Respiratory Protection Program

908.1 PURPOSE AND SCOPE

The purpose of this policy is to identify the different types of respiratory protection equipment provided by the District, the requirements and guidelines for the use of respirators, and other mandates associated with their use.

This policy applies to all members whose job duties could require them to use respiratory protection due to exposure to atmospheres where there is smoke, low levels of oxygen, high levels of carbon monoxide, or the presence of toxic gases or other respiratory hazards (Tex. Govt Code § 419.041).

908.1.1 DEFINITIONS

Definitions related to this policy include:

Immediately dangerous to life or health (IDLH) - Any 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 atmospheric conditions at structure fires beyond the incipient stage are considered IDLH, as are a variety of rescue types.

Respiratory protection - Any device that is worn by the user to reduce or eliminate exposure to harmful contaminants through the inhalation of those contaminants.

908.2 POLICY

It is the policy of the Magnolia Fire Department / Montgomery County ESD No 10 to require members to use the proper level of respiratory protection, as described below, when working in hazardous conditions. The level of protection may be increased or decreased by a Company Officer or Incident Commander (IC) based on an evaluation of the hazard. Members shall not be required or allowed to enter or work in hazardous conditions without proper respiratory protection and shall be trained in the proper use and care of the devices.

908.3 RESPIRATORY PROTECTION PROGRAM ADMINISTRATOR

The Fire Chief will designate a program administrator with sufficient training or experience to oversee the objectives of this policy and ensure that the District meets any legal mandates related to respiratory protection.

The administrator shall:

(a) Maintain, implement, and administer a written respiratory protection program.

(b) Ensure the written respiratory protection program and related procedures are followed and appropriate.

(c) Ensure the procedures and written respiratory protection program address relevant mandates and applicable National Fire Protection Association (NFPA) standards (37 Tex. Admin. Code § 435.3).

(d) Ensure selected respirators continue to effectively protect members.

(e) Have supervisors periodically monitor member respirator use to make sure members are using them properly.

(f) Regularly ask members who are required to use respirators for their input on program effectiveness and whether they have problems with the following:

1. Respirator fit during use
2. Any effects of respirator use on work performance
3. Respirators being appropriate for the hazards encountered
4. Proper use under current work site conditions
5. Proper maintenance

(g) Ensure the District covers the costs associated with respirators, medical evaluations, fit testing, training, maintenance, travel, and wages, as applicable.

(h) Provide direction for respirator selection.

(i) Require medical evaluations for members who use respiratory protection as set forth in 29 CFR 1910.134.

908.4 USE OF RESPIRATORY PROTECTION

Members exposed to harmful environments in the course of their assigned activities shall use respiratory protection devices.

Members using respiratory protection shall ensure that they have no facial hair between the sealing surface of the facepiece and the face that could interfere with the seal or the valve function. Members also shall ensure that they have no other condition that will interfere with the face-to-facepiece seal or the valve function.

Members shall not wear corrective glasses, goggles, or other personal protective equipment (PPE) that interferes with the seal of the facepiece to the face, or that has not been previously tested for use with that respiratory equipment.

For all tight-fitting respirators, members shall perform a user seal check each time they put on the respirators, using the procedures in 29 CFR 1910.134, App. B-1, applicable NFPA standards, or other district-approved procedures recommended by the respirator manufacturer.

Company Officers shall monitor members using respiratory protection and their degree of exposure or stress. When there is a change in work area conditions or when a member's degree of exposure or stress may affect respirator effectiveness, the Company Officer shall reevaluate the continued effectiveness of the respirator and shall direct the member to leave the respirator use area when:

(a) It is necessary for the member to wash their face and the respirator facepiece to prevent eye or skin irritation associated with respirator use.

(b) The member detects vapor or gas breakthrough, or when there is a change in breathing resistance or leakage of the facepiece.

(c) The member needs to replace the respirator or the filter, cartridge, or canister.

Members who detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece shall replace or repair the respirator before returning to the work area.

908.4.1 USE OF SELF-CONTAINED BREATHING APPARATUS

Self-contained breathing apparatus (SCBA) are atmosphere-supplying respirators for which the breathing air source is designed to be carried by the user.

Members shall use SCBA when entering an atmosphere that may be IDLH. These situations may include but are not limited to:

- Entering an area that may be oxygen deficient such as confined spaces, trenches, unventilated structures, or septic tanks.
- Engaging in any firefighting operations, with the possible exception of a vegetation fire.
- Entering the hot zone of a hazardous materials incident.
- Entering any area where contaminant levels may become unsafe without warning, or any situation where exposures cannot be identified or reasonably estimated.
- Any time use is specified by the Company Officer or IC.

