

## **UVM Written Respiratory Protection Program**

1. Introduction
2. Scope
3. Student Respirator Policy
4. Responsibilities
5. Hazard Assessment
6. Respirator Selection
7. Respirator Medical Clearance
8. Fit Testing
9. Training Requirements
10. Respirator Use, Care, and Maintenance
11. Voluntary Respirator Use
12. Documentation and Evaluation
13. Appendix:
  - A. Respiratory Protection Program Flow Chart

### **1. Introduction**

University of Vermont (UVM) employees and students in various positions may be exposed to respiratory hazards during routine job duties. These hazards may include particulates, vapors, biological aerosols, and wood dust. Substitution, engineering, and administrative controls must be used to the extent feasible to minimize employee exposure to respiratory hazards. These methods are effective because they physically change the work environment. Such controls include, but are not limited to:

- Substitute less hazardous substances (i.e. latex paints vs. oil-based paints);
- Isolate or enclose of the work process or of employees (i.e., seal the doorway to where work is being performed);
- Use local exhaust, general dilution, and air filtering ventilation (i.e., chemical fume hoods, building exhaust, and biological safety cabinets); and
- Change the work process (i.e. wet mop vs. dry sweep).

However, such controls are not always feasible for some job tasks or operations at UVM, and in some cases, may not reduce exposures enough to ensure a safe work environment. In these situations, respirators are required to provide protection from respiratory hazards. Respirators may also be required during non-routine or emergency operations.

### **2. Scope**

This Respiratory Protection Program is based on the American National Standards Institute publication, "The American National Standard Practices for Respiratory Protection" (ANSI Z88.2 1992) and OSHA 29 CFR 1910.134. The Department of Risk Management and Safety (RM&S) and the Training and Compliance Office (TCO) of the Physical Plant Department (PPD) developed this program in an effort to ensure safe work practices for UVM employees and students who wear respirators and have known or potential exposure to airborne pollutants. UVM employees and students participating in this program do so at no cost to themselves.

This program applies to all UVM employees and UVM students who are required to wear respirators during normal work operations or course of study, and during some non-routine or emergency operations. It also applies to non-UVM employees or students who are working on University property as part of a UVM-funded research program. Sections of this program also apply to any UVM employee or student who chooses to wear a respirator in environments where it has been determined that respirators are not required or recommended under the Voluntary Use definition of OSHA 1910.134.

This program does not apply to UVM divers that use self-contained underwater breathing apparatus (SCUBA), contractors, or other non-UVM employees working on University property who are not part of a UVM-funded research program.

### **3. Student Respirator Policy**

This Program applies to University students who may be exposed to respiratory hazards in the classroom, research laboratory, or workshop. If a student is required to wear a respirator, they must comply with all sections of this Program, including medical clearance, fit testing, and training requirements. The Voluntary Use section of this Program applies to students who wish to wear respirators for comfort reasons after it has been determined that no respiratory hazards exist.

Students covered by this Program will use the same OSHA Respirator Medical Evaluation Questionnaire as UVM employees and follow the same submission instructions. UVM Student Health Services will review all student questionnaires and provide follow up medical exams when necessary at no cost to the student. If further medical testing is required, students may be referred to Champlain Medical Urgent Care.

Risk Management and Safety can conduct fit tests for individual students. However, due to lack of space and equipment, RM&S is unable to accommodate classes or large groups of students. In these cases, the school or department should arrange fit testing with an outside vendor so that students can be fit tested in a timely manner.

### **4. Responsibilities**

#### *Program Administrator*

The TCO Safety Programs Manager, or designee, is the Program Administrator for all PPD employees. The Senior Assistant Director for Safety and Health in RM&S, or designee, is the Program Administrator for all other UVM employees and students.

The duties of the Program Administrators include:

- Assisting Supervisors in identifying work processes, tasks, or areas that require employees to wear respirators;
- Conducting a hazard assessment of a job task or process to determine the appropriate type of respirator;
- Selecting respirators and appropriate filters or cartridges;
- Monitoring respirator use, storage, cleaning, and maintenance of respirators;
- Conducting and arranging for annual training and annual fit testing;
- Administering the medical surveillance section of this Program;

- Ensuring appropriate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators;
- Evaluating the program on an annual basis; and
- Updating the program as needed.

