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**SUNY CORTLAND
ENVIRONMENTAL HEALTH
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RESPIRATORY PROTECTION PROGRAM

PROGRAMS, POLICIES, AND PROCEDURES

Inception Date:	Not specified
Latest Revision / Review:	August 7, 2018
Previous Revision / Review:	March 5, 2025

RESPIRATORY PROTECTION PROGRAM

REVISION 3

MARCH 2025

Revision History

Revision	Date	Reason for Revision
3	March 2025	Changed to new format

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Respiratory Protection Program

1. Introduction

This document is the Respiratory Protection Program for SUNY Cortland, and it outlines requirements, guidelines, and other information involving the use of respirators. This program complies with the Occupational Health and Safety Administration's (OSHA) Respiratory Protection Standard (29 CFR 1910.134) and other relevant regulations. While this program applies principally to employees, it also outlines requirements, guidelines, and other information for student use of respiratory protection.

Respirators are never used as the primary means of controlling hazards. Every effort is made to eliminate airborne hazards before respirators are used. When airborne hazards cannot be eliminated, respirators are used in conjunction with engineering controls and other sound safety practices.

Respirators are provided to employees without cost for certain job-related hazards. Tasks and processes for which specific respiratory protection is required are indicated in Table A and during other hazard reviews conducted by the Environmental Health and Safety (EH&S) Office. Employees are required to wear respirators whenever it is specified. In instances where an employee believes that a respirator is required, but not specified, the employee or the department supervisor should contact the EH&S Office for assistance.

Employees receive respiratory protection training in accordance with the protocol outlined in Section 12 of this document. Training is provided before employees are assigned to tasks, when they are given new assignments, and when it is determined that additional training is necessary.

2. Purpose

The purpose of this program is to outline the requirements, guidelines, and other information involving the use of respirators. This program complies with the OSHA Respiratory Protection Standard (29 CFR 1910.134) and other relevant regulations

3. References

OSHA Respiratory Protection Standard 29 CFR 1910.134

4. Definitions

Air-purifying respirator (APR) means a respirator with an air-purifying filter or cartridge that removes specific air contaminants by passing ambient air through the air-purifying element.

Assigned protection factor (APF) means the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program as specified by this section.

Atmosphere-supplying respirator means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

Cartridge means a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

Employee exposure means exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

End-of-service-life indicator (ESLI) means a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Filter or air purifying element means a component used in respirators to remove solid or liquid aerosols from the inspired air.

Dust mask means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

Fit factor means a quantitative estimate of the fit of a particular respirator to a specific individual and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit test means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.

Hazard assessment is a formal evaluation of job-specific tasks or processes and their associated hazards or risks. Once a hazard assessment is performed, appropriate personal protective equipment (PPE), including respirator use, is determined. While hazard assessments are principally performed by the EH&S Office, supervisors and employees also provide input for these assessments. Written certification that a hazard assessment has been performed is documented in department hazard assessments. Hazard assessments are available for each department where PPE is required. The EH&S Office will discuss hazard assessments and PPE selection during training sessions. Supervisors are required to maintain department hazard assessments and make them available to their employees.

High efficiency particulate air (HEPA) filter means a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

Immediately dangerous to life or health (IDLH) means 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.

Job Hazard Analysis (JHA) is a document that provides written procedures to help eliminate job hazards and reduce accidents, injuries, illnesses, and incidents in the workplace. Specifically, a JHA: 1) outlines basic steps for a specific task; 2) identifies the hazards associated with the task; and 3) identifies safe operating procedures and PPE, including use of respirators, to reduce or eliminate hazards. Supervisors and employees are requested to use these documents to identify PPE that is required for specific tasks.

Negative pressure respirator (tight fitting) means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Oxygen deficient atmosphere means an atmosphere with an oxygen content below 19.5% by volume.

Physician or other licensed health care professional (PLHCP) means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by 1910.134.

Positive pressure respirator means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Powered air-purifying respirator (PAPR) means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering (i.e. MaxAir CAPR).

Pressure demand respirator means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

Qualitative fit test (QLFT) means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative fit test (QNFT) means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Respiratory inlet covering means that portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a facepiece, helmet, hood, and suit.

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

Service life means the period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.

Supplied-air respirator (SAR) or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user (i.e. air compressor).

Tight-fitting facepiece means a respiratory inlet covering that forms a complete seal with the face.

User seal check means an action conducted by the respirator user to determine if the respirator is properly seated to the face.

5. Responsibilities

EH&S Office – The EH&S Office is responsible for: 1) reviewing and updating this program; 2) evaluating this program's effectiveness; 3) conducting Hazard Assessments and developing Job Hazard Analysis (see Sections III and IV); 4) providing technical guidance on selection and use of respiratory protection; 5) conducting respirator fit testing; 6) providing respiratory protection training; 7) arranging medical evaluations; and 8) maintaining records associated with this program.

