



Division 08 **Health and Safety**

Chapter 17 – Respiratory Protection Program

March 2009

POLICY

This General Order shall establish a Respiratory Protection Program for all work areas of the Department that contain, or potentially contain, hazardous atmospheres to which employees/members could be exposed. To fully comply with all applicable codes, regulations, and standards pertinent to respirator use for the Department including, but not limited to, OSHA 29 CFR 1910.134 Respiratory Protection.

DEFINITIONS

Air-Purifying Respirator - a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

EMS ONLY Member - a volunteer member that participates in an operational capacity as part of an EMS crew only, either by personal choice or related to the use of respiratory protection. Without more specific information on the individual's training and/or certification, an EMS ONLY member shall not perform any operational activity within an IDLH atmosphere. However, an EMS ONLY member must be trained and qualified to use the SCBA and maintain certification to wear SCBA. Members who have not yet obtained SCBA Training will be required to do so within 18-months from the time this General Order takes effect.

Fire/EMS Department Physician - a physician employed by or under contract to the Prince George's County Fire/EMS Department. The physician shall be familiar

with the operations and operational environment of the Department and with the Respiratory Protection Program.

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.

Interior Structural Firefighting - the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures, which are involved in a fire situation beyond the incipient stage.

Operational Activity - any duty, responsibility, or function that involves the delivery of service, training, etc. This includes drivers/operators of vehicles, command officers, and emergency medical service providers.

Member - any career employee or volunteer member of the Prince George's County Fire/EMS Department.

Self-Contained Breathing Apparatus (SCBA) - a County-approved, atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Supplied-Air Respirator (SAR) or Airline Respirator - an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

PROCEDURES

- 1. **Use of SCBA and Air-Purifying**



Respirators

All members who participate in operational activities and/or may be potentially exposed to respiratory hazards shall be qualified and maintain their qualification to use the Department-approved air-purifying respirator, which is the N99 respirator.

All members that are involved in operational activities as part of a crew on any fire suppression vehicle (including driver) shall obtain and maintain certification to wear SCBA.

All members who are, or could be, exposed to IDLH atmospheres during fire suppression operations and/or training exercises shall use SCBA. This includes:

- All interior structural firefighting operations.
- Interior and/ or exterior exposure to smoke or other products of combustion.

SCBA or SAR shall be used by members exposed, or potentially exposed, to IDLH atmospheres at any other type of incident or training exercise including:

- Oxygen deficient atmospheres.
- Carbon monoxide incidents.
- Confined space rescue operations.
- Hazardous materials incidents.

Members operating in the vicinity of known or potential IDLH atmospheres, who could be required to enter the IDLH area shall wear SCBA or have SCBA or SAR available for immediate donning and use.

Air-purifying respirators (filter masks) may be used to provide respiratory protection in situations where SCBA use is not required. This includes:

- Protection from asbestos particles during salvage, overhaul, and fire investigation.
- Certain hazardous materials incidents.
- Dust producing activities.

Air-purifying respirators shall not be used in areas that are, or have the potential, to become IDLH or oxygen deficient atmospheres. The particular filter media (filter or chemical canister) to be utilized must be selected for the specific application. The N99 respirators shall be used in accordance with General Order 08-26.

Unit officers or command officers who have "Observer/ Ride Alongs" (as defined by General Order 13-05) on board their unit shall be responsible for ensuring that these persons are not permitted to enter any potential IDLH zone that exists or may present itself during any incident. Observer/Ride-Alongs shall be left outside of all IDLH hazard zones, as required, until atmospheric conditions permit their entry.

2. Training Policy

All members who are expected to perform interior fire suppression operations, and all members who are expected to operate at emergency incidents in areas that could involve respiratory hazards, shall be qualified to use SCBA.

Members shall not be permitted to use respirators in hazardous atmospheres or at emergency incidents unless they have been trained and qualified to use the specific type and model of respirator.

The initial qualification process to use a respirator, including SCBA, requires:

- Medical evaluation that includes



the an OSHA Respiratory Medical Evaluation Questionnaire.

- Fit testing.
- Training.
- Demonstration of proficiency.

Members must qualify annually to use respirators. Qualification requires:

- Annual refresher training within 60 days of fit testing.
- Fit testing.
- Demonstration of proficiency.
- Annual medical clearance utilizing an OSHA Respiratory Medical Evaluation Questionnaire.

The Commander of the Fire/EMS Training Academy shall maintain the records of members who are qualified to use each type of respirator. These records shall be regularly provided to the Emergency Operations Command to identify the members who are qualified to participate in operational activities.

