



# Respiratory Protection Program

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## 1. Introduction

Syracuse University's Respiratory Protection Program (RPP) outlines how the University will comply with the Occupational Safety and Health Administration's (OSHA) Respiratory Protection Standard, 29 CFR 1910.134 (Standard) to protect employees from exposure to respiratory hazards in the workplace. The RPP is administered by the University's Environmental Health and Safety Services department (EHSS).

Whenever feasible, engineering and administrative controls will be utilized as the primary means to protect employees from exposures to harmful atmospheric conditions and airborne contaminants. When such controls are not feasible or unable to reduce exposures below permissible exposure limits, respiratory protection will be required.

## 2. Applicability

The RPP applies to all University employee operations where use of a respirator is required as determined by OSHA or EHSS. Portions of the RPP are also applicable when respirators are used voluntarily for operations determined to not require respirator use by EHSS.

The RPP does not apply to University contractors. Contractors performing activities at the University that may require respiratory protection must adhere to their employer's respiratory protection program.

## 3. Roles and Responsibilities

### 3.1. Environmental Health and Safety Services

- Designate a suitably trained staff member to serve as program administrator.
- Implement, maintain, and periodically review and revise the RPP.
- Conduct hazard evaluations and notify affected employees, as applicable.
- Coordinate respirator medical evaluation services with a physician or other licensed health care professional (PLHCP).
- Coordinate training and fit testing.
- Provide guidance in the selection, use, and proper care of appropriate respirators and filters/cartridges.
- Maintain records of air monitoring exposure assessments, medical clearance, training, fit testing, and respirator and filter/cartridge selection.
- Consult with department managers, supervisors, and affected employees on issues related to the RPP.

### 3.2. Department Managers and Supervisors

- Implement the RPP in their department and work areas and ensure affected employees wear respirators as required.
- Identify employee operations (i.e. job tasks, work areas) that may require respiratory protection and coordinate with EHSS to conduct respiratory hazard evaluations for identified operations.
- Continually monitor job tasks and work areas for new or changing conditions that may require a re-evaluation and notify EHSS to conduct the re-evaluation.
- Provide a list of affected employees to EHSS and update as personnel changes occur.
- Ensure affected employees are aware of the respiratory hazards in their work areas and job tasks and when to use a respirator.
- Ensure affected employees have access to and follow all elements of the RPP.
- Schedule affected employees for their medical evaluations with the EHSS-designated PLHCP upon hire and on a periodic basis thereafter.
- Ensure affected employees receive respiratory protection training and fit testing upon hire and annually thereafter.

- Provide appropriate respirators and cartridges/filters as assigned by EHSS at no cost to affected employees and ensure appropriate replacement components, cleaning materials, and storage materials are available.
- Notify EHSS of any employee requesting to use a respirator voluntarily for activities where respirator use is not required.

### 3.3. Affected Employees

Affected employees are those who perform job tasks or work in areas where respiratory protection is required.

- Wear, clean, and maintain assigned respirators properly as required by the Standard and the RPP.
- Complete the mandatory medical questionnaire annually and attend medical evaluation appointments as deemed necessary by the LPHCP.
- Attend annual respiratory protection training and fit testing.
- Notify their supervisor or EHSS of new or changing conditions in their work areas or job tasks that may present a respiratory hazard or need a hazard evaluation.
- Notify their supervisor or EHSS of any fit, health, physical issues, or failed inspections associated with using their assigned respirator.

## 4. Hazard Evaluation

EHSS conducts respiratory hazard evaluations for job tasks and/or work areas identified to have a potential for harmful atmospheric conditions and/or airborne contaminants to be present during routine or foreseeable emergency operations. At a minimum, hazard evaluations include identification of the contaminant's chemical state and physical form, a reasonable estimate of employee exposure, and conversation with affected employees and their supervisors to review processes and where exposures may occur. Unless specific information or conversation proves otherwise, estimated exposures and protection measures will be extended to all employees of the same job title or function.