Facepieces should be donned and regulators attached before entering any smoke-filled area or IDLH environment. Use of SCBA shall not cease until approved by the IC.

908.4.2 USE OF FULL-FACE RESPIRATORS

Full-face respirators are respirators that fit over the full face to protect the face and eyes from contaminants at the same time they filter air.

Company Officers or the IC may allow the use of full-face respirators in situations where, due to the duration of the incident and level of exposure, the use of SCBA is not necessary or practical. These situations may include but are not limited to:

(a) Hazardous materials incidents where members are not working in the hot zone.

(b) Incidents involving weapons of mass destruction where members are outside of the hot zone and not directly exposed to any known hazard.

(c) Certain emergency medical responses where additional protection is warranted.

Full-face respirators shall not be used when there is a potential for an oxygen-deficient atmosphere.

908.4.3 USE OF CARTRIDGE RESPIRATORS

Cartridge respirators are a type of air-purifying respirator. They may be fitted with mechanical pre-filters or combination cartridge/filter assemblies for use in areas where gases, vapors, dusts, fumes, or mists are present. The correct cartridge must be selected prior to use.

A Company Officer or IC may specify the use of cartridge respirators in situations where the use of an SCBA or a full-face respirator is not necessary. These incidents may include vegetation fires, exposure to a patient with a communicable disease, and certain other incidents. Cartridge respirators shall not be used if there is a potential for an oxygen-deficient atmosphere or a risk of exposure to the member's face or eyes.

Cartridge respirator filters shall be replaced whenever:

- The wearer begins to smell, taste, or be irritated by a contaminant.
- The wearer begins to experience difficulty breathing due to filter loading.
- The cartridges or filters become wet.
- The expiration date on the cartridges or canisters has been reached.

908.4.4 USE OF N95 MEDICAL MASKS

N95 medical masks are a class of disposable respirators that are approved by the Food and Drug Administration and the National Institute for Occupational Safety and Health (NIOSH) as suitable for use where fluid resistance is a priority. The masks protect against particulate contaminants that are 0.3 microns or larger, and meet the Centers for Disease Control and Prevention guidelines for the prevention of tuberculosis exposure. Misuse of the N95 respirators may result in serious injury or death. N95 masks should only be used to protect the wearer from particulate contaminants and are not suitable in an oxygen-deficient atmosphere or where an unsafe level of carbon monoxide exists.

908.4.5 TRAINING

Members should not use respirators unless they have completed the mandatory training requirements for the selected device (see the Respiratory Protection Training Policy).

All members are required to receive training on the proper use, care, inspection, and maintenance of SCBA, cylinders, face pieces, and all elements associated in accordance with the manufacturer, prior to the use of SCBA equipment.

908.5 EQUIPMENT ACQUISITION AND SPECIFICATIONS

Prior to starting the procurement process of SCBA, a risk assessment shall be performed in accordance with NFPA 1850 and the Texas Commission on Fire Protection (TCFP). The risk assessment shall include, but not be limited to, the expected hazards that can be encountered by users of SCBA based on the type of duties performed, frequency of use, the organization's experiences, and the organization's geographic location and climatic conditions.

The Magnolia Fire Department / Montgomery County ESD No 10 shall review the following at a minimum:

(a) NFPA 1970(1981 and 1982), *Standard on Protective Ensembles for Structural and Proximity Firefighting, Work Apparel, Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services, and Personal Alert Safety Systems (PASS)*

(b) NFPA 1986, *Standard on Respiratory Protection Equipment for Tactical and Technical Operations*

(c) Chapter 9 of NFPA 1550, *Standard for Emergency Responder Health and Safety*

(d) 29 CFR 1910.134 and 29 CFR 1910.156

The Magnolia Fire Department / Montgomery County ESD No 10 shall ensure that the SCBA interfaces properly with other personal protective items already being used by the district.

908.5.1 SCBA REQUIREMENTS

Magnolia Fire Department / Montgomery County ESD No 10's SCBA shall meet the most current NFPA 1970 standard and be approved for use by NIOSH at the time of acquisition (37 Tex. Admin. Code § 435.3).

The Magnolia Fire Department / Montgomery County ESD No 10 shall use only the respirator manufacturer's NIOSH-approved breathing-gas containers, marked and maintained in accordance with the quality assurance provisions of the NIOSH approval for the SCBA as issued in accordance with the NIOSH respirator certification standard at 42 CFR 84.1 et seq.

908.5.2 COMPRESSED BREATHING AIR

Compressed breathing air used in SCBA shall meet NFPA 1970, and the requirements for Grade D breathing air as described in the American National Standards Institute Compressed Gas Association Commodity Specification for Air (G-7.1-2018).

