



Effective Date: October 1, 2009

Revision Date:

## Bastrop County Emergency Services District No. 1

### Standard Operating Procedures

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**Title:**           **Self-Contained Breathing Apparatus**

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**Originator – Fire Chief (Signature/Date):**       \_\_\_\_\_

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#### **PURPOSE**

This policy is to establish a written respiratory protection procedure for all personnel that are or could be exposed to atmospheres that are Immediately Dangerous to Life and Health (IDLH). This policy is in accordance and references NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus for Firefighters*.

#### **POLICY**

It shall be that all personnel expected to respond and function in areas of atmospheric contamination, shall be equipped with a self-contained breathing apparatus (SCBA) and such personnel shall be properly trained in use and maintenance. It is the intent of this policy to avoid any respiratory contact with products of combustion, superheated gases, toxic products or any other hazardous contaminants.

#### **PROCEDURE**

The use of a breathing apparatus means that all personnel shall have a face-piece in place and breathing from the supply provided. A SCBA shall be used by all personnel operating in:

- A contaminated atmosphere

- An atmosphere which may suddenly become contaminated
- An atmosphere which is deemed oxygen deficient (<19%)
- An atmosphere which is suspected of being contaminated or oxygen deficient

This includes all personnel operating in:

- An active fire area
- A location directly above an active fire area
- A potential explosion or fire area, including gas leaks and fuel spills
- Where products of combustion are visible in the atmosphere
- Where invisible contaminants are suspected to be present
- Where toxic products are present, suspected to be present or may be released without warning
- Any confined space which has not been tested to establish respiratory safety

In addition to the above, SCBA shall be worn by all personnel operating at fire incidents above ground, below ground or in any other area which is not, but which may become contaminated by products of combustion or other hazardous substances. The wearing of SCBA in these situations provides that it will be immediately available for use if conditions change or if personnel are to enter an area where the use of SCBA is required.

- A. Members shall only use SCBA that meets or exceeds NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus for Firefighters*, when engaged in any operations where they might encounter atmospheres that are immediately dangerous to life and health (IDLH) or potentially IDLH or where the atmosphere is unknown.
- B. Members who have beard or facial hair at any point where the SCBA face-piece is designated to seal with the face shall not be permitted to use the SCBA.

### **SELECTION**

Prior to the purchasing of any Self-Contained Breathing Apparatus, a selection committee will be formed to conduct a needs/risk assessment of the entire department to determine a guideline for specifications for bidding. The committee will ensure that all SCBA's purchased will meet at a minimum or exceed the most current edition of NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus for Firefighter*.

### **MEDICAL EVALUATIONS**

Each member is required to undergo a physical evaluation annually if they are expected to respond and function in areas of atmospheric contamination.

## **INSPECTION OF SCBA**

ESD firefighters shall check the functional condition of all SCBA's at their assigned station daily. All other departmental SCBA's shall be checked weekly and documentation of such checks will be kept on departmental forms. Additional functional checks will be conducted after each use, after repairs have been conducted, and at any time it may be necessary to render the equipment in a readiness state of condition.

- A. If a SCBA is found to be functioning improperly, it shall be taken out of service, red tagged, reported to the maintenance technician, and replaced immediately. Replacement SCBA shall be obtained from reserve equipment and placed on front line apparatus.
- B. Maintenance, testing and repairs shall be conducted only by a factory trained/qualified technician of the SCBA manufacturer.
- C. Inspections shall be documented on the prescribed form. The inspection shall include:
  - 1. Cylinder pressure – The capacity shall be no less than 90% of maximum rated pressure. See example (2216 = 2000 psi. 4500 = 4100)
  - 2. Regulator and Cylinder Gauge – Both gauges shall read within 100 psi of each other. See example (2200 bottle, remote gauge should not indicate any reading of more than 100 psi difference)
  - 3. Low Pressure Alarm – The low pressure alarm should sound briefly when the cylinder valve is turned on and again as the pressure is relieved.
  - 4. Harness and Face Piece Assembly – Ensure that all the straps are fully extended. Check the harness securing devices for tightness and that the face piece is clean and in good, serviceable, working condition.
  - 5. Valves – Check all valves to ensure that they are stored in the fully closed position and free from leaks. Open the bottle and ensure that all air connections are free from leaks. After checking the by-pass valve, ensure that it is in the fully closed position. Turn the bottle main line valve completely off, and bleed off the remaining air via the by-pass valve. Once the air is relieved from the system, turn the by-pass valve in the fully off position.
  - 6. Hose Connections – Check for tightness and leaks, along with the condition off the hose itself.

## **SCBA TRAINING**

An evaluation of all members in the use of the SCBA shall be conducted annually. Each member shall be able to demonstrate a high level of proficiency and compatibility with the SCBA under conditions, which simulate those expected as a job requirement. Each member shall also demonstrate an effective face piece to skin seal of the SCBA mask.

