

**Renton Fire and Emergency Services Department
Standard Operating Procedure**

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| Subject: Respiratory Protection | Number: 2106 |
| Effective Date: March 1, 2008 | Revised: |

1.0 Statement of Policy

- 1.1. Respiratory protection shall be used in accordance with State regulations.
- 1.2. The Deputy Chief of Safety and Support Services shall be ultimately responsible for the respiratory protection program.
- 1.3. The Logistics Division Captain shall manage the day to day aspects of the program.
- 1.4. Appropriate respiratory protection shall be worn anytime members are operating for any reason in an area where there a suspected or confirmed respiratory hazard and shall only remove this protection when an industrial hygienist has certified the air clear of respiratory hazards.

2.0 Objectives

- 2.1. This document establishes a Departmental Respiratory Protection Program to protect the health of the employee and requires the employee to use respiratory protection.
- 2.2. To provide a written policy for the Respiratory Protection Program.

3.0 Responsibility

- 3.1. The Logistics Division is responsible for the administration of the Respiratory Protection Program including the following:
 - 3.1.1. Identifying personnel who are required and authorized to wear respiratory protection equipment in the course of performing their duties.
 - 3.1.2. Ensuring that members covered by this policy comply with all facets of this respiratory protection policy.
 - 3.1.3. Ensuring the overall implementation of this policy.

- 3.1.4. Ensure that respirators are thoroughly inspected, used and maintained and that inspections are documented by written record.
 - 3.1.5. Appraise the effectiveness of the respirator program at least annually.
 - 3.1.6. An annual written evaluation of the respirator program's effectiveness shall be submitted to the Fire Chief/Emergency Services Administrator.
 - 3.1.7. Maintain air quality test records.
 - 3.1.8. Ensure annual qualitative fit tests are made and maintain qualitative fit test records.
 - 3.1.9. Ensure that the respirator user's medical status is reviewed.
 - 3.1.10. Purchase/procure, assign, document condition, maintenance and repair of SCBA and other Department respirators
 - 3.1.11. Work to establish documented cooperative agreements between the Renton Fire and Emergency Services Department and local agencies/neighboring Fire/Emergency Services providers regarding shared services and/or resources in the area of respirators and respirator-related equipment.
- 3.2. The Safety/Training Division shall:
- 3.2.1. Train, test and require practice of all members who will have occasions to use a respirator.
 - 3.2.2. Provide training and operating guidelines in accordance with Department policy and respirator manufacturers' recommendations.
 - 3.2.3. Ensure that an annual test is completed by each member on their knowledge of SCBA equipment operation, safety and Department operational policies and procedures. The training officer will maintain related training records.
- 3.3. Company Officers shall:
- 3.3.1. Verify daily/weekly checks and ensure the proper use of SCBA by members.
 - 3.3.2. Ensure that they and their crews are using the proper level of respiratory protection commensurate with the hazards they encounter.

- 3.4. No member that has not received respiratory protection training, medical approval and applicable fit testing in accordance with this policy, shall be assigned to any duty where respiratory protection is required.
- 3.5. Each member covered by this policy shall:
 - 3.5.1. Adhere to the policy to the fullest extent.
 - 3.5.2. Condition and inspect respirators assigned to their company and to them as individuals.
 - 3.5.3. Conscientiously use the proper level of respiratory protection that is commensurate with the hazards they encounter.
 - 3.5.4. Maintain the level and proficiency of use expected by the Department.
 - 3.5.5. Maintain SCBA face pieces and breathing tube in sanitary and proper operating condition.
 - 3.5.6. Guard against damage to respiratory equipment.
 - 3.5.7. Check their respirators/SCBA as specified when coming on duty, and shall advise their officer that the unit is OK or in need of repair.

4.0 Procedures

- 4.1. Medical Evaluation
 - 4.1.1. Every member who is being considered for inclusion in the respiratory protection program must participate in the Department's medical surveillance program.
 - 4.1.2. The Department shall provide a medical evaluation to assist in determining the member's ability to use a respirator, before the member is fit tested or required to use the respirator.
 - 4.1.3. The medical questionnaire and examinations shall be administered confidentially during the member's normal working hours or at a time and place convenient to the member.
 - 4.1.4. The Department shall identify a physician or other licensed health care professional (PLHCP) to perform medical evaluations using a medical questionnaire recognized by OSHA and WISHA for aiding in determining a respirator user's medical status.