Estimated employee exposure for specific job tasks or work areas will be determined based on past knowledge or experience, historical data, mathematical calculation, modelling, and/or air sampling. When air sampling is deemed necessary by EHSS to sufficiently estimate employee exposure, the air sampling will be conducted and/or coordinated by EHSS. Where exposure levels cannot be reasonably estimated, the atmosphere will be conservatively considered immediately dangerous to life or health (IDLH).

Estimated employee exposure for a job task or work area will be compared to regulatory permissible exposure limits (PEL) to complete the hazard evaluate and determine if respiratory hazard controls are needed. In the absence of regulatory exposure limits other common occupational exposure limits will be used as well as consultation of relevant scientific publications.

If the hazard evaluation determines the anticipated employee exposure from a job task or work area exceeds a PEL, or another accepted exposure limit in the absence of a PEL, and the exposure cannot be sufficiently controlled through engineering or other controls, respiratory protection will be issued to the employee(s) performing the task or frequenting the work area and the employee(s) will be deemed a RPP affected employee.

## 5. Respirator Selection

EHSS selects respirators and filters, cartridges, and canisters that are applicable and suitable for the hazards to which employees are exposed and the job task to be performed. Respirators selected for use will be appropriate for the chemical state and physical form of the contaminant. All respirators selected for use will be certified by the National Institute for Occupational Safety and Health (NIOSH).

## 5.1. IDLH Atmospheres

University employees will not be assigned respiratory protection or permitted to enter or work in areas where IDLH atmospheres exist. When an IDLH atmosphere exists, Syracuse University will rely on external local emergency response agencies and contracted emergency response vendors to respond. IDLH atmospheres include where:

- An oxygen deficient atmosphere exists
- A respiratory hazard exceeds an IDLH occupational exposure limit.
- A respiratory hazard is presumed to exceed an IDLH occupational exposure limit and the level of the contaminant in the atmosphere is unknown and unable to be measured or reasonably estimated.

## 5.2. Non-IDLH Atmospheres

In non-IDLH atmospheres, respiratory protection will be selected that meets or exceeds the required level of employee protection based on the assigned protection factors listed in Table 1 of the Standard. Contaminants will be measured or reasonably estimated to calculate the maximum use concentration for selected respiratory protection to ensure that employees' exposure does not exceed the PEL or other occupational exposure limits.

### 5.2.1. Gas and Vapor Protection

For protection against gases and vapors affected employees will be issued an air-purifying respirator equipped with a filter/cartridge certified by NIOSH for the contaminant. Certain affected employees may additionally be assigned an atmosphere-supplying respirator in the form of a self-contained breathing apparatus (SCBA).

### 5.2.2. Particulate Protection

For protection against particulates employees will be issued an air-purifying respirator equipped with high efficiency particulate air (HEPA) filters certified by NIOSH under 30 CFR Part 11, filters certified for particulates by NIOSH under 42 CFR Part 84, or filters certified by NIOSH for particulate contaminants consisting primarily of particles with mass median aerodynamic diameters (MMAD) of at least 2 micrometers. Certain affected employees may additionally be assigned an atmosphere-supplying respirator in the form of an SCBA.

## 6. Filters, Cartridges, and Canisters

All filters, cartridges, and canisters provided to affected employees will be labeled and color coded with the NIOSH approval label. Labels must not be removed or rendered illegible by any means.

Filters, cartridges, and canisters equipped with an ESLI will be replaced prior to reaching their end of service life. Filters, cartridges, and canisters not equipped with an ESLI will be replaced based on objective information or data, and/or applicable OSHA regulations to ensure they are replaced prior to the end of their service life. Filters, cartridges, canisters will also be replaced prior to their end of service life if they become damaged, visibly soiled, or difficult to breathe through.