- A. Minimum training levels for members in SCBA will be that of the Introductory Level with the SFFMA training requirements prior to any non-paid firefighter being able to participate in live fire training evolutions or entry into the Hot Zone.
- B. The donning of the SCBA shall be demonstrated in a time not to exceed Texas Commission on Fire Protection Standards. The departmental training officer shall document these times for all personnel in their respected files or departmental record keeping system.

### **SCBA REMOVAL**

In routine fire situations, the decision to remove SCBA shall be made by Company Officers, Designated Safety Officer, or the Incident Commander. This decision shall be based off of an evaluation of the current conditions. Premature removal of SCBA must be avoided at all times. This is particularly significant during overhaul when smoldering materials may produce increased quantities of Carbon Monoxide and other toxic products. In these cases, SCBA must be used or the atmosphere must be changed and monitored.

- A. While within an IDLH, no part of the SCBA shall be removed. This includes taking off the backpack assembly to enter into a confined space. Only in an emergency, where a firefighter may need to exit an opening that is too small to allow them to pass through in a normal manner while wearing SCBA, may they loosen parts of the SCBA harness or remove the backpack completely to exit the restricted area. Upon exiting, the firefighter shall re-secure and or re-don the backpack.
- B. While within an IDLH, no part of the SCBA shall be removed during regulator failure. By-pass usage and removal of the low pressure hose from the regulator and placing it outside or within a non-IDLH area should be used.
- C. Prior to SCBA removal, fire areas shall be thoroughly ventilated and where necessary, continuous ventilation shall be provided.
- D. If there is any doubt about the respiratory safety, SCBA use shall be maintained until the atmosphere is established to be safe by testing. This is required in complex situations, particularly when toxic materials may be involved.

### **CLEANING**

Breathing apparatus shall be cleaned and sanitized immediately after each use. Moving parts that are not cleaned may malfunction. A face-piece that has not been cleaned and sanitized may contain an unpleasant odor and can spread germs, disease, and illness to other departmental members who may have to don the mask at a later date.

- A. The face-piece should be thoroughly washed with warm water containing any mild commercial disinfectant/anti-bacterial cleaner, and then it should be rinsed with clear, warm water or alcohol pads may be used to clean the face-piece. (See manufacture specifications/guidelines for cleaning)
- B. The face-piece should be air dried. Do not use paper towels to dry the lens as the paper towel could scratch the plastic lens.

### **EYE GLASSES**

When a member must wear spectacles while using a full face-piece, the respiratory protection full face-piece shall be fitted with spectacles in such a manner that it shall not interfere with the face-piece to face seal. Spectacles with any strap or temple bars that pass through the face-piece seal shall be prohibited.

- A. Use of contact lenses shall be permitted during full face-piece respiratory protection use, provided that the member has previously demonstrated successful long-term contact lens use.

### **FACE PIECE**

Nothing shall be allowed to enter or pass through the area where the respiratory protection face-piece is designated to seal with the face, regardless of the specific fit test measurement that can be obtained.

### **SAFETY RULES FOR USE**

- All personnel utilizing SCBA's will operate at all times in teams of two or more personnel
- All components such as straps and belts are to be fastened in place. Waist belts are not to be left loose or folded away. They must be in place and worn appropriately. If equipped chest strap is highly encouraged to be secured, but not mandatory
- The wearing of the firefighting hood is mandatory when engaged in firefighting operations, and when worn it should be worn outside of the face-piece and head harness

- All personnel are to ensure that facial hair does not interfere with face to face piece seal.
- Eyeglasses are not to be worn when using SCBA's. The only exception is to use the eyeglass kit that can be retro-fitted to the air mask
- All SCBA's and spare cylinders utilized will comply with State, Federal Law, and **NFPA 1981, 2007 Edition. Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services, in regards to purchasing, testing, training, and inspections.**
- Each SCBA will be inspected and recorded on the appropriate form or record keeping system, all documentation will be recorded daily, weekly, monthly, and after each use in accordance with this policy
- Repairs to any SCBA or cylinder will be performed only by those certified to do so
- Low pressure cylinders will be filled to 2216 as per manufacture's guidelines and will be refilled once the pressure falls below 2000, high pressure cylinders will be filled to 4500 as per manufacture's guidelines and will be refilled once the pressure falls below 4100
- Face piece shall remain in storage bag until ready for use. Upon removal from storage bag accountability of storage bag will be each individual's personal responsibility.
- While stowed away face piece shall remain in the ready position, which is with all straps fully extended, and straps to the rear of the mask. This should prevent any scratching or damage to the lens.
- Whenever possible, trained firefighters shall arrive at the scene in full protective clothing along with a SCBA ready for immediate use ready for an assignment. ***SCBA may be donned while en-route if response safety standards are not compromised.***