908.6 RESPIRATOR FIT TESTING

Fit tests are used to quantitatively evaluate the fit of a respirator or SCBA facepiece on an individual. Each new member shall be fit tested before being permitted to use SCBA in a hazardous atmosphere. Fit tests may only be administered by persons determined to be qualified by the program administrator in accordance with CFR 1910.134.

After initial testing, fit testing shall be repeated:

(a) At least once every 12 months.

(b) Whenever there are changes in the type of SCBA or facepiece used.

(c) Whenever there are significant physical changes in the user (e.g., obvious change in body weight, scarring of the face seal area, dental changes, cosmetic surgery, any other condition that may affect the fit of the facepiece seal).

908.6.1 RESPIRATOR FIT TESTING PROCEDURES

Fit testing is to be done only in a negative-pressure mode. If the facepiece is modified for fit testing, the modification shall not affect the normal fit of the device. Such modified devices shall only be used for fit testing and not for field use.

908.6.2 FIT TESTING RECORDS

The program administrator shall be responsible for maintaining records of all fit testing.

Current fit test records shall be retained as required by the district records retention schedule, but in all cases for at least three years. Fit test records shall include:

(a) Name of person tested.

(b) Test date.

(c) Type of fit test performed.

(d) Description (e.g., type, manufacturer, model, style, size) of the respirator tested.

(e) Results of fit tests (e.g., quantitative fit tests should include the overall fit factor and a printout, or other recording of the test).

(f) The written guidelines for the respirator fit testing program, including pass/fail criteria.

(g) Instrumentation or equipment used for the test.

(h) Name or identification of test operator.

908.7 RESPIRATOR MEDICAL EVALUATION QUESTIONNAIRE

All members who are required to use respiratory protection must complete a medical evaluation questionnaire upon initial fit testing and annually thereafter and if any of the following conditions arise between annual tests:

(a) A member reports medical signs or symptoms that are related to the ability to use a respirator.

(b) A Physician or Licensed Health Care Professional (PLHCP), a supervisor, or the respirator program administrator informs the employer that an employee needs to be re-evaluated.

(c) Information from the respiratory protection program indicates a need for an employee re-evaluation; this includes observations made during fit testing and program evaluation.

(d) A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

The questionnaires will be reviewed by a PLHCP selected by the District to determine which, if any, members need to complete physical examinations.

The program administrator shall be responsible for maintaining records of all respirator medical evaluation questionnaires and any subsequent physical examination results.

908.8 SCBA INSPECTION, MAINTENANCE, AND STORAGE

Prior to each shift, members are required to physically inspect and operate all SCBA and respirators that are on frontline fire apparatus. If the equipment is not in daily use, it should be inspected at least once a week and after each cleaning. Inspection should include but is not limited to:

(a) All alarm devices on the SCBA should be tested for proper operation.

(b) Any SCBA or respirator that is not operating properly or is below district standard air volume shall be taken out of service immediately until the problem is remedied.

(c) Rubber facepiece:

1. Excessive dirt
2. Cracks, tears, holes
3. Distortion from improper storage
4. Cracked, loose, or scratched lenses (full facepiece)
5. Broken or missing mounting clips

(d) Head straps:

1. Breaks or tears
2. Loss of elasticity
3. Broken or malfunctioning buckles or attachments
4. Excessively worn serrations of the head harness which might allow the facepiece to slip

(e) Inhalation and exhalation valves:

1. Detergent residue, dust particles, or dirt on the valve seal
2. Cracks, tears, or distortion in the valve material or valve seal
3. Missing or defective valve covers

(f) Filter elements:

1. Proper filter for the hazard
2. Approved designation (NIOSH)
3. Missing or worn gaskets
4. Worn thread
5. Cracks or dents in filter housing

908.8.1 MAINTENANCE, INSPECTION, AND ANNUAL SERVICE

Members should thoroughly clean and sanitize all SCBA components and respirators after each use. Respirators should be cleaned and sanitized according to manufacturer recommendations.

All partially empty cylinders should be replaced with full cylinders. Members should perform the inspections noted above before placing an SCBA or respirator back in service.

Every SCBA shall be inspected and serviced on an annual basis by individuals who have been trained and certified by the SCBA manufacturer to perform such annual servicing. SCBA cylinders shall be hydrostatically tested pursuant to applicable federal regulations, state standards, and manufacturer recommendations.

At no time shall any component of the SCBA be modified or altered that would affect form, fit, or function. This includes applying tape or other means to secure facepiece straps and/or harness.

908.8.2 REPORTING ADVERSE CONDITIONS

Any failures, near-failures, or significant degradation of performance as a result of normal use shall be reported immediately.

