



HR/HF

FFCC—Policy/SOG Program

Operations

**Safety—Respiratory Protection
SCBA**

Policy # 09-07

Issued: 07/30/09

Subject: Respiratory Protection—SCBA

Purpose: This policy identifies the components of the Fire Department's Respiratory Protection Program as it relates to self contained breathing apparatus (SCBA). This document is intended to satisfy the requirements of OSHA 29CFR 1910.134, NFPA 1404 and NFPA 1500.

Scope: This policy applies to all personnel of the Fire Department.

Definition

Immediately Dangerous To Life or Health (IDLH)

An atmosphere that poses an immediate threat to life and would cause irreversible adverse health effects or would impair an individual's ability to escape from a dangerous atmosphere.

Policy

Purchasing and selection

All SCBA purchased shall be of open circuit positive pressure design and comply with all current applicable standards that exist at the time of purchase. The minimum duration of air cylinders shall be 30 minute.

Equipment testing

Minimum air quality

All compressors shall produce minimum air quality of Grade "E".

Harnesses and regulators

All harnesses shall be inspected quarterly by SCBA maintenance personnel. All regulators shall be flow tested annually. This testing shall be completed by a third party authorized by the fire department. All harnesses and regulators shall comply with all current applicable standards.

Face piece

All face pieces shall be tested annually. This testing shall be done in conjunction with the annual testing of harnesses. The testing shall ensure that the face piece is functioning properly.

Cylinders

All composite cylinders shall be hydrostatic tested every five (5) years from the date of manufacture or last test date. No cylinder shall be used which is out of date. SCBA maintenance personnel shall coordinate the testing procedure with a third party authorized by the fire department and track when the cylinders are due for testing.

Altering Equipment

There shall be no alterations made to any SCBA equipment. Only manufacturer approved equipment shall be added to the SCBA harness, cylinders or face pieces.

Storage of SCBA

All units shall be properly secured in the bracket provided on each vehicle. Spare cylinders shall be stored in the brackets or holder provided and shall not be stored loose or where they may be at risk of damage. At scenes of substantial duration, driver/operators shall make efforts to keep SCBA from freezing after use by storing them in the heated areas of the apparatus (where and when practical).

Certification for use

Medical

All personnel who are expected to use SCBA shall be evaluated and certified on an annual basis. A pulmonary function test shall be used as the evaluation method and shall be conducted by a third party authorized by the fire department. All new personnel shall be medically evaluated prior to initial SCBA use. Record of the medical evaluation shall be kept in the individual's occupational health file.

Fit Testing

All personnel shall annually be fit tested to ensure proper face piece size. This test shall be conducted by SCBA maintenance personnel. All new personnel shall be fit tested prior to initial SCBA use. Records of this testing shall be maintained by the Respiratory Protection Program Coordinator.

Training

All personnel shall be trained in the proper use of SCBA. The training of personnel is under the auspices of the Training Division. The Training Division shall keep a list of all personnel trained to wear SCBA.

The department performance standard for complete donning of SCBA shall be sixty (60) seconds (NFPA 1001).

Daily Inspection

All personnel are responsible for the daily inspection of their assigned SCBA. The Driver/Engineer shall be responsible for inspecting any additional SCBA and all spare cylinders.

The harness daily inspection shall consist of the following:

- Air pressure within the *green* section of the cylinder pressure gauge
- Visual inspection of straps and harness
- High pressure hose connector is tight
- Unit is clean and secured properly
- The by-pass valve is operating properly
- The PASS device and Heads Up Display are in working condition
- The regulator is attached to either the belt holder or the face piece
- If the face piece is attached to the regulator make sure it is placed in the vehicle so it shall not place undo stress on the regulator hose
- Turn on air supply and breath off the regulator to ensure proper function

All personnel are issued a face piece with a bag for storage. The inspection and cleaning are the responsibility of the wearer. The face piece shall be kept in the bag when not in use. The face piece daily inspection shall consist of the following:

- Visual inspection of the face piece and head harness
- Check for a tight seal
- Exhalation valve is working properly
- Nose cup is properly installed

Usage

Facial hair that comes between the sealing surface of the facepiece and the face shall not be permitted.

Personnel shall don SCBA in the following scenarios:

- The atmosphere is hazardous
- The atmosphere is suspected of being hazardous
- The atmosphere may rapidly become hazardous
- During confined space and/or below grade operations
- In any oxygen deficient atmosphere
- When instructed to do so by an officer

Personnel responding to a potential fire incident shall have SCBA strapped on and ready for use when reporting to the Incident Commander for assignment. On apparatus that are not equipped with a built-in SCBA bracket on the officers seat, the harness shall not be donned en route.

All personnel shall don and place in operation their SCBA before entering any IDLH atmosphere. Personnel operating in SCBA shall do so in teams of at least two (2), in accordance with policy # _____. **SCBA shall continue to be utilized during all phase of suppression activities including overhaul.**

Smoke ejector use should be considered for continuous ventilation. Caution shall be used with gasoline powered fans to avoid introduction of exhaust gases into the atmosphere.

When SCBA are removed, they shall not be left in the building where they may be damaged. SCBA will be returned to a central staging area for service and returned to a condition ready for use until they are returned to their respective apparatus.

