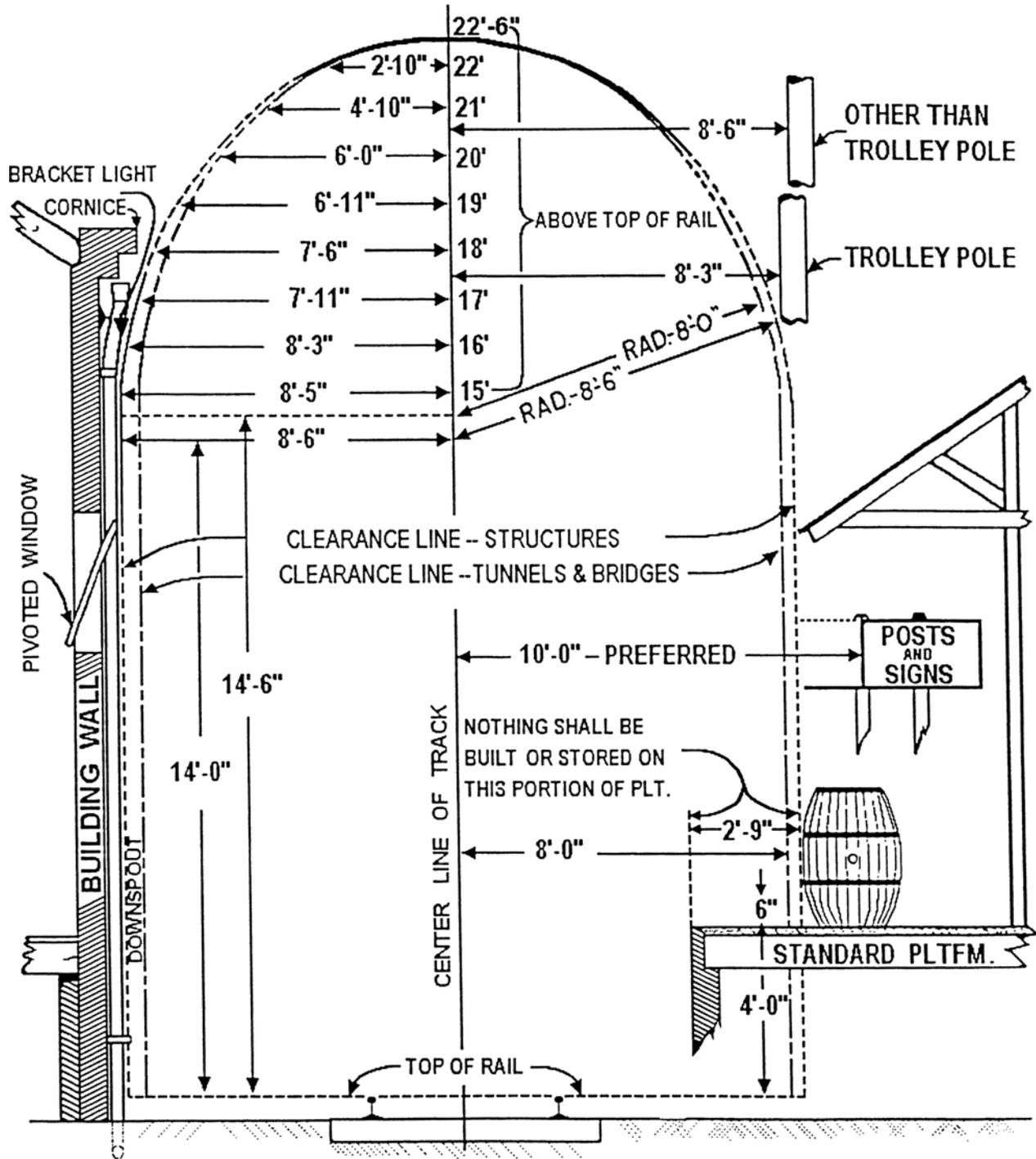


Illustration 3A - Minimum Side Clearance for Certain Structures in or on the Lower Sections of Bridges and Tunnels

