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FIRE AND RESCUE SERVICE

NO. 26-06AM

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Respiratory Protection Policy

MONTGOMERY COUNTY FIRE AND RESCUE SERVICE

RESPIRATORY PROTECTION POLICY

Issued by: Fire Chief

Policy No. 26-06AM

Authority: Code Section 21-2.(d)(4)

Effective Date: April 15, 2005

SUMMARY:

This policy includes requirements consistent with the provisions established in 29 CFR 1910.134, Respiratory Protection Standard, as amended, issued by the United States Department of Labor, Occupational Safety and Health Administration, for implementation by all current and future Montgomery County Fire and Rescue Service personnel. The policy outlines provisions for the selection, fit testing, maintenance, repair, and safe use of all components of respiratory protection equipment, and the medical evaluations, training certifications, and record keeping required for the fire and rescue service personnel who use them. Certain requirements of this policy also establish safety procedures for use when these personnel perform operations in atmospheres that are immediately dangerous to life and health. Provisions in Section 5.g. regarding *SCBA Maintenance and Repair Requirements*, and Sec. 5.k., *Cylinder and Compressed Breathing Air Testing and Maintenance*, have been amended in accordance with the recommendations of the SCBA manufacturers, and the Compressed Gas Association.

ADDRESS:

Send all comments pertaining to this policy to Beth Feldman, Montgomery County Fire and Rescue Service, 12th Floor, 101 Monroe Street, Rockville, MD, 20850, by September 13, 2004. Comments may also be emailed to beth.feldman@montgomerycountymd.gov.

STAFF:

For additional information, please contact Beth Feldman at (240) 777-2423.

BACKGROUND:

The Occupational Safety and Health Administration (OSHA) published a final ruling on workplace safety



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requirements for respiratory protection with its adoption of CFR 1910.134. As a "plan state," Maryland Occupational Safety and Health (MOSH) required the adoption of conforming rule, regulation, and policy within six months of OSHA publication. Because MOSH determined that where career and volunteer firefighter/rescuers are deployed together, all firefighter/rescuer personnel must comply with these requirements, Montgomery County's Fire and Rescue Service adopted this policy to ensure the health and safety of all of its personnel in the firefighter/rescuer operational series.

In 2004, certain requirements were revised, requiring MCFRS to amend this policy to comply with the MOSH Standard.

Sec. 1. Purpose: To reduce the risk of injury and illness to fire and rescue personnel while they are working in atmospheres that are immediately dangerous to life and health, and in hazardous and/or toxic atmospheres.

Sec. 2. Applicability: This policy applies to all personnel who perform firefighting and rescue duties in the Montgomery County Fire and Rescue Service.

This policy was developed in cooperation with the International Association of Fire Fighters, Local 1664.

Sec 3. Definitions.

- a. **Compressed Breathing Air.** Compressed breathing air with a minimum air quality of Grade E, as well as a water vapor level of less than 25 ppm as specified by the Compressed Gas Association, G-7.1, 5th Edition, 2003 commodity specification for air.
- b. **EBSS.** Abbreviation for Emergency Breathing Support System, a component of the respirator that allows two users of similarly equipped SCBA to share a common air supply, under specific conditions.
- c. **Facepiece.** The respirator component that covers the wearer's nose, mouth, and in some cases, the eyes. It includes the headbands,



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exhalation valves, and in some cases, components that are required to connect it to a respirable air supply.

- d. **Fire/Rescue Occupational Medical Service (FROMS)**. The division of Montgomery County's Office of Human Resources that performs physical examinations and medical screenings and related evaluations of all MCFRS personnel, including applicants, employees, and volunteers.
- e. **Hazardous and/or Toxic Atmosphere**. An environment that may contain respiratory hazards, including but not limited to overhaul, hazardous materials, and fire investigations operations.
- f. **Immediately Dangerous to Life or Health (IDLH)**. An atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.
- g. **MSHA**. Abbreviation for the Mine Safety Health Administration.
- h. **NFPA 1404**. Alpha-numeric identifier of the National Fire Protection Standard for *Fire Service Respiratory Protection Training*, 2002 Edition.
- i. **NIOSH**. Acronym for the National Institute for Occupational Safety and Health.
- j. **PASS Device**. Acronym for the Personal Alert Safety System unit, a warning/notification device attached to the turnout gear, or built into the Self-Contained Breathing Apparatus.
- k. **Personnel**. For purposes of this policy, all on-duty firefighter/rescuer and emergency medical service providers, both career and volunteer.
- l. **Qualitative Fit Test (QLFT)**. A testing process used to determine the proper size face-piece for each individual that relies on his/her response to a Porta-count testing machine.
- m. **Quantitative Fit Test (QNFT)**. A testing process used to assess the adequacy of respirator fit by numerically measuring the amount of agent leakage into the respirator.