- 4.1.5. A copy of the questionnaire in use by the Department shall be maintained in the Logistics Division.
- 4.1.6. The Department shall ensure that a follow-up medical examination is provided for a member who gives a positive response to any question among questions 1 through 8 in the medical questionnaire or whose initial medical examination demonstrates the need for a follow-up medical examination.
- 4.1.7. The follow-up medical examination shall include any medical tests, consultations or diagnostic procedures that the PLHCP deems necessary to make a final determination.
- 4.1.8. All respirator users' medical status shall be reviewed whenever:
- 4.1.8.1. A member reports medical signs or symptoms related to their ability to use a respirator.
- 4.1.8.2. A PLHCP, supervisor or Respiratory Program Administrator advises that a member needs to be re-evaluated.
- 4.1.8.3. Information from the Respiratory/Air Program (including observations during fit testing, or during evaluations) indicates a need for re-evaluation.
- 4.1.8.4. A change occurs in workplace conditions (physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on the member.
- 4.1.9. All respirator users' medical status shall be reviewed at the following intervals:

| <u>Age:</u> | <u>Interval:</u> |
|-------------|------------------|
| <35 | every 3 years |
| 35-45 | every 2 years |
| >45 | annually |

4.2. Fit Testing/Face Fit

- 4.2.1. Employees shall be properly fitted and tested for a face seal prior to use of the respirator in a hazardous atmosphere or contaminated area.

- 4.2.2. Quantitative fit testing is required.
- 4.2.3. Fit testing shall be repeated:
 - 4.2.3.1. At least once every twelve (12) months.
 - 4.2.3.2. Whenever there are changes in the type of SCBA or face piece used.
 - 4.2.3.3. Whenever there are significant physical changes in the user.

Examples: Weight change of ten percent (10%) or more, scarring of face seal area, dental changes, cosmetic surgery or any other condition that may affect the fit of the face piece seal.
- 4.2.4. Fit test procedures and test exercises shall follow procedures detailed in the Logistics Division.
- 4.2.5. Facial hair shall not be permitted to come between the sealing periphery of the face piece and the face or interfere with the valve function of the SCBA or any respirator used by the Department.
- 4.2.6. Contact lenses shall be permitted with SCBA use, unless the member's physician determines that the risk of eye damage is increased by their use.
 - 4.2.6.1. If requested by a member, the Department shall provide an SCBA manufacturer approved spectacle kit and prescription ground lenses at no cost to the member.
 - 4.2.6.2. If a spectacle kit, goggle or face shield must be worn with a face piece, it shall be worn so as to not adversely affect the seal of the face piece to the face.
 - 4.2.6.3. Straps or temple bars shall not pass between the seal or surface of the respirator and the user's face.
- 4.2.7. A "user seal check" shall be done by the member every time the respirator is put on to assure that an adequate seal is achieved and that the respirator is adjusted and worn properly.
- 4.2.8. 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 (12) months.

4.2.9. A member shall not wear respiratory protection unless the proper size face piece is available and inspected by the wearer to ensure the equipment is in proper working condition according to Departmental standards and the manufacturer's specification.

4.3. Training

4.3.1. Members shall be trained in the proper function, use, cleaning and maintenance of any respiratory protection provided for their use including the step-by-step procedures for putting on and removing respirators and checking it for proper function.

4.3.2. The required training shall cover:

4.3.2.1. Recognizing hazards that may be encountered.

4.3.2.2. Understanding the components of the respirator.

4.3.2.3. Understanding the safety features and limitations of the respirator.

4.3.2.4. Inspecting and cleaning the respirator.

4.3.2.5. Use of the respirator as designed.

4.3.2.6. Use of the respirator in emergency situations/
extraordinary circumstances.

4.3.3. Upon completion of such initial training, each member shall practice at least quarterly, for each type and manufacture of respirator available for use, the step-by-step procedure for donning and doffing the respirator and checking it for proper function.

4.3.4. Retraining shall be administered annually, and whenever:

4.3.4.1. Changes in work or equipment make previous training obsolete.

4.3.4.2. Inadequacies in the member's knowledge or use of the respirator indicate that the member has not retained the requisite understanding or skill.

4.3.4.3. Any other situation arises in which retraining appears necessary to ensure proper, safe respirator or related equipment use.

4.3.5. Annual training and testing shall be conducted to the Department's standard on the member's knowledge of SCBA equipment

operation, face piece seals, cylinder handling/filling, respirator-related safety and Departmental policies and operating procedures.

4.3.6. All respirator-related training records shall remain part of the member's training file. Each record shall be retained until the next occurrence of that specific training event.

4.3.7. Members shall be thoroughly trained in:

4.3.7.1. Accordance with the respirator manufacturer's instructions on emergency procedures.

4.3.7.2. Other established and improvisational emergency procedures as outlined in the RFD training manual.

4.3.7.3. Trans-fill operations. Trans-filling may be utilized in hazardous material incidents and in cases of Firefighter emergency or other extraordinary circumstances.