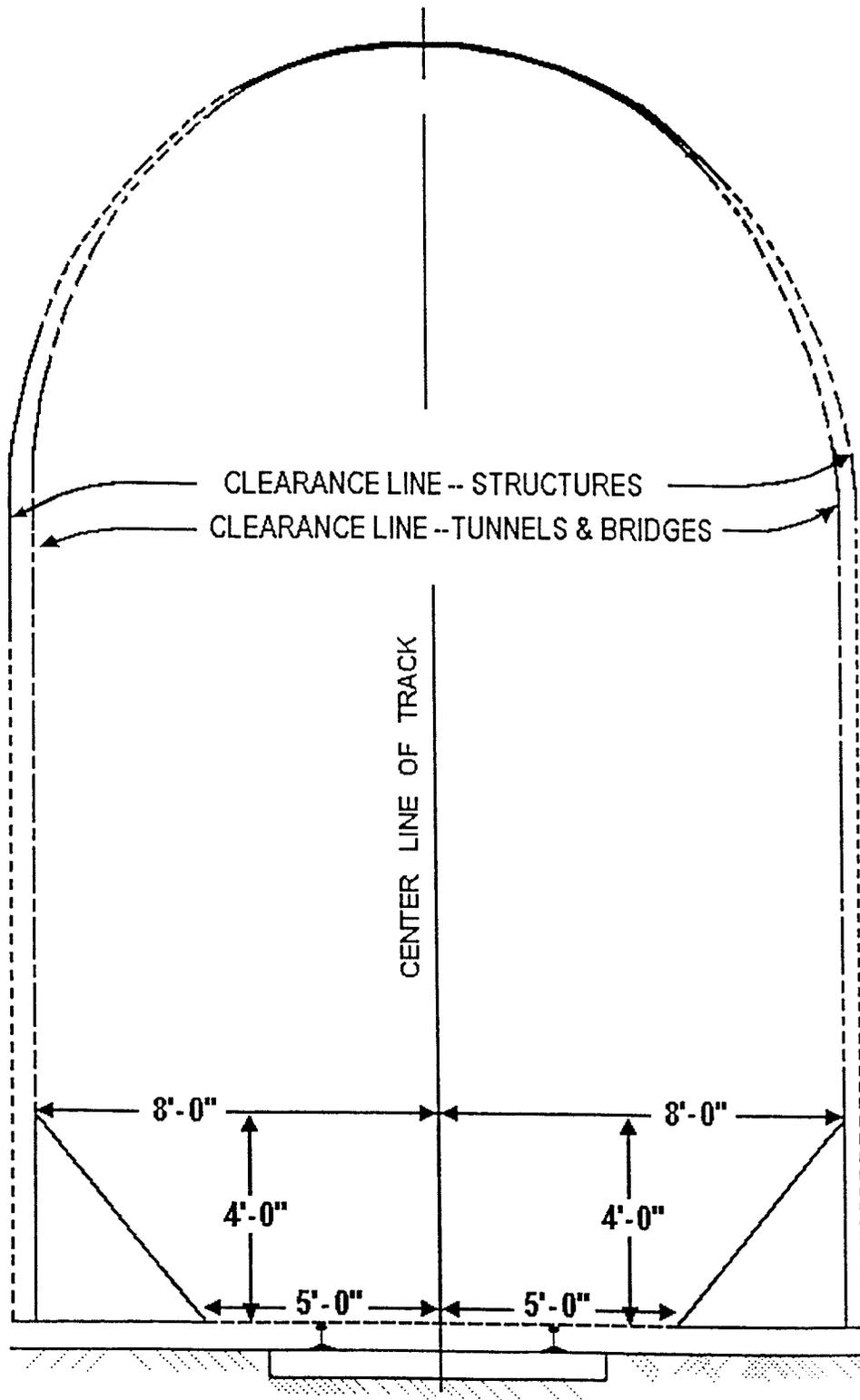


Table 4 - Other Minimum Side Clearance Requirements*

Note:

- The department must approve all minimum clearances for car pulling units and related structures.
- The requirements for filing a variance are located in the Safety and health core rules and chapter 296-900 WAC, Administrative rules.

If your side clearance requirement involves:	Then the minimum side clearance requirements from the track centerline are:
Type A Engine house and car repair shop doors.	7 feet 6 inches
Type B Interlocking mechanism, switch boxes, and other similar devices projecting no more than 4 feet above the top of the rail.	3 feet
Type C Poles supporting trolley contact.	8 feet 3 inches
Type D Signals and switch stands no more than 3 feet high and located between tracks where it is not possible to allow other clearances required in this chapter.	6 feet
Type E Signals and switch stands other than those described in Type B and Type D.	8 feet
Type F Material, merchandise, inventory, storage bins or equipment stacked or stored on ground or platforms adjacent to tracks.	8 feet 6 inches Note: This requirement does not apply to: <ul style="list-style-type: none"> • Railroad maintenance operations • Emergency situations • Local conditions that make compliance impossible.
Type G Space adjacent to curved track.	Increased to equal tangent track clearances. As a general rule, side clearances on curved track should be increased 1-1/2" for each degree of curvature.

*Table 4 does not have an accompanying illustration.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-860-20050, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050, 02-17-106, § 296-860-20050, filed 8/21/02, effective 10/1/02.]

Chapter 296-863 WAC

FORKLIFTS AND OTHER POWERED INDUSTRIAL TRUCKS

WAC

- 296-863-100 Scope.
- 296-863-20025 Provide fall protection on order pickers.
- 296-863-30020 Maintain your PITs properly.
- 296-863-50005 Use the appropriate PITs in hazardous (classified) locations.
- 296-863-700 Definitions.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

- 296-863-10005 Scope. [Statutory Authority: RCW 49.17.010, 49.17.-040, 49.17.050, 49.17.060, 04-19-051, § 296-863-10005, filed 9/14/04, effective 2/1/05.] Decodified by 07-03-163, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. Recodified as WAC 296-863-100.

WAC 296-863-100 Scope. This chapter applies to powered industrial trucks that use electric motors or internal combustion engines. This includes, but is not limited to:

- Fork trucks.
- Forklifts.

- Tractors.
- Platform lift trucks.
- Motorized hand trucks.
- Other specialized industrial trucks.

Definition:

A powered industrial truck (PIT) is a mobile, power-driven vehicle used to carry, push, pull, lift, stack, or tier material.

Exemption: This chapter does not apply to:

- Compressed air-powered industrial trucks.
- Nonflammable compressed gas-operated industrial trucks.
- Vehicles covered by chapter 296-307 WAC, Safety standards for agriculture.
- Vehicles intended primarily for earth moving or over-the-road hauling.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, recodified as § 296-863-100, filed 1/24/07, effective 4/1/07; 04-19-051, § 296-863-10005, filed 9/14/04, effective 2/1/05.]

WAC 296-863-20025 Provide fall protection on order pickers.

You must:

- Make sure order pickers have either:
 - Standard guardrails on all open sides;

OR

– A safety harness and lanyard that are connected to a tie off point that has been approved by the PIT manufacturer.

- Make sure personal fall arrest equipment meets the requirements of WAC 296-24-88050, Appendix C—Personal fall arrest systems.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-863-20025, filed 1/24/07, effective 4/1/07; 04-19-051, § 296-863-20025, filed 9/14/04, effective 2/1/05.]

WAC 296-863-30020 Maintain your PITs properly.**You must:**

- Maintain PITs according to this chapter and the manufacturer's instructions.

- Keep PITs:
 - Clean.
 - Free of excess lint, oil, and grease.

- Take appropriate precautions to protect employees from the hazards associated with the cleaning agents or solvents used.
 - Precautions could include methods such as ventilation.

- Make sure solvents used for cleaning PITs have a flash point of 100° Fahrenheit or more.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-863-30020, filed 1/24/07, effective 4/1/07; 04-19-051, § 296-863-30020, filed 9/14/04, effective 2/1/05.]

WAC 296-863-50005 Use the appropriate PITs in hazardous (classified) locations.**You must:**

- Make sure PITS are used in hazardous (classified) locations as follows:

- PITS authorized to be used in Class 1 locations are shown in Table 1, Approved PIT Use in Class 1 Locations.

- PITS authorized to be used in Class 2 locations are shown in Table 2, Approved PIT Use in Class 2 Locations.

- PITS authorized to be used in Class 3 locations are shown in Table 3, Approved PIT Use in Class 3 Locations.

- PITS authorized to be used in unclassified locations are:

- Approved PITS designated as Type D, E, G, or LP;

AND

- PITs that meet the requirements of a Type D, E, G, or LP PIT.

Definitions:

- An unclassified location is an area that is not designated as a Class 1, 2, or 3 location.

- Designations means a code used to show the different types of hazardous (classified) locations where PITs can be safely used:

- **D** refers to trucks that are diesel engine powered that have minimum safeguards against inherent fire hazards.

- **DS** refers to diesel powered trucks that, in addition to meeting all the requirements for type D trucks, are provided with additional safeguards to the exhaust, fuel and electrical systems.

- **DY** refers to diesel powered trucks that have all the safeguards of the DS trucks and, in addition, any electrical equipment is completely enclosed. They are equipped with temperature limitation features.

- **E** refers to electrically powered trucks that have minimum acceptable safeguards against inherent fire hazards.

- **ES** refers to electrically powered trucks that, in addition to all of the requirements for the E trucks, have additional safeguards to the electrical system to prevent emission of hazardous sparks and to limit surface temperatures.

