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EHS-311, RESPIRATORY PROTECTION PROGRAM

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1.0 Introduction

1.1 Purpose

The document serves as a guide for the use of respiratory protection (use of respirators) at Emory University. All employees of Emory are subject to this program. This guide follows requirements of the Occupational Health and Safety Administration (OSHA) as found in 29 CFR 1910.134.

1.2 Scope

Employees of Emory University and/or Emory Healthcare that are potentially exposed to respiratory hazards not adequately controlled by administrative or engineering controls are subject to this respiratory protection program.

1.3 Definitions

OHS. Occupational Health Services.

EHSO. Emory Environmental Health and Safety Office.

Emergency. Any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

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.

Negative Pressure Respirator (tight fitting). Tight sealed respirator, in which the air pressure inside the face piece is negative during inhalation with respect to the ambient air pressure outside the respirator.

NIOSH. National Institute for Occupational Safety and Health.

OSHA. Occupational Safety and Health Administration.

Powered Air-Purifying Respirator (PAPR). An air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering. There are two types:

Tight Fitting – Tight seal around the face. The employee must be fit tested.

Loose Fitting – Loose fitting hood or cuff. Fit Testing is not required.

Program Administrator. Emory EHSO serves as the institutional Program Administrator.

Self-Contained Breathing Apparatus (SCBA). Atmosphere-supplying (tank) respirator for which the breathing air source carried by the user.

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1.4 Responsibilities

Emory Environmental Health and Safety Office (EHSO)

The Environmental Health & Safety Office's (EHSO) responsibilities include:

- Development and maintenance of the Respirator Protection Program.
- Work place assessment of respiratory exposure and when feasible, implement engineering controls.
- Determination for required respiratory protection, if any.
- Selection of appropriate types of respirators.
- Development of training on the selection, use, care, cleaning and storage of respiratory protection.
- Management and offering of respirator fit testing.
- Serve as Program Administrator.
- Review, evaluation of the overall effectiveness and subsequent update of the Respirator Program.

Supervisors and Management

Supervisors and Management are responsible for the implementation, management and enforcement of the Respirator Protection Program in their areas.

These duties include:

- Ensuring hazard assessments have been completed and when possible, implement engineering controls.
- Notification to EHSO when there are process or work place changes that may affect employee exposure to hazardous substances.
- Ensuring employees receive required training.
- Ensuring employees are medically evaluated and fit tested.
- Ensuring employee compliance with the respiratory protection program.

Employees

Employees that are required to use respiratory protection are responsible for complying with the requirements set forth by this program including:

- How to recognize and report potential hazards to supervisor.
- How to use and wear respirator protection as required.
- How to inspect, clean, maintain and store respirator as trained.

Occupational Health

Occupational Health Services (OHS) is responsible for conducting medical evaluations to ensure that the employee is able to physically perform the assigned work while wearing a respirator, including:

- Initial medical evaluation, including administration of the medical questionnaire and any necessary follow-up medical examination.
- Ongoing medical surveillance as required for respiratory protection.
- Retention of all related medical documents for a minimum of thirty (30) years beyond the last date of employment by the employee.

1.5 Training Requirements

- Initial and annual Respiratory Protection training covers the following:
 - Respiratory hazards to which they are potentially exposed.

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- Why a respirator is necessary and how improper fit, usage or maintenance can compromise the protective effect of the respirator.
- What the limitations and capabilities of a respirator are.
- How to use a respirator effectively in emergency situations, including situations in which the respirator malfunctions.
- How to inspect, put on and remove, use and check the seals of a respirator.
- What the procedures are for maintenance and storage of a respirator.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of a respirator.
- General requirements of the OSHA Respiratory Protection standard (29 CFR 1910.134).
- Retraining is provided annually and/or when any of the following situations occur:
 - Changes in the workplace or the type of respirator render previous training obsolete;
 - Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill; or
 - Additional circumstances where retraining is required to ensure safe respirator use.
- The basic advisory information on respirators, as presented in (Mandatory) Information for Employees Using Respirators When not required Under Standard. - 1910.134 App D is provided in any written or oral format to employees who wear respirators when such use is not required.

1.6 Recordkeeping Requirements

Records of medical evaluations required by this section are retained and made available in OHS in accordance with [29 CFR 1910.1020](#). The records are retained for the length of employment plus 30 years.

EHSO retains fit test records including:

- The name or identification of the employee tested.
- Type of fit test performed.
- Specific make, model, style and size of respirator tested.
- Date of test.
- The pass/fail results for fit testing.
- Fit test records are maintained for 1 year.

1.7 Program Evaluation

The Program Administrator is responsible for evaluating the written Respiratory Protection Program to ensure that it is properly implemented, and there is continued compliance with the OSHA Respirator Standard. The Program Administrator will regularly consult with employees required to use respirators to assess employees' views on program effectiveness. Factors to be assessed include, but are not limited to:

- Respirator fit (including the ability to use the respirator without interfering with effective workplace performance).
- Approved list of respirators for appropriate respirator selection for the hazards to

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which the employee is exposed. (See EHSO website located at www.ehso.emory.edu for Approved Respirators)

- Proper respirator use under the workplace conditions the employee encounters.
- Proper respirator maintenance.

