



O.H.F.D. RESPIRATORY PROTECTION PROGRAM

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This program is provided by the Oak Harbor Fire Department to comply with the Washington Industrial Safety and Health Administration's (WISHA) *General Occupational Health Standards, Chapter 296-62 WAC, Part E, Respiratory Protection*. Much of the information provided in this program was derived from the *OSHA Technical Manual, Section VIII: Chapter 2, Respiratory Protection* and *OSHA's Small Entity Compliance Guide, Appendix IV, Sample Respiratory Protection Program*.

SEE ALSO: *WAC 296-800 Safety and Health Core Rules*

WAC 296-841 Respiratory Hazards

WAC 296-842 Respirators

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1.0 Purpose

It is policy that the Oak Harbor Fire Department shall provide a safe and healthful work environment for all of its employees. The Oak Harbor Fire Department has determined that employees may be exposed to respiratory hazards. These hazards include particulates, vapors and in some cases may represent Immediately-Dangerous-to-Life-or-Health (IDLH) conditions. The purpose of this program is to ensure that all employees are protected from exposure to these hazards.

2.0 Scope and Application

This program applies to all employees who are required to wear respirators during normal work operations such as structural firefighting, fire investigation, and emergency medical calls with potential exposures to airborne contaminants. Respirators will also be required for use during certain non-routine training or emergency operations involving Special Operations. Employees participating in the respiratory protection program do so at no cost to them. The expense associated with medical evaluations, training, fit testing and respiratory protection equipment will be borne by the Oak Harbor Fire Department. (WAC 296-62-07115)

3.0 Responsibilities

3.1 Respirator Program Administrator

The Respirator Program Administrator is responsible for overseeing the respiratory protection program and to conduct the required evaluations of program effectiveness thereby ensuring that all the requirements of this program are fully implemented, as necessary. Through authority delegated by the Fire Chief, the Respiratory Program Administrator has the ability to make changes to this plan. The person designated as the Program Administrator is the **Fire Chief or his Designee.** (WAC 296-62-07113)

Duties of the Program Administrator include:

1. Identifying work areas, processes or tasks that require workers to wear respirators, and evaluating hazards.
2. Selection of respiratory protection options.
3. Monitoring respirator use to ensure that respirators are used in accordance with their certifications.
4. Arranging for and/or conducting training.
5. Ensuring proper maintenance of respiratory protection equipment.
6. Ensuring that qualitative/quantitative fit testing is performed.
7. Maintaining records required by the program.
8. Evaluating the program.
9. Updating the written program as necessary to reflect workplace changes that affect respirator use.

3.2 Supervisors

Supervisors are responsible for ensuring that the Respiratory Protection Program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. Duties of the supervisor include:

10. Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing, and medical evaluation.
11. Ensuring the availability of appropriate respirators/SCBA and accessories.
12. Being aware of tasks requiring the use of respiratory/SCBA protection.
13. Enforcing the proper use of respiratory protection when necessary.
14. Ensuring that respirators/SCBA is properly cleaned, maintained, and stored according to the respiratory protection plan.
15. Ensuring that respirators fit well.
16. Continually monitoring work areas and operations to identify changes in respiratory hazards.
17. Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.

3.3 Employees

Each employee has the responsibility to wear his or her respirator/SCBA when and where required and in the manner in which they were trained. Employees must also:

18. Care for and maintain their respirators/SCBA as instructed and store them in a clean and sanitary location.
19. Inform their supervisor if the respirator no longer fits well and request a fit test.
20. Inform their supervisor or the Program Administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program.
21. Notify their supervisor or the Program Administrator of any other problems associated with using their respirator/SCBA.
22. Participate in Respirator Medical Evaluation process.

4.0 Respirator Selection

4.1 Evaluating Respiratory Hazards

The Program Administrator will ensure selected respirators match the hazards to which workers are exposed and in accordance with all WISHA standards. The Incident Commander (IC) will conduct a hazard evaluation for each work area where airborne contaminants may be present in routine operations or during an emergency. The hazard evaluation will include:

1. Identification of potential respiratory hazards.
2. Review of work processes to determine where hazardous exposures occur and the magnitude of the exposures. This review will be conducted by surveying the workplace

with air monitoring instruments, obtaining objective data (if available), and talking with employees and supervisors on scene.

3. Routine atmospheric monitoring will be conducted when necessary by the IC's designee.

Firefighting - Positive Pressure SCBA

Overhaul - Positive Pressure SCBA or SCOTT half mask 742 Series cartridges and filters.