- **EE** refers to electrically powered trucks that have, in addition to all of the requirements for the E and ES type trucks, have their electric motors and all other electrical equipment completely enclosed.

- **EX** refers to electrically powered trucks that differ from E, ES, or EE type trucks in that the electrical fittings and equipment are designed, constructed and assembled to be used in atmospheres containing flammable vapors or dusts.

- **G** refers to gasoline powered trucks that have minimum acceptable safeguards against inherent fire hazards.

- **GS** refers to gasoline powered trucks that are provided with additional exhaust, fuel, and electrical systems safeguards.

- **LP** refers to liquefied petroleum gas-powered trucks that, in addition to meeting all the requirements for type G trucks, have minimum acceptable safeguards against inherent fire hazards.

- **LPS** refers to liquefied petroleum gas-powered trucks that in addition to meeting the requirements for LP type trucks, have additional exhaust, fuel, and electrical systems safeguards.

Note:

- Tables 1, 2, and 3 show the type of approved PITs that can be used in the appropriate divisions and groups.
- PITS cannot be used in divisions and groups that do not have a PIT designation listed.
- Approved PITs will be marked or labeled with the designation of the PIT. See WAC 296-863-20010, Make sure PITs are properly labeled.

Table 1
Approved PIT Use in Class 1 Locations

Class 1							
Locations in which flammable gases or vapors are, or may be, present in the air in quantities sufficient to produce explosive or ignitable mixtures.							
Division 1				Division 2			
Conditions exist continuously, intermittently, or periodically under normal operating conditions.				Conditions may occur accidentally, for example, due to a puncture of a storage drum.			
Group A	Group B	Group C	Group D	Group A	Group B	Group C	Group D
Acetylene	Hydrogen	Ethyl ether	Acetone Alcohols Benzene Gasoline Lacquer solvent	Acetylene	Hydrogen	Ethyl ether	Acetone Alcohols Benzene Gasoline Lacquer solvent
No PIT type can be used	No PIT type can be used	No PIT type can be used	Use this PIT type: EX	No PIT type can be used	No PIT type can be used	No PIT type can be used	Use this PIT type: DS DY ES EE EX GS LPS

Table 2
Approved PIT Use in Class 2 Locations

Class 2					
Locations which are hazardous because of the presence of combustibile dust.					
Division 1			Division 2		
Explosive mixture may be present under normal operating conditions, or where failure of equipment may cause the condition to exist simultaneously with arcing or sparking of electrical equipment, or where dusts of an electrically conducting nature may be present.			Explosive mixture not normally present, but where deposits of dust may cause heat rise in electrical equipment, or where such deposits may be ignited by arcs or sparks from electrical equipment.		
Group E	Group F	Group G	Group E	Group F	Group G
Metal dust	Carbon black Coal dust Coke dust	Grain dust Flour dust Starch dust Organic dust	Metal dust	Carbon black Coal dust Coke dust	Grain dust Flour dust Starch dust Organic dust
No PIT type can be used	Use this PIT type: EX	Use this PIT type: EX	No PIT type can be used	Use this PIT type: EX DY EE	Use this PIT type: DS DY ES EE EX GS LPS

Table 3
Approved PIT Use in Class 3 Locations

Class 3 Locations where easily ignitable fibers or flyings are present but not likely to be in suspension in quantities sufficient to produce ignitable mixtures.	
Division 1	Division 2
Locations in which easily ignitable fibers or materials producing combustible flyings are handled, manufactured, or used.	Locations in which easily ignitable fibers are stored or handled (except in the process of manufacture).
Use this PIT type: DY EE EX	Use this PIT type: DS DY E ES EE EX GS LPS

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-863-50005, filed 1/24/07, effective 4/1/07; 04-19-051, § 296-863-50005, filed 9/14/04, effective 2/1/05.]

WAC 296-863-700 Definitions.

ANSI is an acronym for the American National Standards Institute.

Authorized person (maintenance) means a person who has been designated to perform maintenance on a PIT.

Authorized person (training) means a person approved or assigned by the employer to perform training for powered industrial truck operators.

Approved means listed or approved by a nationally recognized testing laboratory or a federal agency that issues approvals for equipment such as the Mine Safety and Health Administration (MSHA); the National Institute for Occupational Safety and Health (NIOSH); Department of Transportation; or U.S. Coast Guard, which issue approvals for such equipment.

Bridge plate (dockboard) means a device used to span the distance between rail cars or highway vehicles and loading platforms.

Classified location or hazardous location means areas that could be hazardous because of explosive or flammable atmospheres. These locations are broken down into the following categories:

- Class I locations are areas where flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.
- Class II locations are areas where the presence of combustible dust could be sufficient to produce explosions.
- Class III locations are areas where the presence of easily ignitable fibers are suspended in the air but are not in large enough quantities to produce ignitable mixtures.

Counterweight means a weight used to counteract or the load being carried by the truck, or to increase the load carrying capacity of a truck.

Designations means a code used to show the different types of hazardous (classified) locations where PITs can be safely used:

- **D** refers to trucks that are diesel engine powered that have minimum safeguards against inherent fire hazards.
- **DS** refers to diesel powered trucks that, in addition to meeting all the requirements for type D trucks, are provided with additional safeguards to the exhaust, fuel and electrical systems.
- **DY** refers to diesel powered trucks that have all the safeguards of the DS trucks and, in addition, any electrical equipment is completely enclosed. They are equipped with temperature limitation features.
- **E** refers to electrically powered trucks that have minimum acceptable safeguards against inherent fire hazards.
- **ES** refers to electrically powered trucks that, in addition to all of the requirements for the E trucks, have additional safeguards to the electrical system to prevent emission of hazardous sparks and to limit surface temperatures.
- **EE** refers to electrically powered trucks that have, in addition to all of the requirements for the E and ES type trucks, have their electric motors and all other electrical equipment completely enclosed.
- **EX** refers to electrically powered trucks that differ from E, ES, or EE type trucks in that the electrical fittings and equipment are designed, constructed and assembled to be used in atmospheres containing flammable vapors or dusts.
- **G** refers to gasoline powered trucks that have minimum acceptable safeguards against inherent fire hazards.
- **GS** refers to gasoline powered trucks that are provided with additional exhaust, fuel, and electrical systems safeguards.
- **LP** refers to liquefied petroleum gas-powered trucks that, in addition to meeting all the requirements for type G trucks, have minimum acceptable safeguards against inherent fire hazards.
- **LPS** refers to liquefied petroleum gas powered trucks that in addition to meeting the requirements for LP type trucks, have additional exhaust, fuel, and electrical systems safeguards.

Electrolyte means a chemical, usually acid, that is mixed with water to produce electricity.

Flammable liquid means any liquid having a flashpoint below 100°F (37.8°C), except any mixture having components with flashpoints of 100°F (37.8°C) or higher, the total of which make up 99% or more of the total volume of the mixture.

