REPEALER

The following sections of the Washington Administrative Code are repealed:

WAC 296-62-075	Air contaminants.
WAC 296-62-07501	Airborne contaminants.
WAC 296-62-07503	Ceiling vs. time-weighted average limits.
WAC 296-62-07505	"Skin" notation.
WAC 296-62-07507	Mixtures.
WAC 296-62-07509	Nuisance dusts.
WAC 296-62-07510	Total particulate.
WAC 296-62-07511	Simple asphyxiants.
WAC 296-62-07513	Physical factors.
WAC 296-62-07515	Control of chemical agents.

REPEALER

The following sections of the Washington Administrative Code are repealed:

WAC 296-62-08001	Bloodborne pathogens.
WAC 296-62-08050	Appendix A--Hepatitis B vaccine declination--Mandatory.

REPEALER

The following sections of the Washington Administrative Code are repealed:

WAC 296-62-09015	Hearing conservation.
WAC 296-62-09017	Definitions.
WAC 296-62-09019	Monitoring.
WAC 296-62-09021	Method of noise measurement.
WAC 296-62-09023	Calibration of monitoring equipment.
WAC 296-62-09024	Employee notification.
WAC 296-62-09025	Observation of monitoring.
WAC 296-62-09026	Noise control.
WAC 296-62-09027	Audiometric testing program.
WAC 296-62-09029	Audiometric test requirements.
WAC 296-62-09031	Hearing protectors.
WAC 296-62-09033	Hearing protector attenuation.
WAC 296-62-09035	Training program.
WAC 296-62-09037	Access to information and training materials.
WAC 296-62-09039	Warning signs.
WAC 296-62-09041	Recordkeeping.
WAC 296-62-09043	Appendices.
WAC 296-62-09045	Effective dates.
WAC 296-62-09047	Appendix A--Audiometric measuring instruments.
WAC 296-62-09049	Appendix B--Audiometric test rooms.
WAC 296-62-09051	Appendix C--Acoustic calibration of audiometers.
WAC 296-62-09053	Appendix D--Methods for estimating the adequacy of hearing protector attenuation.
WAC 296-62-09055	Appendix E--Noise exposure computation.

REPEALER

The following sections of the Washington Administrative Code are repealed:

WAC 296-62-141	Permit-required confined spaces.
WAC 296-62-14100	Scope and application.
WAC 296-62-14105	Definitions.
WAC 296-62-14110	General requirements.
WAC 296-62-14115	Permit-required confined space program (permit space program).
WAC 296-62-14120	Permit system.
WAC 296-62-14125	Required entry permit information.
WAC 296-62-14130	Training.
WAC 296-62-14135	Duties of authorized entrants.
WAC 296-62-14140	Duties of attendants.
WAC 296-62-14145	Duties of entry supervisors.
WAC 296-62-14150	Rescue and emergency services.
WAC 296-62-14155	Employee participation.
WAC 296-62-14170	Appendices to WAC 296-62-141--Permit-required confined spaces.
WAC 296-62-14171	Appendix A--Permit-required confined space decision flow chart.
WAC 296-62-14172	Appendix B--Procedures for atmospheric testing.
WAC 296-62-14173	Appendix C--Examples of permit-required confined space programs.
WAC 296-62-14174	Appendix D--Sample permits.
WAC 296-62-14175	Appendix E--Sewer system entry.
WAC 296-62-14176	Appendix F--Rescue team or rescue service evaluation criteria.

REPEALER

The following sections of the Washington Administrative Code are repealed:

WAC 296-62-300	Hazardous waste operations and treatment, storage, and disposal facilities.
WAC 296-62-30001	Scope and application.
WAC 296-62-30003	Definitions.
WAC 296-62-3010	Overview of a written safety and health program.
WAC 296-62-30105	Elements of a safety and health program.
WAC 296-62-30110	Safety considerations during the initial site excavation.
WAC 296-62-30115	Notifying contractors and subcontractors of procedures and hazards.
WAC 296-62-30120	Availability of the safety and health program.
WAC 296-62-30125	Organizational structure of the site safety and health program.
WAC 296-62-30130	Comprehensive workplan of the site program.
WAC 296-62-30135	Overview of a site-specific safety and health plan.
WAC 296-62-30140	Preentry briefing of the site-specific safety and health plan.
WAC 296-62-30145	Effectiveness of site safety and health plan.
WAC 296-62-3020	Site characterization and analysis.
WAC 296-62-30205	Preliminary evaluation.
WAC 296-62-30210	Hazard identification.
WAC 296-62-30215	Required information.
WAC 296-62-30220	Personal protective equipment.
WAC 296-62-30225	Monitoring.
WAC 296-62-30230	Risk identification.
WAC 296-62-30235	Employee notification.
WAC 296-62-3030	Site control.
WAC 296-62-30305	Site control program.
WAC 296-62-30310	Elements of the site control program.
WAC 296-62-30315	Site work zones.

WAC 296-62-3040	General training requirements and the employees covered.
WAC 296-62-30405	Elements covered in training.
WAC 296-62-30410	Initial training.
WAC 296-62-30415	Management and supervisor training.
WAC 296-62-30420	Law enforcement at illicit drug labs.
WAC 296-62-30425	Training course content for 40 and 80 hour hazardous waste cleanup courses.
WAC 296-62-30430	Training content for 24-hour hazardous waste cleanup course.
WAC 296-62-30435	16-hour supplemental training for hazardous waste sites.
WAC 296-62-30440	Additional 8 hours of training for supervisors and managers.
WAC 296-62-30445	Qualifications for trainers.
WAC 296-62-30450	Training certification.
WAC 296-62-30455	Training requirements for emergency response.
WAC 296-62-30460	Refresher training.
WAC 296-62-30465	Equivalent training.
WAC 296-62-3050	Medical surveillance.
WAC 296-62-30505	Employees covered.
WAC 296-62-30510	Frequency of medical examinations and consultations.
WAC 296-62-30515	Content of medical examinations and consultations.
WAC 296-62-30520	Examination by a physician and costs.
WAC 296-62-30525	Information provided to the physician.
WAC 296-62-30530	Physician's written opinion.
WAC 296-62-30535	Recordkeeping of medical surveillance activities.
WAC 296-62-3060	Engineering controls, work practices, and personal protective equipment for employee protection.
WAC 296-62-30605	Personal protective equipment selection.
WAC 296-62-30610	Totally encapsulating chemical protective suits.
WAC 296-62-30615	Personal protective equipment (PPE) program.
WAC 296-62-3070	Monitoring concentrations of hazardous substances.
WAC 296-62-30705	Monitoring during initial entry.
WAC 296-62-30710	Periodic monitoring.

WAC 296-62-30715	Monitoring of high-risk employees.
WAC 296-62-3080	Informational programs.
WAC 296-62-3090	General requirements for handling drums and containers.
WAC 296-62-30905	Opening drums and containers.
WAC 296-62-30910	Material handling equipment.
WAC 296-62-30915	Radioactive wastes.
WAC 296-62-30920	Shock-sensitive wastes.
WAC 296-62-30925	Laboratory waste packs.
WAC 296-62-30930	Sampling of drum and container contents.
WAC 296-62-30935	Shipping and transport of drums.
WAC 296-62-30940	Tanks and vaults procedures.
WAC 296-62-3100	Decontamination procedures.
WAC 296-62-31005	Location of decontamination areas.
WAC 296-62-31010	Decontamination of equipment and solvents.
WAC 296-62-31015	Decontamination of personal protective clothing and equipment.
WAC 296-62-31020	Showers and change rooms used for decontamination.
WAC 296-62-3110	Emergency response plan for employees at uncontrolled hazardous waste sites.
WAC 296-62-31105	Elements of an emergency response plan at uncontrolled hazardous waste sites.
WAC 296-62-31110	Procedures for handling emergency incidents at uncontrolled hazardous waste sites.
WAC 296-62-3120	Illumination.
WAC 296-62-3130	Sanitation at temporary work-places.
WAC 296-62-31305	Potable water.
WAC 296-62-31310	Nonpotable water.
WAC 296-62-31315	Toilet facilities.
WAC 296-62-31320	Food handling.
WAC 296-62-31325	Temporary sleeping quarters.
WAC 296-62-31330	Washing facilities.
WAC 296-62-31335	Showers and change rooms.
WAC 296-62-3138	New technology programs.
WAC 296-62-3140	Certain operations conducted under the Resource Conservation and Recovery Act of 1976 (RCRA).
WAC 296-62-31405	Safety and health program under RCRA.
WAC 296-62-31410	Hazard communication program requirements under RCRA.
WAC 296-62-31415	Medical surveillance program

	requirements under RCRA.
WAC 296-62-31420	Decontamination program requirements under RCRA.
WAC 296-62-31425	New technology programs requirements under RCRA.
WAC 296-62-31430	Material handling program requirements under RCRA.
WAC 296-62-31435	Training program for new employees under RCRA.
WAC 296-62-31440	Training program for current employees.
WAC 296-62-31445	RCRA requirements for trainers.
WAC 296-62-31450	Emergency response program requirements under RCRA.
WAC 296-62-31455	Emergency response plan under RCRA.
WAC 296-62-31460	Elements of an emergency response plan under RCRA.
WAC 296-62-31465	Training requirements for emergency response under RCRA.
WAC 296-62-31470	Procedures for handling emergency incidents under RCRA.
WAC 296-62-3152	Appendices to Part P--Hazardous waste operations and TSD facilities.
WAC 296-62-3160	Appendix A--Personal protective equipment test methods.
WAC 296-62-3170	Appendix B--General description and discussion of the levels of protection and protective gear.
WAC 296-62-3180	Appendix C--Compliance guidelines.
WAC 296-62-3190	Appendix D--References.
WAC 296-62-3195	Appendix E--Training curriculum guidelines.

AMENDATORY SECTION (Amending WSR 03-10-068, filed 5/6/03, effective 8/1/03)

WAC 296-307-018 What are the employer's responsibilities?

You must:

(1) Provide a safe and healthful working environment.

(2) Ensure that employees do not use defective or unsafe tools and equipment, including tools and equipment that may be furnished by the employee.

(3) Implement a written accident prevention program as required by these standards.

(4) Implement a hazard communication program as required by WAC 296-307-550.

(5) Establish a system for reporting and recording accidents on the OSHA 200 log. (See chapter 296-27 WAC.)

(6) Provide safety education and training programs.

(7) Implement the requirements of WAC 296-62-074 through 296-62-07451 to ensure the safety of employees who are exposed to cadmium in the workplace.

(8) Implement the requirements of WAC ((~~296-62-145~~)) 296-307-642 through ((~~296-62-14529~~)) 296-307-656 to ensure the safety of employees who are exposed to confined spaces in the workplace.

(9) Control chemical agents.

You must:

✎ Control chemical agents in a manner that they will not present a hazard to your workers; or

✎ Protect workers from the hazard of contact with, or exposure to, chemical agents.

Reference: Pesticides are chemical agents and are covered by chapter 296-307 WAC Part I, Pesticides (worker protection standard). Pesticides may also be covered by ((~~chapter 296-62 WAC Part E, Respiratory protection~~)) WAC 296-307-594, Respirators.

(10) Protect employees from biological agents.

You must:

✎ Protect employees from exposure to hazardous concentrations of biological agents that may result from processing, handling or using materials or waste.

Note: Examples of biological agents include:
– Animals or animal waste
– Body fluids
– Biological agents in a medical research lab
– Mold or mildew.

AMENDATORY SECTION (Amending WSR 04-07-160, filed 3/23/04, effective 5/1/04)

WAC 296-307-039 First-aid rule summary. Your responsibility: Make sure first-aid trained personnel are available to provide quick and effective first aid.

You must:

Make sure that first-aid trained personnel are available to provide quick and effective first aid.

WAC 296-307-03905.

Make sure appropriate first-aid supplies are readily available.

WAC 296-307-03920.

Note:

- Employers who require their employees to provide first aid must comply with the bloodborne pathogen rule, chapter 296-823 WAC ((~~296-62-080~~)).
- Additional requirements relating to first aid are also located in the following sections:
  - WAC 296-307-07013(12), What rules apply to vehicles used to transport employees?
  - WAC 296-307-16175, First-aid requirements for operators of temporary worker housing.
  - WAC 296-307-16380, First-aid requirements for operators of cherry harvest camps.

Definitions:

First aid: The extent of treatment you would expect from a person trained in basic first aid, using supplies from a first-aid kit.

Emergency medical service: Medical treatment and care given at the scene of any medical emergency or while transporting any victim to a medical facility.

You can get copies of these rules by calling 1-800-4BE SAFE (1-800-423-7233), or by going to http://www.lni.wa.gov.

AMENDATORY SECTION (Amending WSR 01-17-033, filed 8/8/01, effective 9/1/01)

WAC 296-307-03920 Make sure appropriate first-aid supplies are readily available. You must:

- Make sure first-aid supplies are readily available. (See first-aid kit table.)
- Make sure first-aid supplies at your workplace are appropriate to:
  - Your occupational setting.
  - The response time of your emergency medical services.

First-Aid Kit Table

Number of employees normally assigned to worksite	Minimum first-aid supplies required at worksite
1 - 15 Employees	1 First-aid kit

16 - 30 Employees	2 First-aid kits
31 - 50 Employees	3 First-aid kits
((~~Over 50 Employees (within 1/2 mile radius of supplies)~~	~~First-aid station (see WAC 296-307-03925)~~))

Note:
- First-aid kits from your local retailer or safety supplier should be adequate for most nonindustrial employers.
- The following is a list of suggested items for your first-aid kit:
  - 1 absorbent compress, 4 x 8 inches
  - 16 adhesive bandages, 1 x 3 inches
  - 1 adhesive tape, 5 yards long
  - 10 antiseptic single-use packages, 0.5 g application
  - 6 burn treatment single-use packages, 0.5 g application
  - 1 eye covering (for two eyes)
  - 1 eye wash, 1 fluid ounce
  - 4 sterile pads, 3 x 3 inches
  - 2 pair of medical exam gloves
  - 1 triangular bandage, 39 x 39 x 55 inches

  Optional first-aid kit contents
  - Bandage compresses, 2 x 2 inches, 3 x 3 inches and 5 x 5 inches
  - Self-activating cold packs, 4 x 5 inches
  - Roller bandages, 6 yards long
  - Mouth-to-mouth barrier for CPR
- Kits should be checked at least weekly to ensure adequate number of needed items are available.
- Kits may be carried in any motor vehicle that is used near the crew.

You must:

- Make sure that first-aid supplies are:
- Easily accessible to all your employees.
- Stored in containers that protect them from damage, deterioration, or contamination. Containers must be clearly marked, not locked, and may be sealed.
- Able to be moved to the location of an injured or acutely ill worker.

AMENDATORY SECTION (Amending WSR 97-09-013, filed 4/7/97, effective 4/7/97)

WAC 296-307-061 What requirements apply to working around bins, bunkers, hoppers, tanks, pits, and trenches? (1) Employees must be prohibited from entering any bin, bunker, hopper, or similar area when loose materials (such as chips, sand, grain, gravel, sawdust, etc.) may collapse, unless the employee wears a safety belt with a lifeline attached and is attended by a helper.

Note: Silage pits are exempt from this section.
Reference: For requirements relating to confined spaces, see WAC 296-307-642 through 296-307-656.

(2) When employees are required to work in a trench or a pit 4 feet deep or more, the trench or the pit must be shored or sloped according to the following table:

SOIL OR ROCK TYPE MAXIMUM ALLOWABLE	SLOPES (H:V) (1) FOR EXCAVATIONS LESS THAN 20 FEET DEEP (2)
STABLE ROCK	VERTICAL (90°)
TYPE A	3/4:1 (53°)
TYPE B	1:1 (45°)
TYPE C	1 1/2:1 (34°)

1	Numbers in parentheses next to maximum allowable slopes are angles in degrees from the horizontal. Angles have been rounded off.
2	Sloping or benching for excavations greater than 20 feet deep must be designed by a registered professional engineer.

(3) Each soil and rock deposit must be classified by a competent person as Stable Rock, Type A, B, or C according to the definitions in WAC 296-155-66401. "Competent person" means someone who is able to identify working conditions that are hazardous to employees, and has authority to take prompt action to eliminate the hazards.

(4) Classification of the deposits must be based on the results of at least one visual and at least one manual analysis. The analyses must be conducted by a competent person using tests in recognized methods of soil classification and testing such as those adopted by the American Society for Testing Materials, or the U.S. Department of Agriculture textural classification system.

AMENDATORY SECTION (Amending WSR 01-17-033, filed 8/8/01, effective 9/1/01)

WAC 296-307-07013 What rules apply to vehicles used to transport employees? You must ensure that motor vehicles used regularly to transport employees meet the following requirements:

(1) The vehicles are well equipped, covered against the weather, and maintained in good mechanical condition at all times.

(2) A sufficient number of properly secured seats are provided in each vehicle to accommodate the number of employees

transported. When emergency conditions make it necessary to transport more employees than the seating capacity can accommodate, all employees must ride within the vehicle. No employee may ride on fenders or running boards of the vehicle.

(3) No employees may ride in or on any vehicle with their legs hanging over the end or sides. All trucks without tail gates should have safety bars.

(4) The vehicles have storage strong enough to retain sharp tools that could present a hazard to employees being transported.

(5) All dump-trucks used to transport employees have an adequate safety chain or locking device to ensure that the body of the truck is not raised while employees are riding in it.

(6) Explosives or highly inflammable materials are not carried in or on the vehicle while it is used to transport employees.

(7) Exhaust systems are installed and maintained in proper condition, and are designed to eliminate the employee exposure to exhaust gases and fumes.

(8) Within the cab, crew trucks must carry only the number of passengers for which they are designed. In any seating arrangement, the driver must be able to maintain full freedom of motion. The driver's normal vision must be free from obstruction by passengers or the seating arrangement.

(9) All enclosed crew trucks have an emergency exit in addition to the regular entrance.

(10) Trucks used for hauling gravel may be used as crew trucks if they meet the following requirements:

(a) Steps in proper places;

(b) Wooden floors;

(c) Securely fastened seats;

(d) Truck is properly covered; and

(e) Compliance with all other general regulations covering crew trucks.

(11) Half-ton vehicles must haul no more than six persons including driver. Three-quarter-ton vehicles must haul no more than eight persons including driver.

(12) The vehicle is equipped with the first-aid supplies required by WAC ((~~296-307-042~~)) 296-307-03920, two blankets, and a fire extinguisher.

Note: Additional requirements relating to first aid are located in WAC 296-307-039.

(13) Heating units with open fires are not used in vehicles transporting crews.

AMENDATORY SECTION (Amending WSR 97-09-013, filed 4/7/97, effective 4/7/97)

WAC 296-307-11015 Violations of this part--Worker protection standards--40 CFR, § 170.9. (1) RCW 15.58.150 (2)(c) provides that it is unlawful for any person ". . . to use or cause to be used any pesticide contrary to label directions . . .." When 40 CFR, Part 170 is referenced on a label, users must comply with all of its requirements except those that are inconsistent with product specific instructions on the labeling. For purposes of this chapter, the term "use" is interpreted to include:

(a) Preapplication activities, including, but not limited to:

(i) Arranging for the application of the pesticide;

(ii) Mixing and loading the pesticide; and

(iii) Making necessary preparations for the application of the pesticide, including responsibilities related to worker notification, training of handlers, decontamination, use and care of personal protective equipment, emergency information, and heat stress management.

(b) Application of the pesticide.

(c) Post-application activities necessary to reduce the risks of illness and injury resulting from handlers' and workers' occupational exposures to pesticide residues during the restricted-entry interval plus thirty days. These activities include, but are not limited to, responsibilities related to worker training, notification, and decontamination.

(d) Other pesticide-related activities, including, but not limited to, providing emergency assistance, transporting or storing pesticides that have been opened, and disposing of excess pesticides, spray mix, equipment wash waters, pesticide containers, and other pesticide-containing materials.

(2) A person who has a duty under this chapter, as referenced on the pesticide product label, and who fails to perform that duty, violates RCW 15.58.330 and 17.21.315, and is subject to civil penalties under RCW 15.58.335, 15.58.260 and 17.21.315.

(3) FIFRA section 14 (b)(4) provides that a person is liable for a penalty under FIFRA if another person employed by or acting for that person violates any provision of FIFRA. The term "acting for" includes both employment and contractual relationships.

(4) The requirements of this chapter, including the

decontamination requirements, shall not, for the purposes of section 653 (b)(1) of Title 29 of the U.S. Code, be deemed to be the exercise of statutory authority to prescribe or enforce standards or regulations affecting the general sanitary hazards addressed by ((~~the WISHA~~)) Field Sanitation ((~~Standard~~)), WAC ((~~296-24-120~~)) 296-307-095, or other agricultural, nonpesticide hazards.

AMENDATORY SECTION (Amending WSR 98-24-096, filed 12/1/98, effective 3/1/99)

WAC 296-307-13045 Personal protective equipment--Standards for pesticide handlers--40 CFR, § 170.240. (1) Requirement. Any person who performs tasks as a pesticide handler shall use the clothing and personal protective equipment specified on the labeling for use of the product.

(2) Definition.

(a) Personal protective equipment (PPE) means devices and apparel that are worn to protect the body from contact with pesticides or pesticide residues, including, but not limited to, coveralls, chemical-resistant suits, chemical-resistant gloves, chemical-resistant footwear, respiratory protection devices, chemical-resistant aprons, chemical-resistant headgear, and protective eyewear.

(b) Long-sleeved shirts, short-sleeved shirts, long pants, short pants, shoes, socks, and other items of work clothing are not considered personal protective equipment for the purposes of this section and are not subject to the requirements of this section, although pesticide labeling may require that such work clothing be worn during some activities.

(3) Provision. When personal protective equipment is specified by the labeling of any pesticide for any handling activity, the handler employer shall provide the appropriate personal protective equipment in clean and operating condition to the handler.

(a) When "chemical-resistant" personal protective equipment is specified by the product labeling, it shall be made of material that allows no measurable movement of the pesticide being used through the material during use.

(b) When "waterproof" personal protective equipment is specified by the product labeling, it shall be made of material that allows no measurable movement of water or aqueous solutions through the material during use.

(c) When a "chemical-resistant suit" is specified by the product labeling, it shall be a loose-fitting, one-piece or two-

piece chemical-resistant garment that covers, at a minimum, the entire body except head, hands, and feet.

(d) When "coveralls" are specified by the product labeling, they shall be a loose-fitting, one-piece or two-piece garment, such as a cotton or cotton and polyester coverall, that covers, at a minimum, the entire body except head, hands, and feet. The pesticide product labeling may specify that the coveralls be worn over another layer of clothing.

(e) Gloves shall be of the type specified by the product labeling. Gloves or glove linings made of leather, cotton, or other absorbent material shall not be worn for handling activities unless such materials are listed on the product labeling as acceptable for such use.

(f) When "chemical-resistant footwear" is specified by the product labeling, one of the following types of footwear must be worn:

(i) Chemical-resistant shoes.

(ii) Chemical-resistant boots.

(iii) Chemical-resistant shoe coverings worn over shoes or boots.

(g) When "protective eyewear" is specified by the product labeling, one of the following types of eyewear must be worn:

(i) Goggles.

(ii) Face shield.

(iii) Safety glasses with front, brow, and temple protection.

(iv) Full-face respirator.

(h) When a "chemical-resistant apron" is specified by the product labeling, an apron that covers the front of the body from mid-chest to the knees shall be worn.

(i) When a respirator is specified by the product labeling, it shall be appropriate for the pesticide product used and for the activity to be performed. The handler employer shall assure that the respirator fits correctly by using the procedures consistent with chapter ((~~296-62~~)) 296-307 WAC, Part ((~~E~~)) Y-5. If the label does not specify the type of respirator to be used, it shall meet the requirements of chapter ((~~296-62~~)) 296-307 WAC, Part ((~~E~~)) Y-5. The respiratory protection requirements of ((~~the general occupational health standards,~~)) chapter ((~~296-62~~)) 296-307 WAC, Part ((~~E~~)) Y-5, shall apply.

(j) When "chemical-resistant headgear" is specified by the product labeling, it shall be either a chemical-resistant hood or a chemical-resistant hat with a wide brim.

(4) Exceptions to personal protective equipment specified on product labeling.

(a) Body protection.

(i) A chemical-resistant suit may be substituted for "coveralls," and any requirement for an additional layer of clothing beneath is waived.

(ii) A chemical-resistant suit may be substituted for "coveralls" and a chemical-resistant apron.

(b) Boots. If chemical-resistant footwear with sufficient durability and a tread appropriate for wear in rough terrain is not obtainable, then leather boots may be worn in such terrain.

(c) Gloves. If chemical-resistant gloves with sufficient durability and suppleness are not obtainable, then during handling activities with roses or other plants with sharp thorns, leather gloves may be worn over chemical-resistant glove liners. However, once leather gloves are worn for this use, thereafter they shall be worn only with chemical-resistant liners and they shall not be worn for any other use.

(d) Closed systems. If handling tasks are performed using properly functioning systems that enclose the pesticide to prevent it from contacting handlers or other persons, and if such systems are used and are maintained in accordance with that manufacturer's written operating instructions, exceptions to labeling-specified personal protective equipment for the handling activity are permitted as provided in (d)(i) and (ii) of this subsection.

(i) Persons using a closed system to mix or load pesticides with a signal word of DANGER or WARNING may substitute a long-sleeved shirt, long pants, shoes, socks, chemical-resistant apron, and any protective gloves specified on the labeling for handlers for the labeling-specified personal protective equipment.

(ii) Persons using a closed system to mix or load pesticides other than those in (d)(i) of this subsection or to perform other handling tasks may substitute a long-sleeved shirt, long pants, shoes, and socks for the labeling-specified personal protective equipment.