4.4. Repair/Recharge

4.4.1. Any SCBA found unstable shall be removed from service, tagged and recorded as such. Repair of the respirator must be done with parts designed for the respirator in accordance with the manufacturer's instruction, by certified technicians of the Department's Respiratory/Air Program or other manufacturer-certified technician named by the Program Administrator.

4.4.2. When exchanging air supply bottles during suppression or overhaul activities, reasonable precautions shall be taken to ensure contaminated atmosphere does not enter the changing zone.

4.4.3. Primary trans-fill capability (respirator to respirator) shall be maintained on each SCBA. Secondary source (non-respirator to respirator) trans-filling equipment shall be available at any location where members operate in IDLH or potential IDLH conditions.

4.4.4. SCBA cylinders shall be hydrostatically tested within the periods specified by the manufacturer and the U.S. DOT. All SCBA cylinders shall be inspected, maintained and repaired regularly by trained personnel. A thorough, conservative cylinder management program shall ensure member safety during use, normal filling operations, and trans-filling operations.

4.4.4.1. A professionally trained cylinder inspector shall visually inspect the interior and exterior of each SCBA and SCUBA cylinder at regular intervals.

- 4.4.4.2. All respirator users shall perform an exterior cylinder inspection of each in-service cylinder before and after use and before each fill.
- 4.4.5. The air quality from compressors and cascade system cylinders shall be tested at least quarterly. When the Department purchases compressed breathing air from a vendor, the vendor will be required to provide certification and documentation of breathing air quality quarterly. All breathing air utilized by the Department shall:
 - 4.4.5.1. Meet the requirements of **ANSI/CGA G-7 Commodity Specification for Air** with a minimum air quality of D, and
 - 4.4.5.2. Meet a water vapor level of 24 ppm or less.
 - 4.4.5.3. Air Quality records shall be maintained for not less than 40 years.
- 4.4.6. The Renton Fire and Emergency Services Department may establish cooperative agreements with local organizations and neighboring Fire/Emergency Services providers regarding shared use of breathing air compressors, storage systems and fill stations (fixed and mobile).
- 4.4.7. No member who has not received specialized training may operate breathing air compressors and/or breathing air or oxygen filling stations.
- 4.5. Cleaning
 - 4.5.1. Members shall be (field) decontaminated prior to removal of respirators whenever firefighting activities result in exposure to a hazardous substance.
 - 4.5.2. Respirators shall be kept clean, sanitary and in good working order. Respirators shall be cleaned and disinfected using the procedures. Respirators shall be cleaned and disinfected at the following intervals: daily, weekly, monthly and after each use.
 - 4.5.2.1. SCBA face pieces or respirators issued for the exclusive use on a member shall be cleaned and disinfected as often as necessary to be maintained in a sanitary condition.

4.5.2.2. SCBA face pieces or respirators issued to more than one member shall be cleaned and disinfected before being used by different individuals.

4.5.2.3. Face pieces and respirators used in fit testing and training shall be cleaned and disinfected before being used by different individuals.