Flashpoint means the minimum temperature at which a liquid gives off enough vapor to ignite.

Front-end attachment means a device that is attached to the forks or lifting device of the truck.

Lanyard means a flexible line of webbing, rope, or cable used to secure a harness to an anchor point.

Listed by report means a report listing the field assembly, installation procedures, or both, for a UL listed product that does not have generally recognized installation requirements.

Liquefied petroleum gas means any gas that is composed predominantly of the following hydrocarbons, or mix-

tures of them; propane, propylene, butanes (normal butane or iso-butane), and butylenes.

Load engaging means a device attached to a powered industrial truck and used to manipulate or carry a load.

Motorized hand truck means a powered truck with wheeled forks designed to go under or between pallets and is controlled by a walking or riding operator.

Nationally recognized testing laboratory means an organization recognized by the Occupational Safety and Health Administration that conducts safety tests on equipment and materials.

Order picker means a truck controlled by an operator who is stationed on a platform that moves with the load engaging means.

Powered industrial truck (PIT) means a mobile, power-driven vehicle used to carry, push, pull, lift, stack, or tier material.

Rough terrain forklift truck means a truck intended to be used on unimproved natural terrain and at construction sites.

Safety harness (full body harness) means a configuration of connected straps to distribute a fall arresting force over at least the thighs, shoulders and pelvis, with provisions for attaching a lanyard, lifeline, or deceleration devices.

Tie-off point (anchorage) means a secure point to attach a lanyard that meets the requirements of WAC 296-24-87035, Appendix—C Personal fall arrest systems.

Vertical load backrest extension means a device that extends vertically from the fork carriage frame.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-863-700, filed 1/24/07, effective 4/1/07; 04-19-051, § 296-863-700, filed 9/14/04, effective 2/1/05.]

Chapter 296-874 WAC

SCAFFOLDS

WAC

296-874-100	Scope.
296-874-20030	Make sure ramps and walkways used to access scaffolds meet these requirements.
296-874-20052	Provide fall protection for employees on scaffolds.
296-874-20056	Provide specific fall protection for specific types of scaffolds.
296-874-40004	Prevent supported scaffolds from tipping.
296-874-40006	Make sure supported scaffolds are properly supported.
296-874-40040	Meet these requirements when using tube and coupler scaffolds.
296-874-500	Definitions.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-874-40016	Meet these requirements when using crawling boards (chicken ladders). [Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 05-01-054, § 296-874-40016, filed 12/7/04, effective 3/1/05.] Repealed by 07-17-026, filed 8/7/07, effective 10/6/07. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.
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WAC 296-874-100 Scope. This chapter applies to suspended and supported scaffolds, including their supporting structure and anchorage points.

Exemption: This chapter does not apply to:

- Manually propelled elevating work platforms;
- Self-propelled elevating work platforms;
- Boom-supported elevating work platforms;

- Aerial lifts;
- Crane or derrick suspended personnel platforms;
- Personnel platforms supported by powered industrial trucks (PITs).

Reference: Additional requirements for the following types of platforms are found in the general safety and health standards, chapter 296-24 WAC. Go to the following sections:

- For elevating work platforms and aerial lifts, go to elevating work platforms, WAC 296-24-875;
- For crane or derrick suspended personnel platforms, go to WAC 296-24-23533;
- For personnel platforms supported by powered industrial trucks (PITs), go to chapter 296-863 WAC.

Definition:

A **scaffold** is a temporary elevated platform, including its supporting structure and anchorage points, used for supporting employees or materials.

A **suspended scaffold** is one or more platforms suspended from an overhead structure by ropes or other nonrigid means.

A **supported scaffold** is one or more platforms supported by rigid means such as outrigger beams, brackets, poles, legs, uprights, posts, or frames.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-026, § 296-874-100, filed 8/7/07, effective 10/6/07; 05-01-054, § 296-874-100, filed 12/7/04, effective 3/1/05.]

WAC 296-874-20030 Make sure ramps and walkways used to access scaffolds meet these requirements.

You must:

- Make sure ramps and walkways are not inclined at a slope steeper than one vertical in three horizontal (1:3 or twenty degrees from the horizontal).
- Make sure ramps and walkways that are inclined at a slope steeper than one vertical in eight horizontal (1:8) have cleats to provide footing which are:

– Securely fastened to the planks;

AND

– Spaced not more than fourteen inches (35 cm) apart.

Reference: Ramps and walkways that are four feet (1.2 m) or more above a lower level need to have a guardrail system. Those requirements are found in other chapters.

– For general industry activities, go to:

■ Working surfaces, guarding floors and wall openings, Part J-1, in the general safety and health standards, chapter 296-24 WAC;

– For construction activities, go to:

■ Floor openings, wall openings, and stairways, Part K, in the safety standards for construction work, chapter 296-155 WAC.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-026, § 296-874-20030, filed 8/7/07, effective 10/6/07; 05-01-054, § 296-874-20030, filed 12/7/04, effective 3/1/05.]

WAC 296-874-20052 Provide fall protection for employees on scaffolds.

You must:

- Protect each employee on a scaffold more than ten feet (3.1 m) above a lower level, from falling to the lower level, by providing either:

– A personal fall arrest system;

OR

– Guardrails.

REFERENCE		
Fall protection requirements for employees:	Are located in the following chapters:	In the following sections:
On walkways within scaffolds	Chapter 296-874 WAC, Scaffolds	WAC 296-874-20056
Erecting or dismantling supported scaffolds	Chapter 296-874 WAC, Scaffolds	WAC 296-874-40010
Erecting or dismantling suspended scaffolds in general industry	Chapter 296-24 WAC, General safety and health standards	Part J-1 Working surfaces, guarding floors and wall openings, ladders AND Part J-3 Powered platforms
Erecting or dismantling suspended scaffolds in construction work	Chapter 296-155 WAC, Safety standards for construction work	Part C-1 Fall restraint and fall arrest AND Part K Floor openings, wall openings, and stairways

You must:

• Make sure employees erecting the scaffold install the guardrail system, if required, before the scaffold is used by any other employees.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-17-026, § 296-874-20052, filed 8/7/07, effective 10/6/07; 07-03-163, § 296-874-20052, filed 1/24/07, effective 4/1/07; 05-01-054, § 296-874-20052, filed 12/7/04, effective 3/1/05.]