### *Supervisors*

Supervisors include laboratory supervisors, principal investigators, and department/unit management. Supervisors are responsible for determining which job tasks or work processes within their unit or department have potential respiratory hazards for which engineering controls are not effective, not available, or not feasible. These determinations are specific to the unit and may not apply to other units or departments. Supervisors are responsible for implementing this Respiratory Protection Program in their unit, laboratory, or department.

Duties of Supervisors include:

- Identifying job tasks or processes that require the use of the respirator;
- Providing necessary information on the job task that requires a respirator, such as a manufacturer's Safety Data Sheet(s) (SDS), standard operating procedures, and policy or activity-related information for the contaminant of concern;
- Ensuring that employees, including new hires, have received appropriate medical evaluations, fit testing, and training;
- Ensuring the availability of appropriate respirators types and sizes as well as any additional accessories;
- Documenting repair and maintenance of respirators used by employees
- Enforcing the proper use of respiratory protection where necessary;
- Ensuring that respirators are cleaned, maintained, inspected, and stored according to the respiratory protection program; and
- Coordinating with the Program Administrator on how to address new or emerging respiratory hazards.

### *Employees and Students*

UVM employees and students covered by this Program have the responsibility to:

- Wear their assigned respirator when and where it is required in the matter they were trained;
- Care for and maintain their respirator as instructed and keep it stored in a clean location;
- Inform their Supervisor if the respirator no longer fits or becomes uncomfortable to wear;
- Inform their Supervisor or the Program Administrator of any respiratory hazards they feel are not adequately addressed in their workplace; and
- Participate in the required elements of this program.

## **5. Hazard Assessment**

Before an employee can wear a respirator, they must fill out a Respirator Request form on UVM's Occupational Health Portal: <https://rmsweb.w3.uvm.edu/occhealth>. The appropriate Program Administrator or other qualified individual(s) designated by RM&S will respond to the request and conduct a hazard assessment of the job area or job task.

As part of the hazard assessment, the Program Administrator must make a reasonable estimate of the anticipated employee exposures, including those likely to be encountered in reasonably foreseeable emergency situations. Immediately Dangerous to Life or Health (IDLH) conditions must be assumed where sources of airborne hazards are evident and employee exposures have not been or cannot be estimated. Three options are used to estimate employee exposure: Initial Exposure Assessment, Historical Data, and/or Objective Data. When using Initial Exposure and Historical Data, a periodic monitoring plan must be in place to ensure exposure levels are acceptable. The Supervisor is responsible for initiating and maintaining that plan with the support of the Program Administrator. The hazard assessment will also include a review of the work process to determine where potential exposures to respiratory hazards may occur. This may involve observations of the work task, talking with the Supervisor or employees, or a walkthrough or survey of the workspace.

After the hazard assessment is conducted, the Program Administrator will complete a Respiratory Hazard Assessment form on the Occupational Health Portal and indicate whether a respirator is required or not required for the activity or job task.

## **6. Respirator Selection**

If a respirator is required for a specific job task or work area, the Program Administrator will specify the type of respirator on the Respiratory Hazard Assessment form. The Program Administrator will select a respirator that is appropriate for the respiratory hazard. The Program Administrator will refer to the Assigned Protection Factors listed in Table 1 of OSHA 29 CFR 1910.134 to select a respirator that meets or exceeds the required level of protection. All respirators provided by UVM are NIOSH-certified and bear a NIOSH approval number. This includes all replaceable parts, disposable filters and fit testing equipment. Different brands, models and sizes will be available for the individual to achieve the most comfortable fit. Modifications of respirator equipment are not permitted beyond the manufacturer's intent, instructions, or accessories.

The University uses two classes of respirators:

1. Air-Purifying Respirators (APR) have filters, cartridges, or canisters that remove contaminants from the air before it reaches the user. Particulate filters provide protection from solid or liquid particles found in the air such as dust, dirt, mists, and biological aerosols. Cartridges and canisters provide protection from gases and vapors. Some particulate respirators are disposable and should be discarded after each use. Elastomeric cartridge or canister respirators are reusable, as long as the cartridges or canisters are replaced before they reach the end of their service life. These respirators come in half-facepiece or full facepiece designs.