(iii) Persons using a closed system that operates under pressure shall wear protective eyewear.

(iv) Persons using a closed system shall have all labeling-specified personal protective equipment immediately available for use in an emergency.

(e) Enclosed cabs. If handling tasks are performed from inside a cab that has a nonporous barrier which totally surrounds the occupants of the cab and prevents contact with pesticides outside of the cab, exceptions to personal protective equipment specified on the product labeling for that handling activity are permitted as provided in (e)(i) through (iv) of this subsection.

(i) Persons occupying an enclosed cab may substitute a long-sleeved shirt, long pants, shoes, and socks for the labeling-specified personal protective equipment. If a respiratory protection device is specified on the pesticide product labeling for the handling activity, it must be worn.

(ii) Persons occupying an enclosed cab that has a properly

functioning ventilation system which is used and maintained in accordance with the manufacturer's written operating instructions and which is declared in writing by the manufacturer and by the Washington state department of labor and industries to provide respiratory protection equivalent to or greater than a dust/mist filtering respirator may substitute a long-sleeved shirt, long pants, shoes, and socks for the labeling-specified personal protective equipment. If a respiratory protection device other than a dust/mist-filtering respirator is specified on the pesticide product labeling, it must be worn.

(iii) Persons occupying an enclosed cab that has a properly functioning ventilation system which is used and maintained in accordance with the manufacturer's written operating instructions and which is declared in writing by the manufacturer and by the Washington state department of labor and industries to provide respiratory protection equivalent to or greater than the vapor-removing or gas-removing respirator specified on pesticide product labeling may substitute a long-sleeved shirt, long pants, shoes, and socks for the labeling-specified personal protective equipment. If an air-supplying respirator or a self-contained breathing apparatus (SCBA) is specified on the pesticide product labeling, it must be worn.

(iv) Persons occupying an enclosed cab shall have all labeling-specified personal protective equipment immediately available and stored in a chemical-resistant container, such as a plastic bag. They shall wear such personal protective equipment if it is necessary to exit the cab and contact pesticide-treated surfaces in the treated area. Once personal protective equipment is worn in the treated area, it must be removed before reentering the cab.

(f) Aerial applications.

(i) Use of gloves. Chemical-resistant gloves shall be worn when entering or leaving an aircraft contaminated by pesticide residues. In the cockpit, the gloves shall be kept in an enclosed container to prevent contamination of the inside of the cockpit.

(ii) Open cockpit. Persons occupying an open cockpit shall use the personal protective equipment specified in the product labeling for use during application, except that chemical-resistant footwear need not be worn. A helmet may be substituted for chemical-resistant headgear. A visor may be substituted for protective eyewear.

(iii) Enclosed cockpit. Persons occupying an enclosed cockpit may substitute a long-sleeved shirt, long pants, shoes, and socks for labeling-specified personal protective equipment.

(g) Crop advisors. Crop advisors entering treated areas while a restricted-entry interval is in effect may wear the personal protective equipment specified on the pesticide

labeling for early entry activities instead of the personal protective equipment specified on the pesticide labeling for handling activities, provided:

(i) Application has been completed for at least four hours.

(ii) Any inhalation exposure level listed in the labeling has been reached or any ventilation criteria established by WAC 296-307-12015 (3)(c) or in the labeling have been met.

(5) Use of personal protective equipment.

(a) The handler employer shall assure that personal protective equipment is used correctly for its intended purpose and is used according to the manufacturer's instructions.

(b) The handler employer shall assure that, before each day of use, all personal protective equipment is inspected for leaks, holes, tears, or worn places, and any damaged equipment is repaired or discarded.

(6) Cleaning and maintenance.

(a) The handler employer shall assure that all personal protective equipment is cleaned according to the manufacturer's instructions or pesticide product labeling instructions before each day of reuse. In the absence of any such instructions, it shall be washed thoroughly in detergent and hot water.

(b) If any personal protective equipment cannot be cleaned properly, the handler employer shall dispose of the personal protective equipment in accordance with any applicable federal, state, and local regulations. Coveralls or other absorbent materials that have been drenched or heavily contaminated with an undiluted pesticide that has the signal word DANGER or WARNING on the label shall be not be reused.

(c) The handler employer shall assure that contaminated personal protective equipment is kept separately and washed separately from any other clothing or laundry.

(d) The handler employer shall assure that all clean personal protective equipment shall be either dried thoroughly before being stored or shall be put in a well ventilated place to dry.

(e) The handler employer shall assure that all personal protective equipment is stored separately from personal clothing and apart from pesticide-contaminated areas.

(f) The handler employer shall assure that when dust/mist filtering respirators are used, the filters shall be replaced:

(i) When breathing resistance becomes excessive.

(ii) When the filter element has physical damage or tears.

(iii) According to manufacturer's recommendations or pesticide product labeling, whichever is more frequent.

(iv) In the absence of any other instructions or indications of service life, at the end of each day's work period.

(g) The handler employer shall assure that when gas-removing or vapor-removing respirators are used, the gas-

removing or vapor-removing canisters or cartridges shall be replaced:

(i) At the first indication of odor, taste, or irritation.

(ii) According to manufacturer's recommendations or pesticide product labeling, whichever is more frequent.

(iii) In the absence of any other instructions or indications of service life, at the end of each day's work period.

(h) The handler employer shall inform any person who cleans or launders personal protective equipment:

(i) That such equipment may be contaminated with pesticides.

(ii) Of the potentially harmful effects of exposure to pesticides.

(iii) Of the correct way(s) to clean personal protective equipment and to protect themselves when handling such equipment.

(i) The handler employer shall assure that handlers have a clean place(s) away from pesticide storage and pesticide use areas where they may:

(i) Store personal clothing not in use.

(ii) Put on personal protective equipment at the start of any exposure period.

(iii) Remove personal protective equipment at the end of any exposure period.

(j) The handler employer shall not allow or direct any handler to wear home or to take home personal protective equipment contaminated with pesticides.

(7) Heat-related illness. When the use of personal protective equipment is specified by the labeling of any pesticide for the handling activity, the handler employer shall assure that no handler is allowed or directed to perform the handling activity unless appropriate measures are taken, if necessary, to prevent heat-related illness.

AMENDATORY SECTION (Amending WSR 00-06-081, filed 3/1/00, effective 3/1/00)

WAC 296-307-16340 Electricity and lighting. (1) General electricity requirements.

(a) The operator must supply electricity to all dwelling units, kitchen facilities, bathroom facilities, common areas, and laundry facilities.

(b) All electrical wiring, fixtures and electrical equipment must comply with department of labor and industries

regulations, chapter 19.28 RCW and local ordinances, and maintained in a safe condition.

(2) Electricity requirements in tents.

(a) Each individual tent must have at least one separate floor-type or wall-type convenience outlet. If the operator provides a refrigerator in the tent, a dedicated outlet must be provided for it.

(b) All electrical wiring and equipment installed in tents must meet the requirements of WAC ((~~296-46-100~~)) 296-45-045.

(c) All electrical appliances to be connected to the electrical supply must meet the requirements for the load calculations as required by chapter 19.28 RCW.

(d) Electrical wiring exiting the tent to connect to the GFI outside outlet must be placed in approved flexible conduit not to exceed six feet in length.

(e) All wiring located inside the tent must be placed in conduit for protection and connected to a surface to secure the wiring to prevent movement. Wiring must be located to prevent tripping or safety hazards.

(f) Receptacles and lighting fixtures must be UL Listed and approved by the department for use in the tent.

(3) General lighting requirements.

(a) The operator must provide adequate lighting sufficient to carry on normal daily activities in all common use areas.

(b) Laundry and toilet rooms and rooms where people congregate must have at least one ceiling-type or wall-type fixture. Where portable toilets are used, lighting requirements can be met by area illumination.

(c) The operator must provide adequate lighting for safe passage for camp occupants to handwashing sinks and toilets.

(d) The operator must provide adequate lighting for shower rooms during hours of operation.

Note: Lighting requirements may be met by natural or artificial means.

(4) Lighting requirements in tents.

(a) Tents must have adequate lighting sufficient to carry on all normal daily activities. For example: Three 100-watt bulbs located at the top ridge of the frame and are UL Listed or equivalent.

(b) Each tent must have at least one ceiling-type light fixture.

(c) Food preparation areas, if located in the tent, must have at least one lighting fixture located to provide task lighting over the food preparation area.

(d) Alternate lighting appliances must provide adequate lighting. In addition, if using two or more propane, butane, or white gas lighting appliances, a carbon monoxide monitor must be provided and located not more than thirty inches from the floor.

AMENDATORY SECTION (Amending WSR 03-10-068, filed 5/6/03, effective 8/1/03)

WAC 296-307-45010 Provide proper ventilation for the vapor area.

You must:

✎ Make sure mechanical ventilation meets the requirements of one or more of the following standards:

– NFPA 34-1995, Standard for Dipping and Coating Processes Using Flammable or Combustible Liquids

– ACGIH's "Industrial Ventilation: A Manual of Recommended Practice" (22nd ed., 1995)

– ANSI Z9.1-1971, Practices for Ventilation and Operation of Open-Surface Tanks and ANSI Z9.2-1979, Fundamentals Governing the Design and Operation of Local Exhaust Systems.

Note: Some, or all, of the consensus standards (such as ANSI and NFPA) may have been revised. If you comply with a later version of a consensus standard, you will be considered to have complied with any previous version of the same consensus standard.

You must:

✎ Limit the vapor area to the smallest practical space by using mechanical ventilation

✎ Keep airborne concentration of any substance below twenty-five percent of its lower flammable limit (LFL)

✎ Make sure mechanical ventilation draws the flow of air into a hood or exhaust duct

✎ Have a separate exhaust system for each dip tank if the combination of substances being removed could cause a:

– Fire

– Explosion

OR

– Potentially hazardous chemical reaction.

Reference: You need to keep employee exposure within safe levels when the liquid in a dip tank creates an exposure hazard. See ((~~Air contaminants, WAC 296-62-075 through 296-62-07515~~)) Respiratory hazards, chapter 296-307 WAC, Part Y-6.

Note: You may use a tank cover or material that floats on the surface of the liquid to replace or assist ventilation. The method or combination of methods you choose has to maintain the airborne concentration of the hazardous material and the employee's exposure within safe limits.

AMENDATORY SECTION (Amending WSR 97-09-013, filed 4/7/97, effective 4/7/97)

WAC 296-307-50025 What requirements apply to welding beryllium? Welding or cutting indoors, outdoors, or in confined spaces involving beryllium-containing base or filler metals must be done using local exhaust ventilation and airline respirators unless atmospheric tests under the most adverse conditions have established that employee exposure is within the acceptable concentrations defined by ((~~chapter 296-62~~)) WAC 296-307-62625. In all cases, employees in the immediate vicinity of the welding or cutting operations must be protected as necessary by local exhaust ventilation or airline respirators.

AMENDATORY SECTION (Amending WSR 97-09-013, filed 4/7/97, effective 4/7/97)

WAC 296-307-50029 What requirements apply to welding mercury? Welding or cutting indoors or in a confined space involving metals coated with mercury-bearing materials, including paint, must be done using local exhaust ventilation or airline respirators unless atmospheric tests under the most adverse conditions have established that employee exposure is within the acceptable concentrations defined by ((~~chapter 296-62~~)) WAC 296-307-62625. Outdoors, such operations must be done using respiratory protective equipment approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) for such purposes.

Part U-3
Other Hazardous Materials
Dipping and Coating Operations (Dip Tanks)

((~~Part U-3~~
~~Other Hazardous Materials~~))

AMENDATORY SECTION (Amending WSR 03-10-068, filed 5/6/03, effective 8/1/03)

WAC 296-307-45010 Provide proper ventilation for the vapor area.

You must:

✎ Make sure mechanical ventilation meets the requirements of one or more of the following standards:

– NFPA 34-1995, Standard for Dipping and Coating Processes Using Flammable or Combustible Liquids

– ACGIH's "Industrial Ventilation: A Manual of Recommended Practice" (22nd ed., 1995)

– ANSI Z9.1-1971, Practices for Ventilation and Operation of Open-Surface Tanks and ANSI Z9.2-1979, Fundamentals Governing the Design and Operation of Local Exhaust Systems.

Note: Some, or all, of the consensus standards (such as ANSI and NFPA) may have been revised. If you comply with a later version of a consensus standard, you will be considered to have complied with any previous version of the same consensus standard.

You must:

✎ Limit the vapor area to the smallest practical space by using mechanical ventilation

✎ Keep airborne concentration of any substance below twenty-five percent of its lower flammable limit (LFL)

✎ Make sure mechanical ventilation draws the flow of air into a hood or exhaust duct

✎ Have a separate exhaust system for each dip tank if the combination of substances being removed could cause a:

– Fire

– Explosion

OR

– Potentially hazardous chemical reaction.

Reference: You need to keep employee exposure within safe levels when the liquid in a dip tank creates an exposure hazard. See ((~~Air contaminants, WAC 296-62-075 through 296-62-07515~~)) Respiratory hazards, chapter 296-307 WAC, Part Y-6.

Note: You may use a tank cover or material that floats on the surface of the liquid to replace or assist ventilation. The method or combination of methods you choose has to maintain the airborne concentration of the hazardous material and the employee's exposure within safe limits.

AMENDATORY SECTION (Amending WSR 03-10-068, filed 5/6/03, effective 8/1/03)

WAC 296-307-45035 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 ((~~Permit required~~)) Confined spaces, WAC ((~~296-62-141~~)) 296-307-642 and safety procedures, WAC 296-307-320.

AMENDATORY SECTION (Amending WSR 03-10-068, filed 5/6/03, effective 8/1/03)

WAC 296-307-45045 Protect employees during welding, burning, or other work using open flames.

You must:

✎ Make sure the dip tank and the area around it are thoroughly cleaned of solvents and vapors before performing work involving:

– Welding

– Burning

OR

– Open flames.

Reference: There are additional requirements for this type of work. See Welding, cutting and brazing, WAC 296-307-475, and ((~~Respiratory protection~~)) Respirators, chapter ((~~296-62 WAC, Part E~~)) 296-307 WAC, Part Y-5.

((~~Part U-4~~
~~Emergency Response~~))

REPEALER

The following sections of the Washington Administrative Code are repealed:

WAC 296-307-452	Scope.
WAC 296-307-45210	Planning.
WAC 296-307-45220	Training.
WAC 296-307-45230	Medical surveillance.
WAC 296-307-45240	Keep records.
WAC 296-307-45400	Incident requirements.
WAC 296-307-45410	Implement and maintain an incident command system (ICS).
WAC 296-307-45420	Prepare skilled support personnel.
WAC 296-307-45430	Make sure the incident commander oversees activities during the

	response.
WAC 296-307-45440	Use the buddy system in danger areas.
WAC 296-307-45450	Provide rescue and medical assistance.
WAC 296-307-45600	Personal protective equipment.
WAC 296-307-45610	Control hazards created by personal protective equipment (PPE).
WAC 296-307-45620	Use personal protective equipment (PPE) properly.
WAC 296-307-45800	Postemergency response.
WAC 296-307-46000	Definitions.

Part Y-1
Employer Chemical Hazard Communication

AMENDATORY SECTION (Amending WSR 01-17-033, filed 8/8/01, effective 9/1/01)

WAC 296-307-550 Employer chemical hazard communication--Introduction. Important:

Thousands of chemicals can be found in today's workplaces. These chemicals may have the capacity to cause health problems, from minor skin irritations to serious injuries or diseases like cancer.

The employer chemical hazard communication rule was developed to make sure employers and employees are informed about chemical hazards in the workplace.

This rule applies to:

- Employers engaged in businesses where chemicals are used, distributed, or produced for use or distribution.
- Contractors or subcontractors that work for employers engaged in businesses where chemicals are used, distributed, or produced for use or distribution.

Note:

- If you produce, import, distribute and/or repackage chemicals, or choose not to rely on labels or material safety data sheets provided by the manufacturer or importer, you must comply with ((~~Chemical hazard communication for manufacturers, importers and distributors, WAC 296-62-054~~)) Material safety data sheets and label preparation, WAC 296-307-560 through 296-307-56050.
- You may withhold trade secret information under certain circumstances, see Trade secrets, WAC 296-62-053, to find out what information may be withheld as a trade secret and what information must be released.

EXEMPTIONS:

- For the purposes of this employer hazard communication rule, if you are engaged in agricultural production of crops or livestock, "employee" does not mean:
  - Immediate family members of the officers of any corporation, partnership, sole proprietorship or other business entity or officers of any closely held corporation.
- Certain products, chemicals, or items are exempt from this rule. Below is a summarized list of these exemptions. See WAC 296-307-55055 at the end of this rule to get complete information about these exemptions:
  - Any hazardous waste or substance
  - Tobacco or tobacco products
  - Wood or wood products that are not chemically treated and will not be processed, for example, by sawing and sanding
  - Food or alcoholic beverages
  - Some drugs, such as retail or prescription medications
  - Retail cosmetics
  - Ionizing and nonionizing radiation
  - Biological hazards
  - Any consumer product or hazardous substance when workplace exposure is the same as that of a consumer

② Retail products used in offices in the same manner and frequency used by consumers can be termed "consumer products." Consumer products include things such as: Correction fluid, glass cleaner, and dishwashing liquid.

Example: If you use a household cleaner in your workplace in the same way that a consumer would use it when cleaning their house, the exposure should be the same as the consumer's. ("In the same way" means using the household cleaner in the same manner and frequency.) A janitor using a household cleaner, such as bleach, throughout the day, is not considered to be consumer use.

– Manufactured items that remain intact are exempt for this rule.

The following are examples:

Item	Covered by this rule	Not covered by this rule
Brick	sawed or cut in half	used whole or intact
Pipe	cut by a torch	bent with a tube bender
Nylon rope	burning the ends	tying a knot

– Manufactured items that are fluids or in the form of particles are not exempt for this rule.

Your responsibility:

To inform and train your employees about the hazards of chemicals they may be exposed to during normal working conditions, or in foreseeable emergencies by:

- Making a list of the hazardous chemicals present in your workplace
- Preparing a written Chemical Hazard Communication Program for your workplace
- Informing your employees about this rule and your program
- Providing training to your employees about working in the presence of hazardous chemicals
- Getting and keeping the material safety data sheets (MSDSs) for the hazardous chemicals
- Making sure that labels on containers of hazardous chemicals are in place and easy to read

You must:

Develop, implement, maintain, and make available a written Chemical Hazard Communication Program

WAC 296-307-55005

Identify and list all the hazardous chemicals present in your workplace

WAC 296-307-55010

Obtain and maintain material safety data sheets (MSDSs) for each hazardous chemical used

WAC 296-307-55015

Make sure that material safety data sheets (MSDSs) are readily accessible to your employees

WAC 296-307-55020

Label containers holding hazardous chemicals

WAC 296-307-55025

Inform and train your employees about hazardous chemicals in your workplace

WAC 296-307-55030

Follow these rules for laboratories using hazardous chemicals

WAC 296-307-55035

Follow these rules for handling chemicals in factory sealed containers

WAC 296-307-55040

The department must:

Translate certain chemical hazard communication documents upon request

WAC 296-307-55045

Attempt to obtain a material safety data sheet (MSDS) upon request

WAC 296-307-55050

Exemption: Items or chemicals exempt from the rule, and exemptions from labeling

WAC 296-307-55055

Definitions
WAC 296-307-55060

AMENDATORY SECTION (Amending WSR 01-17-033, filed 8/8/01, effective 9/1/01)

WAC 296-307-55015 Obtain and maintain material safety data sheets (MSDSs) for each hazardous chemical used. You must:

✎ Obtain a MSDS for each hazardous chemical used as soon as possible if the MSDS is not provided with the shipment of a hazardous chemical from the chemical manufacturer or importer.

Note:

- ✎ To obtain a MSDS, you may try calling the manufacturer or checking their website.
- ✎ If you have a commercial account with a retailer or wholesaler, you have the right to request and receive a MSDS about hazardous chemicals you purchase.
- ✎ If a chemical is purchased from a retailer with no commercial accounts, you have the right to request and receive the manufacturer's name and address so that you can contact them and request a MSDS for the chemical.
- ✎ Whoever prepares the MSDS is required to mark all blocks on the form, even if there is no relevant information for that section.
- ✎ If you have problems getting a MSDS within 30 calendar days after making a written request to the chemical manufacturer, importer, or distributor, you can get help from WISHA. You may contact your local regional office for assistance or make a written request for assistance to the:
  Department of Labor and Industries
  Right-to-Know Program
  P.O. Box 44610
  Olympia, Washington 98504-4610
- ✎ Include in your request:
  - A copy of the purchaser's written request to the chemical manufacturer, importer, or distributor
  - The name of the product suspected of containing a hazardous chemical
  - The identification number of the product, if available
  - A copy of the product label, if available
  - The name and address of the chemical manufacturer, importer, or distributor from whom the product was obtained

You must:

✎ Maintain a MSDS for each hazardous chemical:

- Keep copies of the required MSDSs for each hazardous chemical present in your workplace. These may be kept in any form, including as a part of operating procedures.

- Each MSDS must be in English. You may also keep copies in other languages.

Note:

- ✎ If you choose not to rely on MSDSs or labels provided by the manufacturer or importer, you must comply with the chemical hazard communication standard for manufacturers, importers, and distributors, WAC ((~~296-62-054~~)) 296-307-560 through 296-307-56050.
- ✎ It may be more appropriate to address the hazards of a process rather than individual hazardous chemicals. MSDSs can be designed to cover groups of hazardous chemicals in a work area.

AMENDATORY SECTION (Amending WSR 03-10-068, filed 5/6/03, effective 8/1/03)

WAC 296-307-55030 Inform and train your employees about hazardous chemicals in your workplace.

Note: The employer chemical hazard communication information and training requirements also apply to pesticides. Employers who have employees who are exposed to pesticides must be in compliance with this rule and the worker protection standards, WAC 296-307-12040.

You must:

✎ Provide employees with effective information on hazardous chemicals in their work area at the time of their initial job assignment. Whenever a new physical or health hazard related to chemical exposure is introduced into their employees' work areas, information must be provided.

– Inform employees of:

② The requirements of this rule.

② Any operations in their work area where hazardous chemicals are present.

② The location and availability of your written Chemical Hazard Communication Program, including the list(s) of hazardous chemicals and material safety data sheets (MSDSs) required by this rule.

✎ Provide employees with effective training about hazardous chemicals in their work area at the time of their initial job assignment. Whenever a new physical or health hazard related to chemical exposure is introduced, the employees must be trained.

✎ Make sure that employee training includes:

– Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area. Examples of these methods and observations may include:

② Monitoring conducted by you

② Continuous monitoring devices

② Visual appearance or odor of hazardous chemicals when being released

– Physical and health hazards of the chemicals in the work area, including the likely physical symptoms or effects of overexposure

– Steps employees can take to protect themselves from the chemical hazards in your workplace, including specific procedures implemented by you to protect employees from exposure to hazardous chemicals. Specific procedures may include:

✂ Appropriate work practices

✂ Engineering controls

✂ Emergency procedures

✂ Personal protective equipment to be used

– Details of the Chemical Hazard Communication Program developed by you, including an explanation of the labeling system and the MSDS, and how employees can obtain and use the appropriate hazard information.

✎ Tailor information and training to the types of hazards to which employees will be exposed. The information and training may be designed to cover categories of hazards, such as flammability or cancer-causing potential, or it may address specific chemicals. Chemical-specific information must always be available through labels and MSDSs.

✎ Make reasonable efforts to post notices in your employees' native languages (as provided by the department) if those employees have trouble communicating in English.

Note:

✎ Interactive computer-based training or training videos can be used provided they are effective.

✎ Your MSDSs may not have WISHA permissible exposure limits (PELs) listed. In some cases, WISHA PELs are stricter than the OSHA PELs and other exposure limits listed on the MSDSs you receive. If this is the case, you must refer to the WISHA PEL table, WAC ((~~296-62-075~~)) 296-307-62625, for the appropriate exposure limits to be covered during training.

AMENDATORY SECTION (Amending WSR 01-17-033, filed 8/8/01, effective 9/1/01)

WAC 296-307-55035 Follow these rules for laboratories using hazardous chemicals.

Note: Laboratories are required to have a written Chemical Hygiene Plan under WAC 296-62-400, if applicable. They are not required to have a written Chemical Hazard Communication Program.
You may combine your Accident Prevention Program and Chemical Hazard Communication Program to assist you in developing a Chemical Hygiene Plan for your laboratory.

You must:

(1) Make sure that labels on incoming containers of hazardous chemicals are in place and readable.

(2) Maintain material safety data sheets (MSDSs) received with incoming shipments of hazardous chemicals and make them available to laboratory employees when they are in their work areas.

(3) Provide laboratory employees with information and training as described in: "Inform and train your employees about hazardous chemicals in your workplace," WAC 296-307-55030, except for the part about the location and availability of the written Chemical Hazard Communication Program.

Note: Laboratory employers that ship hazardous chemicals are considered to be either chemical manufacturers or distributors. When laboratory employers ship hazardous chemicals they must comply with the rule, ((~~"Hazard communication standards for chemical manufacturers, importers and distributors," WAC 296-62-054~~)) Material safety data sheets and label preparation, WAC 296-307-560 through 296-307-56050.

AMENDATORY SECTION (Amending WSR 01-17-033, filed 8/8/01, effective 9/1/01)

WAC 296-307-55060 Definitions.

Chemical

((~~Any element, chemical compound, or mixture of elements and/or compounds.~~)) An element or mixture of elements

OR

A compound or mixture of compounds

OR

A mixture of elements and compounds

Included are manufactured items (such as bricks, welding rods, and sheet metal) that are not exempt as an article.