WAC 296-874-20056 Provide specific fall protection for specific types of scaffolds.**You must:**

- Use a personal fall arrest system to protect employees on the following scaffolds:
 - Boatswain's chair;
 - Catenary scaffold;
 - Float scaffold;
 - Ladder jack scaffold;
 - Needle beam scaffold.
- Use a personal fall arrest system **and** a guardrail system to protect employees on:
 - Single-point adjustable suspension scaffolds;

AND

 - Two-point adjustable suspension scaffolds.
- Protect employees working on a self-contained adjustable scaffold that has the platform:
 - Supported by the frame structure, using a guardrail system with a minimum two hundred pound toprail capacity.
 - Suspended by ropes, using:
 - A guardrail system with a minimum two hundred pound toprail capacity;

AND

 - A personal fall arrest system.
 - Protect employees on walkways located within a scaffold by using a guardrail system that meets all of the following:
 - Has a minimum two hundred pound toprail capacity;
 - Is installed within nine and one-half inches (24.1 cm) of the walkway;
 - Is installed along at least one side of the walkway.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-17-026, § 296-874-20056, filed 8/7/07, effective 10/6/07; 05-01-054, § 296-874-20056, filed 12/7/04, effective 3/1/05.]

WAC 296-874-40004 Prevent supported scaffolds from tipping.**You must:**

• Make sure supported scaffolds with a height to least base dimension ratio of greater than four to one are prevented from tipping by one or more of the following:

- Guying;
- Tying;
- Bracing;
- Other equivalent means.

Note: The least base dimension includes outriggers, if used.

You must:

• Install guys, ties, and braces where horizontal members support both the inner and outer legs of the scaffold.

• Install guys, ties, and braces:

– According to the scaffold manufacturer's recommendations;

OR

– At all points where the following horizontal and vertical planes meet:

■ First vertical level at a height equal to four times the least base dimension;

■ Subsequent vertical levels every:

◆ Twenty feet (6.1 m) or less for scaffolds having a width of three feet (0.91 m) or less;

◆ Twenty six feet (7.9 m) or less for scaffolds more than three feet (0.91 m) wide;

■ Horizontally at:

◆ Each end of the scaffold;

AND

◆ Intervals of thirty feet (9.1 m) or less.

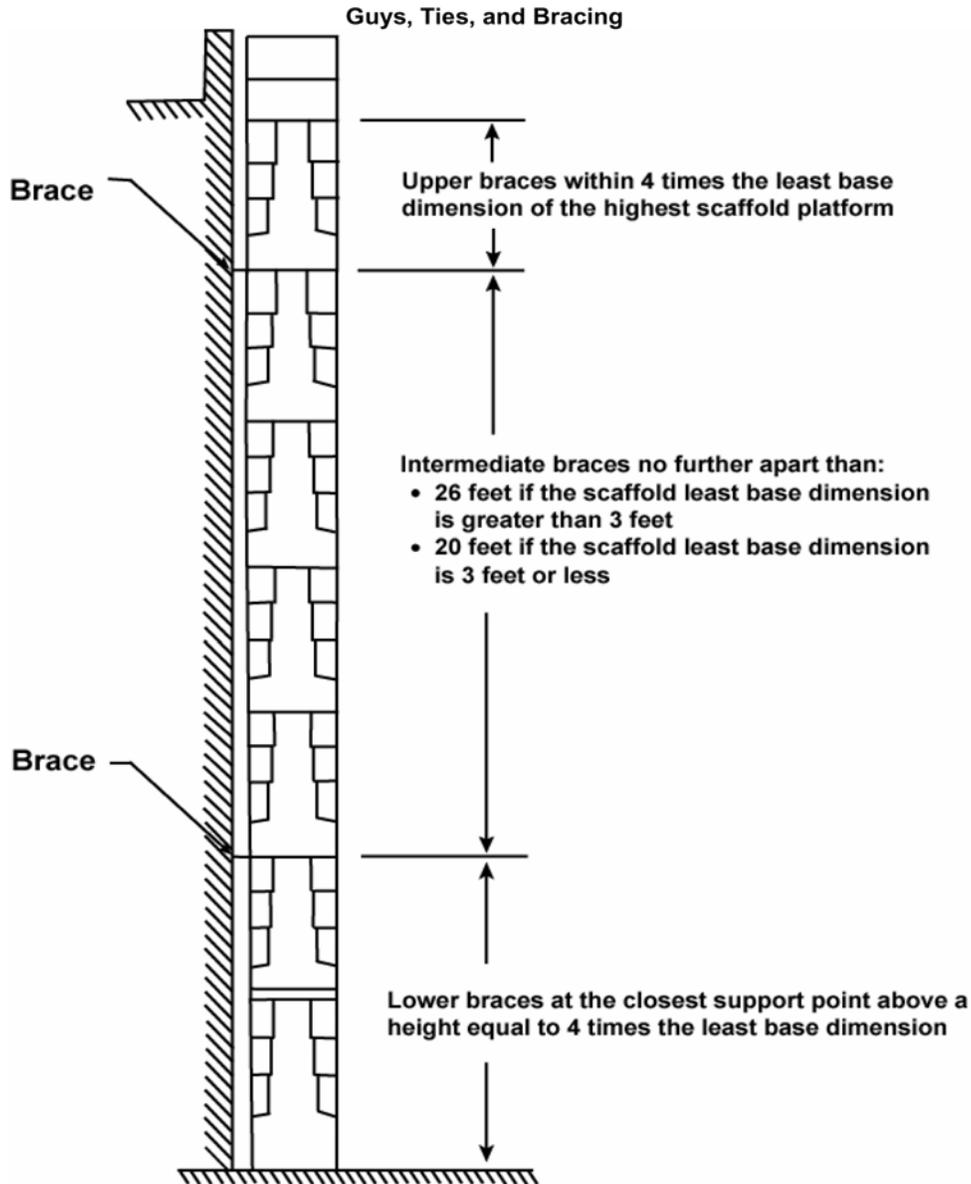
Note: The thirty-foot horizontal intervals are measured from one end of the scaffold to the other.

You must:

• Make sure the highest level of guys, ties, or braces is no further from the top of the scaffold than a distance equal to four times the least base dimension.

• Make sure scaffolds that have an eccentric load applied or transmitted to them, such as a cantilevered work platform, are prevented from tipping by one or more of the following:

- Guying;
- Tying;
- Bracing;
- Outriggers;
- Other equivalent means.



[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-026, § 296-874-40004, filed 8/7/07, effective 10/6/07; 07-03-163, § 296-874-40004, filed 1/24/07, effective 4/1/07; 05-01-054, § 296-874-40004, filed 12/7/04, effective 3/1/05.]

WAC 296-874-40006 Make sure supported scaffolds are properly supported.

You must:

- Make sure supported scaffold poles, legs, posts, frames, and uprights are:

- Plumb;

AND

- Braced to prevent swaying or displacement.

- Make sure supported scaffold poles, legs, posts, frames, and uprights, bear on base plates that rest on:

– Mudsills;

OR

– Other firm foundations such as concrete or dry, compacted soil.

• Make sure foundations are all of the following:

– Level;

– Sound;

– Rigid;

– Capable of supporting the loaded scaffold without settling or displacement.

