

	<h1>COMMERCE FIRE DEPARTMENT</h1>
	<h2>Standard Operating Guidelines</h2>
	Subject: SCBA Self-Contained Breathing Apparatus
	Reference Number: 5.01
	Effective Date: 4/3/2014 Last Date Revised: 4/2/2015
Approved By: Chief Kevin Dean	

Purpose: The intent of this guideline is to prevent accidents, injuries, and exposure to harmful atmospheres and to help develop an awareness of the critical importance of respiratory protection for the health & welfare of our personnel when operating in an Immediately Dangerous to Life and Health (IDLH) atmosphere in accordance with *NFPA 1404: Standard for Fire Service Respiratory Protection Training* and *NFPA 1981: Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services*. The proper usage of the Self-Contained Breathing Apparatus utilizing only approved types of SCBA is essential for maintaining as high a degree of personnel protection as possible. This guideline shall be reinforced by yearly in-service training.

Terminology:

Chemical, Biological, Radiological, and Nuclear (CBRN) - This refers specifically to a NIOSH certification on the protective capabilities of a respirator.

Point of No Return (PONR) - This will be different for each person because it is determined by air consumption rate. It is the point where you have traveled into an IDLH atmosphere that you will need to turn around to get out without running out of air, in other words the amount of time it takes to consume your working air (1,687.5 p.s.i.). This does NOT include the 1,125 p.s.i. of emergency air. This term is another way of expressing the “working time”. It can be the point in which an interior firefighter becomes part of the problem instead of the solution because they could run out of air inside the IDLH.

Respiratory Hazard - Any exposure to products of combustion, superheated, toxic gases, vapors, dust, potentially explosive or oxygen deficient, or any condition that creates a hazard to the respiratory system.

Immediately Dangerous to Life and Health (IDLH) - An atmosphere which is or has the potential to be immediately dangerous to the life and or health of a person. This could be inside or outside a structure.

Rules of Air Management - Know how much air you have in your SCBA, and manage that air, so that you leave the hazard area before your low air alarm activates. Company Officer or the highest ranking member shall be responsible for constant monitoring of

their assigned crew's air levels during all operations. These levels should be checked every 5-10 minutes while operating inside an IDLH.

Self-Contained Breathing Apparatus (SCBA) - A respirator worn by the user that supplies a desirable atmosphere, which is either carried in or generated by the apparatus, and is independent of the ambient atmosphere.

Work-Performing - The duties associated/pertaining to interior structural firefighting, search and rescue, etc.

Working Time - The amount of time it takes a firefighter to consume the 1,687.5 p.s.i. of air that is available for work. This will be different for each person and it represents the amount of air you have to use before it is time to leave the IDLH so that you do not use your emergency air supply. In our SCBA we have 4500 p.s.i. total of air available. Minus 1,125 p.s.i. of emergency air, leaves 3,375 p.s.i. $\frac{1}{2}$ of 3,375 is 1,687.5 p.s.i. 1,687.5 p.s.i. to go in and 1,687.5 p.s.i. to get out.

Scope: These requirements shall be applicable to all firefighters who may be involved in fire suppression, fire training, rescue, and any possibility of an IDLH. Since there is no way to predetermine these hazardous conditions, concentrations of toxic materials, or percentages of oxygen in the air, it shall be assumed they could be present and SCBA use shall be mandated by the Incident Commander until such time as it has been determined, with reasonable certainty that the is safe.

General:

A. An SCBA shall be properly worn by all personnel who may be exposed to respiratory hazards while in the performance of their duties.

B. Each year, fit testing shall be conducted to assure members can produce an acceptable seal with their assigned face piece.

C. When used, an SCBA shall be worn according to the manufacture's recommendations.

D. Any person required to wear an SCBA shall not have any facial hair which could jeopardize a proper fit and seal of the face piece.

E. While donning the SCBA face piece the straps shall be tensioned by pulling toward the back of the head. Applying tension away from the side of the head will apply additional

force to the seal of the face piece and diminish the life span. While storing the SCBA face piece the straps shall be fully extended and not pre-tensioned.

F. All SCBA should be checked periodically as predetermined by the department guidelines.

Included in the check will be:

- Volume of air in the cylinder (Not less than 4,000 psi, the cylinder gauge and console gauge have a tolerance no less than 100 psi.).
- Operation of the unit (to be followed as per the manufacture's recommendations).
- Cleaning of the SCBA.
- Stored in a secure location.

G. If the safe operation of any SCBA is questionable, that unit shall immediately be placed out-of-service, tagged, and forwarded to the Quartermaster for repair.

H. Under no circumstance shall an SCBA be placed in service or worn that is of questionable operation or is not the type approved by NFPA 1981, Standard.

I. An SCBA shall be properly donned and used while operating at, but not limited to the following types of incidents or activities:

a. Structural fires:

- 1) Offensive fire attack
- 2) Ventilation
- 3) Overhaul

4) Any interior involvement from the point of Fire Department arrival to a point at which the measurable Carbon Monoxide level along with any other measurable airborne contaminants has become less than an established hazard. The highest level of Carbon Monoxide that is measurable and considered an acceptable level to allow work to be done in the area without the use of an SCBA shall be established at 200 part per million. Acceptable Oxygen levels for work areas that may not require the use of an SCBA shall be established between 19.5 thru 23% Oxygen by volume of air.

b. Vehicle Fire:

1) Any personal involvement within the work area of a burning vehicle must use an SCBA.

c. Hazardous or suspected Hazardous Materials Incidents.

d. Confined spaces such as septic tanks, underground areas, any tanks, etc. A Confined space shall be determined by any area large enough and so configured that a member can bodily enter and perform assigned work but which has limited or restricted means for entry or exit and is not designed for continuous human occupancy.

e. Boat Fires.

J. Under no circumstances shall any personnel operating in an IDLH atmosphere work into their emergency air supply (1,125 psi). All personnel shall exit the structure prior the

activation of the low pressure alarm. This portion of the air supply is for emergency use and shall not be used for general work duties.

Training:

1. The Training Coordinator shall conduct yearly training that will re-familiarize members with the proper use, care of, and cleaning procedures for SCBA. This module shall include, but not be limited to the following items:
 - a. When respiratory protection equipment is to be used.
 - b. Individual air management program.
 - c. Emergency evacuation procedures.
 - d. Procedures for ensuring proper face piece fit.
 - e. Cleaning of respiratory protection equipment components.
 - f. Proper storage of SCBA.
 - g. Identification of factors that affect the duration of the air supply.
 - h. Determination of the air consumption rate of each member.
 - i. Responsibilities of members for using respiratory protection equipment in a hazardous.
 - j. Limitations of respiratory protection devices.
2. Officers shall be charged with the responsibility of assuring that every member successfully completes this module and shall report any members that do not to the department's Training Coordinator. During any of the department's multi-company drill, members shall be evaluated for proper use, and care of SCBA.

Overview:

The primary purpose of an SCBA is to insure the safety and survival of personnel by protecting the respiratory system from exposure to harmful atmospheric conditions which will be encountered during execution of duty. It is the responsibility of all personnel and supervisors to maintain and use SCBA equipment in a full effort to minimize the short and long term effects that airborne contaminants can cause to an exposed respiratory system.