## 7. Breathing Air Quality

Compressed breathing air cylinders used with SCBA will be maintained in accordance with the Standard and will meet the requirements for Type 1 Grade D breathing air as described in ANSI/CGA Commodity Specification for Air, G-7.1-1989.

## 8. Medical Evaluation

Employees required to use a respirator must pass a medical evaluation prior to being issued or wearing a respirator and prior to fit testing. Medical evaluations will be administered confidentially by an EHSS-designated PLHCP at no cost to employees and during normal work hours.

The PLHCP will assess employees using a medical questionnaire encompassing Appendix C of the Standard and information regarding the job task and work environment. Follow-up medical examination may be required at the discretion of the PLHCP or dependent on the employee's responses to the medical questionnaire.

Following employee medical evaluation, EHSS will receive a written respirator medical qualification recommendation from the PLHCP regarding the employee's ability to wear a respirator. This written qualification will indicate if the employee is medically able to use a respirator and if applicable, specify restrictions or limitations on respirator use such as the type of respirator that may be used, the duration of use, or the acceptable level of physical exertion while in use. EHSS will send the affected employee a copy of their respirator medical qualification upon receipt and maintain a copy in EHSS' RPP record repository.

Subsequent periodic medical evaluations will be required at a frequency determined by the PLHCP as long as the employee remains an affected employee in the RPP.

Additional medical evaluation will be required when any of the following occurs:

- An employee reports medical signs, symptoms, or conditions related to their ability to use a respirator.
- The PLHCP, EHSS, or a supervisor recommends reevaluation.
- Observations made by EHSS or a supervisor during fit testing or program evaluation indicate a need for employee reevaluation.
- A change occurs in workplace conditions that may substantially increase the physiological burden on an employee.

## 9. Fit Testing

Affected employees required to use a negative or positive pressure tight-fitting facepiece respirator must pass a qualitative (QLFT) or quantitative (QNFT) fit test prior to initial use, whenever there is a change in respirator make, model, or size worn, and at least annually thereafter. Fit testing will be provided in accordance with the protocols outlined in Appendix A of the Standard. Employees will be fit tested in the make, model, and size of every type of respirator they will wear on the job.

Additional fit testing will be required if an employee reports changes in their physical condition that may affect respirator fit (e.g. facial scarring, dental changes, cosmetic surgery, or obvious weight change) or if those changes are observed by the employee's supervisor, the PLHCP, or EHSS.

## 10. Use of Respirators

Respirators will be used as specified by the Standard, the RPP, and in accordance with the information they receive from the manufacturer and during respiratory protection training. Respirators will be NIOSH-certified and used in compliance with the conditions of its certification.

Tight-fitting respirators will not be worn by employees who have facial hair or any physical condition that interferes with the face-to-facepiece seal or valve function. Employees who wear glasses, goggles, or other personal protective equipment will ensure they are worn in a manner that does not interfere with the respirator's face-to-facepiece seal or valve function.

Employees will perform a user seal check or follow the procedures recommended by the original equipment manufacturer (OEM) each time they put on their respirator. For tight-fitting respirators, employees will follow the user seal check procedures outlined in Appendix B-1 of the Standard.

### 10.1. Continuing Respirator Effectiveness

Changes in work conditions that may render respiratory protection inadequate will be avoided, and appropriate surveillance of work environments and the degree of employee exposure and stress will be maintained. Department managers and supervisors will notify EHSS when changes to work area conditions or the degree of employee exposure or stress occur so that the continued effectiveness of the respirator may be evaluated.

Employees will not remove their respirators while working in hazardous environments. When using their respirator, employees will stop work and leave the area immediately if they:

- Need to wash their face and/or respirator facepiece as necessary to prevent eye or skin irritation associated with respirator use.
- Detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece.
- Need to replace their respirator or its filter, cartridge, or canister elements.
- Are alerted of a need to leave the work area such as from a low battery or low airflow alarm.