Most air-purifying respirators require a tight seal around the face and must be fit tested before use. These tight-fitting respirators cannot be used if facial hair compromises the seal. If the employee is not receptive to removal of facial hair or if the assigned activity cannot be transferred to another employee, a loose-fitting powered air-purifying respirator (PAPR) must be used, given that the respirator provides adequate protection. Employees may wear corrective lenses or goggles as long as they do not interfere with the fit of the respirator. The University will provide spectacle kits for use with tight-fitting full-facepiece respirators when necessary. Contact lenses may be worn but they are not recommended in dusty environments while wearing a half-facepiece respirator.

If requiring the use of an air-purifying respirator, the Program Administer will specify the type of filter, cartridge, or canister that is appropriate for the type of respiratory hazard.

2. Atmosphere-Supplying Respirators supply clean air directly to the user from an uncontaminated source. These are used in Immediately Dangerous to Life and Health (IDLH) environments, such as when the air lacks sufficient oxygen or when the level of contamination is such that an exposure would be life threatening. These types of respirators include self-contained breathing apparatus (SCBA) and supplied-air respirators.

Atmosphere-supplying respirators are only used by UVM employees who are members of the Confined Space Rescue Team and by Physical Plant employees who work in the Asbestos Management Program.

#### *Respirator Use in IDLH Environments*

Immediately Dangerous to Life and Health environments require the highest level of respiratory protection and reliability. The University considers all oxygen deficient atmospheres to be IDLH. No UVM employee, other than members of the Confined Space Rescue Team, should be exposed to IDLH atmospheres.

### **7. Respirator Medical Clearance**

The use of a respirator adds resistance to the normal breathing functions of the body, and breathing may become laborious under certain conditions. For these reasons, medical clearance is required before an employee is permitted to wear a respirator on the job. If an employee refuses to be medically cleared for the use of a respirator, he or she will not be allowed to perform a job that requires a respirator.

The medical clearance will be conducted using the OSHA Respirator Medical Evaluation Questionnaire. The University will administer the Respirator Medical Evaluation Questionnaire confidentially to employees at no cost. The University's access to information is limited to the information contained in the designated Physician or Licensed Health Care Professional's (PLHCP) written recommendation.

The University has contracted with Champlain Medical Urgent Care of South Burlington, Vermont and Concentra Urgent Care of South Burlington, Vermont to review the Respirator Medical Evaluation Questionnaires for UVM employees and provide any necessary follow up exams. The PLHCP is available to discuss the results of the questionnaire with the employee.

A PLHCP, based on the information obtained from the medical evaluation questionnaire, will make the following determinations:

- Whether or not the employee is medically cleared to use a respirator;
- If there are any limitations on respirator use related to the medical condition of the employee or to the workplace conditions in which the respirator will be used; and
- If there is a need for a follow-up medical examination.

Employees required to wear respirators at work must submit the OSHA Respirator Medical Evaluation Questionnaire and have received medical clearance initially before wearing a respirator, and every three

years thereafter. Employees may be required to fill out and submit the Respirator Medical Evaluation Questionnaire more frequently if one of the following conditions are met:

- The employee is part of the Physical Plant Asbestos Management Program, Physical Plant Lead/Lead Based Paint Program, or is covered by the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standard;
- The employee reports medical signs or symptoms related to their ability to use a respirator;
- The PLHCP, Supervisor, or Program Administrator informs the employer that an employee needs to be reevaluated;
- Observations made during fit testing indicates a need for employee reevaluation; or
- A change occurs in the workplace conditions that may result in an increased physiological burden placed on an employee.

It is the Supervisor's responsibility to ensure that all employees under their supervision are up to date with their medical clearances.