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- n. **Respiratory Protective Equipment (RPE)**. A device designed to protect the wearer from inhaling harmful atmospheres.
- o. **SAR**. Acronym for Supplied Air Respirator, a breathing air device that provides air from a stationary storage cylinder through a high pressure hose. SARs include an escape cylinder with at least five minutes of breathing air.
- p. **SCBA**. Abbreviation for Self-Contained Breathing Apparatus.
- q. **SCBA Advisory Committee**. A five member committee chaired by an individual appointed by the Fire Chief, comprising one representative each from Montgomery County's Division of Risk Management, IAFF Local #1664, Public Safety Training Academy staff, the MCFRS Division of Volunteer Services (appointed by the DVS Chief), and an MCFRS career representative (appointed by the Fire Chief).
- r. **Using SCBA**. Status of personnel who are wearing full protective gear, with SCBA in place and face-piece on, with PASS device activated, and are breathing from the SCBA.
- s. **Wearing SCBA**. Status of personnel who are wearing full protective gear, with SCBA in place and face-piece ready for use, with PASS device activated, but are *not* breathing from the SCBA.
- t. **29 CFR 1910.134**. Numeric identifier of the respiratory protection standard issued by the United States Department of Labor, Occupational Safety and Health Administration (OSHA), that provides rules and regulations on the selection, maintenance, and use of self-contained breathing apparatus.

Sec. 4. **Policy**. The Montgomery County Fire and Rescue Service requires that all fire and rescue **personnel** use safe and efficient procedures and appropriate personal and **respiratory protective equipment (RPE)** on all emergency incidents. To ensure their safety, the Montgomery County Fire and Rescue Service will provide properly fitted, tested, and maintained **respiratory protective equipment** for all fire and rescue **personnel**. **Personnel** must be trained in and consistently use these devices in all areas where an **IDLH** atmosphere may exist. **Personnel** will be provided with **SCBA** and/or **SAR**, as appropriate, which meet the requirements of **NIOSH, MSHA, and NFPA** applicable standards at the time of purchase.



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To further ensure their safety, all MCFRS **personnel** must also comply with the "2 in/2 out" procedures established in **29 CFR 1910.134** (g)(3) and (4) when entering an **IDLH** atmosphere.

Sec. 5. Procedure.

General Guidelines. Personnel using **SCBA** must operate in teams of two or more when entering an **IDLH** atmosphere. They must communicate visually, audibly, by physical contact, or with safety guide lines. They should remain in close proximity to each other, enabling them to provide mutual assistance in case of an emergency.

The **SCBA/SAR** will operate only in the positive pressure mode. **SCBA** must have a minimum rated service duration of 45 minutes, and must be equipped with an integrated **PASS device**, unless specifically waived by the Fire Chief (i.e., for hazmat technicians and bomb technicians).

a. **Respiratory Protection Certifications and Fit Testing.** All **personnel** who may be exposed to **IDLH** atmospheres must use **RPE**. **Personnel** who are required to use **RPE** must be medically certified by Montgomery County's **Fire and Rescue Occupational Medical Section (FROMS)**.

1. At a minimum, medical certification must follow the guidelines provided in **29 CFR 1910.134**, Appendix C.
2. Records of medical certification for the use of **RPE** will be maintained with **personnel** health records. **FROMS** must advise the Fire Chief or designee of **personnel** who are not qualified to use **RPE**.
3. All **personnel** must successfully complete an annual physical administered by **FROMS**, and be in compliance with NFPA 1582 *Standard on Comprehensive Occupational Medical Program for Fire Departments*, by December 31, 2006.

b. **SCBA Training and Annual Recertification.** All **personnel** must receive initial **SCBA** training as part of the *Essentials of Firefighting* training course, or through an approved equivalent program, and must obtain annual re-certification through the PSTA's in-service training program.



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1. The MCFRS Public Safety Training Academy is responsible for distributing **SCBA** training materials.
2. Division of Fire and Rescue Operations (DFRO) Battalion Chiefs or Local Fire and Rescue Department (LFRD) training coordinators must ensure that **SCBA** training is completed in their Battalions and in their stations, and that Level 1 Instructors are available for recertification and other **SCBA** training.
3. The training program for initial and annual recertification must include at least these elements:
 - A. **SCBA** construction and operation;
 - B. Identification of **IDLH** atmospheres;
 - C. Recognition of medical signs and symptoms that may limit or prevent the effective use of respirators;
 - D. A "Skills to be Completed" Check List;
 - E. **SCBA** failures and emergency procedures;
 - F. Reporting procedures for defective **SCBA**;
 - G. **SCBA** record keeping; and
 - H. Routine station maintenance of **SCBA** after use.
4. **Personnel** who have not participated in field operations for twelve months or longer must complete a re-entry program that includes **SCBA** recertification.
5. The Fire Chief or designee must maintain records of all training and recertification.

