**12.04.01 RESPIRATORY EQUIPMENT PROTECTION**

**1. REFERENCE**

 WAC 296-305-04001

 WAC 296-842 Respiratory protection

**2.0 RESPIRATOR PROGRAM POLICY**

More than just SCBAs are used in the fire service. Each type of respirator selected and used must be the requirements of this program, including SCBAs, Supplied Air Respirators, Air Purifying Respirators (APRs) and disposable particulate masks.

**2.1** **TRAINING PROGRAM**.

 All firefighters will be trained on the selection, use, limitations, and maintenance of respirators per the manufacturers instructions annually.

2.2 Firefighters shall be thoroughly trained in accordance with the manufacturer's instructions on emergency procedures such as use of regulator bypass valve, corrective action for facepiece and breathing tube damage, and breathing directly from the regulator (where applicable).

2.3 Firefighters shall be tested at least annually on the knowledge of respiratory protection equipment operation, safety, organizational policies and procedures, and facepiece seals, to the fire department's standard and document results.

2.4 After completing such training, each firefighter shall practice at least quarterly, for each type and manufacture of respirator available for use, the step-by-step procedure for donning the respirator and checking it for proper function.

**2.5** **RESPIRATOR SELECTION AND USE**.

**2.6** Firefighters shall only use Department issued respirators, cartridges, and filters on the included chart.

**2.7** If an additional product or activity requiring a respirator is done by a Firefighter, the Respirator Program Administrator will use a respirator selection guide, the SDS sheet, the AHJ adopted NFPA standard or the manufacturer’s recommendation for the proper respirator cartridge and filter and update the selection and change schedule chart from this section.

**2.8** All members assigned to work in hazardous atmospheres shall be provided with approved SCBA’s that meet the 2007 edition of NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus for Emergency Services.

**2.9 Respirator Selection Chart**

| Fill-in General Product used or Activity Below | Requirements for Respirator | Department Issued Model of Respirator and Cartridge Used | Fill-In Frequency of Cartridge ChangeResponse Conditions  |
| --- | --- | --- | --- |
| Fire Fighting Activities in IDLH or Hazardous Atmospheres | SCBA - NIOSH or 2007 edition of NFPA 1981 Compliant |  | N/A |
| Overhaul | SCBA - NIOSH or 2007 edition of NFPA 1981 Compliant |  | N/A |
| Post Overhaul prior to Exposure Evaluation | SCBA - NIOSH or 2007 edition of NFPA 1981 Compliant |  | N/A |
| Asbestos Present | SCBA - NIOSH or 2007 edition of NFPA 1981 Compliant |  | N/A |
| IDLH/Hazardous Atmospheres | SCBA - NIOSH or 2007 edition of NFPA 1981 Compliant |  | N/A |
| EMS Calls with possible TB Exposure | NIOSH-approved, 95% efficient particulate APR |  | After each response, or if plugged, damaged or soaked change cartridge, filter or mask Immediately |
| EMS Calls with Aggressive Viral or Airborne Pathogens | Current CDC Recommended Guidelines |  | After each response, or if plugged, damaged or soaked change cartridge, filter or mask Immediately |

**2.10** A negative pressure respirator, any self-contained breathing apparatus, or any respirator which is used in an atmosphere immediately dangerous to life or health (IDLH) equipped with a facepiece shall not be worn if facial hair comes between the sealing periphery of the facepiece and the face or if facial hair interferes with the valve function.

**2.11** The wearer of a respirator shall not be allowed to wear contact lenses if the risk of eye damage is increased by their use.

**2.12** **MEDICAL EVALUATIONS.**  Every firefighter who must wear a respirator will be required to have an approved medical evaluation before they are allowed to use the respirator.