#### *Medical Follow-Up Examinations*

A follow-up medical examination may be required for employees who give a positive response on the OSHA Respirator Medical Evaluation Questionnaire. A PLHCP may also investigate a medical condition that is not addressed in the questionnaire if the PLHCP has reason to believe that the condition could affect the employee's ability to wear a respirator. Examinations will be made available during the employee's normal working hours or at a time convenient to the employee. The follow-up medical examination will include any medical tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination and will take into account the physiological and psychological conditions pertinent to the wearing of different types of respirators for an employee.

The PLHCP may recommend an employee follow up with their personal physician regarding a health condition that does not affect their ability to wear respirator. In these cases, the employee is responsible for any costs incurred during the diagnosis and treatment of a non-work-related health condition.

### **8. Fit Testing**

Fit testing is required before an employee is permitted to wear a respirator on the job. Fit testing is required initially for all employees wearing tight-fitting respirators, whenever a different (make, model, size) facepiece is used, and annually thereafter. The fit test will be repeated when an employee receives a new or different respirator, after dental surgery, facial surgery, a weight gain or loss greater than 20% and at any time, or as requested by the employee. Fit testing is not required for loose-fitting PAPRs. It is the Supervisor's responsibility to ensure that their employees are fit tested every year.

The fit test is performed in accordance with Appendix A of OSHA 29 CFR 1910.134. The TCO Program Administrator will arrange fit testing for all PPD employees, and the Respiratory Protection Program Coordinator at RM&S will arrange fit testing for all other UVM employees. Employees will be fit tested with the make, model, and size of respirator that they will wear on the job. There will be several models and sizes available so employees can get the appropriate fit.

## **9. Training Requirements**

Training is an annual requirement for all employees who are required to wear respirators on the job. Supervisors will ensure their employees are trained annually or more often as needed. Employees must be retrained if they are assigned a different respirator, change jobs or departments, or have been observed using or storing the respirator inappropriately.

Training is administered online or in person by the RM&S Program Administrator. The TCO Program Administrator will arrange training for Physical Plant employees. The training will cover:

- Why the respirator is necessary and how improper fit, usage or maintenance can compromise the effectiveness of the respirator;
- The limitations and capabilities of the respirator;
- How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions;
- How to put on and take off (don and doff) the respirator;
- How to inspect, use, and check the seals of the respirator;
- How to conduct a positive and negative pressure check specified in Appendix B-1 of OSHA 29 CFR 1910.134;
- Maintenance and storage procedures for the respirator;
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and
- The general requirements of the OSHA Respirator Standard 29 CFR 1910.134.

## **10. Respirator Use, Care, and Maintenance**

### *Respirator Use*

Employees must wear their respirator when and where it is appropriate, and wear the make, model, and size respirator for which they were fit tested and medically cleared in accordance with the training they have received. Employees must perform a user seal check prior to every use and before entering the work area. The purpose of the seal check is to make sure the respirator is properly positioned on the face. A negative user seal check is conducted by sealing the filter openings and inhaling. Air leakage should not be detectable. A positive user seal check is conducted after sealing the exhalation valve and exhaling until a slight bulge is achieved in the nose cup. Air leakage should not be detectable. If leaks are detected, the respirator should be removed and inspected for signs of wear and tear. If none are detected, the seal check should be repeated and the respirator repositioned on the face until a proper fit is achieved.

### *Cleaning and Storage*

Respirator maintenance and care is chiefly the responsibility of the employee to which it is assigned. Reusable respirator facepieces and associated parts must be cleaned and disinfected as often as necessary or at least once a day following the manufacturer's instructions. Employees must keep track of their respirators and may not share or use someone else's respirator. Respirators will be stored in a clean, dry area free from excessive dust, sunlight, temperatures, moisture, and chemicals when not in use. Cartridges will be stored separately from the respirator in a clean, dry space. The storage area

should be large enough to accommodate the respirator without disfiguring it. Supervisors will identify proper storage locations.

Disposable filtering facepieces, such as N95s, cannot be disinfected or cleaned. Disposable respirators must be discarded when soiled, physically damaged, when the employee experiences resistance breathing through the filter, at the end of the workday, or at the end of service life as specified by the manufacturer. Stricter disposal procedures may be necessary for employees wearing N95s for protection from biological agents. These will be documented on the hazard assessment form and communicated to employees by the supervisor.