Chemical manufacturer

An employer with a workplace where one or more chemicals are produced for use or distribution.

Chemical name

The scientific designation of a chemical ((~~in accordance with one of the following~~)) developed by the:

((~~The nomenclature system developed by the~~)) - International Union of Pure and Applied Chemistry (IUPAC)

OR

((~~The~~)) - Chemical abstracts service (CAS) rules of nomenclature

OR

((~~)~~)) - A name ((~~which will~~)) that clearly ((~~identify~~)) identifies the chemical for the purpose of conducting a hazard evaluation.

Combustible liquid

((~~A combustible liquid has~~)) Liquids with a flashpoint of at least 100°F (37.8°C) and below 200°F (93.3°C). A mixture((~~s~~)) with at least 99% of ((~~their~~)) its components having flashpoints of 200°F (93.3°C), or higher ((~~are~~)), is not considered a combustible liquid((~~s~~)).

Commercial account

An arrangement ((~~in which a retail distributor sells hazardous chemical(s) to an employer, generally in large quantities over time, and/or at costs that are below the regular retail price.~~)) where a retailer is selling hazardous chemicals to an employer

Generally in large quantities over time

OR

At costs below regular retail price.

Common name

Any designation or identification used to identify a chemical other than the chemical name, such as a:

- Code name or number

((- Code number)) OR

- Trade or brand name

((- Brand name)) OR

- Generic name ((used to identify a chemical other than by its chemical name)).

Compressed gas

A contained gas or mixture of gases ((that, when in a container, has)) with an absolute pressure ((exceeding)) greater than:

- 40 psi at 70°F (21.1°C)

OR

- 104 psi at 130°F (54.4°C) regardless of the pressure at 70°F (21.1°C)

OR

((Compressed gas can also mean)) A liquid with a vapor pressure ((that exceeds)) greater than 40 psi at 100°F (37.8°C) as determined by ASTM D323-72.

Container

((Any container, except for)) A vessel, other than a pipe((s)) or piping system((s)), that ((contains)) holds a hazardous chemical. ((It can be any of the following)) Examples include:

- Bags
- Barrels
- Bottles
- Boxes
- Cans
- Cylinders
- Drums
- Rail cars
- Reaction vessels
- Storage tanks.

Designated representative

- ((Any)) An individual or organization ((to which an employee gives)) with written authorization from an employee.

OR

- A recognized or certified collective bargaining agent ((without regard to written employee authorization)) (not necessarily authorized by an employee).

OR

- ((The)) A legal representative of a deceased or legally incapacitated employee.

Director

The director means the director of the department of labor and industries or their designee.

Distributor

A business, other than a chemical manufacturer or importer, that supplies hazardous chemicals to other distributors or to employers. See WAC ((~~296-62-054~~)) 296-307-560 through 296-307-56050 for requirements dealing with manufacturers, distributors and importers - hazard communication.

Employee

The term employee and other terms of like meaning, unless the context of the provision containing such term indicates otherwise, means an employee of an employer who is employed in the business of his or her employer whether by way of manual labor or otherwise and every person in this state who is engaged in the employment of or who is working under an independent contract the essence of which is personal labor for an employer under this standard whether by way of manual labor or otherwise.

Employer

An employer is any person, firm, corporation, partnership, business trust, legal representative, or other business entity which engages in any business, industry, profession, or activity in this state and employs one or more employees or who contracts with one or more persons, the essence of which is the personal labor of such person or persons and includes the state, counties, cities, and all municipal corporations, public corporations, political subdivisions of the state, and charitable organizations: Provided, That any persons, partnership, or business entity not having employees, and who is covered by the Industrial Insurance Act must be considered both an employer and an employee.

Explosive

A chemical that causes a sudden, almost instant release of pressure, gas, and heat when exposed to a sudden shock, pressure, or high temperature.

Exposure or exposed

An employee has been, or may have possibly been, subjected to a hazardous chemical, toxic substance or harmful physical agent while working. An employee could have been exposed to hazardous chemicals, toxic substances, or harmful physical agents in any of the following ways:

- Inhalation
- Ingestion
- Skin contact
- Absorption
- Related means.

The terms exposure and exposed only cover workplace exposure involving a toxic substance or harmful physical agent in the workplace different from typical nonoccupational situations in the way it is:

- Used

✎ Handled
✎ Stored
✎ Generated
OR
✎ Present.

Flammable

A chemical ((~~covered by~~)) in one of the following categories:

((~~✎ Aerosol flammable means an aerosol that, when tested by the method described in 16 CFR 1500.45 yields either a flame projection more than 18 inches at full valve opening or a flashback (a flame extending back to the valve) at any degree of valve opening;~~

~~✎ Gas, flammable means:~~

~~– A gas that, at temperature and pressure of the surrounding area, forms a flammable mixture with air at a concentration of 13% by volume or less; or~~

~~– A gas that, at temperature and pressure of the surrounding area, forms a range of flammable mixtures with air wider than 12% by volume, regardless of the lower limit;~~

~~✎ Liquid, flammable means any liquid having a flashpoint below 100°F (37.8°C), except any mixture having components with flashpoints of 100°F (37.8°C) or higher, the total of which make up 99% or more of the total volume of the mixture.~~

~~✎ Solid, flammable means a solid, other than a blasting agent or explosive as defined in WAC 296-52-417 or 29 CFR 1910.109(a), that is likely to cause fire through friction, moisture absorption, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily. Solid, inflammable also means that when the substance is ignited, it burns so powerfully and persistently that it creates a serious hazard. A chemical must be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.~~)) ✎ Aerosols that, when tested using a method described in 16 CFR 1500.45, yield either a:

– Flame projection of more than eighteen inches at full valve opening

OR

– A flashback (a flame extending back to the valve) at any degree of valve opening

✎ Gases that, at the temperature and pressure of the surrounding area, form a:

– Flammable mixture with air at a concentration of thirteen percent, by volume, or less

OR

– Range of flammable mixtures with air wider than twelve

percent, by volume, regardless of the lower limit

✎ Liquids with a flashpoint below 100☜F (37.8☜C). A mixture with at least ninety-nine percent of its components having flashpoints of 100☜F (37.8☜C), or higher, is not considered a flammable liquid

✎ Solids, other than blasting agents or explosives, as defined in WAC 296-52-417 or 29 CFR 1910.109(a), that:

– Is likely to cause fire through friction, moisture, absorption, spontaneous chemical change or retained heat from manufacturing or processing

OR

– That can be readily ignited (and when ignited burns so vigorously and persistently that it creates a serious hazard)

OR

– When tested by the method described in 16 CFR 1500.44, ignite and burn with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

Flashpoint

✎ The minimum temperature at which a liquid gives off ((~~a vapor in sufficient concentration to ignite~~)) an ignitable concentration of vapor, when tested by any of the following measurement methods:

– Tagliabue closed tester((~~: (See American National Standard Method of Test for Flash Point by Tag Closed Tester, Z11.24-1979 (ASTM D 56-79))~~)). Use this for liquids with a viscosity ((~~of~~)) less than 45 Saybolt Universal Seconds (SUS) at 100°F (37.8°C), that do not contain suspended solids and do not ((~~have a tendency~~)) tend to form a surface film under test((~~; or~~)). See American National Standard Method of Test for Flashpoint by Tag Closed Tester, Z11.24.1979 (ASTM D 56-79)

– Pensky-Martens closed tester((~~: (See American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 (ASTM D 93-79))~~)) for liquids with a viscosity equal to, or greater than, 45 SUS at 100°F (37.8°C), or for liquids that contain suspended solids, or ((~~that~~)) have a tendency to form a surface film under test((~~; or~~)). See American National Standard Method of Test for Flashpoint by Pensky-Martens Closed Tester, Z11.7.1979 (ASTM D 93-79)

– Setaflash closed tester: ((~~(~~))See American National Standard Method of Test for Flash Point by Setaflash Closed Tester (ASTM D 3278-78).((~~)~~))

((~~Note:~~)) Organic peroxides, which undergo auto accelerating thermal decomposition, are excluded from any of the flashpoint measurement methods specified above.

Foreseeable emergency

Any potential event that could result in an uncontrolled release of a hazardous chemical into the workplace. Examples of foreseeable emergencies include equipment failure, rupture of containers, or failure of control equipment.

Hazardous chemical

((~~Any~~)) A chemical ((~~that~~)), which is a physical or health hazard.

Hazard warning

((~~Can be a combination of~~)) Words, pictures, or symbols (alone or in combination), ((~~or combination appearing~~)) that appear on ((~~a~~)) labels (or other ((~~appropriate~~)) forms of warning ((~~which shows the~~)) such as placards or tags) that communicate specific physical and health hazard(s), (including target organ effects), ((~~of the~~)) associated with chemical(s) in ((~~the~~)) a container((~~(s)~~)).

((~~Note: See definition for physical hazard and health hazard to determine which hazards must be covered.~~))

Health hazard

((~~Any~~)) A chemical ((~~with the potential to cause acute or chronic~~)) that may cause health effects in short or long-term exposed employees((~~. The potential must be~~)) based on statistically significant ((~~based on~~)) evidence from ((~~at least one~~)) a single study conducted ((~~under~~)) by using established scientific principles. Health hazards include, but are not limited to, any of the following:

- ((~~Chemicals which are~~)) Carcinogens
- Toxic or highly toxic ((~~agents~~)) substances
- Reproductive toxins
- Irritants
- Corrosives
- Sensitizers
- Hepatotoxins (liver toxins)
- Nephrotoxins (kidney toxins)
- Neurotoxins (nervous system toxins)
- ((~~Agents which~~)) Substances that act on the hematopoietic system (blood or blood forming system)
- ((~~Agents which~~)) Substances that can damage the lungs, skin, eyes, or mucous membranes.

((~~**See WAC 296-62-054 for** more definitions and explanations about the scope of health hazards covered by this part.~~

~~**See WAC 296-62-054 for** the criteria used for determining whether or not a chemical is considered hazardous for purposes of this rule.~~))

Identity

((~~Any~~)) A chemical or common name listed on the material safety data sheet (MSDS) ((~~for the specific chemical. Each identity used must allow cross-references among the:~~

- ~~Required list of hazardous chemicals~~
- ~~Chemical label~~
- ~~MSDSs~~)) and label.

Importer

The first business within the customs territory of the USA that:

- Receives hazardous chemicals produced in other countries AND
- Supplies them to manufacturers, distributors or employers within the USA.

((~~**See WAC 296-62-054 for** requirements dealing with manufacturers, importers and distributors - hazard communication.~~))

Material safety data sheet (MSDS)

Written ((~~or~~)), printed ((~~material~~)) or electronic information (on paper, microfiche, or on-screen) that ((~~tells you about the chemical(s), what it can do to and how to protect yourself, others, or the environment.~~

~~For requirements for developing MSDSs see WAC 296-62-054--manufacturers, importers, and distributors - hazard communication~~)) informs manufacturers, distributors or employers about the chemical, its hazards and protective measures as required by this rule.

Mixture

((~~Any~~)) A combination of 2 or more chemicals ((~~(if that combination did not result from a chemical reaction)~~)) that retain their chemical identity after being combined.

Organic peroxide

((~~This is~~)) An organic compound containing the bivalent-0-0-structure. It may be considered a structural derivative of hydrogen peroxide if one or both of the hydrogen atoms has been replaced by an organic radical.

Oxidizer

A chemical, other than a blasting agent or explosive as defined in WAC 296-52-417 or CFR 1910.109(a), that starts or promotes combustion in other materials, causing fire either of itself or through the release of oxygen or other gases.

Permissible exposure limits (PELs)

((~~PELs are airborne concentrations of substances measured by their concentration in the air no matter what amount is breathed by the employee. The permissible exposure limits (PELs) must include the following four categories:~~

- ~~Permissible exposure limits - Time-weighted average (PEL-TWA) is the time-weighted average airborne exposure to any 8-hour work shift of a 40-hour work week and must not be exceeded.~~
- ~~Permissible exposure limits - Short-term exposure limit (PEL-STEL) is the employee's 15-minute time-weighted average exposure which must not be exceeded at any time during a work day unless another time limit is specified in a parenthetical notation below the limit. If another time period is specified, the time-weighted average exposure over that time period must not be exceeded at any time during the working day.~~
- ~~Permissible exposure limits - Ceiling (PEL-C) is the employee's exposure which must not be exceeded during any part of the work day. If instantaneous monitoring is not feasible,~~

~~then the ceiling must be assessed as a 15-minute time-weighted average exposure which must not be exceeded at any time over a working day.~~

~~- Skin notation is the potential contribution to the overall employee exposure by the cutaneous route including mucous membranes and eye, either by airborne, or more particularly, by direct contact with the substance. These substances are identified as having a skin notation in the OSHA and WISHA PEL tables (29 CFR Part 1910 Subpart Z and WAC 296-62-075, respectively).~~)) See WAC 296-307-628 for the definition of this term.

Physical hazard

A chemical that has scientifically valid evidence to show it is one of the following:

- A combustible liquid
- A compressed gas
- Explosive
- Flammable
- An organic peroxide
- An oxidizer
- Pyrophoric
- Unstable (reactive)
- Water reactive.

Produce

((~~Any~~)) To do one or more of the following:

- Manufacture
- Process
- Formulate
- Blend
- Extract
- Generate
- Emit
- Repackage.

Purchaser

An employer who buys one or more hazardous chemicals to use in their workplace.

Pyrophoric

((~~A~~)) Chemicals ((~~is pyrophoric if it will~~)) that ignite spontaneously in the air ((~~when the~~)) at a temperature ((~~is~~)) of 130°F (54.4°C) or below.

Responsible party

Someone who can provide ((~~appropriate~~)) more information about the hazardous chemical and appropriate emergency procedures.

Specific chemical identity

This term applies to chemical substances. It can mean the:

- Chemical name
- Chemical abstracts service (CAS) registry number

- Any other information that reveals the precise chemical designation of the substance.

Trade secret

Any confidential:

- Formula
- Pattern
- Process
- Device
- Information
- Collection of information.

The trade secret is used in an employer's business and gives an opportunity to gain an advantage over competitors who do not know or use it.

See WAC 296-62-053 for requirements dealing with trade secrets.

Unstable (reactive)

((~~An unstable or reactive~~)) A chemical ((~~is one that~~)) in its pure state, or as produced or transported, that will vigorously polymerize, decompose, condense, or ((~~will~~)) become self-reactive under conditions of shocks, pressure or temperature.

Use

((~~Means to~~)) To do one or more of the following:

- Package
- Handle
- React
- Emit
- Extract
- Generate as a by-product
- Transfer.

Water-reactive

A ((~~water-reactive~~)) chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

Work area

A room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present.

Workplace

The term workplace means an establishment, job site, or project, at one geographical location containing one or more work areas.

Part Y-2
Material Safety Data Sheets and Label Preparation

AMENDATORY SECTION (Amending WSR 03-10-068, filed 5/6/03, effective 8/1/03)

WAC 296-307-560 Scope. This chapter sets minimum requirements for content and distribution of material safety data sheets (MSDSs) and labels for hazardous chemicals.

✎ This chapter applies when you do **one or more** of the following:

– Import, produce, or repackage chemicals, including manufactured items (such as bricks, welding rods, and sheet metal) that are not exempt as articles

– Sell or distribute hazardous chemicals to manufacturers, distributors or employers

– Choose not to rely on material safety data sheets (MSDSs) provided by the importer, manufacturer or distributor.

Note: ✎ You are not required to evaluate chemicals or create MSDSs for chemicals you did not produce or import. If you decide to evaluate chemicals or create MSDSs, then the requirements of this chapter will apply to you.
✎ Use Table 2 to determine which sections in this chapter apply to your workplace.

Exemptions: ✎ All of the following are **always** exempt from this chapter:
– Ionizing and nonionizing radiation
– Biological hazards
– Tobacco and tobacco products
✎ The chemicals and items listed in Table 1 are exempt from this chapter **under the conditions specified.**

Table 1
Conditional Exemptions From This Chapter

This chapter does NOT apply to	**When**
✎ Alcoholic beverages **OR** ✎ Foods	✎ Sold, used, or prepared in a retail establishment (such as a grocery store, restaurant, bar, or tavern)
✎ An article (manufactured item)	✎ It is not a fluid or particle **AND** ✎ It is formed to a specific shape or design during manufacture for a particular end use function[1] **AND** ✎ It releases only trace amounts of a hazardous chemical during normal use **AND** does not pose a physical or health risk to employees
✎ Consumer products	✎ Both criteria apply:

– Produced or distributed for sale meeting the definition of "consumer products" in the Consumer Product Safety Act (see U.S. Code, Title 15, Chapter 47, section 2052[2]) **OR** ✎ Hazardous household products – Meeting the definition of "hazardous substances" in the Federal Hazardous Substance Act (see U.S. Code, Title 15, Chapter 30, section 1261[2])	– They are used in the workplace for the same purpose as intended by the manufacturer or importer – The duration and frequency of an employee's exposure is no more than the range of exposures that consumers might reasonably experience
✎ Cosmetics	✎ Packaged and sold in retail establishments
✎ Drugs – Meeting the definition for "drugs" in the Federal Food, Drug, and Cosmetic Act (see U.S. Code, Title 21, Chapter 9, Subchapter II, section 321[2])	✎ In solid, final form (for example, tablets, or pills) for direct administration to the patient **OR** ✎ Packaged and sold in retail establishments (for example, over-the-counter drugs) **OR** ✎ Intended for employee consumption while in the workplace (for example, first-aid supplies)
✎ Hazardous solid wastes	✎ Subject to the United States Environmental Protection Agency (EPA) regulations[3]

– Meeting the definition of "hazardous wastes" in the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (see U.S. Code, Title 42, Chapter 82, Subchapter I, section 6903[2])	
✎ Hazardous substances – Released into the environment, meeting the definition of "hazardous substances" in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (see U.S. Code, Title 42, Chapter 103, Subchapter I, section 9601[2])	✎ They are the focus of remedial or removal action being conducted under CERCLA in accordance with EPA regulations (Title 40 of the Code of Federal Regulations (CFR)[3])
✎ Hazardous wastes – Meeting the definition of "dangerous wastes" in the Hazardous Waste Management Act (see chapter 70.105 RCW[4])	✎ Subject to department of ecology regulations, chapter 173-303 WAC[5], that address the accumulation, handling and management of hazardous waste, and describe all of the following: – Safety – Labeling – Personnel training – And other related requirements
✎ Solid wood **OR** ✎ Wood products (for example, lumber, and paper)	✎ All of the following apply: – The material is not treated with hazardous chemicals – The only hazard is potential flammability or combustibility – The product is not expected to be processed (for example, by sanding or sawing)

[1]End use is dependent in whole, or in part, upon maintaining the item's original shape or design. If the item will be significantly altered from its original form, it can no longer be considered a manufactured item.

[2]This federal act is included in the United States Code. See http://www.access.gpo.gov/uscode/uscmain.html.

[3]EPA regulations are included in the Code of Federal Regulations (CFR). See http://www.epa.gov.

[4]This state act is included in the Revised Code of Washington (RCW). The RCW compiles all permanent laws of the state. See http://www.leg.wa.gov/wsladm/default.htm.

[5]See http://www.ecy.wa.gov.

Use Table 2 to find out which sections of this ((~~chapter~~))

part apply to you. For example, if you import **AND** sell hazardous chemicals **ALL** sections apply. WAC 296-307-56050 applies to all employers covered by the scope of this ((~~chapter~~)) part.

Table 2
Section Application

If you	**Then the sections marked with an "X" apply**			
	56010 - 56015	**56025**	**56030 - 56035**	**56045**
✎ Import or produce chemicals	X	X		
✎ Sell or distribute hazardous chemicals to – Manufacturers **OR** – Distributors **OR** – Employers (includes retail or wholesale transactions)			X	X
✎ Choose to **NOT** rely on MSDSs provided by the importer, manufacturer or distributor	X	X		

AMENDATORY SECTION (Amending WSR 03-10-068, filed 5/6/03, effective 8/1/03)

WAC 296-307-56025 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: – Name – Address – Telephone number of the responsible party preparing or distributing the MSDS
✎ The chemical's hazardous ingredients[1] as determined by your hazard evaluation – For a **single substance chemical,** include the chemical and common name(s) of the substance – For **mixtures** tested as a whole ✂ Include the common name(s) of the mixture **AND** ✂ 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 ✂ 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
✎ Exposure limits for airborne concentrations. Include **ALL** of the following, when they exist:

– WISHA or OSHA PELs[2]

✂ 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

✎ Physical and chemical characteristics

– For example, boiling point, vapor pressure, and odor

✎ Fire, explosion data, and related information

– For example, flashpoint, flammable and explosion limits, extinguishing media, and unusual fire or explosion hazards

✎ Physical hazards of the chemical including reactivity information
– For example, incompatibilities, decomposition products, by-products, and conditions to avoid

✎ Health hazard information including **ALL** of the following:
– Primary routes of exposure

✎ For example, inhalation, ingestion, and skin absorption or other contact[3]
– Health effects (or hazards) associated with:

✂ Short-term exposure[4]

AND

✂ Long-term exposure[4]

– Whether the chemical is listed or described as a carcinogen or potential carcinogen in the latest editions of each of the following:
✂ The National Toxicology Program (NTP) Annual Report on Carcinogens
OR

✂ The International Agency for Research on Cancer (IARC) Monographs as a potential carcinogen
OR

✂ WISHA or OSHA rules

– Signs and symptoms of exposure[5]

– Medical conditions generally recognized as being aggravated by exposure

✎ Emergency and first-aid procedures

✎ Generally applicable precautions for safe handling and use known to the employer preparing the MSDS

– For example, appropriate procedures for clean-up of spills and leaks, waste disposal method, precautions during handling and storing
✎ Generally applicable and appropriate control measures known to the employer preparing the MSDS, including **ALL** of the following: – 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

[1]The 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 ((~~296-62 WAC, Part H~~)) 296-307 WAC, Part Y-6.
[3]A "skin notation" listed with either an ACGIH TLV or WISHA/OSHA PEL indicates that skin absorption is a primary route of exposure.
[4]Examples 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.
[5]Signs 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.

AMENDATORY SECTION (Amending WSR 03-10-068, filed 5/6/03, effective 8/1/03)

WAC 296-307-56050 Definitions. The following definitions apply to this chapter:

Article (manufactured item)

A manufactured item that

✎ Is not a fluid or particle

AND

✎ Is formed to a specific shape or design during manufacture for a particular end use function

AND

✎ Releases only trace amounts of a hazardous chemical during normal use and does not pose a physical or health risk to employees.

Chemical

✎ An element or mixture of elements

OR

✎ A compound or mixture of compounds

OR

✎ A mixture of elements and compounds

Included are manufactured items (such as bricks, welding rods and sheet metal) that are not exempt as an article.

Chemical name

✎ The scientific designation of a chemical developed by the

– International union of pure and applied chemistry (IUPAC)

OR

– Chemical abstracts service (CAS) rules of nomenclature

OR

✎ A name that clearly identifies the chemical for the purpose of conducting a hazard evaluation.

Combustible liquid

Liquids with a flashpoint of at least 100℉ (37.8℃) and below 200℉ (93.3℃). A mixture with at least 99% of its components having flashpoints of 200℉ (93.3℃), or higher, is not considered a combustible liquid.

Commercial account

An arrangement where a retailer is selling hazardous chemicals to an employer

✎ Generally in large quantities over time

OR

✎ At costs below regular retail price.

Common name

Any designation or identification used to identify a chemical other than the chemical name, such as a

✎ Code name or number

OR

✎ Trade or brand name

OR

✎ Generic name.

Compressed gas

✎ A contained gas or mixture of gases with an absolute pressure greater than:

– 40 psi at 70℉ (21.1℃)

OR

– 104 psi at 130℉ (54.4℃) regardless of the pressure at 70℉ (21.1℃)

OR

✎ A liquid with a vapor pressure greater than 40 psi at 100℉ (37.8℃), as determined by ASTM D323-72.

Container

A vessel, other than a pipe or piping system, that holds a hazardous chemical. Examples include:

✎ Bags

✎ Barrels

✎ Bottles

✎ Boxes

✎ Cans

- Cylinders
- Drums
- Reaction vessels
- Storage tanks
- Rail cars.

Designated representative

- An individual or organization with written authorization from an employee

OR

- A recognized or certified collective bargaining agent (not necessarily authorized by an employee)

OR

- A legal representative of a deceased or legally incapacitated employee.

Distributor

A business that supplies hazardous chemicals to other employers. Included are employers who conduct retail and wholesale transactions.

Explosive

A chemical that causes a sudden, almost instant release of pressure, gas, and heat when exposed to a sudden shock, pressure, or high temperature.

Flammable

A chemical in one of the following categories:

- Aerosols that, when tested using a method described in 16 CFR 1500.45, yield either a:

– Flame projection of more than eighteen inches at full valve opening

OR

– A flashback (a flame extending back to the valve) at any degree of valve opening

- Gases that, at the temperature and pressure of the surrounding area, form a:

– Flammable mixture with air at a concentration of thirteen percent, by volume, or less

OR

– Range of flammable mixtures with air wider than twelve percent, by volume, regardless of the lower limit

- Liquids with a flashpoint below 100☜F (37.8☜C). A mixture with at least ninety-nine percent of its components having flashpoints of 100☜F (37.8☜C), or higher, is not considered a flammable liquid
- Solids, other than blasting agents or explosives, as defined in WAC 296-52-417 or 29 CFR 1910.109(a), that:

– Is likely to cause fire through friction, moisture, absorption, spontaneous chemical change or retained heat from manufacturing or processing

OR

– That can be readily ignited (and when ignited burns so vigorously and persistently that it creates a serious hazard)

OR

– When tested by the method described in 16 CFR 1500.44, ignite and burn with a self-sustained flame at a rate greater than 1/10th of an inch per second along its major axis.