If an employee detects vapor or gas breakthrough, changes in breathing resistance, or any leakage of the facepiece, they will notify their supervisor or EHSS. The employee's respirator will be evaluated by EHSS to assess the need for repair or replacement prior to the employee returning to the work area.

## 11. Maintenance and Care of Respirators

### 11.1. Cleaning and Disinfecting

Respirators provided to employees will be clean, sanitary, and in good working order. Respirators issued to employees for their exclusive use will be cleaned and disinfected by the employee as often as necessary to maintain a sanitary condition following the procedures described in Appendix B-2 of the Standard or by equivalent methods provided by the OEM. Shared respirators will be cleaned and disinfected before being worn by different individuals. Respirators maintained for emergency use and fit testing will be cleaned and disinfected after each use.

### 11.2. Storage

All respirators will be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals. All respirators will be packed or stored in a manner that prevents deformation of the facepiece and exhalation valve and following any storage requirements issued by the OEM.

Respirators maintained for emergency use will be stored in a location that is accessible to the work area and in compartments or covers that are clearly marked as containing emergency respirators and in accordance with applicable OEM instructions.

### 11.3. Inspection

Respirators issued to employees for their exclusive use and worn in routine situations will be inspected by the employee before each use and during cleaning. Routine respirator inspection will include the following:

- A check of respirator function, tightness of connections, and the condition of various parts including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters, or filters.
- A check of elastomeric parts for pliability and signs of deterioration.

Respirators maintained for use in emergency situations, including SCBA, will be inspected monthly in accordance with the OEM's recommendations and will be checked for proper function before and after each use. Inspection records will be maintained in accordance with the Standard. Air cylinders will be maintained in a fully charged state and recharged when their pressure falls to 90% of the OEM's recommended pressure level.

### 11.4. Repair

Respirators that fail an inspection or are otherwise found to be defective will be removed from service. Respirators removed from service will be discarded, repaired, or adjusted. Repairs or adjustments to respirators will only be made by appropriately trained personnel using only the OEM's NIOSH-approved parts designed for the respirator. Repairs will be made in accordance with the

OEM's recommendations and specifications for the type and extent of repairs to be performed. Reducing and admission valves, regulators, and alarms will only be adjusted or repaired by the OEM or an authorized service representative trained by the OEM.

## 12. Training

Respiratory protection training will be provided to employees prior to their initial respirator use and annually thereafter. Additional retraining will be provided when workplace conditions change, a new type of respirator is used, or when an employee indicates need based on inadequacies in their use or knowledge. Training topics include at a minimum:

- The general requirements of the Standard and RPP.
- Why the respirator is necessary and how improper fit, use, and maintenance can compromise the protective effect of the respirator.
- The limitations and capabilities of the respirator.
- Use in emergency situations, where applicable.
- How to inspect, put on and remove, use, and check the seals of the respirator.
- Procedures for maintenance and storage.
- Recognition of medical signs and symptoms that may limit or prevent effective use.

## 13. Voluntary Respirator Use

Disposable N95 or disposable respirators are the only respirator style permitted to be worn voluntarily at Syracuse University. Employees seeking to wear an N95 or other disposable respirator will contact EHSS to conduct a hazard evaluation. Employees authorized for voluntary use will be provided with the advisory information from Appendix D of the Standard.

## 14. Program Evaluation

EHSS conducts periodic evaluations of the RPP to confirm it continues to align with the Standard, is being properly implemented, and to ensure affected employees are using their respirators properly. Problems identified during program evaluation will be noted and corrected.

## 15. Recordkeeping

EHSS maintains a written copy of the RPP. The RPP and Standard are available to affected employees via EHSS' website or by contacting EHSS.

### 15.1. Medical Evaluation

EHSS retains medical evaluation records for affected employees. Medical evaluation records are maintained, and employees are provided access to them in accordance with 29 CFR 1910.1020.

### 15.2. Fit Testing

EHSS maintains records of fit tests administered to employees in the RPP in accordance with the Standard. Fit test records are retained until the employee's next fit test is administered.