Fire Investigation - Positive Pressure SCBA or SCOTT half mask 742 Series cartridges and filters depending on air quality.

Notes:

1. Carbon Monoxide levels should be similar to ambient air, e.g. ½ the PEL for Co (35 ppm). Co levels much higher than ambient air may indicate the presence of other air contaminants.
2. Air monitoring equipment can detect only a few of many heat decomposition products.
3. Minimize exposure in environments where contents are hot to the touch or steaming. This may indicate the continued release of toxic products.
4. Chemical cartridge users shall guard against disturbing any materials that might release dust or fibers.
5. There should be no expectation for unusual toxic contaminants.
6. Respirator cartridges should be replaced per manufacturer's instructions and recommendations.
7. Entrant shall exit hazardous atmosphere immediately if any odor is detected inside the respirator face piece.

4.2 Hazard Evaluation Update

The IC or designee is responsible to revise and update the on-scene hazard evaluation as needed. If an employee feels that a greater level of respiratory protection is needed during a particular activity, s/he is to contact the IC. The IC or designee will evaluate the potential hazard. The IC or designee will then communicate the results of that assessment back to the affected employees. If it is determined that respiratory protection is necessary, all other elements of this program will be in effect for those tasks and this program will be updated accordingly.

The IC or designee will document the hazard evaluation update in the Incident Report using the narrative portion of the approved reporting system. The hazard evaluation update will then become part of the official record of the incident and be kept on file.

4.3 NIOSH Certification

All respirators used by employees of the Oak Harbor Fire Department are certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. All filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while it is in use. In addition all SCBA's are certified CBRN; chemical, biological, radiological, nuclear (WAC 296-62-07130).

4.4 Assigned Protection Factors

The assigned protection factors in “WAC 296-62-07131, Table 1--Assigned Protection Factors” will be used when selecting respirators. SCBA will be used for all fire department emergency activities with the exception of a fire investigator using appropriate respiratory protection in a non-IDLH environment where the IC and lead investigator have determined the environment to be safe using the protocols set forth in the chart on Table 4.1.

4.5 Contaminant Breakthrough Warning Systems

The system in place to prevent air-purifying-respirator wearers from being exposed to contaminant breakthrough includes using a respirator cartridge replacement schedule based on the manufacturer breakthrough-test data and quantitative post fire environmental analysis performed by NIOSH; the US Bureau of Alcohol, Tobacco, and Firearms; and studies summarized in the following documents:

- “Characterization of Firefighter Exposures During Fire Overhaul”, *American Industrial Hygiene Association Journal (AIHAJ)*, 2000; 61:636-641
- “Adverse respiratory Effects Following Overhaul in Firefighters”, *Journal of Occupational Medicine*, 2001; 43:467-473
- “Health Hazard Evaluation Report 96-0171”, *Bureau of Alcohol, Tobacco, and Firearms*, 1998

Refer to Appendix F for a summary of the information and data that was relied upon and is the basis for the APR cartridge change schedule and reliance on the data.

Employees using cartridges not equipped with End-of-Service-Life-Indicator (ESLI) must replace cartridges after every use, and no single use shall exceed 4 hours in length.

For respirators worn exclusively for protection against particles, filters will be changed per the manufacturer's specification and whenever the wearer detects a change in breathing resistance.

4.6 Atmospheres Requiring Highest Level of Protection

For IDLH atmospheres, the highest level of respiratory protection and reliability is required in the form of a complete SCBA ensemble. (WAC 296-62-07132).

5.0 Fit Testing

All employees required to wear a SCBA will be required to pass a fit test.

1. At least annually thereafter.
2. When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, facial deformities scars, deep skin creases, and prominent cheekbones).

Employees will be fit tested with the make, model, and size of respirator they will actually wear. If for any reason an employee finds the respirator fit is unacceptable, the Oak Harbor Fire Department will provide a reasonable opportunity to select a different face piece and to be re-tested.

5.1 Fit Testing Procedure

An Oak Harbor Fire Department approved fit-testing technician will conduct fit testing.

Fit testing will be administered using the WISHA-accepted qualitative fit test protocols found in "WAC 296-62-07201 Appendix A-1: General Fit Testing Requirements for Respiratory Protection and WAC 296-62-07230 Appendix A-3: Quantitative /fit Testing (QNFT) Protocols for Respiratory Protection."

5.2 Fit Testing Exercises

A fit-testing technician will ensure the test exercises are performed when conducting a quantitative fit test.

The respirator must not be adjusted while a fit test is in progress.

