

Yamhill Fire Protection District

District Policies, Procedures, & SOG's

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Respiratory Protection

Issued: September 9, 2014

PURPOSE:

To ensure the District meets all approved standards for Respiratory Protection for all employees.

POLICY:

AUTHORITY & RESPONSIBILITY:

The District Safety Officer shall be the Respiratory Protection Program Administrator. The responsibilities of the program administrator are described in procedure.

PROCEDURE:

1. SELECTING RESPIRATORS FOR USE IN THE WORKPLACE

Ref: OAR Chapter 437, 1910.134(d)

- A. The District will select and provide appropriate respirators based on hazards present, workplace and user factors, respirator performance and reliability. ALL respirators must be NIOSH approved.
- B. The District will evaluate respiratory hazards in the workplace. There are two methods by which this can be accomplished:
 1. Use current exposure data from the work site.
 2. Use representative data from industry or laboratory studies that reflects similar conditions.
- C. The District will select appropriate respirators. Atmospheres that present a respiratory hazard are divided into three types – particulates, gases and vapors, and IDLH (Immediately Dangerous to Life or Health). The types of respirator appropriate for each of these atmospheres is as follows:

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1. Particulates: use either air purifying respirators (APR) with the appropriate filter or air-supplying respirators (SCBA and SAR). For APRs the type filter used depends on the type of particulate. If the particulate type is not known a multi-contaminant P100 filters (the highest level of protection available) can and will be used. **Because firefighters and investigators are exposed to unknown particulates on the fire-ground they will always use combination multi-contaminant/P100 filters in their APRs.** In atmospheres containing a known or suspected Tuberculosis hazard, personnel will wear an N-95 rated respirator.
2. Gases and vapors: use APR with the appropriate filter or air-supplying respirators (SCBA and SAR). For APR use the substance and its concentration must be known to select the right filter. Filters must have an end of service life indicator (ESLI) or must be changed using a time schedule based on objective data. The required data includes contaminants present, their concentration, the volume of air passing through the filter, the air temperature, and the humidity. **Because firefighters and investigators are exposed to unknown gases and vapors on the fire-ground APRs will not be used for such protection. Unknown gases and vapors must be eliminated prior to APR use on the fire-ground.**

Note: Although the combination multi-contaminant/P100 filter will remove some gases and vapors, because of the above limitations it is not intended for gas and vapor protection on the fire-ground.

3. IDLH (Immediately Dangerous to Life or Health): positive pressure air-supply respirators must be used (SCBA and SAR). **Any unknown atmosphere must be assumed to be IDLH.**
- D. The District will strive to keep the assortment of respirator types to a minimum. Ideally, all SCBAs would be of a single make and model. The same is true for APRs. This will contribute to program manageability through simplified training and maintenance. However, if a worker must have a non-standard respirator to achieve a satisfactory fit it will be provided.
- E. Voluntary respirator use: Employees who elect to use a respirator when one is not required must first read Appendix D (Tab 8) and provide the program administrator with a signed letter indicating they have done so.

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F. District Respirators: Only respirators approved by the program administrator will be used. All respirators must be NIOSH approved. The following respirators are approved and in use within the District:

1. Scott High Pressure
2. "Duckbill" N-95 DISPOSABLE MASKS (Tuberculosis atmospheres)

NOTE: The District also supplies dust masks for the convenience of our employees. These are not considered respirators and are not to be used in place of a respirator. They are for nuisance dust only, such as pollen or sawdust from untreated lumber. These masks are not part of the respiratory protection program. Their use is voluntary.

II. MEDICAL EVALUATIONS FOR EMPLOYEES REQUIRED TO USE, RESPIRATORS Ref: OAR Chapter 437, 1910.134(e)

- A. The purpose of the medical evaluation is to ensure no medical condition exists that could become dangerous as a result of a respirator use.
- B. The District shall identify a physician or licensed health care professional (PLHCP) to perform medical evaluations using the OR-OSHA approve medical questionnaire under Tab 4 or an examination that obtains the same information. The program administrator will ensure that the PLHCP possesses a copy of the district's respiratory program (Tab 1) and the medical evaluation procedures and questionnaire (tab 4). When the PLHCP changes, the District will notify the program administrator. The program administrator will ensure the new PLHCP obtains this information mentioned above.
- C. The District will obtain a written recommendation from the PLHCP regarding the employee's ability to use a respirator. This document will be kept in the employee's district medical record.
- D. New employees who are required to use respirators will be screened during their pre-employment physical examination. Employees who have not previously been evaluated for respirator use and are required to use one must be medically evaluated before they are fit tested or begin to use it in the workplace. Non-employees of the district, such as students in fire and SCBA classes, must provide documentation of OSHA complaint medical certification prior to donning a respirator. This applies even if the anticipated atmosphere is free of respiratory hazards.