3. Availability

An adequate number of approved SCBAs shall be provided on each fire suppression and AEMS vehicle for crewmembers that are expected to perform interior fire suppression operations and/or operate in an IDLH atmosphere.

Additional SCBAs shall be provided to ensure that one is available for each member who is required to use a SCBA. This includes extra SCBAs provided for:

- Staff and command vehicles.
- Special use vehicles.
- Training.
- Replacement of units that are out-of-service for maintenance or repairs.

At least one spare air cylinder shall be carried on each fire apparatus for each SCBA assigned to that vehicle. Additional spare air cylinders and/or refilling capabilities shall be provided for long duration incidents.

SCBA carried on apparatus for the use of crewmembers shall be secured in brackets and stored in a manner that protects the SCBA from contamination by dirt, dust, or weather conditions. Additional respirators shall be in enclosed compartments and/or carrying cases.

An adequate number of approved N99 respirators shall be provided on each fire suppression and emergency medical vehicle for crewmembers that are expected to perform emergency medical duties. These respirators shall be stored in a manner that protects them from contamination by dirt, dust, and weather conditions.

4. Respirator Selection

The approved standard respirator used by the Prince George's County Fire/EMS Department for fire suppression and other IDLH emergency operations shall be Scott Air-Pak Fifty 4.5, Single EBSS, AV-3000 Face piece, 2002 NFPA and CBRN Compliant. All members exposed to IDLH, or potential IDLH atmospheres shall use this respirator. This unit may be used with 45 or 60 minute rated air cylinders.

Only approved supplied air respirators (air line breathing apparatus) may be used in IDLH or potential IDLH atmospheres. Supplied air respirators are reserved for special applications requiring long duration and/or reduced weight and bulk, including confined space rescue and hazardous material incidents. These units shall only be used by members who have been trained in their use.



The MSA Advantage 1000® system is approved as an alternative respirator for non-IDLH exposure to hazardous vapors, gases, and/or particulate matter. Air purifying respirators shall only be used in situations where the atmosphere contains at least 19.5% oxygen, the nature and concentration of the contaminant(s) are known, and the appropriate chemical or particulate air-purifying cartridge is available. All other respiratory exposure situations require the use of SCBA.

All members shall wear the NIOSH approved N99 respirator when providing care to the following high risk group of patients or patients who exhibit signs and symptoms (persistent cough \geq three weeks, bloody sputum, night sweats, weight loss, anorexia, and fever) suspicious of Tuberculosis (TB):

- Person with HIV infection, close contacts of infectious TB cases, foreign-born persons from countries with a high prevalence of TB (e.g., Asia, Africa, Latin American and some Caribbean and European countries), or medically underserved, low-income populations, including the homeless and residents of shelters.
- Alcoholics and intravenous drug users, persons currently incarcerated/history of incarceration or residents of mental institutions, and long-term care facilities.
- Persons with medical conditions (silicosis, gastrectomy, jejunioileal bypass, chronic renal failure, diabetes mellitus, leukemia and lymphomas), conditions requiring prolonged high dose corticosteroid and other immunosuppressive therapy, and weight of 10% or more below ideal body weight.
- The use of other alternative respirators for particular situations may be

authorized, in writing, by the Fire Chief or his/her designee. This shall be based on a detailed review of the specific situation and the alternatives that are available.

Additional information can be found in General Order 08-26.

5. Medical Evaluation

Initial Evaluation

The Fire/EMS Department physician shall examine each member before being authorized to use a respirator. The physician shall issue a written recommendation that the member is medically qualified to use a respirator and to engage in emergency operations before the member shall be permitted to be fit tested or to use a respirator within a hazardous environment.

A confidential medical file shall be maintained for each member under the control of the Manager of Risk Management. The physician's recommendation shall be maintained in the member's file. A copy of the physician's recommendation will be provided to the member upon written request to the Manager of Risk Management. The member will have the opportunity to discuss the recommendation with the physician.

Re-evaluation

Members shall be reevaluated for respirator use by the Fire/EMS Department physician if:

- The member reports medical signs or symptoms relating to his/her ability to use a respirator to a supervisor or to the Fire/EMS Department physician.



- Responses to items in the medical questionnaire indicate the need for reevaluation.
- The supervisor has reason to believe that the member requires further medical evaluation or requires a member to be reevaluated for any other reason.
- There is a significant change in the member's work conditions related to respirator use.

All career employees and volunteer members who are scheduled for a full physical examination by the Fire/EMS Department physician shall also have their status for respirator use reviewed at that time using an OSHA Respiratory Medical Evaluation Questionnaire.

All career employees and volunteer members will complete an OSHA Respiratory Medical Evaluation Questionnaire annually.