 **2.13** Using guidelines established by a physician, VARIABLE shall determine whether or not a member may be assigned to a task requiring the use of a respirator. Persons with physical disabilities such as, but not limited to, respiratory impairments, or claustrophobia when wearing a respirator, shall not be assigned to tasks requiring the use of respirators unless it has been determined by a qualified physician that they are physically able to perform the work and use the equipment. All respirator users’ medical status should be reviewed annually by VARIABLE.

**2.14** Additional Medical Evaluations required if:

* Our medical provider recommends it.
* Our respirator program administrator decides it is needed.
* A firefighter shows signs of breathing difficulty.
* Changes in work conditions that increase firefighter physical stress (such as confined spaces).

**2.15** **RESPIRATOR FIT TESTING**. All firefighters who wear tight fitting respirators will be fit-tested before using their respirator. Firefighters will only be allowed to used the specific size and model of respirator they are fit tested for. Fit-testing will be repeated at least annually.

 **2.16** Respirators are fit-testing using the specific procedures in WAC 296-842-22010.

 **2.17** Only members with a properly fitting facepiece shall be permitted by the fire department to function in a hazardous atmosphere with SCBA.

 **2.18** Fit testing shall be repeated:

1. At least once every twelve months.
2. Whenever there are changes in the type of SCBA or facepiece used.
3. Whenever there are significant physical changes in the user. Example: Weight change of ten percent or more, scarring of face seal area, dental changes, cosmetic surgery, or any other condition that may affect the fit of the facepiece seal.

**2.19** The fit-testing instrument we use is:

* SCBAs - Quantitative Fit Testing with Manufacturer approved test piece. The fit testing is done only in a negative-pressure mode. If the facepiece is modified for fit testing, the modification shall not affect the normal fit of the device. Such modified devices shall only be used for fit testing.
* Air Purifying Respirators - VARIABLE PER WAC 296-842-22010
* N95 or P95 Disposable Mask Respirators - VARIABLE PER WAC 296-842-22010

**2.20** Documentation of our fit-test results is kept in each Firefighter’s personnel file at the station. Respirator fit test records shall include:

Applicable written guidelines for the respirator fit testing program including pass/fail criteria;

1. Type of respirator tested including manufacturer, model, and size;
2. Type of fit test and instrumentation or equipment used;
3. Name or identification of test operator;
4. Name of member tested;
5. Date of test; and
6. Results of test.

**2.21** **RESPIRATOR USE**. Facial hair that comes between the sealing periphery of the facepiece and the face or interferes with the valve function of Self-Contained Breathing Apparatus, or any respirator shall not be permitted.

**2.22** Members will only be allowed to use the make, model, and size respirator for which they have passed a fit test within the last twelve months.

**2.23** Wearers of a respirator shall not be allowed to wear contact lenses if the risk of eye damage is increased by such use.

**2.24** If a spectacle, goggle, or face shield must be worn with a facepiece, it shall be worn so as to not adversely affect the seal of the facepiece to the face.

 **2.25** Straps or temple bars shall not pass between the seal or surface of the respirator and the user's face.

**2.26** A ‘seal check’ will be performed before any use of a respirator.

**2.27** Members shall be decontaminated prior to removal of respirators whenever fire fighting activities resulted in exposure to a hazardous substance.

**2.28** When exchanging air supply bottles during suppression or overhaul activities, reasonable precautions shall be taken to maintain uncontaminated atmosphere to the breathing zone and facepiece supply hose.

**2.29** Anytime members are working inside a confined space, they will be provided with SCBA or air line respirator with escape bottle, and shall use the equipment unless the safety of the atmosphere can be established by testing and continuous monitoring.

**2.30** Members using a properly functioning SCBA shall not compromise the protective integrity of the SCBA by removing the facepiece for any reason in hazardous atmospheres or in atmospheres where the quality of air is unknown.

**2.31** Members will clean their own face pieces after every use according to manufacturer’s recommendations.

**2.32** **Maintenance and Testing**. Any SCBA found unstable, or where there is a reported failure of an SCBA, the unit shall be removed from service, tagged and recorded as such, and tested before being returned to service.