- c. **Using and Wearing Respiratory Protection Equipment.** All **personnel** who may be exposed to **IDLH** atmospheres must wear **SCBA** or **RPE**. They may be required to use **SCBA** or **RPE** during the attack and overhaul of fires, or while working at any other incident.
- d. **Face-pieces.** All **personnel** must use a correctly fitted **face-piece**. Correct **face-piece** fit will be determined by a **quantitative fit test**. **Personnel** will be tested during initial recruit/probationary training, annually, and when a new **face-piece** design is adopted. Only **personnel** who have been trained in the fit testing procedure will conduct the **quantitative** and **qualitative fit testing**.



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1. **Personnel** who are required to use **respiratory protective equipment** must not allow any object to enter or pass through the area where the **face-piece** seals with the face.
 - A. Neither beards nor facial hair may interfere with the **face-piece** seal, nor may any object interfere with exhalation valve operation.
 - B. Helmets, head coverings, and protective hoods must be worn outside the **face-piece** seal, head harness, and straps.
 - C. **Personnel** who wear eyeglasses must use frames that do not interrupt the seal area of the **face-piece**.
 - D. **Personnel** who are required to use **RPE** must not wear hard contact lenses; soft contact lenses may be worn.
2. If **FROMS** determines during routine medical examinations that an individual may not be able to obtain a **face-piece** seal because of physical changes (e.g., significant weight loss, dental work, etc.), **FROMS** staff must recommend to the Fire Chief or designee that a supplemental fit test be performed.
3. **Personnel** will be fit tested when they report problems related to obtaining a **face-piece** seal, or if supervisory or **FROMS** staff observe conditions that could affect a proper fit.
4. **Personnel** must not risk exposure by removing the **face-piece** or disconnecting the regulator in hazardous atmospheres.
5. **Personnel** who detect vapor or gas breakthrough, changes in breathing resistance, or **face-piece** leakage, must leave the **IDLH** atmosphere and must not re-enter until the problem has been resolved. If a maintenance problem may be the cause, the unit must be taken out of service and repaired as described in Sections 5g. and 5.j. below.
6. Each primary piece of apparatus will carry additional **face-pieces** as on-board equipment.



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- e. **Emergency Breathing Support Systems (EBSS).** The **EBSS** connection may be used when a system fails, or if the firefighter/rescuer depletes the air supply of the cylinder in use.
1. When an **EBSS** is provided, it may be used only when the travel distance to a safe area is 100 feet or less.
 2. **EBSS** may be used only when both **personnel** are mobile and ambulatory. If a firefighter/rescuer becomes unconscious, the firefighter/rescuer's partner should call for help and perform appropriate rescue. A rescuer must not connect the **EBSS** to an unconscious firefighter; the downed firefighter must be removed from the hazardous area.
 3. Both firefighters must activate their Emergency Buttons (EBs) and activate their **PASS devices**, along with calling in a MAYDAY, when using the **EBSS** connection.
- f. **SCBAs during Elevator Use.** On incidents involving a potentially **IDLH** atmosphere, **personnel** who enter an elevator must have gained Fire Department Control, and must use **SCBA** before the elevator doors close and the car is permitted to move. **Personnel** must:
1. check the shaft for smoke or fire;
 2. note the location of the nearest stairwell before entering the elevator;
 3. note the location of the emergency stop switch;
 4. wear full protective clothing and **SCBA** with cylinder valve open and **face-piece** on, with the regulator in hand for rapid connection, and connect the regulator if the elevator car fails to stop at the midway point; and
 5. restrict the elevator operation to upper floors between entry level(s) and a minimum of two floors below the fire, until the fire is under control and the Incident Commander has suspended this restriction.