Note: The condition of the foundation may change due to weather or other factors. If changes occur, the foundation needs to be evaluated by a competent person to make sure it will safely support the scaffold.

• Make sure unstable objects are not used:

– To support scaffolds or platform units;

OR

– As working platforms.

• Make sure mobile scaffolds meet these additional requirements:

– Wheel and caster stems are pinned or otherwise secured in the scaffold legs or adjustment screws;

– Wheels and casters are locked, or equivalent means are used, to prevent movement when the scaffold is being used;

– Screw jacks or other equivalent means are used if it's necessary to level the work platform.

• Make sure front-end loaders and similar equipment used to support scaffold platforms have been specifically designed for such use by the manufacturer.

Reference: When forklifts or other powered industrial trucks are used for personnel lifting on support scaffold platforms, follow the requirements found in Forklifts and other powered industrial trucks, chapter 296-868 WAC.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-026, § 296-874-40006, filed 8/7/07, effective 10/6/07; 07-03-163, § 296-874-40006, filed 1/24/07, effective 4/1/07; 05-01-054, § 296-874-40006, filed 12/7/04, effective 3/1/05.]

WAC 296-874-40040 Meet these requirements when using tube and coupler scaffolds.

You must:

• Make sure tube and coupler scaffolds over one hundred twenty-five feet high are:

– Designed by a registered professional engineer;

AND

– Constructed and loaded as specified in the design.

• Leave existing platforms undisturbed until new bearers have been set in place and braced before moving the platforms to the new level.

• Install crossbracing across the width of the scaffold that meets all of the following:

– Bracing is installed at:

■ Each end of the scaffold;

AND

■ At least at every third set of posts horizontally and every fourth runner vertically.

– Bracing extends diagonally from the:

■ Outer posts or runners upwards to the next inner posts or runners;

AND

■ Inner posts or runners upwards to the next outer posts or runners.

• Install building ties:

– At the bearer levels between the crossbracing;

AND

– At locations specified in WAC 296-874-40004.

• Install longitudinal bracing on straight run scaffolds as follows:

– Diagonally in both directions across the inner and outer rows of posts;

– From the base of the end posts upward to the top of the scaffold at approximately a forty-five degree angle;

– As close as possible to the intersection of the bearer and post or runner and post;

– If the scaffold is longer than it is tall, repeat the bracing beginning at every fifth post;

– If the scaffold is taller than its length, install the bracing:

■ From the base of the end posts upward to the opposite end posts;

AND

■ In alternating directions until reaching the top of the scaffold.

• Attach bracing to the runners as close to the post as possible, if bracing can't be attached to the post.

• Make sure bearers meet all of the following:

– Are installed transversely between posts;

– If the bearer is coupled to the post, have the inboard coupler bear directly on the runner coupler;

– If the bearer is coupled to the runners, have the couplers as close to the posts as possible;

– Extend bearers beyond the posts and runners;

– Provide full contact with the coupler;

– The bottom bearers are located as close to the base as possible.

• Make sure runners meet all of the following:

– Are installed along the length of the scaffold;

– Are located on both the inside and outside posts at the same height;

– Are interlocked on straight runs to form continuous lengths and are coupled to each post;

– The bottom runners are located as close to the base as possible.

Note: Tube and coupler guardrails and midrails installed on outside posts can be used in lieu of outside runners.

You must:

• Make sure couplers are made of a structural metal, such as drop-forged steel, malleable iron, or structural grade aluminum.

• Prohibit using couplers made of gray cast iron.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-026, § 296-874-40040, filed 8/7/07, effective 10/6/07; 05-01-054, § 296-874-40040, filed 12/7/04, effective 3/1/05.]

WAC 296-874-500 Definitions.

Adjustable suspension scaffold a suspended scaffold equipped with one or more hoists that can be operated by employees on the scaffold.

Bearer a horizontal scaffold member (which may be supported by ledgers or runners) upon which the scaffold

platform rests and which joins scaffold uprights, posts, poles, and similar members.

Boatswain's chair a single-point adjustable suspended scaffold consisting of a seat or sling designed to support one employee in a sitting position.

Brace a rigid connection that holds one scaffold member in a fixed position with respect to another member, or to a building or structure.

Bricklayers' square scaffold a supported scaffold composed of framed squares which support a platform.

Carpenters' bracket scaffold a supported scaffold consisting of a platform supported by brackets attached to building or structural walls.

Catenary scaffold a suspended scaffold consisting of a platform supported by two essentially horizontal and parallel ropes attached to structural members of a building or other structure. Additional support may be provided by vertical pickups.

Cleat a structural block used at the end of a platform to prevent the platform from slipping off its supports. Cleats are also used to provide footing on sloped surfaces such as access ramps.

Competent person someone who:

- Is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees;

AND

- Has the authority to take prompt corrective measures to eliminate them.

Coupler a device for locking together the tubes of a tube and coupler scaffold.

Double-pole (independent pole) scaffold a supported scaffold consisting of one or more platforms resting on cross beams (bearers) supported by ledgers and a double row of uprights independent of support (except ties, guys, braces) from any structure.

Equivalent alternative design, material or method to protect against a hazard. You have to demonstrate it provides an equal or greater degree of safety for employees than the method, material or design specified in the rule.

Exposed power lines electrical power lines which are accessible to and may be contacted by employees. Such lines do not include extension cords or power tool cords.

Eye or eye splice a loop at the end of a wire rope.

Fabricated frame scaffold (tubular welded frame scaffold) a scaffold consisting of platforms supported on fabricated frames with integral posts, horizontal bearers, and intermediate members.

Failure load refusal, breaking, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

Float (ship) scaffold a suspended scaffold consisting of a braced platform resting on two parallel bearers and hung from overhead supports by ropes of fixed length.

Form scaffold a supported scaffold consisting of a platform supported by brackets attached to formwork.

Guardrail system a vertical barrier, consisting of, but not limited to, top rails, midrails, and posts, erected to prevent employees from falling off a scaffold platform or walkway.

Handrails (ladder stands) a rail connected to a ladder stand running parallel to the slope and/or top step.

Hoist a manual or power-operated mechanical device to raise or lower a suspended scaffold.

Horse scaffold a supported scaffold consisting of a platform supported by construction horses (saw horses). Horse scaffolds constructed of metal are sometimes known as trestle scaffolds.

Independent pole scaffold (see double pole scaffold).

Interior hung scaffold a suspended scaffold consisting of a platform suspended from the ceiling or roof structure by fixed length supports.

Ladder jack scaffold a supported scaffold consisting of a platform resting on brackets attached to ladders.

Ladder stand a mobile, fixed-size, self-supporting ladder consisting of a wide flat tread ladder in the form of stairs.

Landing a platform at the end of a flight of stairs.