**2.33** SCBA cylinders shall be hydrostatical tested within the periods specified by the manufacturer and the applicable governmental agencies.

**2.34** When the fire department makes its own breathing air or uses vendor supplied breathing air, they shall maintain documentation certifying breathing air quality. The breathing air shall:

* Be tested at least quarterly by using an air sample taken from the same outlet and in the same manner as the respirator breathing air cylinders are filled or air line respirators are connected.
* Meet the requirements of either the 2003 edition of NFPA 1989, Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection or the 1997 edition of ANSI/CGA G6-1 - Commodity Specification for Air, with a minimum air quality of grade.
* Meet a water vapor level of 24 ppm or less

**2.35** SCBA's shall be checked VARIABLE (day, week) as follows:

* Cylinder Valve closed
* Cylinder Pressure between (VARIABLE 2050 and 4500 or 1800 and 2216 PSI)
* Low pressure alarm bell.
* Check bell sound by pressurizing the system, open the cylinder valve and close it, the alarm should ring Bleed off excess air.
* High pressure hose.
* Check for tight fit at the tank
* Check for physical damage to the hose e.g. bubbles, abrasions, splits.
* Regulator
* Main line knob in closed position
* By-pass knob, closed finger tight
* Rubber outlet cover and gauge in good condition
* Regulator gauge should read zero
* Breathing tube
* Inspect for perforations, small cracks, or signs of wear.
* Tube should be free of moisture.
* Ensure gaskets are in place and not damaged.
* Backpack harness and carrier
* Shoulder and body straps fully opened and not deteriorated
* Buckles and snaps in proper working order.
* Facepiece
* Lens clean and free of cracks
* Inhalation valve tightened at facepiece
* Adjustable head straps have not deteriorated
* Nose cups in place and free of debris
* Note any dents, cuts or discoloration due to heat on the air cylinder

**3.0 DEFINITIONS**

**3.1** Facepiece means that portion of a respirator that covers the wearer's nose and mouth and chin in half-mask facepiece or that covers the nose, mouth, and eyes in a full facepiece. It is designed to make a gas-tight or particle-tight fit with the face and includes the headbands, exhalation valve(s), and connections for an air-purifying device or respirable gas source, or both.

**3.2** Seal check means a test conducted by the wearer to determine if the respirator is properly seated to the face.

**3.3** Hazardous atmosphere means any atmosphere, either immediately or not immediately dangerous to life or health, which is oxygen deficient or which contains a toxic or disease­ producing contaminant

**3.4** High Efficiency Particulate Air (HEPA) Filter means a filter which removes from the air 99.97% or more of particles having a mean particle diameter of 0.3 m.

**3.5** Immediately Dangerous to Life or Health means any atmosphere that poses an immediate hazard to life or produces immediate irreversible debilitating effects on health.

**3.6** Odor threshold limit means the lowest concentration of a contaminant in air that can be detected by the olfactory sense.

**3.7** Oxygen deficiency means an atmosphere containing less than 19.5 percent oxygen by volume or has a partial pressure of 148 millimeters of mercury or less.

**3.8** Qualitative Fit Test means a pass/fail fit test that relies on the subject's sensory response to detect the challenge agent.

**3.9** Quantitative Fit Test means a fit test that uses an instrument to measure the challenge inside and outside the respirator.

**3.10** Respirator means a device designed to protect the wearer from the inhalation of harmful atmospheres.

**4.0 RESPONSIBILITY**

**4.1** The Safety Officer or assigned Respirator Program Administrator has total and complete responsibility for the supervision and administration of the Respiratory Protection Program and has the authority to act on any and all matters relating to the operation and administration of the Respiratory Protection Program.

**4.2** Respirator program evaluation. An appraisal of the effectiveness of the respirator program shall be carried out at least annually by The Safety Officer or assigned Respirator Program Administrator. Action shall be taken to correct defects found in the program.

