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Derby Fire Department
Standard Operating Procedure Number 11
Respiratory Protection and SCBA

1. Introduction

- 1.1. The purpose of this procedure is to establish and communicate measures necessary to protect members that perform duties requiring the use of respiratory protective equipment. This policy is intended to comply with regulatory requirements promulgated by O.S.H.A. (Occupational Safety and Health Administration) under 1910.134 (e) (3) which reads:

"Written procedures shall be prepared covering safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and available respirators."

- 1.2. This procedure covers the use, care and maintenance of respiratory protective equipment necessary to protect firefighters working in potentially dangerous atmospheres. For the purpose of this procedure, respiratory protective equipment will refer to positive-pressure self contained breathing apparatus (SCBA) or supplied air respirators. Any other type of respiratory protective device will not be recognized by the Derby Fire Department as authorized equipment, and thus will not be worn by any member.
- 1.3. It is the policy of the Derby Fire Department to avoid or eliminate exposure to dangerous atmospheres whenever possible. Entry into dangerous atmospheres should be predicated upon a true emergency where the safety and health of the public or other emergency team members are in jeopardy.

2. Recognition/Identification

- 2.1. Some atmospheres immediately dangerous to life are not immediately obvious. Several toxic gases have no warning properties or have odor thresholds that are significantly higher than safe exposure limits. Oxygen deficiency is detectable only with oxygen meters that are properly calibrated.
- 2.2. Therefore, only through proper training can individuals recognize potential hazards and exposures and as such, SCBA is to be worn whenever there is uncertainty about the existence and/or extent of a hazardous exposure.

3. Limitations

- 3.1. Although the respiratory system is the most prominent route of entry for toxic materials, exposure can occur through other mechanisms. Some chemicals can be absorbed through mucous membranes or the skin and cause significant harm or even death despite proper use of respiratory protective equipment. Respiratory protective equipment must be considered as only one component of full body protection.
- 3.2. Even when properly certified and fitted with SCBA, firefighters will not enter a confined space (see SOP for confined space). Only specially trained personnel, who are both members of the Storm Ambulance Corps. HazMat team AND Derby Fire Department Certified Interior Structural Firefighters, will enter a confined space as defined by Derby Fire Department policies and procedures.

4. Procedures Governing Use

- 4.1. Positive pressure SCBA must be worn without exception by any personnel that enters an atmosphere that:
 - a) is recognized as dangerous.
 - b) is suspected or anticipated as being dangerous.
 - c) has the potential to become dangerous with little or no warning
- 4.2. Only Certified Interior Structural Firefighters that meet the requirements of the Derby Fire Department's respiratory protection policy will be allowed to use SCBA. Candidates for Interior Structural Firefighter will be allowed to train with SCBA upon receiving required medical clearance.
- 4.3. In no case will a Certified Interior Structural Firefighter wear facial hair that can come in contact with and/or interfere with the seal of the face-piece. Such members will automatically lose their certification as Interior Structural Firefighters by virtue of their inability to safely use SCBA.
- 4.4. SCBA must be worn in conjunction with full protective clothing and a fully operational (activated) TPASS device.

5. Operations

- 5.1. A minimum of two (2) fully trained members are required in order to permit entry into an atmosphere recognized as, or anticipated to be, hazardous. Members will work in teams of two (2) and remain in voice contact with one another.

- 5.2. Back-up personnel will be provided and maintain a position outside of the dangerous atmosphere. Back-up personnel will have SCBA donned, tested, and positioned as such to initiate use with minimal delay.
- 5.3. Entry into the atmosphere will be permitted only after the SCBA has been fully donned and tested. This includes assurances that:
 - a) there is a full bottle of air (including a comparison of regulator and cylinder gauge).
 - b) the regulator is properly configured (by-pass valve fully closed)
 - c) exhalation valve is functional.
 - d) all straps are properly fastened and properly adjusted.
 - e) a proper face seal has been established
- 5.4. It is preferred that a charged hose line be used by teams conducting search and rescue operations to provide protection if needed and to help maintain a route of egress. In the absence of a hose-line, search ropes and thermal imaging cameras should be used.
- 5.5. Members are allowed one refill of air. After a second cylinder has been expended, a mandatory rest period of thirty (30) minutes will be required before re-entry- is permitted. Breathing apparatus should not be used after extensive physical exertion.

6. Returning SCBA to Service

- 6.1. Members are responsible to fully return equipment to service following use. All Scott 4.5 bottles must be refilled or topped off to 4500 psi. The air pack, including the mask, should be thoroughly cleaned, and fully inspected/tested before placing it back on the apparatus.
- 6.2. Any air pack that has malfunctioned, or has failed any portion of the testing or inspection shall be immediately taken out of service. The member responsible for the air pack will immediately notify a company officer and will affix a sturdy label indicating that the unit is not to be used and the reason(s) it has been taken out of service.

7. Testing, Inspection and Maintenance

- 7.1. Self-Contained Breathing Apparatus must be inspected monthly by trained personnel and after every use. Inspections must be completed monthly and fully documented on the departments computer system.

- 7.2. Air bottles will be hydrostatically tested at a frequency required by applicable standards and as recommended by the equipment manufacturer.
- 7.3. The Department inspection guideline/checklist should be used to insure that all testing and inspection activity is thorough and complete.
- 7.4. Completed inspection forms and records, including exception reports, must be forwarded to the Fire Commissioner within five (5) days of the inspection activity.
- 7.5. Repairs will only be performed by personnel, specifically trained and authorized to perform that particular level of service.

8. Maintenance of Quality Breathing Air

- 8.1. SCBA air bottles will be filled only with air that is known to be of NFPA Grade “D” breathing air or better. SCUBA air bottles will be filled with air that is known to be of NFPA Grade “E” or better.
- 8.2. All compressor systems producing breathing air and all bulk storage systems will be regularly tested in accordance with all applicable codes and standards. Breathing air will be tested at regular intervals not to exceed 6 months, and must be rated NFPA Grade “D” breathing air or better.
- 8.3. All compressors producing breathing air will be maintained in accordance with the manufacturers recommendations.