6. Confidentiality of Records

The questionnaire is a confidential medical record and the responses shall only be reviewed by the Fire/EMS Department physician or a qualified medical professional working under the direction of the Fire/EMS Department physician. If the need for a medical reevaluation is identified, the member shall be notified to contact the Fire/EMS Department physician within 30 days. If the member has not responded to the notification within 30 days, the Manager of Occupational Safety and Health will be notified and the member's authorization to use a respirator shall be suspended until the medical reevaluation has been completed.

7. Fit Testing

Test Requirements

Members shall successfully complete a quantitative fit test administered by the Prince George's County Fire/EMS Department before being authorized to use SCBA or other respirators in a hazardous or potentially hazardous atmosphere. Annual fit testing shall be required for all members to retain their qualification to use respirators and participate in operational activities.

Fit testing shall be conducted as part of the initial training program and the annual respirator training program by individuals who have been trained and are qualified to use the fit testing apparatus. The fit test records will be maintained by the Manager of the Fire/EMS Apparatus Maintenance.

Members who have any presence of facial hair that comes between the sealing surface of the face piece and the face, or interferes with the operation of the unit, shall not be fit tested. Additional fit testing may be required if:

- The member reports changes in his/her physical condition or problems maintaining a seal during respirator use.
- Recommended by a supervisor or the Fire/EMS Department physician.
- A new or different type of face piece is to be used by the member.

Use Requirements

Members shall only use the type and size of face piece that was used when completing the fit test.

Members shall be issued a proper fitting face piece for their personal use.

Members who have any presence of facial hair that comes between the sealing surface of the face piece and the face, or hair that could interfere with the operation of the unit, shall



not be permitted to use respiratory protection at emergency incidents, IDLH, or potentially IDLH atmospheres, and shall not be authorized to participate in operational activities. These restrictions shall apply regardless of the specific fit test measurement that can be obtained under test conditions.

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

Members shall always perform a self-check of the face piece seal when donning an SCBA before entering a hazardous atmosphere.

8. Training

Initial Training

All members who perform fire suppression operations and/or any other emergency operational activities shall be trained and certified in the use of SCBA and the N99 respirator prior to being authorized to participate in emergency incidents, training exercises, or other activities that involve respiratory hazards.

Members who are expected to use other types of respirators shall be trained in the use of that specific equipment prior to use.

The initial training shall ensure that the member is thoroughly familiar with the respirator and has experience in using it in a non-hazardous environment. The initial training shall address:

- Why the respirator is necessary and how improper fit, use, or maintenance can compromise its protection.
- Capabilities and limitations of the respirator.

- Inspection, donning, doffing, seal checking, and normal use of the respirator.
- Emergency procedures, including situations that involve malfunction of the respirator, maintenance, and storage procedures.
- Recognition of medical signs and symptoms that may limit or prevent effective use of the respirator.
- The general requirements of 29 CFR 1910.134, Respiratory Protection.

Each member shall demonstrate proficiency in the proper procedures for:

- User inspection of the respirator.
- Donning the respirator, including the seal check.
- Confident use of the respirator.
- Emergency procedures.
- Doffing, cleaning, and maintenance.

Annual Refresher Training

Each member who is authorized to participate in operational activities and required to use SCBA, the N99 respirator, or other respirators, shall be required to participate in an annual refresher training and re-qualification program. The refresher training shall ensure the member is able to meet the objectives listed for initial training and provide any new information that is required. Each member shall also demonstrate proficiency in the same skills as are required for initial training program.

Training Records

The Fire/EMS Training Academy shall maintain the training records, and the records of annual refresher training, of all members who have been initially trained and certified to use respirators.



Supervisors shall ensure that all career members maintain their qualification to use respirators. Each volunteer company shall ensure that all members participating in Fire/EMS Department operational activities have met the specific requirements.

9. Maintenance and Inspections

Inspection

Respirators shall be maintained in working order and in a clean and sanitary condition. Units that require maintenance or repairs shall be removed from apparatus and tagged to prevent inadvertent use.

Regular inspections of respirators shall be conducted in accordance with the following schedule:

- SCBA carried on in-service apparatus for the regular use of crewmembers shall be checked daily.
- SCBA and spare air cylinders carried on apparatus, including reserve apparatus, command and staff vehicles, shall be checked weekly.
- SCBA reserved for training and spare units shall be checked before each use and before being placed in regular service.
- Other types of respirators shall be checked weekly and before each use.
- All respirators shall be checked after each use, after cleaning and servicing, and before being placed back in service.