Large area scaffold a pole scaffold, tube and coupler scaffold, system scaffold, or fabricated frame scaffold erected over substantially the entire work area. For example: A scaffold erected over the entire floor area of a room.

Lean-to scaffold a supported scaffold which is kept erect by tilting it toward and resting it against a building or structure.

Ledger (see runner).

Lifeline a component consisting of a flexible line that connects to an anchorage at one end to hang vertically (vertical lifeline), or that connects to anchorages at both ends to stretch horizontally (horizontal lifeline). It serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Lower levels areas below the level where the employee is located and to which an employee can fall. Such areas include, but are not limited to, ground levels, floors, roofs, ramps, runways, excavations, pits, tanks, materials, water, and equipment.

Masons' adjustable supported scaffold (see self-contained adjustable scaffold).

Masons' multipoint adjustable suspension scaffold a continuous run suspended scaffold designed and used for masonry operations.

Maximum intended load the total load of all persons, equipment, tools, materials, transmitted loads, and other loads reasonably anticipated to be applied to a scaffold or scaffold component at any one time.

Midrail a rail, approximately midway between the toprail of a guardrail system and the platform, and secured to the uprights erected along the exposed sides and ends of a platform.

Mobile scaffold supported scaffold mounted on casters or wheels.

Multilevel suspended scaffold a two-point or multipoint adjustable suspension scaffold with a series of platforms at various levels resting on common stirrups.

Multipoint adjustable suspension scaffold a suspended scaffold consisting of a platform(s) which is suspended by more than two ropes from overhead supports and equipped with means to raise and lower the platform to desired work levels.

Needle beam scaffold a suspended scaffold which has a platform supported by two bearers (needle beams) suspended from overhead supports.

Outrigger a structural member of a supported scaffold which increases the base width of a scaffold. This provides support for and increases the stability of the scaffold.

Outrigger beam (suspended and supported) the structural member of a suspended scaffold or outrigger scaffold which provides support for the scaffold by extending the scaffold point of attachment to a point out and away from the structure or building.

Outrigger scaffold a supported scaffold consisting of a platform resting on outrigger beams which projects beyond the wall or face of the building or structure. The inboard ends of the outrigger beams are secured inside the building or structure.

Overhand bricklaying the process of laying bricks and masonry so that the surface of the wall is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. It includes mason tending and electrical installation incorporated into the brick wall during the overhand bricklaying process.

Personal fall arrest system a system used to arrest an employee's fall. It consists of an anchorage, connectors, and body harness and may also include a lanyard, deceleration device, lifeline, or combinations of these.

Platform a work surface used in scaffolds, elevated above lower levels. Platforms can be constructed using individual wood planks, fabricated planks, fabricated decks, and fabricated platforms.

Pole scaffold (see single-pole scaffold and double (independent) pole scaffold).

Pump jack scaffold a supported scaffold consisting of a platform supported by vertical poles and movable support brackets.

Qualified person a person who has successfully demonstrated the ability to solve problems relating to the subject matter, work, or project, either by:

- Possession of a recognized degree, certificate, or professional standing;

OR

- Extensive knowledge, training and experience.

Rated load the manufacturer's specified maximum load to be lifted by a hoist or to be applied to a scaffold or scaffold component.

Repair bracket scaffold a supported scaffold consisting of a platform supported by brackets. The brackets are secured in place around the circumference or perimeter of a chimney, stack, tank or other supporting structure by one or more wire ropes placed around the supporting structure.

Roof bracket scaffold a supported scaffold used on a sloped roof. It consists of a platform resting on angular-shaped supports so that the scaffold platform is level.

Runner (ledger) the lengthwise horizontal spacing or bracing member which may support the bearers.

Scaffold a temporary elevated platform, including its supporting structure and anchorage points, used for supporting employees or materials.

Self-contained adjustable scaffold a combination supported and suspended scaffold consisting of an adjustable platform mounted on an independent supporting frame, not a part of the object being worked on, which is equipped with a means to raise and lower the platform. Such systems include

rolling roof rigs, rolling outrigger systems, and some masons' adjustable supported scaffolds.

Shore scaffold a supported scaffold which is placed against a building or structure and held in place with props.

Single-point adjustable suspension scaffold a suspended scaffold consisting of a platform suspended by one rope from an overhead support and equipped with means to permit the movement of the platform to desired work levels.

Single-pole scaffold a supported scaffold consisting of platforms resting on bearers, the outside ends of which are supported on runners secured to a single row of posts or uprights, and the inner ends of which are supported on or in a structure or building wall.

Stair tower (scaffold stairway/tower) a tower comprised of scaffold components which contains internal stairway units and rest platforms. These towers are used to provide access to scaffold platforms and other elevated points such as floors and roofs.

Stall load the load at which the prime mover of a power-operated hoist stalls or the power to the prime mover is automatically disconnected.

Step, platform, and trestle ladder scaffold a platform resting directly on the rungs of a step, platform, or trestle ladder.

Stilts a pair of poles or similar supports with raised footrests, used to permit walking above the ground or working surface.

Stonesetters' multipoint adjustable suspension scaffold a continuous run suspended scaffold designed and used for stonesetters' operations.

Supported scaffold one or more platforms supported by rigid means such as outrigger beams, brackets, poles, legs, uprights, posts, or frames.

Suspended scaffold one or more platforms suspended from an overhead structure by ropes or other nonrigid means.

System scaffold a scaffold consisting of posts with fixed connection points that accept runners, bearers, and diagonals that can be interconnected at predetermined levels.

Toeboard (scaffold) a barrier erected along the exposed sides and ends of a scaffold platform at platform level to prevent material, tools, and other loose objects from falling from the platform.

Top plate bracket scaffold a scaffold supported by brackets that hook over or are attached to the top of a wall. This type of scaffold is similar to carpenters' bracket scaffolds and form scaffolds.

Tube and coupler scaffold a scaffold consisting of platforms supported by tubing, erected with coupling devices connecting uprights, braces, bearers, and runners.

Tubular welded frame scaffold (see fabricated frame scaffold).

Tubular welded sectional folding scaffold a sectional, folding metal scaffold either of ladder frame or inside stairway design. It is substantially built of prefabricated welded sections, which consist of end frames, platform frame, inside inclined stairway frame and braces, or hinged connected diagonal and horizontal braces. It can be folded into a flat package when the scaffold is not in use.

Two-point suspension scaffold (swing stage) a suspended scaffold consisting of a platform supported by hangers (stirrups), suspended by two ropes from overhead sup-

ports, and equipped with a means to permit the raising and lowering of the platform to desired work levels.

Unstable objects items whose strength, configuration, or lack of stability may allow them to become dislocated and shift and therefore may not properly support the loads imposed on them. Unstable objects do not constitute a safe base support for scaffolds, platforms, or employees. Examples include, but are not limited to, barrels, boxes, loose brick, and concrete blocks.