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III. FIT TEST PROCEDURES FOR TIGHT FITTING RESPIRATORS

Ref: OAR Chapter 437, 1910.134(d)

- A. The purpose of fit testing is to ensure a mask is the right size and shape to create an effective seal with the user's face. The test shall not be conducted if there is any hair growth between the skin and the face piece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed. (OAR 437, 1910.134 appendix A(9))
- B. Before any employee uses a respirator with a negative or positive pressure tight-fitting face piece in a hazardous or unknown atmosphere, the employee must be fit tested with the same make, model, style, and size respirator. Either qualitative or quantitative fit testing methods may be used. These tests must be administered using the OSHA accepted procedures under Tab 5. When using the Scott qualitative fit test kit follow the Bitrex test procedures on page I-28 under Tab 5 or the instructions in the kit. This requirement also applies to non-employees who intend to use a respirator for training or any other purpose when a hazardous or unknown environment may be encountered.
- C. Fit testing shall be re-accomplished annually, when changes occur in the employee's physical condition that could affect the fit, and whenever the employee will be using a different type of respirator from that for which he/she has already been fit tested. If an employee cannot achieve a proper fit with a particular type respirator, the employee will not use that type of respirator in a hazardous or unknown atmosphere.

IV. PROCEDURES FOR PROPER USE AND REASONABLY FORSEEABLE EMERGENCY SITUATIONS

Ref: OAR Chapter 437, 1910.134(g)

- A. The District prohibits the use of tight-fitting respirators by employees who have facial hair, glasses, or any other condition that comes between the sealing surface of the face piece and the face or that interferes with valve function.
- B. Seal Checks: All users will perform a seal check each time they don a respirator. SCBAs and SARs will be seal checked in accordance with training standards. APRs will be seal checked using either of the methods described under Tab 6. TB masks will be seal checked in accordance with the manufacturer's instructions. All leaks must be eliminated before entering a hazardous atmosphere.

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- C. Employees shall **immediately** leave the hazardous atmosphere if they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece. Employees shall leave the hazardous atmosphere to change SCBA bottles, APR filters or TB masks.
- D. Interior Structural Firefighting: This applies only to fires that have progressed beyond the incipient stage. All firefighters engaged in interior structural firefighting must use SCBA and full personal protective equipment. At least two firefighters must enter the IDLH atmosphere and remain in visual or voice contact with each other at all times; at least two firefighters must be located outside. Visual, voice or signal line communication will be maintained between employees inside and those outside. Employees outside will be trained and equipped to provide rescue. The Incident Commander or designee will be notified before employees outside the IDLH atmosphere make entry to effect a rescue.
- E. IDLH Atmospheres Other Than Interior Structural Firefighting: This includes but is not limited to Confined Space Rescue Operations. SCBA or SAR will be used. At least two employees will remain outside the IDLH atmosphere. Visual, voice or signal line communication will be maintained between employees inside and those outside. Employees outside will be trained and equipped to provide rescue. The Incident Commander or designee will be notified before employees outside the IDLH atmosphere make entry to effect a rescue. Confined Space Rescue is included in this category.
- F. Unknown Atmospheres: Any atmosphere where the contaminants are unknown shall be assumed to be IDLH.
- G. Salvage, Overhaul and Fire Investigation: Initially the atmosphere is unknown and therefore assumed to be an IDLH hazard area. SCBA equipped employees shall use a gas monitor to ensure all readings are within limits and established **brisk and continuous** ventilation. The purpose of ventilation is to exhaust any potential evolving gases and vapors before they reach hazardous concentrations. At this point the atmosphere is no longer IDLH and considered to be free of hazardous quantities of unknown gases and vapors but still contaminated with unknown particulate hazards. APRs with combination multi-contaminants/P100 filters may be used in lieu of SCBA under these circumstances. Approval of the use of APR must come from the Incident Commander. **All APR equipped employees will immediately evacuate to fresh air if a gas or vapor is detected, brisk and continuous ventilation is lost, gas monitor readings exceed limits, or anyone experiences unusual physiologic**

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effects. Whenever APRs are used, even if only for a short time, the masks will be cleaned and filters replaced as soon as the crew/investigator returns to quarters.

H. Cold Scene: The area must meet the following criteria to be designated a cold scene:

1. All combustion has ceased
2. The atmosphere and materials have returned to ambient temperature
3. No suspended particles (smoke, dust, etc.) are visible or suspected
4. Gas monitor readings are normal
5. No suspicion of hazardous materials exists.