**4.5** The OIC (officer) shall be responsible for the condition and maintenance of SCBA's assigned to their crews (company engine etc).

**4.6** VARIABLE will be responsible for the replacement of air tanks, verification of daily/weekly checks and for the proper use of SCBA by members.

**4.7** Members shall maintain the level and proficiency of use expected by the Department.

**4.8** Members shall be responsible for maintaining SCBA facepieces and breathing tube in sanitary and proper operating condition

**4.9** Members shall guard against damage to respiratory equipment.

**4.10** Members shall be responsible for checking their SCBA as specified in the Guidelines when coming on duty, and shall advise their officer that the unit is OK or in need or repair.

**4.11** The Safety Officer or assigned Respirator Program Administrator will be responsible for the purchases/procurement, assignment and repair of SCBA

**4.12** The Safety Officer or assigned Respirator Program Administrator shall be responsible for ensuring that an annual test is completed by each member on their knowledge of SCBA equipment operation, safety, Department organizational policies and procedures, and facepiece seals.

**4.13** The Safety Officer or assigned Respirator Program Administrator is responsible for the training of all respirator users.

**4.14** Members and their supervisors failure to abide by the mandatory mask rule established for their safety may result in disciplinary actions.

**4.15** Management is responsible for:

 **4.15.1** Identification of personnel or job titles which are required and authorized to wear to wear respiratory protection equipment in the course of performing their duties;

**4.15.2** Ensuring that members/employees covered by this policy comply with all facets of this respiratory protection policy, including medical surveillance, fit testing, respiratory inspection and maintenance;

 **4.15.3** The overall implementation of this policy.

 **4.15.4** Self-contained breathing apparatus (SCBA) are thoroughly inspected and documented by written record, at least once per month and after each use;

 **4.15.5.** The respirator program is adhered to by covered employees;

 **4.15.6** The respirator program is evaluated annually in order to evaluate its effectiveness.

**5.0 GUIDELINES**

**5.1** Equipment Limitations: Self-Contained Breathing Apparatus provides respiratory protection under conditions of oxygen deficiency or in concentrations of toxic gases immediately dangerous to life or health. The period over which the device provides protection is limited by the amount of air in the apparatus. Respirators offer no protection against skin irritation or against skin absorption of materials.

**5.2** Equipment Limitations: Combination Self-Contained and Air-Line Respirators provide respiratory protection under conditions of oxygen deficiency or concentrations of toxic gases immediately dangerous to life or health. By means of a small air cylinder, the wearer is able to escape the dangerous atmosphere in case the primary air supply is interrupted. If used for entry into atmospheres dangerous to life or health, the air line needs to be connected on entry.

**5.3** Equipment Limitations: Chemical Cartridge Respirators provides respiratory protection against light concentrations of certain acid gases, ammonia, and organic vapors by utilizing various chemical filters to purify the inhaled air. It is necessary that sufficient oxygen be present at all times to support life. Half-mask respirators of this type provide no protection to the eyes.

**5.4** Equipment Limitations: Mechanical Filter Respirators provide respiratory protection against airborne particulate matter, including dusts, mists, metal fumes, and smoke. This type of respirator offers no protection against gases, vapors, or oxygen deficiency. Half-mask respirators of this type provide no protection of the eyes.

**5.5** Unusual factors can add new dimensions to a hazardous situation and should be considered where using respirators. Some airborne contaminants are extremely irritating to the skin, while others are capable of being absorbed through the skin and into the bloodstream with serious, possibly fatal results. A face piece or hood respirator does not provide complete protection against such contaminants.

**6.0 ADDITIONAL REFERENCES**

**7.0 APPENDIX**

 Manufacturer’s instructions

 Medical questionnaire

 WAC 296-842-22010 Follow these fit-testing procedures for tight-fitting respirators.