Vertical pickup a rope used to support the horizontal rope in a catenary scaffold.

Walkway (scaffold) part of a scaffold used only for access and not as a working level.

Window jack scaffold a platform resting on a bracket or jack that projects through a window opening.

Work level the elevated platform, used for supporting workers and their materials.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-17-026, § 296-874-500, filed 8/7/07, effective 10/6/07; 05-01-054, § 296-874-500, filed 12/7/04, effective 3/1/05.]

Chapter 296-878 WAC

SAFETY STANDARDS FOR WINDOW CLEANING

WAC

296-878-10005 Summary.

WAC 296-878-10005 Summary.

Your responsibility:

Make sure workers clean windows safely, and properly use and maintain their window-cleaning equipment.

IMPORTANT:

Window-cleaning equipment includes window-cleaner's belts, boatswains' chairs, rope descent systems, ladders, supported scaffolds and the support equipment used to suspend employees cleaning windows.

You must:

Training

Train workers to use window-cleaning equipment

WAC 296-878-11005

Building surfaces and fixtures

Make sure building surfaces and fixtures are safe to use

WAC 296-878-12005

Inspection procedures

Inspect the area to be cleaned

WAC 296-878-13005

Inspect window-cleaning equipment before use

WAC 296-878-13010

Develop site-specific service and emergency plans

Develop a site-specific service and emergency recovery plan for window-cleaning operations

WAC 296-878-14005

Equipment

Select and use appropriate equipment

WAC 296-878-15005

Select appropriate rope for suspended equipment

WAC 296-878-15015

Select appropriate carabiners

WAC 296-878-15020

Use fall protection equipment

WAC 296-878-15025

Warning signs and barricades

Provide warning signs and barricades when suspended equipment is used

WAC 296-878-16005

Power line clearances

Maintain clearance between window cleaners and power lines

WAC 296-878-17005

Window-cleaners' belts and anchors

Select appropriate window-cleaners' belts and anchors

WAC 296-878-18005

Inspect the anchors you plan to use for window cleaning

WAC 296-878-18010

Use window-cleaners' belts safely

WAC 296-878-18015

Move safely on the outside of buildings

WAC 296-878-18020

Boatswains' chairs

Select appropriate boatswains' chairs

WAC 296-878-19005

Safely use boatswains' chairs rigged with a block and tackle

WAC 296-878-19010

Rope descent systems

Select appropriate rope descent systems

WAC 296-878-20005

Safely use rope descent systems

WAC 296-878-20010

Safely use rope descent devices

WAC 296-878-20015

Equipment prohibited

Prohibit equipment from use

WAC 296-878-21005

Definitions

WAC 296-878-220.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-878-10005, filed 1/24/07, effective 4/1/07; 02-22-027, § 296-878-10005, filed 10/28/02, effective 1/1/03.]

Chapter 296-900 WAC

ADMINISTRATIVE RULES

WAC

296-900-130

Citation and notice.

296-900-14020

Increases to adjusted base penalties.

296-900-150

Certifying violation corrections.

WAC 296-900-130 Citation and notice.

Summary:

Employer responsibility:

To notify employees when a citation and notice is received:

Citation and notice

WAC 296-900-13005.

Copies of future citations and notices

WAC 296-900-13010.

Posting citation and notices

WAC 296-900-13015.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 07-03-163, § 296-900-130, filed 1/24/07, effective 4/1/07; 06-06-020, § 296-900-130, filed 2/21/06, effective 6/1/06.]

WAC 296-900-14020 Increases to adjusted base penalties.

• WISHA may increase an adjusted base penalty in certain circumstances. Table 6, Increases to Adjusted Base Penalties, describes circumstances where an increase may be applied to an adjusted base penalty.

**Table 6
Increases to Adjusted Base Penalties**

For this circumstance:	The adjusted base penalty may be increased as follows:
<p>Repeat violation When the employer has been previously cited for a substantially similar hazard, with a final order for the previous violation dated no more than 3 years prior to the employer committing the violation being cited.</p>	<ul style="list-style-type: none"> Multiplied by the total number of citations with violations involving similar hazards, including the current inspection. Note: The maximum penalty can't exceed seventy thousand dollars for each violation.
<p>Willful violation An act committed with the intentional, knowing, or voluntary disregard for the WISHA requirements or with plain indifference to employee safety.</p>	<ul style="list-style-type: none"> Multiplied by ten with at least the statutory minimum penalty of five thousand dollars Note: The maximum penalty can't exceed \$70,000 for each violation.
<p>Egregious violation If the violation was willful and at least one of the following:</p> <ul style="list-style-type: none"> The violations resulted in worker fatalities, a worksite catastrophe, or a large number of injuries or illnesses. The violations resulted in persistently high rates of worker injuries or illnesses. The employer has an extensive history of prior violations. The employer has intentionally disregarded its safety and health responsibilities. The employer's conduct taken as a whole amounts to clear bad faith in the performance of his/her duties. The employer has committed a large number of violations so as to undermine significantly the effectiveness of any safety and health program that might be in place. 	<ul style="list-style-type: none"> With a separate penalty issued for each instance the employer fails to follow a specific requirement.

**Table 6
Increases to Adjusted Base Penalties**

For this circumstance:	The adjusted base penalty may be increased as follows:
<p>Failure to abate (FTA) Failure to correct a cited WISHA violation on time. Reference: For how to certify corrected violations, go to Certifying violation corrections, WAC 296-900-15005 through 296-900-15030.</p>	<ul style="list-style-type: none"> Based on the facts at the time of reinspection, will be multiplied by: <ul style="list-style-type: none"> At least five, but up to ten, based on the employer's effort to comply. The number of calendar days past the correction date, with a minimum of five days. Note: The maximum penalty can't exceed seven thousand dollars per day for every day the violation is not corrected.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-900-14020, filed 1/24/07, effective 4/1/07; 06-06-020, § 296-900-14020, filed 2/21/06, effective 6/1/06.]

WAC 296-900-150 Certifying violation corrections.

Summary:

Employer responsibility:

- To certify that violations to safety and health requirements have been corrected.
 - To submit, if required:
 - Additional information.
 - Correction action plans.
 - Progress reports.
 - To comply with correction due dates.
 - To tag cited moveable equipment to warn employees of a hazard.
 - To inform affected employees that each violation was corrected.

- Certifying violation correction
WAC 296-900-15005.
- Violation correction action plans
WAC 296-900-15010.
- Progress reports
WAC 296-900-15015.
- Timeliness of violation correction documents
WAC 296-900-15020.
- Inform employees about violation correction
WAC 296-900-15025.
- Tag moveable equipment
WAC 296-900-15030.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. 07-03-163, § 296-900-150, filed 1/24/07, effective 4/1/07; 06-06-020, § 296-900-150, filed 2/21/06, effective 6/1/06.]