Employees – Employees must complete a medical questionnaire prior to being approved to use respiratory protection. When employees are approved to use respiratory protection, they must: 1) wear respiratory protection whenever it is specified; 2) use respiratory protection in accordance with instructions given during training; 3) observe use restrictions, whenever applicable; and 4) observe use, care, and storage requirements. In instances where an employee's use of a respirator is voluntary, employees must observe guidance that is offered by the EH&S Office (see Section 10).

Supervisors – Supervisors must make sure that employees do not use respiratory protection until they are approved by the EH&S Office. When employees are approved to use respiratory protection, supervisors must enforce use, care, and storage requirements.

Student Health Service Nurse Practitioner (NP) – The Student Health Service NP will evaluate medical questionnaires that are submitted by students and supply written recommendations in accordance with the information outlined in Section 7. Additionally, the Student Health Service NP will handle health issues related to student use of respirators.

Students – See responsibilities outlined in Section 11.

6. Hazard Elimination and Control

Substitution, engineering controls, and administrative controls are first employed to eliminate or reduce atmospheric hazards. When these methods are not effective/available or feasible, appropriate respiratory protection is used. Processes and tasks for which respiratory protection is required are outlined in department hazard assessments, JHAs, and in Appendix A (Table 1). Employees who require respiratory protection are contacted by the EH&S Office so that arrangements can be made to use a respirator. Final approval to use a NIOSH-certified respirator is not granted until medical evaluations, fit testing, and training are finalized.

7. Medical Evaluations

Prior to fit testing and training, employees must complete Parts A and B of the OSHA Respiratory Protection Standard medical questionnaire (Appendix C). The EH&S Office will assist employees with completing this questionnaire. Once completed, the EH&S Office sends the medical questionnaire to a physician or other licensed health care professional (PLHCP). As part of the medical evaluation agreement, the PLHCP is also given a copy of SUNY Cortland's Respiratory Protection Program and a copy of section (e)(5)(iii) of the Respiratory Protection Standard if this section of the standard is requested.

After the medical questionnaire is evaluated by the PLHCP, the EH&S Office obtains a written recommendation from the PLHCP regarding the employee's ability to use a respirator. This written recommendation will provide: 1) limitations on respirator use, if applicable; 2) the need, if any, for follow-up medical evaluations; and 3) a statement that the employee has been provided with a copy of the written recommendation. Aside from written recommendations, employees will be provided with additional medical evaluations if: 1) medical signs or symptoms that are related to one's ability to use a respirator are reported; 2) the EH&S Office is informed that reevaluations are needed; and 3) a change occurs in the workplace that may result in a substantial increase in the physiological burden of an employee.

Records of employee medical evaluations are confidential and will be maintained by the EH&S Office for the duration of one's employment at SUNY Cortland plus 30 years.

8. Fit Testing

Once it is determined that an employee is able to use a respirator, the EH&S Office will contact the employee to arrange for quantitative fit testing. Fit testing is performed prior to initial use of a respirator, whenever a different respirator is used, and at least annually thereafter. During fit testing, employees are fit tested with the same make, model, style, and size of respirator that will be used for job-specific tasks where use of the respirator is specified. Respirators that are used during fit testing are cleaned and disinfected after each use. It is noteworthy to mention that for tight-fitting respirators, facial hair must be removed before fit testing and before the respirator is actually used.

The following records are retained for fit testing: 1) the name of the employee; 2) the type of fit test performed; 3) specific make, model, style, and size of respirator tested; 4) date of the test; and 5) the quantitative results of the fit test. These records are retained by the EH&S Office.

9. Requirements for Respirator Use and Maintenance

Requirements for respirator use and maintenance are summarized in this sub-section.

1. Respirators must be inspected for integrity before each use and during cleaning. This includes, but is not limited to, the following respirator parts: facepiece, head straps, valves, cartridges, or filters.
2. Respirators that are defective must be discarded or repaired. In instances where a respirator is repaired, the employee must contact the EH&S Office for assistance. The EH&S Office will ensure that NIOSH-approved parts are used, and repairs are made in accordance with manufacturer's recommendations and specifications.
3. Employees must perform a seal check in accordance with protocol that is discussed during training before each use of a respirator.
4. Tight-fitting respirators must not be worn when facial hair or other conditions interfere with the face-to-facepiece seal or valve function. This includes situations where eyewear or other personal protective equipment is used.
5. Employees must not use a respirator when exposures or conditions within the workplace affect the integrity of the respirator.
6. Employees must leave the respirator use area when they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece.