2.0 Procedure for Selection and Issuance of Respirators

The Program Administrator in collaboration with area directors or managers will ensure the following:

- Workplace exposure monitoring is conducted to qualitatively or quantitatively evaluate the employees' exposure to airborne hazards.
- If a determination is made that employee exposure necessitates the use of respiratory protection then:
 - Selection of appropriate type of respirator is based upon the respiratory hazards in the work area identified in the hazard assessment.
 - The choice of respirators is from a selection of various models and sizes to ensure a proper fit can be maintained for the user from the NIOSH approved respirator list on the EHSO website. Any deviation in respirator selection must be approved by the Program Administrator.
 - In addition, periodic monitoring, based upon the regulatory requirements of the airborne hazard, will be conducted.
- Supervisors/Management is responsible for purchasing the appropriate respirator recommended by the Program Administrator. See approved respirator list on the EHSO website.

3.0 Medical Evaluations of Employees Required to Wear Respirators

- An OHS physician or other medically competent healthcare provider conducts a medical evaluation to determine if the employee is medically competent for use a respirator. The evaluation includes:
- Completion of the OSHA Respiratory Protection Questionnaire.
 - A follow-up medical examination may be provided if indicated by the Medical Evaluation Questionnaire.
- The medical questionnaire and examinations are administered confidentially during the employee's normal working hours or at a time and place convenient to the employee.
- The medical questionnaire is administered in a manner that ensures that the employee understands its content.
- The employee is given the opportunity to discuss the questionnaire and examination results with OHS at the time of the examination.
- Upon completion of the medical evaluation, OHS provides the Program Administrator and the Supervisor/Manager that the employee is:
 - *Cleared without limitations, Cleared with limitations or Not Cleared.*
 - Any limitations on respirator use related to the medical condition of the employee or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator.
 - The need for any follow-up medical evaluations.
 - A statement that OHS has provided the employee with a copy of their written recommendation.

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- If OHS identifies a medical condition that may place the employee's health at increased risk when wearing a negative pressure respirator, the Program Administrator will work with OHS and the employee to evaluate alternative respiratory protection.
- The employee completes and OHS reviews the Emory Medical Questionnaire annually.
- Additional medical evaluations are provided to the employee if:
 - An employee reports medical signs or symptoms that are related to their ability to use a respirator.
 - OHS, employee manager, supervisor or the Program Administrator deems it necessary that the employee be re-evaluated.
 - Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee re-evaluation.
 - A change occurs in workplace conditions (e.g., physical work effort, protective clothing, and temperature) that may result in a substantial increase in the physiological burden placed on an employee.

4.0 Fit Testing

- Employees using tight-fitting face piece respirators will need to pass an annual qualitative or quantitative fit test.
- Employees using tight-fitting face piece respirators are fit tested prior to initial use of the respirators, whenever a different respirator face piece (size, style, model or make) is used, and at least annually thereafter.
- An additional fit test is conducted whenever the employee reports, or Employee Health Services, the manager or supervisor, or the Program Administrator makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include - but are not limited to - facial scarring, dental changes, cosmetic surgery or an obvious change in body weight.
- If after passing a qualitative fit test, the employee subsequently notifies the Program Administrator, employee's manager or supervisor, or OHS that the fit of the respirator is unacceptable, the employee is given a reasonable opportunity to select a different respirator face piece and be retested.
- Fit testing is not required when using loose fitting PAPRs or SCBAs.
- Qualitative fit testing of tight fitting Self-Containing Breathing Apparatus (SCBAs) and Powered Air-Purifying Respirators (PAPRs) are accomplished by temporarily converting the respirator user's actual face piece into a negative pressure respirator with appropriate filters or by using an identical negative pressure air-purifying respirator face piece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator face piece. **Note that qualitative fit testing of SCBAs and PAPRs does not provide full fit protection.**
- **Note:** Quantitative fit testing is required to achieve full fit protection.

5.0 Use of Respirators

- Respirators with tight-fitting face pieces are not to be worn by employees who have:

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- Facial hair that comes between the sealing surface of the face piece and the face or that interferes with valve function; or
- Any condition that interferes with the face-to-face piece seal or valve function.
- If an employee wears corrective glasses or goggles or other personal protective equipment, the equipment is worn in a manner that does not interfere with the seal of the face piece to the face of the user.
- The employee performs a user seal check each time they put on a tight fitting negative pressure respirator using the *User Seal Check Procedures (Mandatory)*. - 1910.134 App B-1 or procedures recommended by the respirator manufacturer that the employer demonstrates are **as effective** as those in Appendix B-1 of the Respiratory Protection Standard. (This is also known as the negative and positive fit test.)
- Supervisors are responsible for surveillance of the work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or other factors that may affect respirator effectiveness, the supervisor informs the Program Administrator. Respiratory protection needs are then re-evaluated.
- Employees are required to leave the respirator use area under any of the following situations:
 - To wash their faces or respirator face pieces as necessary to prevent eye or skin irritation associated with respirator use; or
 - If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece; or
 - To replace the respirator or the filter, cartridge, or canister elements.
 - If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece, the respirator is replaced or repaired before the employee is allowed to return to the work area.
- Employees wearing respirators equipped with chemical cartridge respirators are required to change the chemical cartridge as recommended by the manufacturer or when there is a chemical breakthrough.