6.0 Respirator Use

The IC or designee will monitor emergency scene work areas to be aware of changing conditions where employees are using respirators.

6.1 Facepiece Seal Protection

The Oak Harbor Fire Department will not permit respirators with tight-fitting face pieces to be worn by employees who have conditions determined to compromise the facepiece-to-face seal. Examples of these conditions include facial hair (e.g., stubble, bangs) that interferes with the facepiece seal or valve function, absence of normally worn dentures, the use of jewelry or headgear that projects under the facepiece seal.

Corrective glasses or goggles, or other personal protective equipment, must be worn in such a way that they do not interfere with the seal of the facepiece to the face. Full-facepiece respirators will be provided where either corrective glasses or eye protection is required, since corrective lenses can be mounted inside a full-facepiece respirator. The use of contact lenses with respirators where the wearer has successfully worn such lenses before will be allowed.

A user seal check (*also known as a fit check*) will be performed every time a tight-fitting respirator is put on or adjusted to ensure proper seating of the respirator to the face. The user seal check shall be conducted in accordance to the manufacturer's recommendations.

6.2 Monitoring Respirator Effectiveness

The IC or designee will be responsible to maintain appropriate surveillance of changes on the scene of an incident. Different work areas may present different conditions that may increase employee exposure or stress. (WAC 296-62-07171)

Employees must leave the respirator use area when:

- The respirator user can detect vapor or gas breakthrough (by odor, taste, and/or irritation effects), a change in breathing resistance, or leakage of the facepiece. The employee must leave the respirator-use area before attempting to replace the respirator or the filter, cartridge, or canister elements.
- The respirator is not properly functioning and must be replaced or repaired.
- The employee experiences severe discomfort in wearing the respirator or if the employee experiences sensations of dizziness, nausea, weakness, breathing difficulty, coughing, sneezing, vomiting, fever, and chills.

6.3 Procedures for Immediately Dangerous to Life and Health (IDLH) Situations

The Oak Harbor Fire Department has identified the following areas or job duties as presenting the potential for IDLH conditions:

- Environments that have elements of fire, smoke, hazardous materials, or the potential for explosion.
- Post-fire environments where fire origin and cause investigations may occur.

7.0 Maintenance and Care

7.1 Cleaning, and Disinfecting

Respirator users must clean and disinfect their assigned respirators in accordance with the manufacturer's recommended procedures.

[WAC 296-62-07253 Appendix B-2: Respirator Cleaning Procedures.](#))

7.2 Storage

All fire department respirators will be stored in a natural configuration protecting them from damage, contamination, dust, sunlight, temperature extremes, excessive moisture, and damaging chemicals. Each employee will be issued a face piece and protective bag. The face piece, exhalation valve, heads up display, and voice emitter will be stored in the protective bag and in a manner that prevents deformity. (WAC 296-62-07176)

7.3 Inspection

Respirator inspections will include a check of respirator function, tightness of connections, and the condition of the various parts including but not limited to: The facepiece, head straps, valves, connecting tube, and all warning devices. On all cartridges, canisters, or filters will be checked for any deformity or expiration. In addition, the elastomeric parts must be evaluated for pliability and signs of deterioration. Respirator inspections will ensure the air cylinders are charged to at least 4,000 lbs. psi. This equals 90% of the manufacturer's recommended full pressure level of 4,500 psi.

7.4 Repair

The Program Administrator will ensure respirators failing to pass inspection or otherwise found to be defective will be removed from service and repaired or adjusted. If a respirator cannot be repaired or adjusted, it will not be put back into service.

Only NIOSH-approved manufacturer's replacement parts designed for that respirator will be used, and work will be done according to the manufacturer's recommendations and specifications.

SCBA's air cylinders will be maintained in a fully charged state and recharged when the pressure falls below 4,000lbs.psi. SCBA air cylinders will be hydrostatically tested according the manufacturers recommended frequency. Hydrostatic testing will be conducted by an approved facility.

8.0 Breathing Air Quality

The Program Administrator will ensure that breathing air for atmosphere-supplying respirators is of high purity, meets quality levels for content, and does not exceed certain contaminant levels and moisture requirements as specified in WAC 296-62-07182(2).

All breathing gas containers must be marked in accordance with the NIOSH respirator certification standard, 42 CFR part 84.

8.1 Compressors

Compressors used for supplying breathing air must be constructed and situated so contaminated air cannot enter the air-supply system. The location of the air intake will be in an uncontaminated area where exhaust gases from nearby vehicles, the internal combustion engine that is powering the compressor itself (*if applicable*), or other exhaust contaminants being ventilated will not be picked up by the compressor air intake.