Upon proper notification, the following steps must be performed in accordance with NFPA 1850:

(a) Remove the complete SCBA assembly, including the cylinder and facepiece from service

(b) Secure the SCBA and restrict access

(c) Document the chain of custody

Where a specific condition is identified, the organization shall promptly notify the manufacturer in writing of the specific condition(s) or cause and the circumstances involved with the specific condition(s) or cause.

The Magnolia Fire Department / Montgomery County ESD No 10 shall provide to the manufacturer data logging and photographic and/or video evidence of the specific condition.

Copies of the notification to the SCBA manufacturer shall also be promptly supplied to the certification organization that certified the SCBA and to National Institute for Occupational Safety and Health National Personal Protective Technology Laboratory (NIOSH NPPTL).

908.8.3 STORAGE

Respirators in storage shall be protected against:

- Dust.
- Sunlight.
- Heat.
- Extreme cold.
- Excessive moisture.
- Damaging chemicals.

Freshly cleaned respirators can be stored in reusable plastic bags or in a storage cabinet. Care must be taken so that distortion of the rubber or elastic parts does not occur. Respirators shall not be stored in lockers or vehicles unless the respirators are stored in individual containers and are protected from damage.

All filters, cartridges and canisters shall be properly labeled and color coded with NIOSH approval labels. Labels shall not be removed and must remain legible.

908.8.4 FLOW TESTING

The District shall conduct annual flow testing on all SCBA. A flow test, also known as a performance test, ensures that the SCBA is performing to the manufacturer's specifications. Unlike basic inspections and functional testing, flow testing requires specialized equipment. The District shall use NFPA standards or the SCBA manufacturer's requirements for flow testing, whichever is more stringent.

Exposing SCBA to extreme temperatures, water, or chemicals can degrade SCBA performance. If an SCBA is exposed to any type of corrosive material that could lead to a component failure, it should be sent to a certified SCBA technician for testing. If a member suspects that an SCBA has been compromised or damaged, a flow test should be conducted to ensure that it is in good working order.

All annual flow testing must be performed by a certified SCBA technician.

908.8.5 RETIREMENT AND DISPOSAL

Retired SCBA shall be destroyed or altered in a manner assuring that they are not used for respiratory protection and shall be rendered unable to hold pressure, or the ownership of the SCBA shall be transferred to the manufacturer or the manufacturer's agent.

Contaminated SCBA or components shall be segregated from other equipment and personnel and disposed of in a manner consistent with the type of contamination and any governmental regulations governing contaminated items.

Prior to disposal, contaminated SCBA or components shall be altered in a manner assuring that they cannot be used for any purpose.

Defective or obsolete SCBA components or defective or obsolete SCBA that have been removed from service and cannot be repaired or upgraded shall be destroyed or altered in a manner assuring that they cannot be used in any emergency, tactical or technical operations, or other activities, including training; or the ownership of such SCBA shall be transferred to the manufacturer or the manufacturer's agent.

SCBA elastomeric components, including but not limited to facepieces, O-rings, and hose, shall be destroyed or altered in a manner assuring that they cannot be used for any purpose when the component reaches the SCBA manufacturer's specified component service life.

SCBA composite cylinders shall be removed from service and retired when they reach the end of the service life specified by the SCBA manufacturer. Such composite cylinders shall be destroyed or altered in a manner assuring that they cannot be used for respiratory protection and shall be rendered unable to hold pressure, or the ownership of the composite cylinder shall be transferred to the manufacturer or the manufacturer's agent.

Any SCBA cylinders that are beyond repair or not allowed to be repaired shall be destroyed or altered in a manner assuring that they are marked and identified as "Condemned" and shall be rendered unable to hold pressure. Before destroying or rendering them unable to hold pressure, permission from the owner of the cylinder shall be obtained.

908.9 EXPOSURES

Any member who is exposed to a hazardous atmosphere should immediately leave the room or area and move to an area containing fresh, uncontaminated air. Physical symptoms of hazardous atmosphere exposure may include but are not limited to:

- Difficulty breathing.
- Dizziness, headache, or other distress symptoms.
- A sense of irritation.
- A smell or taste of contaminants.

If a member feels ill or impaired in any way, a supervisor should be notified and emergency medical personnel summoned if not already available on-scene. Any time there is a doubt about the need for medical care, medical care shall be obtained. Any injury or exposure must be documented on an injury reporting form. Under most circumstances, the exposed member should not drive a vehicle.

An attempt should be made to identify the exposure agent by questioning the facility representative or by reviewing the hazardous materials inventory. A supervisor should attempt to make this determination. If possible, a Safety Data Sheet for the exposure agent should be obtained.