6.0 Immediately Dangerous to Life and Health (IDLH) Atmospheres

If the concentration or identity of a hazardous material is not known or is above an IDLH level Emory employees are not allowed to enter. **Immediately contact a supervisor and/or EHSO.**

7.0 Maintenance and Care of Respirators

Respirators must be kept clean, sanitary and in good working condition:

- Procedures for cleaning and disinfecting are found in 1910.134 App B-2.
- Procedures recommended by the respirator manufacturer, if such procedures are of equivalent effectiveness may be followed.
- Cleaning and disinfecting is not necessary for single use respirators. Discard after use.
- Elastomer respirators are cleaned and disinfected at the intervals listed in Table 1.0.

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Table 1.0 – Respirator Cleaning Intervals

RESPIRATORS ISSUE USE	CLEANING & DISINFECTION INTERVAL
Exclusive use of an employee.	Often as necessary to be maintained in a sanitary condition.
Issued to more than one employee.	Before being worn by different individuals.
Maintained for emergency use.	After each use.
Fit testing and training when fit testing using shared respirators.	After each use.

8.0 Voluntary Use of Respirators

- Employees may choose to wear respirators in situations where workplace conditions do not require respiratory protection.
- Employees that voluntarily choose to wear tight-fitting respirators, other than single use dust masks (e.g. N95), must be medically evaluated and fit tested.
- All employees volunteering to wear respirators must read and sign the Voluntary Use of Respirators document found on the EHSO website.

9.0 Respirator Storage

- All respirators are stored to protect from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture and damaging chemicals. They are also stored to prevent deformation of the face piece and exhalation valve.
- Additionally, emergency respirators are:
 - Kept immediately accessible to the work area.
 - Stored in compartments or in covers that are clearly marked as containing emergency respirators.
 - Stored in accordance with any applicable manufacturer instructions.

10.0 Inspection of Respirators

- Respirators used in routine situations are inspected before each use and during cleaning. Respirators maintained for use in emergency situations are inspected at least monthly and in accordance with the manufacturers' recommendations, and are checked for proper function before and after each use.
- Respirator inspections include the following:
 - Check of respirator function, tightness of connections and the condition of the various parts including, but not limited to, the face piece, head straps, valves, connecting tube and cartridges, canisters or filters.
 - Inspect elastomeric parts for pliability and signs of deterioration.
- Breathing air cylinders are maintained in a fully charged state and are recharged when the pressure falls to 90% of the manufacturer's recommended pressure level.
- SCBA regulator and warning devices are checked monthly to ensure that they are functioning properly and documented with the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings, required remedial action and a serial number or other means of identifying the inspected respirator. This inspection information is provided on a tag or label that is attached to the storage compartment for the respirator, is kept with the respirator, or is included in inspection reports stored as paper or

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electronic files. This information is maintained until replaced following a subsequent certification.

- Respirators that fail an inspection or are otherwise found to be defective are removed from service and discarded or repaired or adjusted in accordance with the following procedures:
 - Repairs or adjustments to respirators are made only by persons appropriately trained to perform such operations, and only the respirator manufacturer's NIOSH-approved parts designed for the respirator are used.
 - Repairs are made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed.
 - Reducing and admission valves, regulators, and alarms are adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

11.0 Breathing Air Quality and Use for Air Supplied Respirators

Breathing air supply must meet the following requirements:

- Cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the 49 CFR Part 173 and 49 CFR Part 178.
- Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air.
- The moisture content in the cylinder does not exceed a dew point of -50°F (-45.6°C) at 1 atmosphere pressure.

12.0 Identification of Filters, Cartridges, and Canisters

All filters, cartridges and canisters used at Emory are labeled and color-coded with the NIOSH-approval label, the label is not removed and is legible. Filters, cartridges or canisters are changed as needed and **at least once a year** during the annual training and fit testing.

13.0 References

- [Respiratory Protection Standard - 29 CFR 1910.134](#)
- [OSHA Respirator Medical Evaluation Questionnaire \(Mandatory\). - 1910.134 App C](#)
- [User Seal Check Procedures \(Mandatory\). - 1910.134 App B-1](#)
- [Respirator Cleaning Procedures \(Mandatory\). - 1910.134 App B-2](#)
- 49 CFR Part 173
- 49 CFR Part 178
- [\(Mandatory\) Information for Employees Using Respirators When not required Under Standard. - 1910.134 App D](#)
- [29 CFR 1910.1020](#)

14.0 List of Associated Documents

Associated Documents found on the EHSO web site:

- Voluntary Use of Respirators.
- Respirator Fit Test Form.



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- Medical Surveillance Worksheet.