Flashpoint

The minimum temperature at which a liquid gives off an ignitable concentration of vapor, when tested by any of the following measurement methods:

- Tagliabue closed tester. Use this for liquids with a viscosity less than 45 Saybolt Universal Seconds (SUS) at 100☜F (37.8☜C), that do not contain suspended solids and do not tend to form a surface film under test. See American National Standard Method of Test for Flashpoint by Tag Closed Tester, Z11.24-1979 (ASTM D 56-79)
- Pensky-Martens closed tester. Use this for liquids with a viscosity equal to, or greater than, 45 SUS at 100☜F (37.8☜C) or for liquids that contain suspended solids or have a tendency to form a surface film under test. See American National Standard Method of Test for Flashpoint by Pensky-Martens Closed Tester, Z11.7-1979 (ASTM D 93-79)
- Setaflash closed tester. See American National Standard Method of Test for Flashpoint by Setaflash Closed Tester (ASTM D 3278-78)

Organic peroxides, which undergo auto accelerating thermal decomposition, are excluded from any of the flashpoint measurement methods specified above.

Hazardous chemical

A chemical, which is a physical or health hazard.

Hazard warning

Words, pictures or symbols (alone or in combination) that appear on labels (or other forms of warning such as placards or tags) that communicate specific physical and health hazards (including target organ effects) associated with chemicals in a container.

Health hazard

A chemical that may cause health effects in short or long-term exposed employees based on statistically significant evidence from a single study conducted by using established scientific principles.

Health hazards include, but are not limited to, any of the following:

- Carcinogens
- Toxic or highly toxic substances
- Reproductive toxins
- Irritants
- Corrosives

- Sensitizers
- Hepatotoxins (liver toxins)
- Nephrotoxins (kidney toxins)
- Neurotoxins (nervous system toxins)
- Substances that act on the hematopoietic system (blood or blood forming system)
- Substances that can damage the lungs, skin, eyes, or mucous membranes.

Identity

A chemical or common name listed on the material safety data sheet (MSDS) and label.

Importer

The first business, within the Customs Territory of the United States, that receives hazardous chemicals produced in other countries and supplies them to manufacturers, distributors or employers within the United States.

Label

Written, printed, or graphic material displayed on, or attached to, a container of hazardous chemicals.

Manufacturer

An employer with a workplace where one or more chemicals (including items not exempt as "articles," see Table 1 in this ((~~chapter~~)) part) are produced for use or distribution.

Material safety data sheet (MSDS)

Written, printed or electronic information (on paper, microfiche, or on-screen) that informs manufacturers, distributors or employers about the chemical, its hazards and protective measures as required by this rule.

Mixture

A combination of two or more chemicals that retain their chemical identify after being combined.

Organic peroxide

An organic compound containing the bivalent-O-O-structure. It may be considered a structural derivative of hydrogen peroxide if one or both of the hydrogen atoms has been replaced by an organic radical.

Oxidizer

A chemical, other than a blasting agent or explosive as defined in WAC 296-52-417 or 29 CFR 1910.109(a), that starts or promotes combustion in other materials, causing fire either of itself or through the release of oxygen or other gases.

Permissible exposure limits

See ((~~chapter 296-62 WAC Part H~~)) WAC 296-307-628, for definition of this term.

Physical hazards

A chemical that has scientifically valid evidence to show it is one of the following:

- A combustible liquid

- A compressed gas
- Explosive
- Flammable
- An organic peroxide
- An oxidizer
- Pyrophoric
- Unstable (reactive)
- Water-reactive.

Produce

To do one or more of the following:

- Manufacture
- Process
- Formulate
- Blend
- Extract
- Generate
- Emit
- Repackage.

Pyrophoric

Chemicals that ignite spontaneously in the air at a temperature of 130☜F (54.4☜C) or below.

Responsible party

Someone who can provide more information about the hazardous chemical and appropriate emergency procedures.

Retailer

See "distributor."

Threshold limit values (TLVs)

Airborne concentrations of substances established by the American Conference of Governmental Industrial Hygienists (ACGIH), and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse health effects.

TLVs are specified in the most recent edition of the *Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices* and include the following categories:

- Threshold limit value-time-weighted average (TLV-TWA)
- Threshold limit value-short-term exposure limit (TLV-STEL)
- Threshold limit value-ceiling (TLV-C).

Unstable (reactive)

A chemical in its pure state, or as produced or transported, that will vigorously polymerize, decompose, condense, or become self-reactive under conditions of shocks, pressure or temperature.

Use

To do one or more of the following:

- Package

- Handle
- React
- Emit
- Extract
- Generate as a by-product
- Transfer.

Water-reactive

A chemical that reacts with water to release a gas that is either flammable or presents a heath hazard.

Wholesaler

See "distributor."

Part Y-3
Lighting

Part Y-4
Environmental Tobacco Smoke in the Office

Part Y-5
Respirators

NEW SECTION

WAC 296-307-594 Scope. This part 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 WAC 296-307-624 through 296-307-628, Respiratory hazards.

The term "respiratory hazards" will be used throughout this part 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 sections apply to you.

Table 1
Sections that apply to your workplace

If employees...	**Then the sections marked with an "X" apply...**					
	596	598	600	602-618	620	622
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 296-307-100, Personal protective equipment (PPE) to find requirements for other types of personal protective equipment (PPE), such as eye, hand, and head protection.

NEW SECTION

WAC 296-307-596 Respirator program administrator.

Your responsibility:

To make sure a capable individual is in charge of respirator program development and management.

NEW SECTION

WAC 296-307-59605 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.

You must:

✎ Designate a program administrator who has overall responsibility for your program and has sufficient training or experience to:

– Oversee program development and coordinate implementation

– Conduct required evaluations of program effectiveness outlined in WAC 296-307-60005.

NEW SECTION

WAC 296-307-598 Voluntary respirator use requirements.

Your responsibility:

To make sure voluntary use of respirators by employees does not create job safety or health hazards.

You must:

Make sure voluntary use of respirators is safe

WAC 296-307-59805

Keep voluntary use respirator program records

WAC 296-307-59810.

IMPORTANT:

✎ Respirator use is NOT voluntary if a respiratory hazard, such as exposure to a substance over the permissible exposure limit (PEL) or hazardous exposure to an airborne biological hazard, is present.

✎ To evaluate respiratory hazards in your workplace, see WAC 296-307-624, 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.

NEW SECTION

WAC 296-307-59805 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, use is NOT voluntary and the required use sections of this part apply.

You must:

(1) Make sure voluntary respirator use does **NOT:**

- Interfere with an employee's ability to work safely, such as restricting necessary vision or radio communication

OR

- 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.

You must:

(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 section, WAC 296-307-598, you do not need to provide the additional information in Table 2 to those employees.

You must:

(3) Develop and maintain a written program that includes the following:

- Medical evaluation provisions as specified in WAC 296-307-604.
- Procedures to properly clean and disinfect respirators, according to WAC 296-307-62015, if they are reused.
- How to properly store respirators, according to WAC 296-307-61010, so that using them does not create hazards.
- Procedures to make sure there is a safe air supply, according to WAC 296-307-616, when using air-line respirators and SCBAs.
- Training according to WAC 296-307-608 when necessary 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.

Exemption: If employees use only filtering-facepiece respirators and do so only voluntarily, you do not need to develop and maintain a written program.

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
✎ Respirators protect against airborne hazards when properly selected and used. 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: – 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. ✂ 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: ✂ 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. ✂ Situations where respirator use is required.

NEW SECTION

WAC 296-307-59810 Keep voluntary use program records.

Exemption: If employees use only filtering-facepiece respirators voluntarily, you do not need to follow these recordkeeping requirements.

You must:

✎ Keep copies of:

– Your current written respirator program

– Written recommendations from the LHCP

✎ Allow records required by this section to be examined and copied by affected employees and their representatives.

NEW SECTION

WAC 296-307-600 Written respirator program and recordkeeping.

Your responsibility:

To develop, implement, and maintain a written program that provides clear instruction for safe and reliable respirator use.

You must:
Develop and maintain a written program
WAC 296-307-60005
Keep respirator program records
WAC 296-307-60010.

NEW SECTION

WAC 296-307-60005 Develop and maintain a written program.

Exemption: This section does **NOT** apply to respirator use that is voluntary. See WAC 296-307-59805 for voluntary use program requirements.

You must:

(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.

You must:

(2) Keep your program current and effective by evaluating it and making corrections. Do ALL of the following:

✎ Make sure procedures and program specifications are followed and appropriate.

✎ 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.

✎ Have supervisors periodically monitor employee respirator use to make sure employees are using them properly.

✎ 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.

When developing your written program include applicable elements listed in Table 3.

Table 3

Required Elements for Required-Use Respirator Programs
✎ Selection: – 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

✎ Medical evaluation provisions

✎ Fit-test provisions and procedures, if tight-fitting respirators are selected

✎ Training provisions that address:

– Respiratory hazards encountered during:

✂ 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.

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 296-307-550, employer chemical hazard communication.

✎ Respirator use procedures for:

– Routine activities

– Infrequent activities

– Reasonably foreseeable emergencies

✎ Maintenance:

– Procedures and schedules for respirator maintenance covering:

✂ 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:

✂ 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)

✎ Procedures to ensure a safe air quantity and quality **IF** atmosphere-supplying respirators (air-line or SCBA) are selected

✎ Procedures for evaluating program effectiveness on a regular basis

NEW SECTION

WAC 296-307-60010 Keep respirator program records. You must:

✎ Keep the following records:

– Your current respirator program

– Each employee's current fit test record, if fit testing is conducted. Fit test records must include:

✂ Employee name

✂ Test date

✂ Type of fit-test performed

✂ Description (type, manufacturer, model, style, and size) of the respirator tested

✂ 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.

– Training records that include employee's names and the dates trained

– Written recommendations from the LHCP.

✎ Allow records required by this section to be examined and copied by affected employees and their representatives.

NEW SECTION

WAC 296-307-602 Respirator selection.

Your responsibility:

To select and provide respirators that are appropriate for the hazard, user, and worksite conditions.

Exemption: This section does NOT apply to voluntary respirator use. See WAC 296-307-598 of this part for voluntary use program requirements.

NEW SECTION

WAC 296-307-60205 Select and provide appropriate respirators.

IMPORTANT:

See WAC 296-307-624, Respiratory hazards, for:

✎ Hazard evaluation requirements. Evaluation results are necessary for respirator selection.

✎ A list of substance-specific rules that may also apply to you. Those listed rules have additional respirator selection requirements.

You must:

✎ 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 WAC 296-307-624, Respiratory hazards.

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 - 8,000	19.3 - 19.5
Above 8,000 feet the exception does not apply.	

Step 7: Identify respirator types with assigned protection factors (APFs) from Table 5 that are appropriate to protect employees from the expected exposure concentration.

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.

Step 9: Evaluate user and workplace factors that might compromise respirator performance, reliability or safety.

✎ If the respiratory hazard is a pesticide, follow the requirements on the pesticide label and skip to **Step 11.**

Examples:

✎ High humidity or temperature extremes in the workplace.

✎ Necessary voice communication.

✎ High traffic areas and moving machinery.

✎ 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 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).

✎ To maintain certification, make sure the respirator is used according to cautions and limitations specified on the NIOSH approval label.

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.

Table 5
Assigned Protection Factors (APF) for Respirator Types

If the respirator is a(n) ...	**Then the APF is ...**

Air-purifying respirator with a:	
✎ Half-facepiece	10
✎ Full-facepiece	100
Note: Half-facepiece includes 1/4 masks, filtering facepieces, and elastomeric facepieces.	
Powered air-purifying respirator (PAPR) with a:	
✎ Loose-fitting facepiece	25
✎ Half-facepiece	50
✎ Full-facepiece, equipped with HEPA filters, chemical cartridges or canisters	1000
✎ Hood or helmet, equipped with HEPA filters, chemical cartridges or canisters	1000
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, or pressure-demand mode	50
✎ Full-facepiece and designed to operate in demand mode	100
✎ Full-facepiece and designed to operate in continuous-flow OR pressure-demand mode	1000
✎ Helmet or hood and designed to operate in continuous-flow mode	1000
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	100
✎ Full-facepiece and designed to operate in pressure-demand mode	10,000
Combination respirators:	

✎ Find the APF for each type of respirator in the combination. ✎ Use the lower APF to represent the combination.	The lowest value

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 . . .
✎ Gas OR vapor	✎ Provide a respirator with canisters or cartridges equipped with a NIOSH-certified, end-of-service-life indicator (ESLI) **OR** ✎ 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 **OR** ✎ Select an atmosphere-supplying respirator
✎ Particle, such as a dust, spray, mist, fog, fume, or aerosol	✎ Select respirators with filters certified to be at least 95% efficient by NIOSH – For example, N95s, R99s, P100s, or High Efficiency Particulate Air filters (HEPA) **OR** ✎ 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. **Note:** These respirators are no longer sold for occupational use.

NEW SECTION

WAC 296-307-604 Medical evaluations.

Your responsibility:

To make sure a respirator used under your specific worksite conditions is not a health risk to employees.

Exemption: This section does **NOT** apply to employees who **only** use:

- Filtering-facepiece respirators voluntarily. See WAC 296-307-598 of this part for voluntary use requirements

OR

- Escape-only respirators that are mouthpiece, loose-fitting, or hooded respirators.

IMPORTANT:

- Using a respirator can create physical risks for an employee each time it is worn. The extent of these risks depends on these factors:
  - Type of respirator
  - Environmental conditions at the worksite
  - Physical demands of the work
  - Use of other protective clothing
  - Employee's health status.

NEW SECTION

WAC 296-307-60405 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.

You must:

- 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-facepiece 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 healthcare professional's (LHCP's) written recommendation approving the employee's use of the respirator chosen by you.

Step 2: Identify a licensed healthcare 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 part.

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 296-307-61605 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 296-307-61605.

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 296-307-602 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	- Before respirators are fit-tested or used in the workplace.
Subsequent medical evaluations	- If any of these occur: – Your licensed healthcare 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: ✂ 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.

NEW SECTION

WAC 296-307-606 Fit testing.

Your responsibility:

To make sure negative and positive-pressure tight-fitting respirators can provide an adequate fit and acceptable level of

comfort to employees.

Exemption: This section does **NOT** apply to any respirators that are:
- Voluntarily used. See WAC 296-307-598 for voluntary use requirements.
- Mouthpiece respirators.

IMPORTANT:

- Fit testing is an activity where the seal of a respirator is tested to determine if it is adequate.
- This section covers general **requirements** for fit testing. Fit-testing **procedures** are covered in WAC 296-307-62010 of this part.

NEW SECTION

WAC 296-307-60605 Conduct fit testing.

You must:

- Provide, at no cost to the employee, fit tests for ALL tight fitting respirators on the following schedule:
  - Before employees are assigned duties that may require the use of respirators
  - At least every twelve months after initial testing
  - 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 296-307-606 and 296-307-62010.

You must:

- Select an appropriate fit-testing procedure from WAC 296-307-62010 of this part AND:
  - 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.

– Make sure PAPRs, SCBAs, or air-line respirators are fit tested in negative-pressure mode.

✎ Make sure the person conducting fit testing is able to do ALL of the following:

– Prepare test solutions if required
– Make sure equipment works properly
– Perform tests properly
– Recognize invalid tests
– 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.

NEW SECTION

WAC 296-307-608 Training.

Your responsibility:

To make sure employees who are required to use respirators understand and can demonstrate proper respirator use and maintenance.

IMPORTANT:

This section applies to employees who voluntarily use respirators only when training is necessary to prevent the respirator from creating a hazard. See WAC 296-307-598 for voluntary use requirements.

NEW SECTION

WAC 296-307-60805 Provide effective training.

You must:

✎ Train employees, based on their duties, if they do any of the following:

– Use respirators
– Supervise respirator users
– Issue, repair, or adjust respirators

✎ 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.

You must:

✎ Make sure a qualified instructor provides training

✎ Provide training, at no cost to the employee, at these times:

– Initially, before worksite respirator use begins

– Periodically, within twelve months of the previous training

– 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.

You must:

✎ Make sure employees can demonstrate the following knowledge and skills as required by their duties:

– 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

– 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

– How improper fit, use, or maintenance can compromise the respirator's effectiveness and reliability

– How to properly inspect, put on, seal check, use, and remove the respirator

– How to clean, disinfect, repair, and store the respirator, or how to get this done by someone else

– How to use the respirator effectively in emergency situations; including what to do when a respirator fails and where emergency respirators are stored

– Medical signs and symptoms that may limit or prevent the effective use of respirators such as shortness of breath or dizziness

– The employer's general obligations under this part. For example, developing a written program, selecting appropriate respirators, and providing medical evaluations.

NEW SECTION

WAC 296-307-610 Maintenance.

Your responsibility:

To make sure respirators are maintained so they will function properly and not create health hazards such as skin irritation.

You must:

Maintain respirators in a clean and reliable condition
WAC 296-307-61005
Store respirators properly
WAC 296-307-61010
Inspect and repair respirators
WAC 296-307-61015

IMPORTANT:

This section applies to employees who voluntarily use respirators only when maintenance is necessary to prevent the respirator from creating a hazard. See WAC 296-307-598 for voluntary use requirements.

NEW SECTION

WAC 296-307-61005 Maintain respirators in a clean and reliable condition.

You must:

✎ Make sure respirators are kept, at no cost to the employee, clean, sanitary and in good working order. Do at least the following:

– Clean and disinfect respirators as often as specified in Table 8 of this section.

Note: ✎ Use required cleaning and disinfecting procedures in WAC 296-307-62015, **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.

You must:

✎ Make sure respirators are assembled properly after cleaning or disinfecting.

Use Table 8 to determine how often to clean and disinfect respirators.

Table 8
Required Frequencies for Cleaning and Disinfecting Respirators

If, the respirator will be . . .	Then, clean and disinfect the respirator . . .
✎ **Used exclusively** by one employee	✎ As often as needed to: – Keep it clean and functional **AND** – To prevent health hazards such as skin irritation
✎ Shared for nonemergency use **OR** ✎ Used for fit-testing or training	✎ **Before** it is worn by another employee
✎ Shared for emergency use	✎ **After** each use so the respirator is immediately ready for use at all times

NEW SECTION

WAC 296-307-61010 Store respirators properly.

You must:

✎ Store respirators to protect them from ALL of the following:

– Deformation of the facepiece or exhalation valve

– Sunlight or extreme temperatures or other conditions

– Contamination such as dust or damaging chemicals

– Excessive moisture.

Note: Use coffee cans, sealable plastic bags, or other suitable means of protection.

You must:

✎ Follow these additional requirements for emergency respirators:

– Keep respirators accessible to the work area

– Store respirators in compartments or with covers clearly marked as containing emergency respirators

– Follow additional storage instructions from the respirator manufacturer

– 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.

NEW SECTION

WAC 296-307-61015 Inspect and repair respirators.

You must:

✎ Conduct respirator inspections as often as specified in Table 9.

✎ Make sure respirator inspections cover **all** of the following:

– Respirator function

– Tightness of connections

– The condition of the facepiece, head straps, valves, connecting tubes, and cartridge, canisters or filters

– Pliability and deterioration of elastomeric parts

– Maintenance of air or oxygen cylinders

– Making sure SCBA air cylinders are at ninety percent of the manufacturer's recommended pressure level

– Proper functioning of SCBA regulators when air-flow is activated

– Proper functioning of SCBA low-pressure warning devices when activated

✎ Certify inspections for emergency respirators by documenting the following:

– Inspection date

– Serial number of each respirator or other identifying information

– Inspector's name or signature

– Inspection findings

– 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.

You must:

✎ 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:

✂ Do **NOT** permit such respirators to be used until properly repaired or adjusted

✂ Use only NIOSH-certified parts

✂ 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.

✂ Follow the manufacturer's recommendations and specifications for the type and extent of repairs.

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	✎ Before **each** use **AND** ✎ During cleaning **OR** ✎ Monthly if **NOT** used
Used for nonemergencies, including day-to-day or infrequent use	✎ Inspect before each use **AND** ✎ During cleaning
Used only for emergencies	✎ Check for proper function before **and** after **each** use **AND** ✎ Inspect at least monthly as instructed by the manufacturer
Used for escape-only purposes	✎ Before carrying into a work place for use

NEW SECTION

WAC 296-307-612 Safe use and removal of respirators.

Your responsibility:

To make sure respirator use and removal is safe.

Exemption: These sections do **NOT** apply to employees who voluntarily use any type of respirator. See WAC 296-307-598 for voluntary use requirements.

You must:

Prevent sealing problems with tight-fitting respirators WAC 296-307-61205

Make sure employees leave the use area before removing respirators WAC 296-307-61210.

NEW SECTION

WAC 296-307-61205 Prevent sealing problems with tight-fitting respirators.

You must:

✎ Make sure employees use the procedure in WAC 296-307-62020 to perform a user seal check each time they put on their tight-fitting respirator.

✎ 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.

✎ 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.

NEW SECTION

WAC 296-307-62010 Make sure employees leave the use area before removing respirators.

You must:

✎ 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.

NEW SECTION

WAC 296-307-614 Standby requirements for immediately dangerous to life or health (IDLH) conditions.

Your responsibility:

To provide adequate assistance to employees using respirators in conditions immediately dangerous to life or health (IDLH).

NEW SECTION

WAC 296-307-61405 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.

You must:

✎ 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.

✎ Train and equip standby employees to provide effective emergency rescue. Equip them with:

– A pressure-demand SCBA or a pressure-demand air-line respirator with an auxiliary SCBA, for each standby employee

– Appropriate retrieval equipment, when it would help with the effective rescue of the entrant, or an equivalent means of rescue

✎ Make sure standby employees maintain visual, voice, or signal line communication with employees in the IDLH area

✎ Make sure that in the event of an emergency:

– Standby employees notify you or your designee before they enter the IDLH area to provide emergency rescue

– You provide necessary assistance when notified.

NEW SECTION

WAC 296-307-616 Air quality for self-contained breathing apparatus (SCBA) and air-line respirators.

Your responsibility:

To provide employees who use SCBAs or air-line respirators with an acceptable air supply.

You must:

Make sure breathing air and oxygen meet established specifications

WAC 296-307-61605

Prevent conditions that could create a hazardous breathing air supply

WAC 296-307-61610

Make sure compressors do not create a hazardous breathing air supply

WAC 296-307-61615.

NEW SECTION

WAC 296-307-61605 Make sure breathing air and oxygen meet established specifications.

You must:

✎ Make sure that all SCBAs and air-line respirators are provided with safe breathing air and oxygen according to the following:

– Compressed breathing air must meet the following specifications for Grade D air:

✂ Oxygen (volume/volume) within 19.5-23.5%

✂ Hydrocarbon (condensed): NO MORE than five milligrams per cubic meter of air

✂ Carbon **monoxide** (CO): NO MORE than ten parts per million (ppm)

✂ Carbon **dioxide** (CO2): NO MORE than 1,000 ppm

✂ 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.

You must:

✎ Make sure the moisture content of the air supplied meets the following:

– Air supplied to respirators from cylinders must **NOT** exceed

a dew point of -50☜F (or -45.6☜C) at 1 atmospheric pressure.

– Compressor supplied air must **NOT** exceed a dew point of 10☜F (or 5.56☜C) **BELOW** the use temperature at 1 atmospheric pressure.

✐ Cylinders obtained from a supplier of breathing air must have a certificate of analysis that verifies each cylinder's contents meet Grade D and dew point standards.

✐ Compressed and liquid oxygen must meet the United States Pharmacopoeia requirements for medical or breathing oxygen.

NEW SECTION

WAC 296-307-61610 Prevent conditions that could create a hazardous breathing air supply.

You must:

✐ 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.

You must:

✐ 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.

✐ 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.

✐ 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%.

You must:

✐ 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 Parts 173 and 178.

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.

NEW SECTION

WAC 296-307-61615 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.

You must:

(1) Locate or modify compressor intakes so they will not pick up contaminated air OR exhaust gases such as carbon monoxide 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.

You must:

(2) Equip compressors with suitable air-purifying filters, water traps, and sorbents (such as charcoal beds) and maintain them as follows:

✎ Periodically change or clean them according to the manufacturer or supplier's instructions

✎ 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 at the point where the manifold respirator hose is attached.

You must:

(3) Make sure the carbon monoxide (CO) level in breathing air from compressors does **NOT** exceed ten parts per million (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).

You must:

✎ Maintain CO levels in oil lubricated compressors by using at least one of the following:

– An effective CO alarm

– An effective high temperature alarm **AND** testing the air supply often enough to see if CO levels exceed ten ppm.

Note: ✎ 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
✎ 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.

NEW SECTION

WAC 296-307-618 Labeling of air-purifying respirator filters, cartridges, and canisters.

Your responsibility:

To make sure employees, their supervisors, and program administrators can easily check for the correct air-purifying filters, cartridges, and canisters on respirators.

Exemption: This section does **NOT** apply to filtering-facepiece respirators when used voluntarily. See WAC 296-307-598 for voluntary use requirements.

NEW SECTION

WAC 296-307-61805 Keep labels readable on respirator filters, cartridges, and canisters during use.

You must:

✎ Make sure the NIOSH certification labeling and color-coding on air-purifying respirator filters, cartridges, and canisters remains readable and intact during use.

NEW SECTION

WAC 296-307-620 Required procedures for respiratory protection program.

Your responsibility:

To use the procedures and questionnaire provided in this section when implementing your respiratory protection program.

You must:

Use this medical questionnaire for medical evaluations WAC 296-307-62005

Follow these fit-testing procedures for tight-fitting respirators WAC 296-307-62010

Follow procedures established for cleaning and disinfecting respirators WAC 296-307-62015

Follow procedures established for seal checking respirators WAC 296-307-62020.