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- g. **SCBA Maintenance and Repair Requirements.** An **SCBA** unit must be taken out of service when any defect is found.
1. An **SCBA** repair tag must be completed and attached to the unit. The unit must be transported to the maintenance facility for appropriate repairs.
 2. An **SCBA** used by a firefighter/rescuer who suffers respiratory injuries, burn injuries, or line of duty death must be impounded by the Incident Commander or the Safety Office. The unit's identification must include the name of the user, the date and location of the incident, and a description of the problem. The Incident Commander must take possession of the unit and all appropriate documentation and deliver it to the Safety Chief or designee. All **personnel** who have handled the respirator involved must sign off on the documentation as the unit is transferred to the Safety Chief.
- h. **SCBA, SAR, and RPE Records.** A records program must be maintained for all **SCBA**, **SAR**, and **RPE**.
1. The records program begins with receipt of the unit and ends with its disposal. Documentation must include a complete history of all shop maintenance performed on any component.
 2. Records must be maintained for the pressure reducer, **face-piece**-mounted regulator, back-pack assembly, and cylinders.
 3. Each completed assembly must be identified by a station number tag.
- i. **SCBA/SAR In-Service Inspection and Maintenance.** All **SCBA** must be inspected, cleaned, disinfected, and serviced after each use according to the manufacturer's recommendations. Routine inspections, in-station preventive maintenance, and shop maintenance must also comply with the manufacturer's requirements.
1. **In-station inspections.** In-station inspections must be logged on forms provided by the DFRO. Station officers must ensure that these forms are used daily and monthly, and that the unit is



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identified either by its serial number, or a number the station assigned to that unit. The forms below must be used:

- A. A daily inspection form;
 - B. A monthly inspection form; and
 - C. A monthly disinfection log.
- 2. Original reports must be stored in the station for 12 months.
 - 3. All **SCBA** carried on first-line response units must be inspected daily, before and after each use.
 - 4. All **SCBA** carried on second line and reserve units must be inspected weekly.
 - 5. All **SCBA** carried on staff vehicles must be inspected weekly.
 - 6. All **SCBA** at the PSTA must be inspected before and after each use.
 - 7. All **SAR** must be inspected daily.
- j. **Preventive Maintenance.** All **SCBA** and **SAR** must receive both preventive maintenance and shop maintenance. All maintenance performed on **SCBA** must comply with the manufacturer's manual for operations and maintenance. Deviations may be permitted only if authorized in writing by the manufacturer, or the Fire Chief or designee.
- 1. **SCBA** must receive a complete preventive maintenance inspection on a monthly basis, in accordance with the manufacturer's recommendations.
 - 2. **SCBA** must receive periodic shop maintenance, performed *only* by individuals who have been trained and certified by the manufacturer.
- k. **Cylinder and Compressed Breathing Air Testing and Maintenance.** **Compressed breathing air** used in breathing apparatus must meet the requirements of the Compressed Gas Association, G-7.1,



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5th Edition, 2003 commodity specification for air. The minimum air quality is Grade E, with a water vapor level of less than 25 ppm.

1. **Cylinders**. All cylinders must be maintained in accordance with the Compressed Gas Association and the **SCBA** manufacturer's requirements
 - A. **SCBA** cylinders must be maintained in a fully charged state, and must be re-charged when the pressure indicates 4200 PSI.
 - B. **SCBA** cylinders must be hydrostatically tested according to the manufacturer's recommendations, normally every five years. These tests must comply with the U. S. Department of Transportation's rules and regulations.
2. **Compressed Breathing Air**. Sources of compressed gas breathing air such as compressors, cascade systems, and storage receivers used for filling **SCBA** cylinders, must be tested at least every three months.
 - A. Breathing air compressors must be maintained according to the manufacturer's recommendations.
 - B. A compressor operational log must be maintained at every facility where **compressed breathing air** is manufactured.
 - C. A list of approved sources of **compressed breathing air** will be provided to each LFRD. Only approved sources may be used to supply **SCBA**.

Sec. 6. Responsibilities.

- a. All **personnel** must ensure that their **SCBA/RPE** is in order and ready for use with the correctly sized **face-piece** when they are assigned a riding position, before entering an **IDLH** or **hazardous and/or toxic atmosphere**, and after each use.
- b. All officers must require their **personnel** to follow these procedures to ensure their personal safety.



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- c. The **SCBA Advisory Committee** is responsible for reviewing, evaluating, and making appropriate recommendations on the Respiratory Protection Program as outlined in **29 CFR 1910.134(I)**.
- d. The Fire Chief or designee is responsible for appointing the chair of the **SCBA Advisory Committee**, and for maintaining **personnel** and other records.

Sec. 6. **Enforcement.** The Fire Chief is the enforcement authority for all policies, procedures, and regulations of the Montgomery County Fire and Rescue Service.

Sec. 7. **Effective Date.** This policy is effective on April 15, 2005.

Approved:

Thomas W. Carr, Jr., Chief
Montgomery County Fire and Rescue Service

Date

Respiratory Protection Policy 3-24-05 final BF wp