#### *Maintenance*

Respirators are to be properly maintained at all times to ensure that they function properly. Before each use, employees must perform a visual inspection of the respirator and respirator parts for cleanliness and defects. Worn or deteriorated parts must be replaced prior to use. Disposable respirators that are damaged must be discarded. Employees using PAPRs must check the airflow, airflow alarms, and battery life in accordance with the manufacturer's instructions before use. Battery packs must be charged and/or replaced in accordance with the manufacturer's instructions. Respirator replacement parts will be stocked and readily available (i.e. filters, straps, gaskets, valve seals, etc.) in the employee's department.

#### *Change Schedule*

Employees wearing elastomeric air purifying respirators or PAPRs with particulate filters should change the filter in accordance with the manufacturer's guidelines, or when they first begin to experience resistance breathing while wearing the respirator. Gas and vapor cartridges need to be replaced in accordance with a change-out schedule that is developed by the Program Administrator and Supervisors. The change-out schedule is based on the hazard assessment for the job task, the employee's estimated or actual exposure, the duration of exposure, and environmental factors such as temperature and humidity.

### **11. Voluntary Respirator Use Policy**

The UVM Respiratory Protection Program is intended to protect employees against recognized health hazards. However, an employee may be irritated by the presence of non-hazardous air contaminants (such as dust, pollen or dander), or work in an area where respiratory protection is not required or recommended. In this case, the University will permit an employee to wear a disposable N95 respirator for comfort reasons and will consider this Voluntary Use under OSHA 29 CFR 1910.134(c)(2).

Respirator use is not considered voluntary if a Program Administrator or other qualified person designated by RM&S recommends a respirator be used when working in certain locations or performing certain procedures. However, it is considered voluntary use if a lab instructor hands out N95 respirators to students and allows them to be worn during a procedure if a hazard assessment has shown the absence of a hazardous atmosphere.

#### *Determining Voluntary Use*

Employees who desire to use a disposable N95 respirator for comfort reasons must first notify their



Supervisor of this request. The Supervisor should assist the employee in filling out a Respirator Request Form through the Occupational Health Portal at: <https://rmsweb.w3.uvm.edu/occhealth>.

The appropriate Program Administrator will review the request and conduct a hazard assessment of the procedure or work area. A hazard assessment allows a determination to be made as to whether or not UVM will approve the individual for "Required Respirator Use" or "Voluntary Respirator Use."

"Voluntary Respirator Use" will be approved if the work process involves a non-hazardous substance or a contaminant at a concentration below the occupational exposure limit, and if wearing a respirator poses no health risk to the employee. Voluntary use of N95s for biological agents will be determined by the UVM biosafety officer on a case-by-case basis and will depend on workplace practices, engineering controls, exposure routes, and aerosolization potential of the agent.

Once approved for Voluntary Respirator Use, the employee must:

- Complete the online "Voluntary Disposable Respirator Use" training, which includes OSHA 29 CFR 1910.134 Appendix D available at: <https://riskmgmt.w3.uvm.edu/courses/> and;
- Report any changes, questions or concerns in your work environment that may affect respirator use to the supervisor.

Voluntary use of N95 respirators does not require compliance with the Medical Clearance, Fit Testing, and Annual Training Requirement sections of this program.

## **12. Documentation & Evaluation**

The Program Administrator will keep records for all employees and students covered in this program including hazardous assessments, exposure monitoring results (if conducted), medical clearance provided by the PLHCP, training records, and fit test results. For laboratory use of respirators, such records will be maintained in the Lab Safety Notebook. The employee record is available to the respective employee, the immediate Supervisor and any individual who has received approval from RM&S. The Supervisor will document repair and maintenance of respirators including the dates of respirator repairs, the name of the respirator user, the type of repair and parts used.

Supervisors, Program Administrators, and qualified individuals from RM&S will periodically monitor respirator use to ensure procedures are being followed in accordance with the elements of this program.

A written copy of this program is available online and provided to any employee to wishes to see it. The Program Administrator will evaluate this Program annually.

### **Date Last Updated:**

March 2022

### UVM Respiratory Protection Program Flow Chart