NEW SECTION

WAC 296-307-62005 Use this medical questionnaire for medical evaluations.

You must:

✎ 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 296-307-604 of this part are met.
✎ You may choose to send the questionnaire to the LCHP 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:
✎ You may use on-line questionnaires if the requirements in WAC 296-307-60405 are met. ✎ You must tell your employee how to deliver or send the completed questionnaire to the healthcare provider you have selected.

✎ You must **NOT** review employees' questionnaires.

Healthcare provider's instructions:

✎ 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.
✎ 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's 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 healthcare 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 healthcare 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 *currently* 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 *ever had* 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 *ever had* 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's 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 *currently* 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 *ever had* 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 healthcare 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 *ever lost* vision in either eye (temporarily or permanently)?	Yes	/	No
2. Do you *currently* 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 *ever had* an injury to your ears, including a broken ear drum?	Yes	/	No
4. Do you *currently* 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 *ever had* a back injury?	Yes	/	No
6. Do you *currently* 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 healthcare 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 *per week*: Yes / No

d. Less than 2 hours *per day*: 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. *Light* (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. *Moderate* (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).

NEW SECTION

WAC 296-307-62010 Follow these fit-testing procedures for tight-fitting respirators.

IMPORTANT:

✎ This section contains procedural requirements that apply during actual fit testing.

✎ See WAC 296-307-606 of this part 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.

You must:

✎ Conduct fit testing according to all of the following:

– Follow the procedure in Table 11 to choose a respirator for fit testing:

✂ Prior to conducting fit tests

AND

✂ Any time your employee must select a different respirator such as when a previously selected respirator fails a test

– Select and follow at least one of the following fit test procedures:

✂ Qualitative fit-test procedures:

② Isoamyl acetate vapor (IAA, banana oil) in Table 12

② Saccharine aerosol in Table 13

② Bitrex™ aerosol in Table 14

② Irritant smoke in Table 15

✂ Quantitative fit-test procedures:

② Ambient aerosol condensation nuclei counter such as the Portacount™, in Table 16

② Controlled negative pressure (CNP) such as the FitTester 3000™, in Table 17

② Generated aerosol in Table 18

– Make sure employees perform the appropriate fit-test exercises listed in Table 19.

– Clean and maintain equipment according to the manufacturer's instructions.

– Make sure during fit testing employees wear any safety equipment that could:

✂ Interfere with respirator fit

AND

✂ Be worn in the workplace. For example, chemical splash goggles.

– 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
1. **Inform** the employee: ✎ 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 2. **Provide** a mirror and show the employee how to: ✎ Put on the respirator ✎ Position the respirator on the face ✎ Set strap tension. **Note:** This instruction does NOT take the place of the employee's formal training since it is only a review. 3. **Review** with the employee how to check for a comfortable fit around the nose, cheeks and other areas on the face. ✎ Tell the employee the respirator should be comfortable while talking or wearing eye protection. 4. **Have the employee** hold each facepiece against the face, taking enough time to compare the fit of each. The employee can then either: ✎ Reject any facepiece that clearly does not feel comfortable or fit adequately **OR** ✎ Choose which facepiece is most acceptable and which is less acceptable, if any. **Note:** ✎ Supply as many respirator models and sizes as needed to make sure the employee finds a respirator that's 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.

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:

- Ask the employee to observe and comment about the comfort and fit:
  - 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:
  - 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 296-307-62020 of this chapter
  - Prior to the seal check they must settle the respirator on their face by taking a few slow deep breaths **WHILE SLOWLY:**
    - Moving their head from side-to-side

    AND

    - Up and down.

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.

7. **Before starting the fit test,** you must:

- Describe the fit test including screening procedures, employee responsibilities, and test exercises

AND

- Make sure the employee wears the respirator **AT LEAST** five minutes.

Table 12

Isoamyl Acetate (Banana Oil) Vapor Test Procedure
Important: • 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 – Vapor accumulations in ambient air can decrease odor sensitivity. To prevent this:

✂ 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's 25°C (77°F).

✎ Isoamyl acetate is also known as isopentyl acetate.

Screening Preparations

Important:

Odor threshold screening determines if the employee can detect weak concentrations of IAA vapor.

1. Choose an appropriate location to conduct screening.

✎ Conduct screening and tests in separate well-ventilated rooms.

2. Prepare a stock solution **AT LEAST** weekly as follows:

✎ 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:

✎ 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."

Note:
To maintain the integrity of the test, use labels that peel off easily **AND** periodically switch the labels.

4. Prepare a "test blank" solution as follows:

✎ 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.

5. Type or neatly print the following instructions on a card and place it on the table in front of the two test jars:

"*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.*
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.

Tell the individual conducting the fit test which jar contains banana oil."

Test Preparations

6. Choose an appropriate location to conduct fit testing.

- Conduct screening and tests in separate well-ventilated rooms.

7. Assemble the fit test enclosure in the room.

- Invert a clear 55-gallon drum liner over a circular 2-foot diameter frame made of plywood or other lightweight 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 28) to the inside of the test enclosure where the employee can read it.

8. Have organic vapor cartridges or equivalent on hand for each employee's chosen respirator.
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.

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.

Screening

10. Have the employee, while **NOT** wearing a respirator, follow the instructions on the card provided.
    - 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.

Test

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.
12. Wet the paper towel with 0.75 ml of **pure** IAA **AND** fold it in half.
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.
14. Wait two minutes for the IAA vapor to fill the enclosure.
    - 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.

15. Have the employee perform the appropriate fit-test exercises in Table 19.

✎ If the employee does **NOT** detect IAA while performing test exercises, the fit test has been **PASSED.** Proceed as follows:

– **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:

– 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

✂ 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

Saccharin Aerosol Test Procedure
Screening Preparations
Important: ✎ This is a qualitative fit-test (QLFT) procedure ✎ Taste threshold screening determines whether the employee being tested can detect the taste of saccharin – 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: ✂ Each morning and afternoon **OR** ✂ At least every four hours. ✎ You may use commercially prepared solutions if they meet the requirements in this procedure.

1. Obtain a test enclosure (hood) that meets the following specifications:
- Twelve inches in diameter by fourteen inches tall
- 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.

Note:
- 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.

2. Obtain and assemble two clean DeVilbiss Model 40 Inhalation Medication Nebulizers OR equivalent.
3. Prepare the screening solution as follows:
- Dissolve 83.0 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.

4. Add about 1 ml of the screening solution to one of the nebulizers.
- Mark this nebulizer to distinguish it from the one to be used for fit testing.

Test Preparations

5. Prepare the fit-test solution as follows:
- Add 83.0 grams of sodium saccharin to 100 ml of warm water.

6. Add about 1 ml of the test solution to the second nebulizer.
- Mark this nebulizer to distinguish it from the one used for screening

7. Have particulate filters ready for the employee's chosen respirator or have filtering-facepiece respirators ready.

Screening

8. Have the employee, while NOT wearing a respirator, put on the test enclosure.
9. Instruct the employee to:
- Breath through a slightly open mouth with tongue extended during screening **AND** testing
- Immediately report when a sweet taste is detected.

10. Insert the nebulizer into the front hole of the test enclosure **AND** administer saccharin as follows:
- 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.

11. Ask the employee if a sweet taste is detected.

✎ If **YES,** screening is completed. Proceed to conduct testing, Step 14, **AFTER** you:
– 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.

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.

✎ 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.

13. If **NO** sweet taste is reported after 30 squeezes, you must **STOP** and choose a different fit-test protocol for the employee.

Test

Important!

✎ 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.

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).

15. Instruct the employee to immediately report if a sweet taste is detected.

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.

17. Have the employee perform the appropriate fit-test exercises as described in Table 19. During this step:

✎ 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:
– If **NO** saccharin is tasted, the test has been **PASSED**
✂ 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

Important!

✎ This is a qualitative fit-test (QLFT) procedure

✎ Bitrex™ (denatonium benzoate) is routinely used as a taste aversion agent in household liquids that children shouldn't 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

Important!

✎ 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:

– Each morning and afternoon

OR

– At least every four hours.

✎ You may use commercially prepared solutions if they meet the requirements in this procedure.

1. Obtain a test enclosure that meets the following specifications:

✎ 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.

Note:

✎ 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.

2. Obtain and assemble two clean DeVilbiss Model 40 Inhalation Medication Nebulizers OR equivalent:

3. Prepare the screening solution as follows:

✎ 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.

4. Add about 1 ml of the screening solution to one of the nebulizers.

✎ Mark this nebulizer to distinguish it from the one to be used for fit testing.

Test Preparations

5. Prepare the fit test solution.

- ✎ 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.

6. Add about 1 ml of the test solution to the second nebulizer.

- ✎ Mark this nebulizer to distinguish it from the one used for screening.

7. Have particulate filters ready for the employee's chosen respirator or have filtering-facepiece respirators ready.

Screening

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

8. Have the employee, while **NOT** wearing a respirator, put on the test enclosure.
9. Instruct the employee to:

- ✎ Breath through a slightly opened mouth with tongue extended during screening **AND** testing
- ✎ Immediately report when a bitter taste is detected.

10. Insert the nebulizer into the front hole of the test enclosure **AND** administer Bitrex™ as follows:

- ✎ 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.

11. Ask the employee whether a bitter taste is detected.

- ✎ If **YES,** screening is completed. Proceed to conduct testing, Step 14, **AFTER** you:
  - – 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.

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.

- ✎ 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.

13. If **NO** bitter taste is reported after 30 squeezes, you must **STOP** and choose a different fit-test protocol for the employee.

Test

14. Have the employee attach particulate filters, put on, properly adjust, and seal check the respirator. Have the employee put on the test enclosure.
15. Instruct the employee to:

- Breathe through a slightly opened mouth with tongue extended during screening **AND** testing
- Immediately report when a bitter taste is detected.

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.
17. Have the employee perform the appropriate fit-test exercises as described in Table 19. During this step:
- 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:
  - If **NO** Bitrex™ is tasted, the test has been **PASSED**
  - If Bitrex™ is tasted the test has **FAILED.** Have the employee:
    - Select another respirator

    AND

    - Repeat all screening and testing steps.

Table 15

Irritant Smoke (Stannic Chloride) Test Procedure
Important: **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.
Screening AND Test Preparations
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.

1. 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.
2. 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

Important!

When performing sensitivity screening checks use only the **MINIMUM** amount of smoke necessary to elicit a response from the employee.

3. 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.
4. 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.
5. 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.
   - Carefully direct a small amount of irritant smoke toward the employee.

Test

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.
7. Remind the employee to keep eyes closed during testing.
8. Direct a stream of irritant smoke toward the respirator's face seal area as follows:
   - 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.
9. 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.

✎ Continue to direct smoke from a distance of 6 inches around the facepiece perimeter
– 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.

10. Have the employee remove the respirator **AND** perform another sensitivity screening check as follows:
✎ Continue to use the smoke tube used for fit testing

✎ Carefully direct a **SMALL** amount of irritant smoke toward the employee
– 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
Important: ✎ 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
1. Obtain a test instrument such as a Portacount™. 2. 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. **Note:** ✎ 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. 3. 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: ✎ 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

4. 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.

✎ If you'll use a sampling adapter instead of probed respirators be sure to have the correct type for the respirators chosen.

Test

5. Properly attach the sampling line to the facepiece probe or sampling adapter.

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:

✎ 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.

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.

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:

✎ Determine the cause

AND

✎ If leakage is due to a poorly fitting facepiece, have the employee:

– Choose another respirator size or model

AND

– Start again at Step 6.

8. Start the fit test cycle.

✎ Follow the manufacturer's instructions for operating the test instrument

✎ Have the employee perform the appropriate fit-test exercises in Table 19

– The test instrument will automatically stop and calculate the overall fit factor. Use this result to determine whether or not the test is passed

✂ 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.
Note:
If the test has failed, have the employee select another respirator model or size following Table 11 **AND** repeat this procedure.

Table 17

Controlled Negative Pressure (CNP) Test Procedure
Important! ✎ 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 ✎ Measurements occur while employees remain still **AND** hold their breath for 10 seconds ✎ No test aerosols are used. Respirator cartridges aren't needed for this test.
Test Preparations
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: ✎ Defaults are set at: – -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. **Note:** ✎ 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.

Note:

✎ 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.

Test

Important!

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.

4. Explain the test procedure to the employee.

5. Train the employee on how to hold a breath for at least 20 seconds.

6. Prepare the respirator for the fit test as follows:

✎ 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

– 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.

8. Turn on the instrument **AND** have the employee stand and perform the fit-test exercises in Table 19.

9. Interpret the test results:

✎ 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

✂ 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) = Average test enclosure concentration

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

✎ 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:**

$$\text{Overall fit factor} = \frac{n}{1/ffE1 + 1/ffE2 + 1/ffE3 \ldots + 1/ffEn}$$

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[1] ✂ 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 – **Premeasurement activity:** Stand and breath normally, without talking – **Measurement position:** Face forward while holding breath for 10 seconds			X
✎ Bending over – **Premeasurement activity:** While standing, bend over to touch toes – **Measurement position:** Hold the bending position with face parallel to the floor while holding breath for 10 seconds			X
✎ Head shaking – **Premeasurement activity:** Vigorously shake head from side to side for 3 seconds while shouting or making the sound of "BRRRR" loudly – **Measurement position:** Face forward, while holding breath for 10 seconds			X
✎ Redon-1 – **Premeasurement activity:** Remove the respirator completely and put it back on – **Measurement position:** Face forward while holding breath for 10 seconds			X
✎ Redon-2 – Repeat the premeasurement activity and measurement position described in Redon-1			X

[1]The 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."

NEW SECTION

WAC 296-307-62015 Follow procedures established for cleaning and disinfecting respirators.

You must:

✎ 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. ✎ 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 ✎ 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: – 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: ✂ 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.
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.

NEW SECTION

WAC 296-307-62020 Follow procedures established for seal checking respirators.

IMPORTANT:

✎ User seal checks are **NOT** a substitute for fit tests. See WAC 296-307-62010 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.

You must:

✎ 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
Important information for employees: ✎ 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.
Positive pressure check: 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). ✎ 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.
Negative pressure check: 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. ✎ 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.

NEW SECTION

WAC 296-307-622 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 expected level of workplace respiratory

protection WHEN 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 296-307-616.

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 healthcare professional (LHCP)

An individual whose legally permitted scope of medical practice allows him or her to provide **SOME OR ALL** of the healthcare 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 WAC 296-307-624, Identifying and controlling airborne hazards and oxygen deficiency.

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
- The employer for his or her own reasons. For example, the employer decides to follow more rigorous exposure limits, **OR** the employer is required to follow a medical recommendation.

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 cartridge 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 aren't tight-fitting facepieces.

Voluntary use

Respirator use that is requested by the employee **AND** permitted by the employer when **NO** respiratory hazard exists.

REPEALER

The following sections of the Washington Administrative Code are repealed:

WAC 296-62-071	Respiratory protection.
WAC 296-62-07101	To whom does chapter 296-62 WAC, Part E apply?
WAC 296-62-07102	When are you allowed to rely on respirators to protect employees from breathing contaminated air?
WAC 296-62-07103	What are your responsibilities as an employer?
WAC 296-62-07105	Definitions.
WAC 296-62-07107	When is a respiratory protection program required?
WAC 296-62-07109	When must you update your written respiratory protection program?
WAC 296-62-07111	What must be included in your written respiratory protection program?
WAC 296-62-07113	What are the requirements for a program administrator?
WAC 296-62-07115	Who pays for the respirators, training, medical evaluations, and fit testing?
WAC 296-62-07117	What must you do when employees choose to wear respirators when respirators are not required?
WAC 296-62-07130	What must be considered when selecting any respirator?
WAC 296-62-07131	What else must you consider when selecting a respirator for use in atmospheres that are not IDLH?
WAC 296-62-07132	What else must you consider when selecting a respirator for use in IDLH atmospheres?
WAC 296-62-07133	What else must you consider when selecting a respirator for emergency and rescue use?
WAC 296-62-07150	What are the general requirements for medical evaluations?
WAC 296-62-07151	Who must perform medical evaluations?
WAC 296-62-07152	What information must you provide

	to the PLHCP in addition to the questionnaire?
WAC 296-62-07153	How must the medical evaluations and the questionnaire be administered?
WAC 296-62-07154	Who must review the questionnaire and determine what, if any, follow-up evaluations are needed?
WAC 296-62-07155	What must be included in the PLHCP's written recommendation?
WAC 296-62-07156	When are future medical evaluations required?
WAC 296-62-07160	When is fit testing required?
WAC 296-62-07161	What is required when an employee finds the respirator's fit unacceptable?
WAC 296-62-07162	How must fit testing be done?
WAC 296-62-07170	How must you prevent problems with the seal on tight-fitting facepieces?
WAC 296-62-07171	How do you monitor continuing effectiveness of your employees' respirators?
WAC 296-62-07172	What are the standby procedures when respirators are used in IDLH situations?
WAC 296-62-07175	How must respirators be cleaned and disinfected?
WAC 296-62-07176	How must respirators be stored?
WAC 296-62-07177	When must respirators be inspected?
WAC 296-62-07178	How must respirators be inspected and maintained?
WAC 296-62-07179	How must respirators be repaired and adjusted?
WAC 296-62-07182	What are the breathing gas requirements for atmosphere-supplying respirators?
WAC 296-62-07184	How must filters, cartridges and canisters be labeled?
WAC 296-62-07186	What are the general training requirements?
WAC 296-62-07188	How do you know if you adequately trained your employees?
WAC 296-62-07190	When must your employees be trained?
WAC 296-62-07192	How must you evaluate the effectiveness of your respiratory protection program?

WAC 296-62-07194	What are the recordkeeping requirements?
WAC 296-62-07201	Appendix A-1: General fit testing requirements for respiratory protection--Mandatory.
WAC 296-62-07202	What are the general requirements for fit testing?
WAC 296-62-07203	What are the fit test exercise requirements?
WAC 296-62-07205	Appendix A-2: Qualitative fit testing (QLFT) protocols for respiratory protection--Mandatory.
WAC 296-62-07206	What are the general qualitative fit testing (QLFT) protocols?
WAC 296-62-07208	Isoamyl acetate protocol (a QLFT).
WAC 296-62-07209	What are the odor threshold screening procedures for isoamyl acetate (QLFT)?
WAC 296-62-07210	What are the isoamyl acetate fit testing procedures (QLFT)?
WAC 296-62-07212	Saccharin solution aerosol protocol (QLFT).
WAC 296-62-07213	What are the taste threshold screening procedures for saccharin (QLFT)?
WAC 296-62-07214	What is the saccharin solution aerosol fit testing procedure (QLFT)?
WAC 296-62-07217	Bitrex™ (denatonium benzoate) solution aerosol qualitative fit testing (QLFT) protocol.
WAC 296-62-07218	What is the taste threshold screening procedure for Bitrex™ (QLFT)?
WAC 296-62-07219	What is the Bitrex™ solution aerosol fit testing procedure (QLFT)?
WAC 296-62-07222	Irritant smoke (stannic chloride) protocol (QLFT).
WAC 296-62-07223	What are the general requirements and precautions for irritant smoke fit testing (QLFT)?
WAC 296-62-07224	What is the sensitivity screening check protocol for irritant smoke (QLFT)?
WAC 296-62-07225	What is the irritant smoke fit testing procedure (QLFT)?
WAC 296-62-07230	Appendix A-3: Quantitative fit testing (QNFT) protocols for

	respiratory protection--Mandatory.
WAC 296-62-07231	What are the general requirements for quantitative fit testing (QNFT)?
WAC 296-62-07233	Generated aerosol quantitative fit testing protocol (QNFT).
WAC 296-62-07234	What equipment is required for generated aerosol fit testing (QNFT)?
WAC 296-62-07235	What are the procedures for generated aerosol quantitative fit testing (QNFT)?
WAC 296-62-07236	How are fit factors calculated (QNFT)?
WAC 296-62-07238	Ambient aerosol condensation nuclei counter (CNC) quantitative fit testing protocol.
WAC 296-62-07239	General information about ambient aerosol condensation nuclei counter (CNC) protocol (QNFT).
WAC 296-62-07240	What are the general requirements for ambient aerosol condensation nuclei counter (CNC) protocol (QNFT)?
WAC 296-62-07242	What are the Portacount fit testing procedures?
WAC 296-62-07243	How is the Portacount test instrument used?
WAC 296-62-07245	Controlled negative pressure (CNP) quantitative fit testing protocol (QNFT).
WAC 296-62-07246	How does controlled negative pressure (CNP) fit testing work (QNFT)?
WAC 296-62-07247	What are the controlled negative pressure (CNP) fit testing requirements and procedures (QNFT)?
WAC 296-62-07248	What test exercises are required for controlled negative pressure (CNP) fit testing (QNFT)?
WAC 296-62-07251	Appendix B-1: User seal check procedures--Mandatory.
WAC 296-62-07253	Appendix B-2: Respirator cleaning procedures--Mandatory.
WAC 296-62-07255	Appendix C: WISHA respirator medical evaluation questionnaire--Mandatory.
WAC 296-62-07257	Appendix D: Health care provider

	respirator recommendation form--Nonmandatory.
WAC 296-62-07260	Appendix E: Additional information regarding respirator selection--Nonmandatory.
WAC 296-62-07261	How do you classify respiratory hazards?
WAC 296-62-07263	What are oxygen deficient respiratory hazards?
WAC 296-62-07265	What needs to be considered when combinations of contaminants occur in the workplace?
WAC 296-62-07267	What are the two major types of respirators?
WAC 296-62-07269	What are air-purifying respirators (APRs)?
WAC 296-62-07271	What are the general limitations for air-purifying respirators (APRs)?
WAC 296-62-07273	What are particulate-removing respirators?
WAC 296-62-07275	What are vapor- and gas-removing respirators?
WAC 296-62-07277	What are combination particulate- and vapor- and gas-removing respirators?
WAC 296-62-07279	What types of filters, canisters and cartridges are available for air-purifying respirators (APRs)?
WAC 296-62-07281	How do atmosphere-supplying respirators work?
WAC 296-62-07283	What are the capabilities and limitations of atmosphere-supplying respirators?
WAC 296-62-07285	What is a supplied-air respirator?
WAC 296-62-07287	What are the general capabilities and limitations of supplied-air respirators?
WAC 296-62-07289	What are combination supplied-air and air-purifying respirators?
WAC 296-62-07291	What are combination supplied-air respirators with auxiliary self-contained air supply?
WAC 296-62-07293	What is a self-contained breathing apparatus respirator (SCBA)?
WAC 296-62-07295	What are the limitations for self-contained breathing apparatus respirators (SCBA)?

Part Y-7
Hearing Loss Prevention (Noise)

NEW SECTION

WAC 296-307-630 Scope. The purpose of this part is to:

- Prevent employee hearing loss by minimizing employee noise exposures

AND

- Make sure employees exposed to noise are protected.

These goals are accomplished by:

- Measuring and computing the employee noise exposure from all equipment and machinery in the workplace, as well as any other noise sources in the work area
- Protecting employees from noise exposure by using feasible noise controls
- Making sure employees use hearing protection, if you cannot feasibly control the noise
- Training employees about hearing loss prevention
- Evaluating your hearing loss prevention efforts by tracking employee hearing or periodically reviewing controls and protection
- Making appropriate corrections to your program.

Reference: Table 1 will help you determine the hearing loss prevention requirements for your workplace. For the specific requirements associated with Noise Evaluation Criteria, see WAC 296-307-63410 of this part.

Table 1
Noise Evaluation Criteria

Criteria	Description	Requirements
85 dBA TWA_8	Full-day employee noise exposure dose. If you have one or more employees whose exposure equals or exceeds this level, you must have a hearing loss prevention program	– Hearing protection – Training – Audiometric testing
90 dBA TWA_8	Full-day employee noise exposure dose. If you have one or more employees whose exposure equals or exceeds this level, you must reduce employee noise exposures in the workplace	– Noise controls **AND** – Hearing protection – Training – Audiometric testing
115 dBA measured using slow response	Extreme noise level (greater than one second in duration)	– Hearing protection – Signs posted in work areas warning of exposure

140 dBC measured using fast response	Extreme impulse or impact noise (less than one second in duration)	Hearing protection

HEARING LOSS PREVENTION PROGRAM

NEW SECTION

WAC 296-307-632 Summary.

Your responsibility:

To prevent employee hearing loss by minimizing, and providing protection from, noise exposures.

You must:

Conduct employee noise exposure monitoring

WAC 296-307-63205

Control employee noise exposures that equal or exceed 90 dBA TWA_8

WAC 296-307-63210

Make sure employees use hearing protection when their noise exposure equals or exceed 85 dBA TWA_8

WAC 296-307-63215

Make sure exposed employees receive training about noise and hearing protection

WAC 296-307-63220

Make sure warning signs are posted for areas with noise levels that equal or exceed 115 dBA

WAC 296-307-63225

Arrange for oversight of audiometric testing

WAC 296-307-63230

Identify and correct deficiencies in your hearing loss prevention program

WAC 296-307-63235

Document your hearing loss prevention activities

WAC 296-307-63240.

NEW SECTION

WAC 296-307-63205 Conduct employee noise exposure monitoring.

You must:

✎ Conduct employee noise exposure monitoring to determine the employee's actual exposure when reasonable information indicates that any employee's exposure may equal or exceed 85 dBA TWA_8.