7. Employees must leave the respirator use area before a respirator is removed and when respirator cartridges or filter elements are replaced.
8. Respirators must be cleaned and disinfected as often as necessary to be maintained in a sanitary condition. Respirators used for emergencies must be cleaned and disinfected before and after each use.
9. Respirators must not be shared with other employees.
10. Respirators must be properly stored to protect them from damage, deformation, contamination, dust, sunlight, moisture, and chemicals.
11. Employees must contact the EH&S Office when significant changes occur in the workplace that might affect a respirator's effectiveness. This includes increased duration of exposure to certain hazards, new hazards introduced into the work environment, and changes in how certain tasks are performed.
12. Employees must contact the EH&S Office when changes in health or physiology affects one's ability to use a respirator safely.

10. Non-mandatory Use of Respiratory Protection

Employees are not encouraged to use respirators for airborne hazards within the workplace that do not exceed exposure limits established by OSHA standards. However, if an employee uses a respirator that is not supplied in accordance with SUNY Cortland's Respiratory Protection Program (i.e., voluntary use), the EH&S Office will provide the employee with a copy of Appendix D of the OSHA Respiratory Protection Standard (see Appendix B) and apprise the employee of the information in this appendix and other information that is pertinent to use of respirators.

11. Student Use of Respiratory Protection

A small number of students are approved to use respirators at SUNY Cortland. Students are expected to properly care for their respirators and observe all of the requirements outlined in this program. Students may not share their respirators with other students. Additionally, instructors must enforce use, care, and storage requirements for their students who use respirators.

Students will observe all fit testing, training, and respirator use requirements that are outlined in this program; however, medical evaluations are handled somewhat differently. For medical evaluations, the EH&S Office will supply students with the medical questionnaire used for

students. This questionnaire will be evaluated by the SUNY Cortland Student Health Service NP. After the questionnaire is evaluated, the Student Health Service health care professional will provide a written recommendation that indicates: 1) limitations on respirator use, if applicable; 2) the need, if any, for follow-up medical evaluations; and 3) the student has been provided with a copy of the written recommendation. Moreover, students will confer with the Student Health Service NP if health issues related to the use of a respirator arise. Records of student medical evaluations are confidential and will be maintained by the EH&S Office for 30 years.

12. Training

The EH&S Office provides respirator training to employees prior to initial use and annually thereafter. Additionally, retraining is provided when: 1) changes in the workplace or the type of respirator render previous training obsolete; 2) the employee's knowledge or use of the respirator indicate that comprehension or skill is lacking; and 3) other circumstances arise in which retraining appears necessary to ensure safe respirator use. Respirator training is generally provided to employees during fit testing.

The following information is discussed during training: 1) why respirators are necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator; 2) the limitations and capabilities of the respirator; 3) how to use the respirator effectively in emergency situations, including situations where the respirator can malfunction; 4) how to inspect, put on and remove, use, and check the seals of the respirator; 5) maintenance and storage procedures; 6) how to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and 7) other requirements pertaining to the Respiratory Protection Program. Employees must demonstrate that they comprehend the information that is discussed during training.

Appendix A – Respirator Use Table

Airborne Exposures	Cartridge Type [respirators are half-face except for powered air purifying respirators (PAPR)]	Affected Offices
Asbestos (includes disturbances, removals, clean-up, brake/clutch jobs, accessing posted areas)	High Efficiency Particulate Air (HEPA) cartridge, or PAPR with HEPA cartridge	Custodial Services HVAC Masons Plumbers
Chemicals	Defender cartridge with HEPA cartridge; or OV cartridge with HEPA cartridge	Art Department Chemistry HVAC Maintenance Pool
Clay Mixing	HEPA cartridge	Art Department
Dusts (includes certain exposures to wood dust, plaster, textile fibers, and soot)	HEPA cartridge; Chemical cartridge with HEPA cartridge; PAPR with HEPA cartridge; or P100 respirator	Art Department Custodial Services HVAC Maintenance Masons Motor Pool Paint Shop Performing Arts Plumbers
Forging, Grinding, Welding (includes exposures to fumes and metal dust)	HEPA cartridge; or P100 respirator	Art Department HVAC Maintenance Masons Motor Pool Performing Arts Plumbers
Painting	PAPR with organic vapor cartridge; Organic vapor cartridge with HEPA cartridge; or organic vapor cartridge and paint mist filter	Art Department Carpentry Shop Grounds Paint Shop Performing Arts
Pesticides	Organic vapor and HEPA cartridge pre-filter	Grounds HVAC
Sand Blasting	HEPA cartridge	Art Department Masons Motor Pool
Pathogens	N-95	Student Health Services Custodial Services

Appendix D to § 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

[63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]