Compressors will be equipped with suitable in-line, air-purifying sorbent beds and filters to further ensure breathing air quality and to minimize moisture content so that the dew point at 1 atmosphere pressure is 10°F (5.56°C) below the ambient temperature. Sorbent beds and filters will be maintained and replaced or refurbished periodically according to the manufacturer's recommendations. An inspection tag will be kept at the compressor indicating the most recent change date and the signature of the Program Administrator or designee authorized to perform the maintenance.

Oil lubricated compressors use a high temperature or carbon monoxide alarm, or both, to monitor CO levels. If only high temperature alarms are used, the Program Administrator will ensure the air supply will be monitored at intervals sufficient to make sure the concentrations of CO in the breathing air does not exceed 10 ppm. Where this is not possible or feasible, we will combine the use of a carbon monoxide alarm with a carbon monoxide sorbent bed.

Breathing air couplings must be incompatible with outlets for non-respirable plant air or other gas systems to prevent accidental servicing of airline respirators with non-respirable gases or oxygen. No asphyxiating substance (*e.g., nitrogen*) will be allowed in the breathing airlines.

9.0 Identification of Filters, Cartridges and Canisters

The Program Administrator will ensure that all filters, cartridges, and canisters used in the workplace are labeled and color-coded with the NIOSH approval label, and ensure that the label is not removed and remains legible. (WAC 296-62-07184 Table 3 -- Color Coding of Respirator

Filters, Cartridges and Canisters) provides color-coding information. For employees authorized to use APRs in their work, the safety policies and filter change requirements can be found in AG 200.5.

10.0 Training and Information

The Program Administrator will ensure training is provided to respirator users, supervisors, and any person issuing respirators on the contents of this Program and their responsibilities under it, and on the WISHA respiratory protection standard.

Employees will be trained prior to using a respirator in the workplace. Supervisors will be trained prior to using a respirator in the workplace or prior to supervising employees who wear respirators. (WAC 296-62-07186)

New employees will be provided respirator training prior to using a respirator in the workplace.

Retraining will occur if the Program Administrator or Supervisor determines that any employee has not retained or demonstrated the knowledge, understanding, or skill level required by the training program.

11.0 Program Evaluation

The Program Administrator is responsible to conduct periodic evaluations to ensure that the provisions of the program are being implemented. The following factors will be evaluated to determine program effectiveness:

- Respirators are properly fitted and if employees are able to wear respirators without interfering with effective workplace performance.
- Respirators are correctly selected for the hazards encountered.
- Respirators are used properly depending on the workplace conditions encountered.
- Respirators are being maintained and stored properly.
- Employee feedback

Supervisors are responsible to periodically monitor employee use of respirators to ensure that they are being used and worn properly.

The Program Administrator will ensure corrective actions are taken to address problems associated with wearing a respirator that are identified by employees or that are revealed during any other part of this evaluation.

Recordkeeping

The Program Administrator will ensure retention of fit test records for respirator users until the next fit test is administered. These records consist of:

- - Name or identification of the employee tested;
 - Type of fit test performed (QLFT, QNFT -- irritant smoke, saccharin, etc.);
 - Make, model, and size of the respirator fitted;
 - Date of the fit test;
 - Pass/fail results if a QLFT is used; or
 - Fit factor and strip chart recording or other record of the test results if quantitative fit testing was performed.

The Program Administrator will ensure retention of employee training records, including the names of employees trained and the dates when training was conducted.

The Program Administrator will keep a current copy of the Oak Harbor Fire Department's written respiratory protection program at Fire Station 81, located at 855 East Whidbey Avenue, Oak Harbor WA 98277. Also, every computer desk top will have access to this written program in electronic form under OHFD Policy & Procedure Manual, and every fire station will have a hard written copy of the Policy & Procedure Manual. All written materials required to be maintained under the recordkeeping requirements will be made available, upon request, to the employee who is subject of the records and to the director or the director's designee of the Washington State Department of Labor and Industries for examination and copying.

Medical Evaluations

Every employee of the Oak Harbor Fire Department who must wear a respirator will be provided with a medical evaluation before they are allowed to use the respirator. Our first step is to give the medical questionnaire to those employees. Employees are required to fill out the questionnaire in private and send or give them to the Oak Harbor Fire Department medical provider. Completed questionnaires are confidential and will be sent directly to medical provider without review by management.