Note: ✎ Representative monitoring may be used where several employees perform the same tasks in substantially similar conditions

✎ Examples of information or situations that can indicate exposures which equal or exceed 85 dBA TWA_8, include:

– Noise in the workplace that interferes with people speaking, even at close range

– Information from the manufacturer of equipment you use in the workplace that indicates high noise levels for machines in use

– Reports from employees of ringing in their ears or temporary hearing loss

– Warning signals or alarms that are difficult to hear

– Work near abrasive blasting or jack hammering operations

– Use of tools and equipment such as the following:

✂ Heavy equipment or machinery

✂ Fuel-powered hand tools

✂ Compressed air-driven tools or equipment in frequent use

✂ Power saws, grinders or chippers

✂ Powder-actuated tools.

You must:

✎ Follow applicable guidance in WAC 296-307-634 when conducting noise exposure monitoring

✎ Make sure your sampling for noise exposure monitoring identifies:

– All employees whose exposure equals or exceeds the following:

✂ 85 dBA TWA_8 (noise dosimetry, providing an average exposure over an eight-hour time period)

✂ 115 dBA (slow response sound level meter, identifying short-term noise exposures)

✂ 140 dBC (fast response sound level meter, identifying almost instantaneous noise exposures).

– Exposure levels for selection of hearing protection.

✎ Provide exposed employees and their representatives with an opportunity to observe any measurements of employee noise exposure that are conducted

✎ Notify each employee whose exposure equals or exceeds 85 dBA TWA_8 of the monitoring results within five working days of when you receive the results

✎ Conduct additional noise monitoring whenever a change in production, process, equipment or controls, may reasonably be expected to result in:

– Additional employees whose exposure equals or exceeds 85 dBA TWA_8

– Employees exposed to higher level of noise requiring more effective hearing protection.

Note: Conditions that may be expected to increase exposure include:
- Adding machinery to the work area
- Increasing production rates
- Removal or deterioration of noise control devices
- Increased use of noisy equipment
- Change in work schedule
- Change of job duties.

NEW SECTION

WAC 296-307-63210 Control employee noise exposures that equal or exceed 90 dBA TWA_8.

IMPORTANT:

Hearing protection provides a barrier to noise and protects employees but is not considered a control of the noise hazard. Separate requirements apply to hearing protection and are found in WAC 296-307-63215.

You must:

- Reduce employee noise exposure, using feasible controls, wherever exposure equals or exceeds 90 dBA TWA_8.

Note:
- Once noise exposures are brought below 90 dBA TWA_8, no further reduction is required. However, further reduction of noise may reduce the need for other hearing loss prevention requirements
- Controls that eliminate noise at the source or establish a permanent barrier to noise are typically more reliable. For example:
  – Replacing noisy equipment with quiet equipment
  – Using silencers and mufflers
  – Installing enclosures
  – Damping noisy equipment and parts.
- Other controls and work practices may also be useful for reducing noise exposures. Examples include:
  – Employee rotation
  – Limiting use of noisy equipment
  – Rescheduling work.

NEW SECTION

WAC 296-307-63215 Make sure employees use hearing protection when their noise exposure equals or exceeds 85 dBA TWA_8.

You must:

- Make sure employees wear hearing protectors that will provide sufficient protection when exposure equals or exceeds:

– 85 dBA TWA_8 (noise dosimetry, providing an average exposure over an eight-hour time period)

– 115 dBA (slow response sound level meter, identifying

short-term noise exposures)

– 140 dBC (fast response sound level meter, identifying almost instantaneous noise exposures).

✎ Provide employees with an appropriate selection of hearing protectors:

– The selection must include at least two distinct types (such as molded earplugs, foam earplugs, custom-molded earplugs, earcaps, or earmuffs) for each exposed employee and must be sufficient to cover:

✂ Different levels of hearing protection needed in order to reduce all employee exposures to a level below 85 dBA TWA_8

✂ Different sizes

✂ Different working conditions.

– Consider requests of the employees regarding:

✂ Physical comfort

✂ Environmental conditions

✂ Medical needs

✂ Communication requirements.

Note: Hearing protector selection should include earplugs, earcaps and earmuffs.

You must:

✎ Provide hearing protection at no cost to employees

✎ Supervise employees to make sure that hearing protection is used correctly

✎ Make sure hearing protectors are:

– Properly chosen for fit

– Replaced as necessary.

✎ Make sure all hearing protection is sufficient to reduce the employee's equivalent eight-hour noise exposure to 85 dBA or less. When using the A-weighted exposure measurements, reported as "dBA TWA_8," the reduction in noise exposure by hearing protectors is given by Table 2:

Table 2
Effective Protection of Hearing Protectors

Type of hearing protection	Effective protection
Single hearing protection (earplugs, earcaps or earmuffs)	7 dB less than the manufacturer assigned noise reduction rating (NRR); for example, earplugs with an NRR of 20 dB are considered to reduce employee exposures of 95 dBA TWA_8 to 82 dBA TWA_8

Dual hearing protection (earplug and earmuff worn together)	2 dB less than the higher NRR of the two protectors; for example, earplugs with an NRR of 20 dB and earmuffs with an NRR of 12 dB are considered to reduce employee exposures of 100 dBA TWA_8 to 82 dBA TWA_8

✎ In addition to protection based on daily noise dose, make sure hearing protection has an NRR of at least 20 dB when exposures involve noise that equals or exceeds 115 dBA (slow response sound level meter) or 140 dBC (fast response sound level meter).

Note: You may also evaluate hearing protection by using the other methods given in the NIOSH *Compendium of Hearing Protection* (DHHS (NIOSH)) Publication No. 95-105 or online at http://www.cdc.gov/niosh/topics/noise/hpcomp.html. These methods require additional monitoring and are more complex, but provide a more thorough evaluation of protection. This may be useful in cases where communication is critical or for evaluating hearing protection for employees with hearing impairment.

NEW SECTION

WAC 296-307-63220 Make sure exposed employees receive training about noise and hearing protection.

You must:

✎ Train all employees whose noise exposure equals or exceeds 85 dBA TWA_8

✎ Provide training when an employee is first assigned to a position involving noise exposure that equals or exceeds 85 dBA TWA_8 **and** at least annually after that

✎ Update information provided in the training program to be consistent with changes in controls, hearing protectors and work processes

✎ Make sure your noise and hearing protection training includes:

– The effects of noise on hearing (including both occupational and nonoccupational exposures)

– Noise controls used in your workplace

– The purpose of hearing protectors: The advantages, disadvantages, and attenuation of various types

– Instructions about selecting, fitting, using, and caring for hearing protection

– The purpose and procedures for program evaluation including audiometric testing and hearing protection auditing when you choose to rely upon auditing (see WAC 296-307-638)

– The employees' right to access records kept by the employer.

✎ Maintain a written program describing initial and refresher training.

NEW SECTION

WAC 296-307-63225 Make sure warning signs are posted for areas where noise levels equal or exceed 115 dBA.

You must:

✎ Make sure warning signs are posted at the entrances or boundaries of all well-defined work areas where employees may be exposed to noise that equals or exceeds 115 dBA (measured using a sound level meter with slow response).

– Warning signs must clearly indicate that the area is a high noise area and that hearing protectors are required.

NEW SECTION

WAC 296-307-63230 Arrange for oversight of audiometric testing.

You must:

✎ Make sure audiometric testing as described by WAC 296-307-636 is supervised and reviewed by one of the following licensed or certified individuals:

– An audiologist

– An otolaryngologist

– Another qualified physician.

✎ Make sure audiograms are conducted by one of the above individuals or by a technician certified by the Council of Accreditation in Occupational Hearing Conservation (CAOHC) and responsible to a qualified reviewer.

NEW SECTION

WAC 296-307-63235 Identify and correct deficiencies in your hearing loss prevention program.

You must:

✎ Use audiometric testing to identify hearing loss, which may indicate program deficiencies

✎ Take appropriate actions when deficiencies are found with your program.

– A deficiency may be indicated when:

✂ Any employee experiences measurable hearing loss indicated by a standard threshold shift

OR

✂ Any employee isn't wearing appropriate hearing protection during an audit when auditing is used in place of baseline audiograms for short term employees (see WAC 296-307-638, Option to audiometric testing).

Note: A standard threshold shift or audit deficiency does not necessarily indicate that a significant hearing loss has occurred. These criteria are intended to help identify where there may be flaws in your hearing loss prevention program that can be fixed before permanent hearing loss occurs.
There are additional statistical tools and tests that may be used to improve the effectiveness of your program. Staff conducting audiometric testing and auditing may be able to suggest additional ways to improve your hearing loss prevention program and tailor it to your worksite.

You must:

✎ Evaluate the following, at a minimum, when responding to a standard threshold shift:

– Employee noise exposure measurements

– Noise controls in the work area

– The selection of hearing protection available and refit employees as necessary

– Employee training on noise and the use of hearing protection and conduct additional training as necessary.

Reference: You may use the option of auditing hearing protection (see WAC 296-307-638) for employees hired or transferred to jobs with noise exposure for less than one year. You may also use audiograms provided by a third-party hearing loss prevention program in some circumstances. Details of these program options are found in WAC 296-307-638, Options to audiometric testing.

NEW SECTION

WAC 296-307-63240 Document your hearing loss prevention activities.

You must:

✎ Create and retain records documenting noise exposures. Include, at a minimum:

– Exposure measurements required by this part for at least two years and for as long as you rely upon them to determine employee exposure

– Audiometric test records for the duration of employment for the affected employees

– Hearing protection audits, if you choose to rely upon them, for the duration of employment of the affected employees.

Note: ✎ You need to keep as complete a record as possible. Records developed under previous rules or in other jurisdictions need to be kept, even when they do not fulfill the full requirements of this part. Similarly, records found to have errors in collection or processing need to be kept if they provide an indication of employee exposure or medical condition not found in other records

✎ You may want to consider your other business needs, such as worker's compensation claims management, before

discarding these records.

NOISE MEASUREMENT AND COMPUTATION

NEW SECTION

WAC 296-307-634 Summary.

Your responsibility:

Conduct noise monitoring or measurement to evaluate employee exposures in your workplace.

You must:

Make sure that noise-measuring equipment meets recognized standards

WAC 296-307-63405

Measure employee noise exposure

WAC 296-307-63410

Use these equations when estimating full-day noise exposure from sound level measurements

WAC 296-307-63415.

NEW SECTION

WAC 296-307-63405 Make sure that noise-measuring equipment meets recognized standards.

You must:

✎ Make sure that noise dosimetry equipment meets these specifications:

– Dosimeters must be equipment class 2AS-90/80-5 of the American National Rule Specification for Personal Noise Dosimeters, ANSI S1.25-1991, such dosimeters are normally marked "Type 2."

Note: Make sure any dosimeter you use is Type 2 equipment that:
✎ Uses slow integration and A-weighting of sound levels.
✎ Has the **criterion level** set to 90 dB, so the dosimeter will report a constant 8-hour exposure at 90 dBA as a 100% dose.
✎ Has the **threshold level** set at 80 dB, so the dosimeter will register all noise above 80 dB.
✎ Uses a 5 dB **exchange rate** for averaging of noise levels over the sample period.

You must:

✎ Make sure that sound level meters meet these specifications:

– American National Standard Specification for Sound Level Meters, S1.4-1984, Type 2 requirements for sound level meters, such sound level meters are normally marked "Type 2."

✂ For continuous noise measurements, the meter must be capable of measuring A-weighted sound levels with slow response

✂ For impulse or impact noise measurements, the meter must be capable of indicating maximum C-weighted sound level measurements with fast response.

✎ Calibrate dosimeters and sound level meters used to monitor employee noise exposure:

– Before and after each day's use

AND

– Following the instrument manufacturer's calibration instructions.

Note: ✎ You may conduct dosimetry using an exchange rate less than 5 dB and compare the results directly to the noise evaluation criteria in Table 1

✎ For measuring impulse and impact noise you may also use a sound level meter set to measure maximum impulse C-weighted sound levels or peak C-weighted sound levels.

NEW SECTION

WAC 296-307-63410 Measure employee noise exposure.

IMPORTANT:

A noise dosimeter is the basis for determining total daily noise exposure for employees. However, where you have constant noise levels, you may estimate employee noise exposure using measurements from a sound level meter. Calculation of the employee noise exposure must be consistent with WAC 296-307-63415.

You must:

✎ Include all:

– Workplace noise from equipment and machinery in use

– Other noise from sources necessary to perform the work

– Noise outside the control of the exposed employees.

✎ Use a noise dosimeter when necessary to measure employee noise dose

✎ Use a sound level meter to evaluate continuous and impulse noise levels

✎ Identify all employees whose exposures equal or exceed the Noise Evaluation Criteria as follows:

Noise Evaluation Criteria

Criteria	Description	Requirements

85 dBA TWA_8	Full-day employee noise exposure dose. If you have one or more employees whose exposure equals or exceeds this level, you must have a hearing loss prevention program	– Hearing protection – Training – Audiometric testing
90 dBA TWA_8	Full-day employee noise exposure dose. If you have one or more employees whose exposure equals or exceeds this level, you must reduce employee noise exposures in the workplace	Noise controls (in addition to the requirements for 85 dBA TWA_8)
115 dBA measured using slow response	Extreme noise level (greater than one second in duration)	– Hearing protection – Signs posted in work areas warning of exposure
140 dBC measured using fast response	Extreme impulse or impact noise (less than one second in duration)	Hearing protection

NEW SECTION

WAC 296-307-63415 Use these equations when estimating full-day noise exposure from sound level measurements.

You must:

✎ Compute employee's full-day noise exposure by using the appropriate equations from Table 3 "Noise Dose Computation" **when** using a sound level meter to estimate noise dose.

Table 3
Noise Dose Computation

Description	Equation

Compute the noise dose based on several time periods of constant noise during the shift	The total noise dose over the work day, as a percentage, is given by the following equation where C_n indicates the total time of exposure at a specific noise level, and T_n indicates the reference duration for that level. $D = 100*((C_1/T_1) + (C_2/T_2) + (C_3/T_3) + ... + (C_n/T_n))$
The reference duration is equal to the time of exposure to continuous noise at a specific sound level that will result in a one hundred percent dose	The reference duration, T, for sound level, L, is given in hours by the equation: $T = 8/(2^{((L - 90)/5)})$
Given a noise dose as a percentage, compute the equivalent eight-hour time weighted average noise level	The equivalent eight-hour time weighted average, TWA_8, is computed from the dose, D, by the equation: $TWA_8 = 16.61* Log_{10}(D/100) + 90$

AUDIOMETRIC TESTING

NEW SECTION

WAC 296-307-636 Summary.

Your responsibility:

To conduct audiometric testing of employees exposed to noise to make sure that their hearing protection is effective.

You must:

Provide audiometric testing at no cost to employees

WAC 296-307-63605

Establish a baseline audiogram for each exposed employee

WAC 296-307-63610

Conduct annual audiograms

WAC 296-307-63615

Review audiograms that indicate a standard threshold shift

WAC 296-307-63620

Keep the baseline audiogram without revision, unless annual audiograms indicate a persistent threshold shift or a significant improvement in hearing

WAC 296-307-63625
Make sure a record is kept of audiometric tests
WAC 296-307-63630
Make sure audiometric testing equipment meets these requirements
WAC 296-307-63635.

NEW SECTION

WAC 296-307-63605 Provide audiometric testing at no cost to employees.

You must:

✎ Provide audiograms, including any required travel or necessary additional examinations or testing, at no cost to exposed employees.

NEW SECTION

WAC 296-307-63610 Establish a baseline audiogram for each exposed employee.

You must:

✎ Conduct a baseline audiogram when an employee is first assigned to work involving noise exposures that equal or exceed 85 dBA TWA_8.

– Make sure this audiogram is completed no more than one hundred eighty days after the employee is first assigned

OR

– Make sure employee is covered by a hearing protection audit program (as described by WAC 296-307-638 and available as an alternative only for employees hired for less than one year).

Note: Employers who utilize mobile test units are allowed up to one year to obtain a valid baseline audiogram for each exposed employee. The employees must still be given training and hearing protection as required by this part.

You must:

✎ Make sure employees are not exposed to workplace noise at least fourteen hours before testing to establish a baseline audiogram.

– Hearing protectors may be used to accomplish this.

✎ Notify employees of the need to avoid high levels of nonoccupational noise exposure (such as loud music, headphones, guns, power tools, motorcycles, etc.) during the fourteen-hour period immediately preceding the baseline audiometric examination.

NEW SECTION

WAC 296-307-63615 Conduct annual audiograms.

You must:

✎ Conduct annual audiograms for employees as long as they continue to be exposed to noise that equals or exceeds 85 dBA TWA_8.

Note: Annual audiometric testing may be conducted at any time during the work shift. By conducting the annual audiogram during the work shift with the employee exposed to typical noise for their job, the test may record a temporary threshold shift. This makes the test more sensitive to potential hearing loss and may help you improve employee protection before a permanent threshold shift occurs. A suspected temporary shift is one reason an employer may choose to retest employee hearing.

You must:

✎ Make sure each employee is informed of the results of his or her audiometric test.

– Include whether or not there has been a hearing level decrease or improvement since their previous test.

✎ Make sure each employee's annual audiogram is compared to his or her baseline audiogram by an audiologist, otolaryngologist, another qualified physician, or the technician conducting the test to determine if a standard threshold shift has occurred.

– If the annual audiogram indicates that an employee has suffered a standard threshold shift, you may obtain a retest within thirty days and consider the results of the retest as the annual audiogram.

✎ Make sure that an audiologist, otolaryngologist, or other qualified physician sees any annual audiogram that indicates a standard threshold shift.

NEW SECTION

WAC 296-307-63620 Review audiograms that indicate a standard threshold shift.

You must:

✎ Make sure the healthcare professional supervising audiograms has:

– A copy of this part

– The baseline audiogram and most recent audiogram of the employee to be evaluated

– Background noise level records for the testing room

– Calibration records for the audiometer.

✎ Obtain an opinion from the healthcare professional supervising audiograms as to whether the audiograms indicate possible occupational hearing loss and any recommendations for changes in hearing protection.

✎ Pay for any clinical audiological evaluation or otological examination required by the reviewer, if:

– Additional review is necessary to evaluate the cause of hearing loss

OR

– If there is indication of a medical condition of the ear caused or aggravated by the wearing of hearing protectors.

✎ Inform the employee in writing of the existence of a standard threshold shift within twenty-one calendar days of the determination.

✎ Make arrangements for the reviewer to communicate to the employee any suspected medical conditions that are found unrelated to your workplace. This information is confidential and must be handled appropriately.

NEW SECTION

WAC 296-307-63625 Keep the baseline audiogram without revision, unless annual audiograms indicate a persistent threshold shift or a significant improvement in hearing.

You must:

✎ Keep the baseline audiogram without revision, unless a qualified reviewer determines:

– The standard threshold shift revealed by the audiogram is persistent

OR

– The hearing threshold shown in the annual audiogram indicates significant improvement over the baseline audiogram.

NEW SECTION

WAC 296-307-63630 Make sure a record is kept of audiometric tests.

You must:

✎ Retain a legible copy of all employee audiograms conducted under this part.

– Make sure the record includes:

✂ Name and job classification of the employee

✂ Date of the audiogram
✂ The examiner's name
✂ Date of the last acoustic or exhaustive calibration of the audiometer
✂ Employee's most recent noise exposure assessment
✂ The background sound pressure levels in audiometric test rooms.

NEW SECTION

WAC 296-307-63635 Make sure audiometric testing equipment meets these requirements.

You must:

✎ Use pure tone, air conduction, hearing threshold examinations, with test frequencies including as a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz

– Tests at each frequency must be taken separately for each ear

– Supra-aural headphones must be used.

✎ Conduct audiometric tests with audiometers (including microprocessor audiometers) that meet the specifications of, and are maintained and used according to, American National Standard Specification for Audiometers, S3.6-1996

✎ Check the functional operation of the audiometer each day before use by doing all of the following:

– Make sure the audiometer's output is free from distorted or unwanted sound

– Test either a person with known, stable hearing thresholds or a bio-acoustic simulator

– Perform acoustic calibration for deviations of 10 dB or greater.

✎ Audiometer calibration must be checked acoustically at least annually to verify continued conformance with ANSI S3.6-1996. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this check

✎ An exhaustive calibration must be performed at least every two years according to the American National Standard Specification for Audiometers, S3.6-1996. Test frequencies below 500 Hz and above 6000 Hz may be omitted from the calibration

✎ Provide audiometric test rooms that meet the requirements of ANSI S3.1-1999 American National Standard Maximum Permissible Ambient Noise Levels for Audiometric Test Rooms using the following table of Maximum Ambient Sound Pressure Levels:

Table 4
Maximum Ambient Sound Pressure Levels

Frequency (Hz)	500	1000	2000	4000	8000
Sound Pressure Level (dB)	40	40	47	57	62

Note: The American Industrial Hygiene Association and National Hearing Conservation Association recommend conducting audiograms using the requirements of ANSI S3.1-1999 American National Standard Maximum Permissible Ambient Noise Levels for Audiometric Test Rooms with adjustments at only 500 Hz and below.

OPTIONS TO AUDIOMETRIC TESTING

NEW SECTION

WAC 296-307-638 Summary.

Your responsibility:

This section provides options to baseline audiometric testing for employees assigned to duties with noise exposures for **less than one year.** These program options may also be used to provide added assessment of longer-term employees in addition to audiometric testing.

The requirements of this section apply only if you decide to use auditing or a third-party hearing loss prevention program and do not conduct baseline audiometric testing for those employees.

Hearing Protection Audits

You must:

Conduct hearing protection audits at least quarterly

WAC 296-307-63805

Make sure staff conducting audits are properly trained

WAC 296-307-63810

Assess the hearing protection used by each employee during audits

WAC 296-307-63815

Document your hearing protection audits

WAC 296-307-63820

Third-Party Audiometric Testing

You must:

Make sure third-party hearing loss prevention programs meet the following requirements

WAC 296-307-63825

IMPORTANT:

Hearing protection audits are a tool for use in evaluating your hearing loss prevention program in cases where audiometric testing does not provide a useful measure. For example, if most of your employees are hired on a temporary basis for a few months at a time, audiometric testing may not identify the small changes in hearing acuity that could occur. Auditing provides an alternative to audiometric testing in these cases.

Auditing is not required unless you use it in place of baseline audiometric testing for employees hired for a period of **less than one year** and is permitted as a substitute for audiometric testing only for these employees.

Third-party hearing loss prevention programs are full hearing loss prevention programs and are distinct from audiometric testing provided by third parties as part of your own hearing loss prevention program. These programs may be organized by labor groups, trade associations, labor-management cooperatives, or other organizations to:

✎ Cover a specific group of employees

OR

✎ Combine efforts for several employers with common employees.

Although you remain responsible for the program, third-party programs can have at least two benefits over running your own program:

✎ The audiometric testing is portable between the participating employers so new testing will not be needed when an employee changes employers

✎ Employees who only work for short periods for any one employer can be monitored under the group program over a longer period of time increasing the effectiveness of the audiometric testing in preventing hearing loss for these employees.

NEW SECTION

WAC 296-307-63805 Conduct hearing protection audits at least quarterly.

You must:

✎ Conduct audits at least quarterly to provide a representative assessment of your workplace

– The assessment is representative if it:

✂ Covers all processes and work activities in your business at full production levels

AND

✂ Covers all employees present on the audit day.

– If your business is mobile or involves variable processes, auditing may need to be repeated more often than quarterly

– Auditing does not need to be repeated more than monthly as long as a reasonable effort is made to cover:

✂ The activities with greatest exposure

AND

✂ As many employees as possible.

✎ Assess exposures and hearing protection for the full shift for each employee covered at the time of the audit.

NEW SECTION

WAC 296-307-63810 Make sure staff conducting audits are properly trained.

You must:

✎ Make sure staff conducting hearing protection audits:

– Can demonstrate competence in:

✂ Evaluating hearing protection attenuation

✂ Evaluating hearing protector choices

✂ Assessing the correct use of hearing protectors.

– Are certified by the Council for Accreditation in Occupational Hearing Conservation (CAOHC) or have training in the following areas:

✂ Noise and hearing loss prevention

✂ Washington state noise regulations

✂ Hearing protectors

✂ Fitting of hearing protectors

✂ Basic noise measurement

✂ Hearing loss prevention recordkeeping.

NEW SECTION

WAC 296-307-63815 Assess the hearing protection used by each employee during audits.

You must:

✎ Confirm that:

– Current site conditions during audits are consistent with conditions existing during noise monitoring

– The hearing protection used by the employee is sufficient and appropriate for the conditions

– The hearing protection is worn properly

– The employees are satisfied with the performance and comfort of the hearing protection.

NEW SECTION

WAC 296-307-63820 Document your hearing protection audits.

You must:

✎ Keep a record of audit results for each employee assessed for the length of their employment and for the length of time you will rely upon the audit results

✎ Include the following information in the record:

– The make and model of the hearing protectors

– The size of the protectors

– Average noise exposure of the employee

– Any problems found with use of the hearing protection

– Any comments or complaints from the employee regarding the hearing protection.

THIRD-PARTY AUDIOMETRIC TESTS

NEW SECTION

WAC 296-307-63825 Make sure third-party hearing loss prevention programs meet the following requirements.

IMPORTANT:

Third-party hearing loss prevention programs are intended:

✎ For short-term employees hired or assigned to duties having noise exposures **for less than one year**

AND

✎ For seasonal employees.

However, other employees may be included as long as you meet all requirements for hearing loss follow-ups and recordkeeping.

You must:

✎ Make sure that the third-party program is:

– Equivalent to an employer program as required by this part

AND

– Uses audiometric testing to evaluate hearing loss.

✎ Make sure a licensed or certified audiologist, otolaryngologist, or other qualified physician administers the third-party program

✎ Make sure the third-party program has written procedures for:

– Communicating with participating employers of program requirements

– Follow-up procedures for detected hearing loss

– Annual review of participating employer programs.

✎ Make sure the following program elements are corrected by you or the third-party program when deficiencies are found:

– Noise exposures

– Hearing protection

– Employee training

– Noise controls.