Air Management and Emergency Procedures

The Rule of Air Management (ROAM) shall be utilized when operating in an IDLH atmosphere. The key components of ROAM are:

- Know how much air you have before entering an IDLH
- Manage your air as you proceed
- Exit the IDLH ***before*** the low air alarm activates

If any member of the crew has a low air alarm or has a malfunction of any part of their SCBA, the entire crew shall exit the building immediately.

After Use Inspection

After every use of a SCBA, the wearer shall be responsible for the following:

- Clean and wipe dry the harness, cylinder and face piece
- Fill all empty cylinders
- Perform a daily inspection

Refilling of cylinders

Routine refilling

The routine refilling of cylinders shall be done in accordance with the recommendations of the cylinder and cascade system manufacturers. Cylinders shall be placed inside the fragmentation guards (tubes) during refilling.

The following is the procedure that shall be used for refilling air cylinders:

- Each unit is responsible for filling their cylinders after an incident.
- Cylinders are to be refilled at Station _____ or a mobile cascade if on scene
- Ensure that the proper numbers of cylinders are returned to the apparatus
- If a cylinder is damaged, replace it with a spare. These cylinders are located in the racks near the compressors at each station. DO NOT TAKE FULL CYLINDERS AND LEAVE EMPTY ONES IN THEIR PLACE. Follow the maintenance procedure after replacing a damaged cylinder.

Cylinders from an outside agency

When a request is made to fill air cylinders from either another City department or an outside agency the hydrostatic test date of the cylinder(s) shall be checked for compliance. All cylinders must be tested every five (5) years. **If the cylinders are found to be out of date they shall not be filled. All filling of cylinders shall be done by a fire department member.**

Maintenance

Harnesses and Cylinders

Any time there is need for repair of SCBA equipment, it shall be tagged and an e-mail sent to SCBA maintenance. The equipment shall be taken to the station where SCBA maintenance is done and a spare harness and/or cylinder shall be taken as replacement. The information in the e-mail shall include where the equipment is from, a brief description of the problem and who is submitting the equipment for repair. If the repair can not be accomplished by the SCBA maintenance personnel, it shall be sent to the manufacturer's repair facility.

Face piece

If there is a repair required with a mask that renders it unusable, it shall be sent to SCBA maintenance for repair. An e-mail shall be sent with the same information as an air pack. Spare face pieces are kept available at the Respiratory Protection Program Coordinator's assigned fire station.

Compressors

The compressor at station _____ shall be inspected weekly by station personnel. The inspection shall include the following:

- Check oil level and fill if needed
- Open the drain located in the lower rear of the compressor
- Ensure the regulator is set at "0"
- Drain air from the storage bottles
- Run the compressor for a minimum of thirty (30) minutes

Compressor maintenance shall be done by the manufacturers certified repair facility. When a maintenance need is found, the SCBA maintenance personnel and the Shift Commander shall be notified of the problem. It shall be their responsibility to contact the repair facility and to determine if the unit needs to be taken out of service. If taken out of service, all stations shall be notified by memo.

Spectacles and contact lenses

Personnel shall not wear standard eye glasses in conjunction with SCBA. All styles of spectacles which break the seal are prohibited. Contact lenses are permitted, and spectacle kits which attach to the inside of the face piece and lenses are available upon request to the Respiratory Protection Coordinator.

Records and reports

It shall be the responsibility of the Respiratory Protection Program coordinator to insure that records are kept for each of the following areas:

- Serial numbers of face pieces, harnesses, and cylinders
- Air quality testing results
- SCBA equipment out of service for repair
- SCBA equipment testing and repairs
- Compressor repairs and routine maintenance

SCBA program evaluation

The department shall annually review the SCBA program for the purpose of determining the need to upgrade or change various aspects of the program.

By the order of: _____
Fire Chief

Date:

References:

- NFPA 1500, *Fire Department Occupational Safety & Health Program*, 2007 edition
- NFPA 1404, *Standard for Fire Service Respiratory Protection Training*, 2006 edition
- OSHA 29CFR 1910.134

Resources: (*click title to access resource*)

- USFA, *Special Report: Prevention of SCBA Failures*
- NIOSH Firefighter Fatality Investigation Reports
 - Nine Career Fire Fighters Die in Rapid Fire Progression at Commercial Furniture Showroom – South Carolina
 - Career Fire Fighter Dies and Captain is Injured During a Civilian Rescue Attempt at a Residential Structure Fire – Georgia
 - Career Probationary Fire Fighter Dies While Participating in a Live-Fire Training Evolution at an Acquired Structure - Maryland
 - Career Lieutenant Dies in Residential Structure Fire – Colorado
 - Career Fire Fighter Dies Searching For Fire In A Restaurant/Lounge – Missouri
 - Residential Basement Fire Claims the Life of Career Lieutenant – Pennsylvania
 - Two Career Fire Fighters Die in Four-Alarm Fire at Two-Story Brick Structure – Missouri
- Website—Manage Your Air—Rule of Air Management (The Seattle Guys)
- National FF Near Miss Reporting System—Report 09-857
- Firefighter Close Calls.Com—Weekly Fire Drills (*available on website*)
 - Basic Skills Volume 20-234—Don SCBA
 - 09-25-06—Masking Up
 - 10-24-2005—SCBA Donning Drill
 - 02-07-2005—SCBA Facepiece Care