A scene will not usually meet these criteria until the fire has been out for hours or days. If a clear atmosphere is confirmed, respiratory protection is optional and at the discretion of the designated IC or investigator, but still a recommended practice. **Be aware that physically disturbing a fire scene, through overhaul, investigation activities or a change in atmospheric conditions (wind, heat, etc.), may reduce air quality. Under these conditions protection from particulates (APR) or unknown atmospheres (SCBA) is required.** Whenever APRs are used, even if only for a short time, the masks will be cleaned and filters replaced as soon as the crew / investigator returns to quarters.

I. Tuberculosis Patients: This is a particulate hazard area. Prior to entering a known or suspected TB atmosphere or contacting a known or suspected TB patient employees will don and seal check "duckbill" masks. A Tecno mask will be applied to the patient as well if it does not interfere with medical treatment.

V. CLEANING, DISINFECTING, STORING, INSPECTIONG, REPAIRING, AND
MAINTAINING RESPIRATORS. Ref: OAR Chapter 437, 1910.134(h)

- A. Cleaning: Individually that are issued respirators will be cleaned by the user as often as necessary to maintain them in a sanitary and functional condition. Respirators worn by more than one employee will be cleaned and disinfected immediately after each use. This includes respirators used in training and fit testing.
- B. SCBAs will be cleaned in accordance with Scott manufactures recommendations. APR cleaning will follow the guidance found under Tab 6. APRs will be cleaned and filters replaced as soon as the crew / investigator returns to quarters.

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- C. Storage: Respirators will be stored in such a way that they are protected from deformation, damage, dust, contamination, sunlight, extreme temperatures, excess moisture, and chemicals. Storage locations must be accessible and convenient to the users.
 - D. Inspection: SCBAs will be inspected in accordance with Scott manufactures recommendations APR inspection: inspect prior to each use. Check for cleanliness, the presence of correct filters, tightness of filter cartridges, proper functioning of inhalation valves, and integrity of mask body, seal and harness.
 - E. Maintenance and Repair: SCBAs will be maintained and repaired by certified personnel. Only personnel who possess a current OSHA/NIOSH/DOT approved certification in the maintenance and repair of the Scott will perform such work. Recertification is required every two years. This program administrator will keep a copy of the personnel certification on file. Individually issued APRs will be maintained and repaired by the user. Obtain replacement parts from supply as needed. If there is any doubt regarding the serviceability or repair ability of an APR it is to be exchanged for a new one.
- VI. ENSURE ADEQUATE AIR QUALITY, QUANTITY, AND FLOW OF BREATHING AIR FOR ATMOSPHERE-SUPPLYING RESPIRATORS (SCBA AND SAR).
Ref: OAR Chapter 437, 1910.134(i)
- A. Air Supply Equipment: The District obtains compressed breathing air from the District-owned breathing air compressor at station 4. **Trained employees will be the only ones operating the breathing air compressors and cascade systems. Bottles with an expired hydrostat test date will not be filled.** As a minimum all compressed breathing air shall meet the requirements for Grade E breathing air approved for use in SCBA and SCUBA as described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7, 1-1989.
 - B. Maintenance: Maintenance is performed under contract with a private company. The contractor performs scheduled maintenance and repairs on the above equipment.

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- C. Air Sample Analysis: Air samples are collected quarterly by a private company and sent to a private laboratory for analysis. The results are sent to the program administrator for review. Facilities Maintenance maintains records of service and air sampling. The most recent air quality certification record is to be posted on the wall of the compressor room.

VII. TRAINING IN RESPIRATORY HAZARDS, PROPER RESPIRATOR USE, AND MAINTENANCE.

Ref: OAR Chapter 437, 1910.134(k)

- A. The Training Division will conduct initial training on respirators and respiratory protection. Initial training will be conducted when a new type of respirator is put into service and when an employee\volunteer is required to use a current respirator for which they have not had previous training. The trainee will watch the respiratory protection program video and receive hands-on instruction from someone qualified to use the equipment. Accomplishment of annual training and fit testing will be the responsibility of the employee's\volunteer's Training Officer or there designee. Annual training will consist of watching the respiratory protection video and demonstration of ability to don SCBA in 60 seconds or less. The Training Division will maintain copies of all initial and annual training. Initial training records will be kept on file as long as the employee/volunteer is required to use that piece of equipment. Annual training records will be kept on file in the employee/volunteer training file. In accordance with OSHA rules, a hard copy of these records must be maintained and readily available for inspection.
- B. SCBA training shall comply with training standards; refer to NFPA 1404 – Standard for Fire Department Self-Contained Breathing Apparatus Program Information, the manufacturer's instructions and the information contained in this program.
- C. APR training shall comply with OAR Chapter 437, 1910.134(k) – Respiratory Protection, Training and Information, the manufacturer's instructions and the information contained in this program.
- D. Tuberculosis mask training shall comply with OAR Chapter 437, 1910.134(k) – Respiratory Protection for Tuberculosis, Training and Information, the manufacturer's instructions and the information contained in this program.