✎ Obtain a review of your hearing loss prevention program at least once per year, conducted by the third-party program administrator or their representative, in order to:

– Identify any tasks needing a revised selection of hearing protection

AND

– Provide an overall assessment of the employers' hearing loss prevention activities.

NEW SECTION

WAC 296-307-640 Noise definitions.

A-weighted - An adjustment to sound level measurements that reflects the sensitivity of the human ear. Used for evaluating continuous or average noise levels.

Audiogram - A chart, graph, or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of frequency.

Audiologist - A professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech, Hearing, and Language Association, or the American Academy of Audiology, and is licensed by the state board of examiners.

Baseline audiogram - The audiogram against which future audiograms are compared. The baseline audiogram is collected when an employee is first assigned to work with noise exposure. The baseline audiogram may be revised if persistent standard threshold shift (STS) of improvement is found.

Continuous noise - Noise with peaks spaced no more than one second apart. Continuous noise is measured using sound level meters and noise dosimeters with the slow response setting.

Criterion sound level - A sound level of ninety decibels. An eight-hour exposure to constant 90 dBA noise is a one hundred percent noise dose exposure.

C-weighted - An adjustment to sound level measurements that evenly represents frequencies within the range of human hearing. Used for evaluating impact or impulse noise.

Decibel (dB) - Unit of measurement of sound level. A-weighting, adjusting for the sensitivity of the human ear, is indicated as "dBA." C-weighting, an even reading across the frequencies of human hearing, is indicated as "dBC."

Fast response - A setting for a sound level meter that will allow the meter to respond to noise events of less than one second. Used for evaluating impulse and impact noise levels.

Hertz (Hz) - Unit of measurement of frequency, numerically equal to cycles per second.

Impulsive or impact noise - Noise levels which involve maxima at intervals greater than one second. Impulse and impact noise are measured using the fast response setting on a sound level meter.

Noise dose - The total noise exposure received by an employee during their shift. It can be expressed as a percentage indicating the ratio of exposure received to the noise exposure received in an eight-hour exposure to constant noise at 90 dBA. It may also be expressed as the sound level that would produce the equivalent exposure during an eight-hour period (TWA_8).

Noise dosimeter - An instrument that integrates a function of sound pressure over a period of time in such a manner that it directly indicates a noise dose.

Occupational hearing loss - A reduction in the ability of an individual to hear either caused or contributed to by exposure in the work environment.

Otolaryngologist - A physician specializing in diagnosis and treatment of disorders of the ear, nose and throat.

Permanent threshold shift - A hearing level change that has become persistent and is not expected to improve.

Qualified reviewer - An audiologist, otolaryngologist, or other qualified physician who has experience and training in evaluating occupational audiograms.

Slow response - A setting for sound level meters and dosimeters in which the meter does not register events of less than about one second. Used for evaluating continuous and average noise levels.

Sound level - The intensity of noise as indicated by a sound level meter.

Sound level meter - An instrument that measures sound

levels.

Standard threshold shift (STS) - A hearing level change, relative to the baseline audiogram, of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear.

Temporary threshold shift - A hearing level change that improves. A temporary threshold shift may occur with exposure to noise and hearing will return to normal within a few days. Temporary threshold shifts can be indicators of exposures that lead to permanent hearing loss.

TWA_8 - Equivalent eight-hour time-weighted average sound level - That sound level, which if constant over an eight-hour period, would result in the same noise dose measured in an environment where the noise level varies.

Part Y-8
Confined Spaces

NEW SECTION

WAC 296-307-642 Scope. This part applies to all confined spaces and provides requirements to protect employees from the hazards of entering and working in confined spaces. This part applies in any of the following circumstances:

- You have confined spaces in your workplace.
- Your employees will enter another employer's confined spaces.
- A contractor will enter your confined spaces.
- You provide confined space rescue services.

You can use Table 1 to help you decide which requirements to follow for confined spaces.

Table 1
Requirements for Confined Spaces

For confined spaces that are	**The requirements in the following sections apply**					
	644	**646**	**648**	**650**	**652**	**654**
Permit-required confined spaces	X	X	X	X	X	X
Entered by a contractor	X	X	X	X	X	X
Nonpermit confined spaces	X					X
Never entered	X					
If you only:						
Use alternate entry procedures	X	X	X		X	
Have a contractor enter your space	X					
Are a rescue service provider		X	X	X		

Definition:

A **confined space** is 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.

Note:
- Requirements in other chapters may apply to your work. You will find some safety and health requirements are addressed on a broad level in this part, while being addressed for a specific application in another rule. When this happens, both requirements apply and should not conflict. When a conflict does occur, you need to follow the more specific requirement.
- If you are uncertain which requirements to follow, contact your local labor and industries (L&I) office.

NEW SECTION

WAC 296-307-644 Summary. Identifying and controlling permit-required confined spaces.

Your responsibility:

To identify your permit-required confined spaces and control employee entry.

You must:

Identify permit-required confined spaces.

WAC 296-307-64402

Inform employees and control entry to permit-required confined spaces.

WAC 296-307-64404

Follow these requirements when you contract with another employer to enter your confined space.

WAC 296-307-64406

NEW SECTION

WAC 296-307-64402 Identify permit-required confined spaces.

IMPORTANT:

If your workplace contains only nonpermit confined spaces and your employees do not enter another employer's confined space, you may follow only the requirements in:

– WAC 296-307-644, Identifying and controlling permit-required confined spaces; and

– WAC 296-307-654, Nonpermit confined space requirements.

You must:

✎ Identify all permit-required confined spaces in your workplace.

✎ Assume any confined space is a permit-required confined space, unless you determine the space to be a nonpermit confined space.

– If you enter the space to determine the hazards, follow the requirements in WAC 296-307-650, Permit entry procedures.

– If you evaluate the confined space and there are no potential or actual hazards, you can consider it to be a nonpermit confined space.

✎ Document your determination that the space is nonpermit, as required by WAC 296-307-654.

Definitions:

A **permit-required confined space or permit space** is 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 the space.

– 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 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.

A **nonpermit confined space** is a confined space that does NOT contain actual hazards or potential hazards capable of causing death or serious physical harm.

NEW SECTION

WAC 296-307-64404 Inform employees and control entry to permit-required confined spaces.

You must:

(1) Provide information about confined spaces as follows:

✎ Make available to affected employees and their authorized representatives all information and documents required by this part.

✎ Inform affected employees about the existence, location, and danger of any permit-required confined spaces in your workplace by:

– Posting danger signs; or

– Using any other equally effective means to inform employees.

Note: A sign reading "Danger-Permit Required Confined Space, DO NOT ENTER" or using pictures or other similar wording employees can understand would satisfy the requirement for a sign.

You must:

(2) Take effective measures to prevent unauthorized employees from entering permit-required confined spaces.

Note: Examples of measures to prevent employee entry include padlocks, bolted covers, special tools to remove covers, and providing employee training.

NEW SECTION

WAC 296-307-64406 Follow these requirements when you contract with another employer to enter your confined space.

IMPORTANT:

The contractor is responsible for following all confined space requirements in this part and in other rules that apply.

You must:

✎ Do **all** of the following if you arrange to have another employer (contractor) perform work that involves entry into your permit-required confined space:

– Inform the contractor:

✂ That the workplace contains permit-required confined spaces and entry is allowed only if the applicable requirements of this part are met.

✂ Of the identified hazards and your experience with each permit-required confined space.

✂ Of any precautions or procedures you require for the protection of employees in or near spaces where the contractor will be working.

– Coordinate entry operations with the contractor, when either employees or employers from the different companies will be working in or near permit-required confined spaces.

– Discuss entry operations with the contractor when they are complete. Include the following in your discussion:

✂ The program followed during confined space entry; and

✂ Any hazards confronted or created.

PERMIT-REQUIRED CONFINED SPACE PROGRAM

NEW SECTION

WAC 296-307-646 Summary.

Your responsibility:

To develop your permit-required confined space program and

practices.

IMPORTANT:

This section applies if employees will enter a permit-required confined space.

You must:

Develop a written permit-required confined space program.

WAC 296-307-64602

Meet these additional requirements if your employees enter another employer's confined space.

WAC 296-307-64604

NEW SECTION

WAC 296-307-64602 Develop a written permit-required confined space program.

IMPORTANT:

✎ Identify and evaluate the hazards of permit-required confined spaces and the work performed, to assist you in developing your entry program.

You must:

✎ Develop a written program, before employees enter, that describes the means, procedures, and practices you use for the safe entry of permit-required confined spaces as required by this part. Include the following when applicable to your confined space entry program:

– Documentation of permit entry procedures.

– Documentation used for alternate entry procedures.

– How to reclassify permit-required confined spaces to nonpermit spaces.

– Designation of employee roles, such as entrants, attendants, entry supervisors, rescuers, or those who test or monitor the atmosphere in a permit-required space.

– Identification of designated employee duties.

– Training employees on their designated roles.

– How to identify and evaluate hazards.

– Use and maintenance of equipment.

– How to prevent unauthorized entry.

– How to coordinate entry with another employer.

– How to rescue entrants.

Note: For alternate entry, your written program only needs to meet the requirements of WAC 296-307-648, Employee training, and WAC 296-307-652, Alternate entry procedures, of this part.

You must:

✎ Consult with affected employees and their authorized representatives when developing and implementing all aspects of your permit-required confined space program.

✎ Make the written program available to employees and their

authorized representatives.

✎ Update your written program as necessary.

NEW SECTION

WAC 296-307-64604 Meet these additional requirements if your employees enter another employer's confined space.

You must:

✎ Obtain any available information about permit-required confined space hazards and entry operations from the host employer.

✎ Coordinate entry operations with any other employers whose employees will be working in or near the permit-required confined space.

✎ Inform the host employer, either through a debriefing or during entry operations, about:

– The entry program you will follow; and

– Any hazards you confronted or created in the space during entry operations.

EMPLOYEE TRAINING

NEW SECTION

WAC 296-307-648 Summary.

Your responsibility:

To make sure employees are trained to perform their designated roles safely.

You must:

Provide employee training.

WAC 296-307-64802

Certify employee proficiency.

WAC 296-307-64804

NEW SECTION

WAC 296-307-64802 Provide employee training.

You must:

✎ Provide training to each employee involved in permit-required confined space activities, so they acquire the understanding, knowledge and skills necessary to safely perform assigned duties.

– Establish employee proficiency in their confined space duties.

– Introduce new or revised procedures as necessary.

Note: ✎ Employers can determine employee proficiency by:
– Observing employee performance during training exercises that simulate actual confined space conditions.
– A comprehensive written examination; or
– Any other method that is effective for the employer.

You must:

✎ Provide training at the following times:

– Before an employee is first assigned to duties covered by this part.

– Before there is a change in an employee's assigned duties.

– When there is a permit-required confined space hazard for which the employee has not already been trained.

– If you have reason to believe that there are either:

✂ Deviations from your procedures for permit-required confined space entry; or

✂ Employee knowledge or use of your procedures is inadequate.

NEW SECTION

WAC 296-307-64804 Certify employee proficiency.

You must:

✎ Certify employee proficiency in their assigned duties.

✎ Make sure the certification:

– Contains each employee's name, the trainer's written or electronic signature or initials, and the dates of training.

– Is available for inspection by employees and their authorized representatives.

PERMIT ENTRY PROCEDURES

NEW SECTION

WAC 296-307-650 Summary.

Your responsibility:

To establish procedures for the safe permit-required entry of confined spaces.

Implement procedures for entry permits.

WAC 296-307-65002

Use an entry permit that contains all required information.

WAC 296-307-65004

Keep and review your entry permits.

WAC 296-307-65006

Prevent unauthorized entry.

WAC 296-307-65008

Provide, maintain, and use proper equipment.

WAC 296-307-65010

Evaluate and control hazards for safe entry.

WAC 296-307-65012

Make sure you have adequate rescue and emergency services available.

WAC 296-307-65014

Use nonentry rescue systems or methods whenever possible.

WAC 296-307-65016

Make sure entry supervisors perform their responsibilities and duties.

WAC 296-307-65018

Provide an attendant outside the permit-required confined space.

WAC 296-307-65020

Make sure entrants know the hazardous conditions and their duties.

WAC 296-307-65022

Implement procedures for ending entry.

WAC 296-307-65024

NEW SECTION

WAC 296-307-65002 Implement procedures for entry permits.

You must:

✎ Identify and evaluate, before employees enter, potential hazards from:

– The permit-required confined space; and

– The work to be performed.

✎ Complete an entry permit before entry is authorized, documenting that you have completed the means, procedures and practices necessary for safe entry and work.

✎ Make sure that entrants or their representatives have an opportunity to observe any monitoring or testing, or any actions to eliminate or control hazards, performed to complete the permit.

✎ Identify the entry supervisor.

– Make sure the entry supervisor signs the entry permit, authorizing entry, before the space is entered.

✎ Make the completed permit available to entrants or their authorized representatives at the time of entry.

– Do this by either posting the completed permit at the entry location, or by any other equally effective means.

✎ Make sure the duration of the permit does not exceed the time required to complete the assigned task or job identified on the permit.

✎ Note any problems encountered during an entry operation on the permit. Use the information to make appropriate revisions to your program, entry operations, means, systems, procedures and practices.

NEW SECTION

WAC 296-307-65004 Use an entry permit that contains all required information.

You must:

✎ Make sure your entry permit identifies **all** of the following that apply to your entry operation:

– The space to be entered.

– Purpose of the entry.

– Date and the authorized duration of the entry permit.

– Hazards of the space to be entered.

– Acceptable entry conditions.

– Results of initial and periodic tests performed to evaluate and identify the hazards and conditions of the space, accompanied by the names or initials of the testers and by an indication of when the tests were performed.

– Appropriate measures used before entry to isolate the space, and eliminate or control hazards.

✎ Examples of appropriate measures include the lockout or tagging of equipment and procedures for purging, inerting, ventilating, and flushing permit-required confined spaces.

– Names of entrants and current attendants.

✎ Other means include the use of rosters or tracking systems as long as the attendant can determine quickly and accurately, for the duration of the permit, which entrants are inside the space.

– The current entry supervisor.

– A space for the signature or initials of the original supervisor authorizing entry.

– Communication procedures for entrants and attendants to maintain contact during the entry.

– Equipment provided for safe entry, such as:

✂ Personal protective equipment (PPE).

✂ Testing equipment.

✂ Communications equipment.

✂ Alarm systems.

✂ Rescue equipment.

– Rescue and emergency services available, and how to contact them. Include equipment to use, and names and contact information.

– Other information needed for safety in the particular confined space.

– Additional permits issued for work in the space, such as for hot work.

NEW SECTION

WAC 296-307-65006 Keep and review your entry permits.

You must:

✎ Keep entry permits for at least one year.

✎ Keep entry permits or other atmospheric monitoring records that show the actual atmosphere an employee entered or worked in, as employee exposure records.

✎ Review your permit-required confined space entry program as follows:

– Conduct a review when you have any reason to believe your entry program may not protect employees, and revise your program before allowing subsequent entries.

Note: Examples of circumstances requiring the review of your program include the following:
- There is unauthorized entry of a permit space.
- A permit space hazard not covered by the permit is found.
- A condition prohibited by the permit occurs.
- An injury or near-miss occurs during entry.
- There is a change in the use or configuration of a permit space.
- An employee complains about the effectiveness of the program.

You must:

- Review canceled entry permits within one year following each entry to evaluate:

– Your permit-required confined space program.

– The protection provided to employees entering permit-required confined spaces.

- Update your written permit-required confined space entry program as necessary.

Note: Employers may perform a single annual review covering all entries performed during a twelve-month period. If no entry is performed during a twelve-month period, no review is necessary.

NEW SECTION

WAC 296-307-65008 Prevent unauthorized entry.

You must:

- Implement measures necessary to prevent unauthorized entry into permit-required confined spaces, when conducting authorized entry.

Note:
- When removing entrance covers to open the confined space, protect entrants and those outside the confined space from hazards.
- Examples of measures to prevent unauthorized entry are signs, barricades, warning tape, and an attendant.

NEW SECTION

WAC 296-307-65010 Provide, maintain, and use proper equipment.

You must:

- Provide the equipment in Table 2, when needed and at no cost to employees.
- Make sure that employees use provided equipment properly.
- Maintain the provided equipment.

Table 2

Equipment Provided to Employees at No Cost

Type of equipment	For
Testing and monitoring equipment	Evaluating permit-required confined space conditions
Ventilating equipment	Obtaining and maintaining acceptable entry conditions
Communication equipment	Effective communication between the attendant and the entrants and to initiate rescue when required
Personal protective equipment (PPE)	Protecting employees from hazards of the space or the work performed
Lighting equipment	Employees to see well enough to work safely and to exit the space quickly in an emergency
Barriers or shields, such as pedestrian, vehicle or other barriers	Protecting employees from hazards outside of the space
Ladders	Safe entry and exit by entrants
Rescue and emergency equipment, except for equipment provided by the rescue service provider	Safe and effective rescue
Any other equipment	Safe entry into and rescue from permit-required confined spaces

NEW SECTION

WAC 296-307-65012 Evaluate and control hazards for safe entry.

✎ Evaluate and control hazards for safe entry into permit-required confined spaces by doing all the following:

– Test for atmospheric hazards, in this order:

✂ Oxygen.

✂ Combustible gases and vapors.

✂ Toxic gases and vapors.

– Provide each entrant or their authorized representative an opportunity to observe any of the following:

✂ Preentry testing.

✂ Subsequent testing.

✂ Monitoring of permit-required spaces.

– Reevaluate the permit-required space in the presence of any entrant, or their authorized representative, who requests this to be done because they have reason to believe that the

evaluation of that space may not have been adequate.

– Upon request, immediately provide each entrant or their authorized representative, with the results of any testing required by this rule.

– Continuously monitor conditions in areas where entrants are working, when isolation of the space is not feasible.

✎ Examples would be a large space or space that is part of a continuous system, such as a sewer.

✎ Evaluate space conditions during entry as follows:

Table 3
Evaluating Space Conditions

You must:	In order to
Test conditions before entry	Determine that acceptable entry conditions exist before entry is authorized by the entry supervisor
Test or evaluate space conditions during entry	Determine that acceptable entry conditions are being maintained during entry operations
Evaluate entry operations	Make sure entrants of more than one employer working at the same time in or around a permit-required confined space, do not endanger each other

IMPORTANT:

This section applies to both:

✎ Employers whose employees use permit entry procedures; and

✎ Employers who provide rescue services.

NEW SECTION

WAC 296-307-65014 Make sure you have adequate rescue and emergency services available.

You must:

(1) Make sure you have adequate rescue and emergency services available during your permit-required confined space entry operations.

✎ Evaluate and select rescue teams or services who can:

– Respond to a rescue call in a timely manner. Timeliness is based on the identified hazards. Rescuers must have the capability to reach potential victims within an appropriate time frame based on the identified permit space hazards.

– Proficiently rescue employees from a permit-required confined space in your workplace. Rescuers must have the appropriate equipment for the type of rescue.

✎ Make sure that at least one member of the rescue team or service holds a current certification in first aid and cardiopulmonary resuscitation (CPR).

✎ Inform each rescue team or service about the hazards they may confront when called to perform rescue.

✎ Provide the rescue team or service with access to all permit spaces from which rescue may be necessary.

– This will allow them to develop appropriate rescue plans and to practice rescue operations.

Note: What will be considered timely will vary according to the specific hazards involved in each entry. For example, WAC 296-307-594, Respirators, requires that employers provide a standby person or persons capable of immediate action to rescue employee(s) for work areas considered to contain an IDLH atmosphere.

You must:

(2) Provide employees, assigned to provide permit-required confined space rescue and emergency services, with:

✎ Personal protective equipment (PPE) needed for safe entry.

✎ Other equipment required to conduct rescues safely.

✎ Training so they are:

– Proficient in the use of the PPE and other equipment.

– Proficient as an entrant of permit-required confined spaces.

– Able to safely perform assigned rescue and emergency duties.

– Knowledgeable in basic first aid and cardiopulmonary resuscitation (CPR).

✎ Practice sessions for permit-required confined space rescues **at least** once every twelve months where dummies, manikins, or actual persons are removed from either:

– The actual permit spaces; or

– Representative permit spaces that simulate the opening size, configuration, and accessibility, of permit spaces where rescue will be performed.

(3) Establish procedures for:

✎ Contacting rescue and emergency services.

✎ Rescuing entrants from permit-required confined spaces.

✎ Providing necessary emergency services to rescued entrants.

✎ Preventing unauthorized persons from attempting a rescue.

NEW SECTION

WAC 296-307-65016 Use nonentry rescue systems or methods whenever possible.

You must:

✎ Use nonentry retrieval systems or methods to rescue

entrants in a permit-required confined space unless this:

– Would increase the overall risk of injury to entrants; or

– Would not contribute to the rescue of the entrant.

✐ Make sure each entrant uses a chest or full-body harness, with a retrieval line attached to the harness at one of the following locations:

– At the center of the employee's back, near shoulder level.

– Above the employee's head.

– At another point which presents a profile small enough for the successful removal of the employee.

✐ Attach the retrieval line to a mechanical device or fixed point outside the space, so rescue can begin as soon as necessary.

✐ Make sure a mechanical device is available to retrieve entrants from vertical spaces more than five feet (1.52 m) deep.

Note: When you can demonstrate that the use of a chest or full-body harness is not feasible or creates a greater hazard, then you may use wristlets or another method shown to be the safest and most effective alternative.

NEW SECTION

WAC 296-307-65018 Make sure entry supervisors perform their responsibilities and duties.

You must:

✐ Make sure that an entry supervisor:

– Authorizes the entry into a permit-required confined space by signing the entry permit.

– Oversees entry operations.

– Knows about the hazards that may be faced during entry, including the mode, signs or symptoms, and consequences of the exposure.

– Verifies and checks **all** of the following:

✂ The appropriate entries have been made on the permit.

✂ All tests specified by the permit have been conducted.

✂ All procedures and equipment specified by the permit are in place before approving the permit and allowing entry to the space.

– Terminates the entry and cancels the permit when:

✂ The assigned task or job has been completed.

✂ A condition in the space that is not covered by the entry permit is discovered.

– Verifies that rescue services are available and that there is a way to contact them.

– Removes unauthorized individuals who enter or attempt to

enter the permit-required confined space during entry operations.

– Determines that entry operations remain consistent with the terms of the entry permit and acceptable entry conditions are maintained:

✂ Whenever responsibility for a permit-required space entry operation is transferred; and

✂ At regular intervals dictated by the hazards and operations performed within the space.

Note: ✎ Make sure entry supervisors have the required knowledge and proficiency to perform the job duties and responsibilities required by this part.

✎ The entry supervisor may also perform other duties under this part, such as attendant or entrant, if they are trained and proficient in those duties.

✎ The responsibility of the entry supervisor may be passed from one supervisor to another during an entry operation.

NEW SECTION

WAC 296-307-65020 Provide an attendant outside the permit-required confined space.

IMPORTANT:

✎ The number of attendants assigned should be tailored to the requirements of the space and the work performed.

✎ You need to assess if it is appropriate or possible to have multiple permit spaces monitored by a single attendant, or have an attendant stationed at a location outside each space. Video cameras and radios are examples of tools that may assist an attendant monitoring more than one space.

✎ Attendants may be stationed at any location outside the permit-required confined space if the duties described in this section can be effectively performed for each space that is monitored.

You must:

✎ Provide at least one attendant outside the permit-required confined space during entry operations.

✎ Make sure each permit-required confined space attendant:

– Understands the hazards that may be faced during entry, including the mode, signs or symptoms, and results of exposure to the hazards.

– Is aware of the behavioral effects of exposure to the hazard.

– Continuously maintains an accurate count of entrants in the space.

– Maintains an accurate record of who is in the permit-required confined space.

– Communicates with entrants as necessary to monitor their status or alert them of the need to evacuate the space.

– Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space.

– Orders entrants to evacuate the space immediately if **any** of the following conditions occur:

✂ A prohibited condition.

✂ The behavioral effects of hazardous exposure on an entrant.

✂ A situation outside the space that could endanger entrants.

✂ The attendant cannot effectively and safely perform all the duties required in this part.

– Takes the following actions when unauthorized persons approach or enter a space:

✂ Warns unauthorized persons to stay away from the space.

✂ Tells the unauthorized persons to exit immediately if they have entered the space.

✂ Informs entrants and the entry supervisor if unauthorized persons have entered the space.

– Performs nonentry rescues as specified by your rescue procedure.

– Has the means to respond to an emergency affecting one or more of the permit spaces being monitored without preventing performance of the attendant's duties to the other spaces being monitored.

– Carries out no duties that might interfere with their primary duty to monitor and protect the entrants.

– Calls for rescue and other emergency services as soon as entrants may need assistance to escape from the space.

– Monitors entry operations until relieved by another attendant or all entrants are out of the space.

NEW SECTION

WAC 296-307-65022 Make sure entrants know the hazardous conditions and their duties.

You must:

✎ Make sure that all entrants:

– Know the hazards they may face during entry, including the mode, signs or symptoms, and results of exposure to the hazards.

– Use equipment properly.

– Communicate with the attendant as necessary so the attendant can:

✂ Monitor entrant status.

✂ Alert entrants of the need to evacuate.

– Alert the attendant whenever either of these situations exist:

✂ A warning sign or symptom of exposure to a dangerous situation such as, behavioral changes, euphoria, giddiness potentially from lack of oxygen or exposure to solvents.

✂ A prohibited condition.

– Exit from the permit-required confined space as quickly as possible when one of the following occurs:

✂ The attendant or entry supervisor gives an order to evacuate.

✂ The entrant recognizes any warning sign or symptom of exposure to a dangerous situation.