Respirator inspections shall follow the manufacturer's recommended procedures. Regular user inspections of SCBA shall include verification that:

- The air cylinder is full - cylinders shall be refilled if the pressure is

found to be below 90% of the rated capacity (4050 psi for a 4500 psi SCBA).

- The regulator, low-pressure alarm, heads up display, and integral PASS device function properly.
- All parts are in operable condition.
- The unit is clean and ready for use.

Cleaning and Sanitizing

Respirators shall be cleaned and sanitized following the manufacturer's instructions, after each use, and at any other time when the need for cleaning is identified.

Function Testing

Each SCBA unit shall be thoroughly inspected and flow tested annually by a qualified technician following the manufacturer's recommended procedures. Units shall also be flow tested after major maintenance or repairs are conducted, and before being returned to service.

Maintenance, inspection, and flow test records for each SCBA unit shall be maintained by the Manager of Apparatus Maintenance.

Maintenance and Repairs

Maintenance and repairs shall only be performed by Apparatus Maintenance Personnel who have been trained and certified to perform such operations on the specific make and model of respirator, and by using parts and procedures approved by the manufacturer. Personnel who have been trained and certified by the manufacturer shall perform repairs or adjustments to high-pressure components, regulators, or low-pressure alarms. SCBA respirators requiring maintenance shall be sent to Apparatus Maintenance.



A maintenance record for each SCBA respirator shall be maintained at Apparatus Maintenance.

Air Quality

Breathing air compressors, air storage systems, and refill stations shall be regularly inspected and maintained in compliance with the manufacturer's recommendations. The Manager of Apparatus Maintenance is responsible for ensuring that all such systems are properly inspected and maintained.

Compressed gaseous breathing air for SCBA cylinders shall meet the requirements of ANSI/CGA G-7.1, Commodity Specification for Air with a minimum air quality of Grade D, even though it will be tested to Grade E specifications.

Air produced by each of the Department's compressor and refill systems shall be tested at least quarterly by an independent laboratory to ensure that it meets the required specification. The test results shall be maintained by the Manager of the Apparatus Maintenance.

A certificate of compliance certifying that the air has been analyzed by a reputable testing agency, and complies with the required specification, shall accompany air obtained from other sources. These certificates shall be maintained at the location where the air is stored until it is expended then forwarded to the Manager of the Risk Management Office (RMO).

Apparatus Maintenance shall maintain a record of each SCBA respirator noting the dates of acquisition and assignment, annual inspections and function tests, modifications, overhaul, and repairs.

Apparatus Maintenance shall also maintain records for each breathing air refill system, including compressors, filters, air storage cylinders, and refill stations. This record shall track all maintenance, inspection, repairs, and modifications to the system.

10. Program Evaluation

The Manager of RMO and the Infection Control Officer shall annually review the effectiveness of the Respiratory Protection/ Tuberculosis Program and develop a report to the Fire Chief. This review shall include:

- An assessment of compliance with the program requirements.
- Analysis of reports of respiratory injuries and exposures.
- Review of changes to applicable regulations and consensus standards.
- Advances in respiratory protection technology.

The Manager of Occupational Safety and Health and the Infection Control Officer shall periodically develop and issue updates to this Respiratory Protection/ Tuberculosis Program and to related procedures and practices.

11. Responsibilities

All employees who might be required to wear tight fitting respirators as a condition of employment shall be required to remove all visible facial hair (clean shaven/clipped to the skin) at the start of each tour of duty per General Order 08-11. This should prevent facial hair from coming between the face and the sealing portion of the SCBA face piece or respirator.

All members shall be required to remove all visible facial hair (clean shaven/clipped to the skin) prior to participating in an operational activity. This should prevent facial hair from



coming between the face and the sealing portion of the SCBA face piece or respirator.

All members are required to comply with the specific requirements of the program that relate to their duties and activities.

Authorization to participate in operational activities shall be dependent upon the member's full compliance with the specific requirements.

All career and volunteer members shall be responsible to ensure that all operational members under their supervision are in full compliance with the specific requirements.

The Manager of RMO is responsible for the overall administration and management of the Respiratory Protection Program, and is designated as the Program Administrator.

The Infection Control Officer is responsible for all aspects of the Tuberculosis Control Program (see General Order 08-26, Tuberculosis Exposure Control Program) and management of suspected or confirmed Tuberculosis exposure incidents.

The Commander of the Fire/EMS Training Academy is responsible for the training components of the Respiratory Protection Program.

The Manager of Apparatus Maintenance is responsible for the maintenance of respirators and associated equipment, and administering the fit testing of respirators.

REFERENCES

ANSI/CGA G-7.1, Commodity Specification for Air

FORMS/ATTACHMENTS

N/A