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- E. Technical Rescue Teams will annually conduct training in-house that specifically addresses equipment and factors affecting respirator use in those situations. This training will be documented and filed in-house. This is in addition to the training listed above.

VIII. PROGRAM ADMINISTRATION

Ref: OAR Chapter 437, 1910.134(l)

- A. The District Lieutenant will be the Respiratory Program Administrator. The Fire Chief will identify this person by name in writing. Appropriate training or experience will qualify this person. The Administrator shall ensure District operations comply with applicable OSHA respiratory protection directives.
- B. Program Effectiveness Evaluation: The program administrator shall evaluate the effectiveness of the respiratory program annually. This evaluation will include an assessment of hazard sites, training, equipment, and program administration.
- C. Hazard sites: District employees/volunteers come into contact with both temporary and permanent respiratory hazard sites. All permanent sites will be visited annually. A visit will also be conducted when a permanent site is modified in any significant way, such as a change in materials being used, change in ventilation apparatus, or relocation. Any new permanent hazard sites will be visited during their development phase to assist in respiratory protection planning and implementation. The district has the following respiratory hazard sites:
 - 1. Fire grounds (temporary)
 - 2. Tuberculosis patients (temporary)
- D. Training: review training aids, such as videos and equipment, and update as needed. Review training records to ensure that employees/volunteers who use respirators accomplish annual refresher training and fit testing. Interview a sample of employees/volunteers and supervisors who work in each of the hazard sites to determine the following:
 - 1. Are employees/volunteers receiving initial training and medical evaluations prior to respirator use?
 - 2. Are employees/volunteers using respirators when they should be?

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3. Do employees/volunteers understand what their respirators will and will not protect against?
 4. Do employees/volunteers know how to use and maintain their respirators?
 5. What concerns do employees/volunteers have regarding their personal respiratory protection or the respiratory protection program?
- E. Equipment: Examine a sampling of APRs and SCBAs. Check their overall condition and ensure that the correct filters are installed and not in need of replacement. Determine if different or more modern equipment is required. Visit the district SCBA refill sites. Talk with the support services person responsible for the equipment to identify any problems. Examine air sample test records. Ensure current air quality certificates are posted at the compressor site.
- F. Program Administration: Determine if any rule changes or other developments have occurred that must be incorporated in the district's respiratory protection program. The following points of contact may be helpful:
1. OR-OSHA at 503-229-5910 or <http://www.cbs.stste.or.us/external/osha>
 2. National Institute of Occupational Safety and Health at 800-35NIOSH or <http://www.cdc.gov/niosh/homepage.html>
 3. Center for Disease Control at <http://www.cdc.gov/>
 4. Oregon Health Division TB Section at <http://www.ohd.hr.state.or.us/cdpe/tb/welcome.htm>
 5. OR-OSHA TB Section – 503-229-6193
 6. OR-OSHA Consultative Branch at 503-229-6193
- G. Record Keeping: The offices responsible for maintaining respiratory protection records are listed below. Contact each to verify that the records are up to date.
1. The District: Medical evaluation records
 2. Training Division: Training and fit test records
 3. The District: SCBA maintenance records
- H. Program Administrator: Program effectiveness evaluation records, compressor/cascade air sample test records.

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VIX. GLOSSARY

APR: Air-Purifying Respirator.

A respirator that covers part or all of the face and removes contaminants from ambient air by drawing it through a filter.

ASR: Air-Supplying Respirator.

A respirator that delivers clean air from a source other than the ambient atmosphere to a mask via a hose. This includes SCBA and SAR.

DUST MASK:

A performed disposable mask. Also called a filtering face piece or surgical mask.

FIT TEST:

A qualitative or quantitative test to determine if a respirator is the right size and shape for a user's face.

SAR: Supplied Air Respirator.

An air-supplying respirator for which the source of breathing air is not designed to be carried by the user.

SEAL CHECK: Also known as a fit check.

An action performed by the user each time a respirator is donned to determine if it is properly seated to the face.