✂ The entrant detects a prohibited condition.

✂ An evacuation alarm is activated.

NEW SECTION

WAC 296-307-65024 Implement procedures for ending entry.

You must:

✎ Make sure you terminate the entry when entry operations are completed, including securing an entrance cover and canceling the permit.

NEW SECTION

WAC 296-307-652 Alternate entry procedures.

Summary:

Your responsibility:

To choose alternate entry procedures for spaces where the only hazard is a hazardous atmosphere.

IMPORTANT:

In addition to this section, you also need to meet the requirements in the following sections of this part:

– WAC 296-307-644, Identifying and controlling permit-required confined spaces.

– WAC 296-307-646, Permit-required confined space program.

– WAC 296-307-648, Employee training.

You must:

Make sure the following conditions are met if using alternate entry procedures.

WAC 296-307-65202

Follow these alternate entry procedures for permit-required

confined spaces.

WAC 296-307-65204

NEW SECTION

WAC 296-307-65202 Make sure the following conditions are met if using alternate entry procedures.

You must:

✎ Make sure, when using alternate entry procedures, instead of permit entry procedures, that you have monitoring and inspection data that supports the following:

– That the only hazard of the permit-required confined space is an actual or potentially hazardous atmosphere.

– That continuous forced air ventilation alone is all that is needed to maintain the permit-required confined space for safe entry.

✎ Make sure an entry to obtain monitoring and inspection data or to eliminate hazards is performed according to WAC 296-307-500, Permit entry procedures.

✎ Make sure all documentation produced is available to each affected employee and their authorized representative.

NEW SECTION

WAC 296-307-65204 Follow these alternate entry procedures for permit-required confined spaces.

You must:

✎ Use the following alternate entry procedures:

– Eliminate any unsafe conditions before removing an entrance cover.

✂ When entrance covers are removed, promptly guard the opening with a railing, temporary cover, or other temporary barrier to prevent accidental falls through the opening and protect entrants from objects falling into the space.

✂ Certify that preentry measures have been taken (such as safe removal of the cover and having protection needed to gather preentry data), with the date, location of the space, and signature of the person certifying.

✎ Make the preentry certification available before entry to each entrant.

– Before an employee enters the confined space, test the internal atmosphere with a calibrated, direct-reading instrument

for all of the following, in this order:

- ✂ Oxygen content.
- ✂ Flammable gases and vapors.
- ✂ Potential toxic air contaminants.

– Provide entrants, or their authorized representatives, with an opportunity to observe the preentry and periodic testing.

– Make sure the atmosphere within the space is not hazardous when entrants are present.

– Use continuous forced air ventilation, as follows:

- ✂ Wait until the forced air ventilation has removed any hazardous atmosphere before allowing entrants into the space.
- ✂ Direct forced air ventilation toward the immediate areas where employees are, or will be, and continue ventilation until all employees have left the space.
- ✎ Provide the air supply from a clean source and make sure it does not increase hazards in the space.

– Test the atmosphere within the space as needed to make sure hazards do not accumulate.

– If a hazardous atmosphere is detected during entry, do all of the following:

- ✂ Evacuate employees from the space immediately.
- ✂ Evaluate the space to determine how the hazardous atmosphere developed.
- ✂ Implement measures to protect employees from the hazardous atmosphere before continuing the entry operation.
- ✂ Verify the space is safe for entry before continuing the entry operation.

NEW SECTION

WAC 296-307-654 Nonpermit confined spaces requirements.

Summary:

IMPORTANT:

A confined space may be classified as a nonpermit confined space for as long as the hazards remain eliminated. Once a hazard is present, you must follow all requirements of this part that apply.

Your responsibility:

To make sure any space you classify as nonpermit does not have the potential to contain serious health or safety hazards.

You must:

Follow these requirements when classifying a confined space as a nonpermit confined space.

WAC 296-307-65402

Reevaluate nonpermit confined spaces if hazards develop.
WAC 296-307-65404

NEW SECTION

WAC 296-307-65402 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 WAC 296-307-320, to determine if using it fully eliminates the hazard.
✎ You are allowed to use alternate entry procedures covered in WAC 296-307-652, 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.

NEW SECTION

WAC 296-307-65404 Reevaluate nonpermit confined spaces if hazards develop.

You must:

✎ Reclassify a nonpermit confined space to a permit-required confined space, if necessary, when changes in the use or configuration of the space increase the hazards to entrants.

✎ Make sure all employees exit the space if hazards develop. You must then reevaluate the space and determine whether it must be reclassified as a permit-required confined space.

NEW SECTION

WAC 296-307-656 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 lockout-tagout, WAC 296-307-320 or respiratory hazards, WAC 296-307-624 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 296-307-650, 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 WAC 296-307-624, Respiratory hazards.

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 296-307-550, 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.

Part Y-10
Emergency Response

NEW SECTION

WAC 296-307-704 Scope. What is the purpose of WAC 296-307-704, Emergency response to hazardous substance releases?

To state the minimum requirements that help you protect the safety and health of your employees during a response to hazardous substance releases in your workplace or any other location.

Do the requirements of this rule apply to your workplace?

This section 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 section applies to your workplace(s). Defined words are *italicized* in the flow chart.

Place illustration here.

*The flow chart references other rules applicable to your workplace depending on conditions and hazards.

Examples include:

- WAC 296-62-400, Hazardous chemicals in laboratories
- WAC 296-307-594, Respiratory protection.

Definitions applicable to the flow chart (see WAC 296-307-70480 for additional definitions used in this section):

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 296-307-70480 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

- 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.

Summary:

Your responsibility:

To anticipate, plan for, and manage emergency response operations so employees are protected from hazardous substances and conditions.

Note: Other chapters may apply to your workplace, such as:
- Chapter 296-62 WAC, General occupational health standards.

You will find some safety and health requirements (for example, personal protective equipment) are addressed on a general level in the core rules, while being addressed for a specific application in this section. 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.

You must:

WAC 296-307-70410 Planning

WAC 296-307-70415 Training

WAC 296-307-70420 Medical surveillance

WAC 296-307-70425 Keep records

WAC 296-307-70430 Incident requirements

WAC 296-307-70435 Implement and maintain an incident command system (ICS) (incident command system)

WAC 296-307-70440 Prepare skilled support personnel

WAC 296-307-70445 Make sure the incident commander oversees activities during the response

WAC 296-307-70450 Use the buddy system in danger areas

WAC 296-307-70455 Provide rescue and medical assistance

WAC 296-307-70460 Personal protective equipment

WAC 296-307-70465 Control hazards created by personal protective equipment (PPE)

WAC 296-307-70470 Use personal protective equipment (PPE) properly

WAC 296-307-70475 Postemergency response

WAC 296-307-70480 Definitions.

NEW SECTION

WAC 296-307-70410 Planning. 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 296-307-70415, train your employees), for more detail:

Note:
- Responders' level of training depends on the duties and 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) relevant to that single substance. If employees might respond to a range of hazardous substances, training may be required to cover categories of hazardous substances.

You must:

- 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 employees' understanding of the material
  - Provide instructional interaction to the group.
- Emergency recognition
- Immediate emergency procedures including:
  - Methods of alerting employees (see WAC 296-307-345, 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 IDLH conditions	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).

You must:

✎ 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 296-307 WAC, Part Y-5, 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 the following apply. They:
First responder at the awareness level	- 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	- 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: - Confine the release from a safe distance - Keep it from spreading - Protect others from hazardous exposures
Hazardous materials technician	- 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: - Plug - Patch - Stop the release using other methods
Hazardous materials specialist	- 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	- Have ultimate responsibility for: - Direction - Control - Coordination of the response effort - Will assume control of the incident beyond the first responder awareness level
Specialist employee	- 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	✎ Are needed to perform an immediate, specific emergency support task at the site ✎ Are skilled in the operation of equipment including: – Earth moving equipment – Cranes – Hoisting equipment
Incident safety officer	✎ Are designated by the incident commander ✎ Are knowledgeable in operations being implemented at the site ✎ Have specific responsibility to – Identify and evaluate hazards – Provide direction on employee safety matters

NEW SECTION

WAC 296-307-70415 Training. Train your employees

Note: ✎ Use Tables 3 through 6 to identify your employees' training competencies.
✎ You may conduct training internally, or use outside training services to comply with this section.
– When outside trainers are hired, you are still responsible for making sure the requirements of this section are met. For example, employers may compare the course outline to the competencies listed in Tables 3 through 6.

You must:

✎ Make sure employees are appropriately trained for their assigned roles and duties as follows:

Exemption: Skilled support employees are not covered by the training requirements of this section (see WAC 296-307-70440).

Initial training:

✎ Provide initial training before the employee is allowed to participate in an actual emergency response operation.

Note: When first responders at the awareness or operations level have sufficient experience to objectively demonstrate competencies specified in Table 3, you may accept experience instead of training.

✎ Make sure initial training adequately addresses the competencies in Tables 3 through 6 and the minimum training durations in Table 2.

✎ Certify that employees objectively demonstrate competencies specified in Tables 3 through 6 (except for employees trained as first responders at the awareness level).

You must:

Retraining (refresher) training:

- Provide retraining annually.
- Make sure retraining covers necessary content.
- Document training or demonstrated competency.

Note: Retraining is not required when employees demonstrate competencies annually and a record is kept of the demonstration methodology used.

You must:

Trainer qualifications:

- Verify trainers have satisfactorily completed an instructors' training course for the subjects they teach. For example, courses offered by the United States National Academy, or equivalent courses are acceptable.

OR

- Have the educational and instructional experience necessary for training.

Specialist employees:

- Specialist employees who have been sent to the scene to advise or assist must receive training or demonstrate competency in their specialty, annually.

Table 2
Minimum Training Durations for all Responders

If you are a:	Then:
First responder at the awareness level	Training duration needs to be sufficient to provide the required competencies
First responder at the operations level	You need a minimum of 8 hours training (see Table 3)
Hazardous materials technician	You need a minimum of 24 hours training (see Table 4)
Hazardous materials specialist	You need a minimum of 24 hours training (see Table 4)
Incident commander	You need a minimum of 24 hours training (see Table 5)

Table 3
Competencies for First Responders at the Awareness Level and Operations Level

Employees must be able to show they:	When they are designated as First Responders at the:	
	Awareness Level	Operations Level
Understand what hazardous substances are and their associated risks.	X	X
Recognize the presence of hazardous substances in an emergency.	X	X
Can identify the hazardous substances, when possible.	X	X
Understand the potential consequences of hazardous substances in an emergency.	X	X
Understand the role of a first responder at the awareness level as described in: - The employer's emergency response plan, including site security and control. - The United States Department of Transportation's Emergency Response Guidebook. (*Search at: http://www.dot.gov.*)	X	X

Can use The United States Department of Transportation's Emergency Response Guidebook.	X	X
Recognize the need for additional resources and the need to notify the incident's communication center accordingly.	X	X
Know basic hazard and risk assessment techniques.		X
Can select and use personal protective equipment (PPE) appropriate for first responder operations level.		X
Understand basic hazardous materials terms.		X
Can perform basic control, containment, and/or confinement operations within the capabilities of the resources and PPE available.		X
Can implement decontamination procedures to their level of training.		X
Understand relevant standard operating and termination procedures.		X

Table 4
Competencies for Hazardous Materials Technicians and Hazardous Materials Specialist

Employees must be able to show they:	**When they are designated as a Hazardous Materials:**	
	Technician	**Specialist**
Have the competencies specified for the first responder operations level. (See Table 3)	X	X
Can implement an employer's emergency response plan.	X	X
Can function within their assigned role in the incident command system.	X	X
Understand hazard and risk assessment techniques.	X	X
Understand basic chemical and toxicological terminology and behavior.	X	X
Can use field survey instruments and equipment to classify, identify, and verify materials at the incident.	X	X
Can select and use personal protective equipment (PPE) appropriate for hazardous materials technicians.	X	X
Can perform advance control, containment, and/or confinement operations within the capabilities of the resources and PPE available.	X	X
Can implement decontamination procedures to their level of training.	X	X
Understand termination procedures.	X	X
Can implement the local emergency response plan.		X
Know of the state emergency response plan.		X
Can develop a site safety and control plan.		X
Understand chemical, radiological, and toxicological terminology and behavior.		X
Understand in-depth hazard and risk techniques.		X
Can use advanced survey instruments and equipment to classify, identify and verify materials at the incident.		X

Can select and use proper specialized chemical PPE given to hazardous materials specialists.		X
Can perform specialized control, containment, and/or confinement operations within the capabilities of the resources and PPE available.		X
Can determine decontamination procedures.		X

Table 5 **Competencies for Incident Commanders**
Employees designated as Incident Commanders must be able to show they:
✎ Have competencies specified for the First Responder Operations Level. (See Table 3.)
✎ Know of the state emergency response plan and the Federal Regional Response Team.
✎ Can implement the local emergency response plan.
✎ Can implement the employer's emergency response plan.
✎ Have knowledge of the incident command system (ICS) and understand how they relate to it.
✎ Can implement the employer's ICS.
✎ Understand the hazards and risks associated with employees working in chemical protective clothing.
✎ Understand the importance of decontamination procedures.
Note: If the first employee arriving at the scene is not trained as an IC, they may take control of the incident within their designated role and training level.

Table 6 **Competencies for Specialist Employees**
Employees designated as Specialist Employees must be able to show they:
✎ Have current knowledge in their field regarding safety and health practices relating to the specific hazardous substances.
✎ Have the knowledge of the ICS and understand how they relate to it.
✎ Understand the care and use of personal protective equipment (PPE).

NEW SECTION

WAC 296-307-70420 Medical surveillance. Provide medical surveillance to employees.

You must:

(1) Provide medical surveillance for employees to comply with Tables 7 and 8, and the following:

✎ Make medical surveillance available at:

– Reasonable times and places.

– No cost to employees, including travel associated costs

such as mileage, gas or bus fare if the employee is required to travel off site

AND

– Wages for additional time spent outside of employees' normal work hours.

✎ Make sure a licensed physician performs or supervises exams and procedures.

✎ Give complete information to the examining physician including:

– A copy of this section.

– A description of the employee's duties that relate to hazardous substance exposure.

– The hazardous substance exposure levels anticipated for the employee.

– A description of the personal protective equipment (PPE) the employee could use.

– Information available from previous medical examinations.

– The medical evaluation information required by chapter 296-307 WAC, Part Y-5, Respirators.

✎ Medical exams must include, at a minimum:

– A medical history.

– A work history (or updated history if on file).

– A special emphasis on:

✂ Assessment of symptoms related to handling hazardous substances.

✂ Health hazards.

✂ Evaluation of fitness for duty (including the ability to wear any personal protective equipment (PPE) or other conditions that may be expected at the workplace).

– Other content as determined by the examining physician.

Note: The physician should consult the *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* and the *Medical Management Guidelines for Acute Chemical Exposure* (search OSHA website: http://www.osha.gov).

You must:

(2) Obtain the physician's written opinion and give a copy to the employee that includes:

✎ A statement of whether or not medical conditions were found which would increase the employee's risk for impairment during emergency response work or respirator use.

– Do not include specific findings or diagnoses unrelated to occupational exposures.

✎ Limitations recommended to the employee's assigned work, if any.

✎ Exam and test results if the employee requests this information.

✎ A statement that affirms the employee has been confidentially informed of medical exam results (including medical conditions requiring follow-up).

Table 7 Medical Surveillance for Employee Categories	
If the employee is covered by this section and is:	**Then you must:**
✎ Exposed for at least 30 days a year to health hazards or hazardous substances at or above the permissible exposure limit or published exposure levels (even when respirators are used), **OR** ✎ Required to wear a respirator for at least 30 days a year.*	✎ Offer standard medical surveillance as specified in Table 8.*
✎ A hazardous materials (HAZMAT) team member. ✎ A hazardous materials specialist.	✎ Provide standard medical surveillance as specified in Table 8.
✎ An emergency responder who shows immediate or delayed signs or symptoms possibly resulting from exposure to hazardous substances during an incident.	✎ Provide incident-specific medical surveillance as specified in Table 8.
✎ Not an emergency responder and: – May be injured. – Shows immediate or delayed signs or symptoms possibly resulting from exposure to hazardous substances. – May have been exposed to hazardous substances at concentrations above the permissible exposure limits (PELs) or the published exposure levels without appropriate PPE.	✎ Offer incident-specific medical surveillance as specified in Table 8.

*Note: A medical evaluation for respirator use is required by chapter 296-307 WAC, Part Y-5, Respiratory protection, for those employees who have not been cleared for respirator use during medical surveillance activities.

Table 8 Frequency of Exams and Consultations	
If the employee is covered by:	**Then medical surveillance must include:**
✎ Standard medical surveillance	Exams and consultations: ✎ Before assignment. **Note:** If the employee is a hazardous materials (HAZMAT) team member or a hazardous materials specialist, the employee must receive a baseline physical examination. ✎ At least once every 12 months after their initial assignment unless the physician believes a shorter, or longer interval (but no more than 24 months) is appropriate. ✎ Whenever employees are reassigned to an area where they will no longer be covered by medical surveillance and they have not been examined within the past 6 months. ✎ As soon as possible after an employee reports: – Signs or symptoms of possible overexposure to hazardous substances or health hazards. – Injury. – Exposure above the permissible exposure limits or published exposure levels. ✎ At the termination of their employment unless they were examined within the past 6 months.

✎ Incident-specific medical surveillance	Medical consultations and exams: ✎ As soon as possible following the incident or development of signs or symptoms. ✎ At additional times, if the physician determines follow-up is medically necessary.

NEW SECTION

WAC 296-307-70425 Keep records.

You must:

✎ Keep a record of:

– Name and Social Security number of the employee receiving medical surveillance

– Physicians' written opinions, recommended limitations, and results of examinations and tests

– Any employee medical complaints regarding hazardous substance exposures

– A copy of all information given to the examining physician (except a copy of this section).

NEW SECTION

WAC 296-307-70430 Incident requirements. Recognize emergencies and initiate a response.

You must:

✎ Make sure employees follow procedures in your emergency response plan to:

– Recognize when an emergency response must be initiated

– Notify employees, and others designated in your plan, of the release

– Follow immediate emergency procedures

– Prevent the incident from increasing in severity or to secure the operation.

NEW SECTION

WAC 296-307-70435 Implement and maintain an incident command system (ICS).

You must:

(1) Make sure a single individual, acting as the incident commander (IC), is in charge of the site-specific incident command system (ICS) and acts within their designated role and training level.

Note: ✎ For multiemployer worksites:
– The IC has responsibility for controlling emergency response operations at the site for all employers.
– Emergency response plans should be consistent in designating who assumes the IC position.
✂ If the first employee arriving at the scene is not trained as an IC (see Table 5, Training Requirements for Incident Commanders and Specialist Employees, WAC 296-307-70415), they may take control of the incident within their designated role and training level.

You must:

(2) Make sure all employers' emergency responders and their communications are coordinated and controlled by the IC.

Note: The IC may delegate tasks to subordinates (within their training level).

You must:

(3) Make sure each employer at the scene has designated a representative to assist the IC.

(4) Establish security and control of the site as specified in your written emergency response plan.

NEW SECTION

WAC 296-307-70440 Prepare skilled support personnel.

Note: The duties of skilled support personnel are described in Table 1, Roles and Duties of Emergency Responders.

You must:

(1) Make sure that your skilled support personnel (including those employees who are not regularly employed by you) who could be exposed to on-scene hazards are given an initial briefing at the site before they participate in any emergency response. The initial briefing must include:

✎ What chemical hazards are involved

✎ What duties are to be performed

✎ Instruction in the wearing of appropriate personal protective equipment.

Note: Skilled support personnel do not need to comply with the other training requirements of this section.

You must:

(2) Make sure the safety and health precautions given to your employees are also given to skilled support personnel.

NEW SECTION

WAC 296-307-70445 Make sure the incident commander oversees activities during the response. The employer of the incident commander (IC) must:

(1) Identify all hazardous substances and conditions present, within their training level, using site analysis and maximum exposure limits, when appropriate.

(2) Implement emergency response procedures appropriate to the hazardous substances and conditions present, such as:

- Procedures that address the use of engineering controls, hazardous substance handling, and new technologies
- Procedures that address decontamination
- Procedures that address PPE
- Procedures that limit the number of personnel to those who are actively performing emergency response operations, in areas where exposure could exist.

(3) Designate an incident safety officer (ISO).

- Make sure the ISO demonstrates knowledge about operations being implemented at the emergency response site. They must:

– Identify and evaluate hazards

– Communicate with the IC about hazards, immediately informing the IC of corrective actions that must be taken when conditions are judged to be:

- An imminent danger

OR

- Immediately dangerous to life or health (IDLH).

– Provide direction about the safety of operations.

NEW SECTION

WAC 296-307-70450 Use the buddy system in danger areas.

You must:

- Make sure operations and tasks (including limited actions) in danger areas are conducted using the buddy system in teams of two or more.

Definition:

Danger areas are 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 hazardous substance.

NEW SECTION

WAC 296-307-70455 Provide rescue and medical assistance.

You must:

(1) Provide stand-by employees equipped with the same level of personal protective equipment (PPE) as the entrants, for assistance or rescue.

Note: ✎ The buddy system applies to stand-by employees (WAC 296-307-70450).
✎ One of the two stand-by employees can be assigned to another task provided it does not interfere with the performance of the stand-by role.
✎ Rescue equipment should be selected and provided based on the types of rescue situations that could occur.

You must:

(2) Make sure employees trained in first aid are readily available with necessary medical equipment and have a way to transport the injured.

Note: ✎ Employers who require their employees to provide first aid must comply with the bloodborne pathogen rule, chapter 296-823 WAC.

NEW SECTION

WAC 296-307-70460 Personal protective equipment.

Note: ✎ Only properly trained employees should select PPE. Hazardous materials technicians and hazardous materials specialists can select PPE within the competencies specified in Table 4.
✎ Selection requirements in other PPE rules also apply, including:
– Chapter 296-307 WAC, Part Y-5, Respirators.
– Chapter 296-305 WAC, Safety standards for fire fighting.

You must:

✎ Provide employees with appropriate PPE and make sure it is used if hazards could be present.

✎ Select PPE (such as respirators, gloves, protective suits and other PPE) based on:

– An evaluation of the performance characteristics (such as breakthrough time and hazardous substance-specificity of the material or item) relevant to the requirements and limitations of the site.

– Task-specific conditions and durations.

– The hazards and potential hazards of the site (see Table 9, Selecting PPE for Specific Hazards).

✎ Select totally encapsulating chemical protective (TECP) suits, as specified in Table 9, that:

– Maintain positive air pressure.

– Prevent inward test gas leakage of more than 0.5 percent.

Note: Follow the manufacturer's recommended procedure for testing a TECP suit's ability to maintain positive air pressure and prevent inward gas leakage. Other established test protocols for these suits, for example NFPA 1991 and ASTM F1052-97, may also be used.

Table 9
Selecting PPE for Specific Hazards

If:	**Then use:**
✎ Inhalation hazards could be present.	✎ Positive-pressure (pressure-demand) self-contained breathing apparatus (SCBA) **OR** ✎ A decreased level of respiratory protection only when the incident commander determines, from air monitoring results, that employees will be adequately protected.
Chemical exposure levels will create a substantial possibility of: ✎ Immediate death. ✎ Immediate serious illness or injury. ✎ Reduced ability to escape.	Either positive-pressure (pressure-demand): ✎ SCBA ✎ Air-line respirators equipped with an escape air supply.
Skin absorption of a hazardous substance may result in a substantial possibility of: ✎ Immediate death. ✎ Immediate serious illness or injury. ✎ Reduced ability to escape.	Protection equivalent to Level A including a totally encapsulating chemical protective (TECP) suit.

NEW SECTION

WAC 296-307-70465 Control hazards created by personal protective equipment (PPE).

You must:

✎ Control hazards created by the use of PPE, including:

– Heat stress due to extremely high temperatures.

– Any other employee health hazard and consideration.

NEW SECTION

WAC 296-307-70470 Use personal protective equipment (PPE) properly.

You must:

(1) Make sure employees inspect PPE before, during and after use, following your plan's procedures.

(2) Make sure employees put on (don) and remove (doff) PPE following your plan's procedures.

(3) Make sure employees do not interchange self-contained breathing apparatus (SCBA) air cylinders from different manufacturers, unless all of the following apply:

- There is a life-saving emergency
- You need a supplemental air supply
- The cylinders are of the same capacity and pressure rating.

(4) Make sure compressed air cylinders used with SCBAs meet the testing and service life requirements of the United States Department of Transportation (USDOT). Search at: *http://www.dot.gov.*

Note: You can also check with the cylinder manufacturers to obtain USDOT test and service life specifications.

You must:

(5) Make sure PPE is maintained in a safe and reliable condition using your plan's procedures. PPE maintenance includes:

- Decontamination
- Cleaning
- Inspection
- Identification of damage or defects
- Parts repair or replacement
- Storage or disposal.

NEW SECTION

WAC 296-307-70475 Postemergency response.

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 covered by this section (however, training, PPE and other requirements in WAC 296-307-70460 through 296-307-70470 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: ✎ WAC 296-307-35015 and 296-307-35018, Employee emergency action plans ✎ Chapter 296-307 WAC, Part Y-5, Respiratory protection ✎ WAC 296-307-550, Employer chemical hazard communication ✎ Other appropriate training requirements relevant to personal protective equipment (PPE) and decontamination For equipment: ✎ Make sure that all equipment used for clean-up work is serviced and inspected before use.

NEW SECTION

WAC 296-307-70480 Definitions. The following definitions are specific to this section:

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 section.

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 section.

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 296-307-550, chemical hazard communication.)

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.

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.

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 296-307 WAC, Part Y-6, Respiratory hazards.

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

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.