4.6. Use

4.6.1. Personnel shall wear the proper respiratory protection when operating in any of the following circumstances:

4.6.1.1. In a contaminated atmosphere.

4.6.1.2. In an atmosphere that is suspected of being contaminated or oxygen deficient.

4.6.1.3. In an atmosphere that may rapidly become hazardous or oxygen deficient.

4.6.1.4. In an atmosphere that is oxygen deficient.

4.6.1.5. When transporting or treating an individual with suspected or confirmed infectious TB.

4.6.2. These circumstances include:

4.6.2.1. In an active fire area.

4.6.2.2. Directly above a fire area.

4.6.2.3. Directly under the active area.

4.6.2.4. In potential explosive fire area, including gas leaks or fuel spills.

4.6.2.5. Where products of combustion are visible in an atmosphere, including vehicle fires and dumpster fires.

4.6.2.6. Where invisible contaminants are present or suspected; this includes the overhaul stage of a fire.

4.6.2.7. Where toxic products are present, suspected of being present or may be released without prior warning.

4.6.2.8. In an active chemical spill area where the chemical present is an inhalation hazard.

- 4.6.2.9. In any permit-required confined space that has not been tested and monitored to establish respiratory safety.
- 4.6.2.10. Transporting or treating an individual with suspected or confirmed TB in an enclosed vehicle or area.
- 4.6.3. All employees assigned to work in hazardous atmospheres shall be provided with NIOSH-approved, NFPA compliant Self-Contained Breathing Apparatus (SCBA) or Supplied Air Respirator/Supplied Air Breathing Apparatus (SAR/SABA).
- 4.6.4. Anytime members are working inside a permit required confined space, they shall wear SCBA or a supplied air line respirator (SAR) with (5 minute minimum capacity) escape bottle, unless the safety of the atmosphere can be established by testing and continuous monitoring.
- 4.6.5. SCBA are not Self-Contained Underwater Breathing Apparatus (SCUBA) gear and are not approved or safe for that use. SCBA shall not be used in pools or other unusual circumstances without written permission of the manufacturer.
- 4.6.6. Members using a properly functioning SCBA shall not compromise the protective integrity of the SCBA by removing the face piece for any reason in a hazardous atmosphere or in atmospheres where the quality of the air is unknown.
- 4.6.7. Before any members may use an air-purifying respirator, an evaluation of the respiratory hazard shall be conducted to include the contaminant's chemical state and physical form. When these cannot be identified or quantified, the Department shall consider the atmosphere IDLH, and SCBA or SAR with auxiliary self-contained air supply shall be the only acceptable respirators for use.
- 4.6.8. Members of the Community Risk Reduction (CRR) Section may create and/or encounter particulate and fume/vapor hazards in the performance of their duties at an emergency scene; as such, they should wear an appropriate APR, even after reclassification.
- 4.6.9. Conditions at the scene shall be monitored continuously to insure that the atmosphere remains non-hazardous.
 - 4.6.9.1. Should particulates be present, CRR members shall wear their APR if they are to continue to work in the area. Response Operations members shall re-don SCBA. The particulate hazard shall be abated, if possible.

- 4.6.9.2. Should members encounter steam/smoke/off gassing, those conditions shall be abated, if possible. If oxygen levels remain at/above 19.5% and CO levels do not exceed 35 ppm, then CRR members shall make efforts to avoid steam/smoke/gas hazard exposure and may continue to occupy the area. Response Operations members shall re-don SCBA.
 - 4.6.9.3. Should CO levels rise above 35 ppm, only SCBA or SAR users shall be allowed to occupy the area.
 - 4.6.9.4. Should oxygen levels drop below 19.5%, the atmosphere shall be considered IDLH.
- 4.7. Testing Pass Devices
- 4.7.1. Firefighters will perform the following PASS device test when checking their SCBA at the start of each shift:
 - 4.7.1.1. Don the SCBA following the SCBA instruction manual.
 - 4.7.1.2. Open the cylinder valve to perform the SCBA “system checks,” listen for the DragonFly IP to sound the proper activation tones.
 - 4.7.1.3. The Audi-Alarm bell must ring briefly as the SCBA is pressurized.
 - 4.7.1.4. Look to verify that the GREEN lights on the unit are slowly flashing.
 - 4.7.1.5. Stand motionless for about 18 seconds. Listen for the pre-alarm to sound the low volume repeated tones. Look for the **RED** light to alternately flash slowly.
 - 4.7.1.6. Remain motionless until the full alarm activates. Listen for the alarm to sound the increasingly loud repeated tones. Look for the lights to flash **RED** rapidly.
 - 4.7.1.7. Reset the DragonFly IP by pushing either **RESET** button on the side of the unit two (2) times within approximately one (1) second.
 - 4.7.2. To check manual activation of the alarm, push the **Manual** button on the front of the unit.
 - 4.7.3. Reset the Alarm. Press either **RESET** button two (2) times within approximately one (1) second.

4.7.4. Stand motionless until the pre-alarm sounds. Shake the unit to reset the alarm.

4.7.5. If the DragonFly IP checks out, complete all remaining SCBA donning steps.

5.0 Reference

- 5.1. WAC 296-305-04001
- 5.2. WAC 296-62 Part E, Respiratory Protection
- 5.3. WAC 296-62 Part I-1, Asbestos, Tremolite, Anthophyllite, and Actinolite
- 5.4. WAC 296-24-07801
- 5.5. WAC 296-305-01513
- 5.6. Title 29 CFR Part 1910.101
- 5.7. Title 29 CFR Part 1910.134
- 5.8. Title 42 CFR Part 84
- 5.9. Title 49 CFR Part 172.700
- 5.10. Title 49 CFR Part 173
- 5.11. Title 49 CFR Part 178
- 5.12. ANSI Z88.2
- 5.13. NFPA 1404
- 5.14. NFPA 1500
- 5.15. NFPA 1901
- 5.16. NFPA 1981
- 5.17. NFPA 1982
- 5.18. NIOSH Guide to Industrial Respiratory Protection
- 5.19. NIOSH Respirator Decision Logic

6.0 Appendix – N/A