

STATEMENT OF POLICY

The University of Minnesota is committed to maintaining a safe and healthy work environment. Managers and supervisors are responsible for establishing and maintaining good health and safety practices in their respective units.

When employees are exposed or potentially exposed to hazardous air contaminants, the primary method of protecting employees will be to prevent exposures through the judicious use of accepted engineering methods, such as elimination of the hazardous substance or isolation of the process. However, when engineering controls are infeasible, or when they fail to reduce the level of contamination to acceptable levels, or during periods that engineering controls are being implemented, respirators will be provided to, and worn by, employees.

In all cases, the use of respirators will be classified as “required” or “voluntary,” based on exposures and management discretion. Specific portions of the Respiratory Protection Program (RPP) may apply to both mandatory and voluntary use, and other sections will apply to mandatory use, but not voluntary, or vice versa. Each section of the program will clearly delineate this distinction.

This program is intended to conform to Federal and Minnesota laws and specifically comply with the Occupational Safety and Health Administration (OSHA) requirements codified at 29 CFR 1910.134 (Respiratory Protection Standard, revised 10/5/1998), and 29 CFR 1910.139 (M. tuberculosis standard).

RELATED

None.

SCOPE AND APPLICATION

This program applies to all U of M community members and operations.

This program applies to all use of respirators, voluntary or mandatory, regardless of frequency of use, reason for use, duration of use, etc.

Non U of M community members working at the U of M shall observe procedures that are equivalent to or exceed U of M Respiratory Protection Program requirements.

DEFINITIONS

None.

RESPONSIBILITIES

Supervisors and Principal Investigators

Supervisors have the primary responsibility for implementing the Respiratory Protection Program in their work area. Implementation involves:

- Identifying U of M community members and their jobs or tasks which may require respiratory protection, providing this information to the Program Administrator and seeking assistance in evaluation of respiratory hazards.
- Supervising U of M community members to ensure that the Respiratory Protection Program procedures are being followed.
- Purchasing permitted respirators and making them available for authorized use by respirator users.
- Enforcing the proper use of respiratory protection equipment.
- Ensuring that respirators are properly cleaned, maintained, and stored according to this program.
- Ensuring that respirator users under their supervision (including new hires) receive appropriate training, medical evaluation, and annual fit testing.
- Identifying changes in jobs or tasks which may require re-evaluation of respirator use and notifying the Respiratory Protection Program Administrator.
- Maintaining, storing, and monthly inspection of emergency use respirators as required so that they are readily accessible and operational when needed.

Office of Occupational Health and Safety (OHS)

OHS is responsible for developing, implementing, and administering the U of M Respiratory Protection Program. The OHS Respiratory Protection Program Administrator is responsible for:

- Reviewing and updating the written Respiratory Protection Program.
- Coordinating medical evaluation and fit testing services for respirator users.
- Maintaining records on respiratory protective equipment assignments, medical clearances, fit testing, and training.
- Evaluating the overall effectiveness of the respirator program.

Department of Environmental Health and Safety (DEHS)

DEHS is responsible for the following aspects of the U of M Respiratory Protection Program:

- Evaluating respiratory hazards in the work areas.
- Providing consultation to OHS on development and implementation of the Respiratory Protection Program.
- Providing guidance to the supervisor for selecting and purchasing approved respirators. Providing training (including refresher sessions) on the proper use, maintenance, and storage of respirators to all respirator users, including emergency Self Contained Breathing Apparatus (SCBA) users.
- Assisting with fit testing for respirator users.
- Transmitting fit testing and training records to OHS.
- Conducting periodic monitoring to assess concentrations of airborne contaminants.
- Conducting periodic inspections of respirator storage and use, and ensuring that these inspections are properly documented.
- Transmitting monitoring and inspection results to Supervisors, Principal Investigators and OHS.

Respirator User

The respirator user is responsible for following the requirements of the written program, including:

- Using the respirator in accordance with the manufacturer's instructions and the training received.
- Storing, cleaning, maintaining, and guarding against damage to the respirator.
- Reporting any malfunction of the respirator to his/her supervisor.
- Inspecting the respirator before each use.
- Promptly reporting to his/her supervisor or the Respiratory Protection Program Administrator any symptoms of illness that may be related to respirator usage or exposure to hazardous atmospheres.
- Informing the supervisor or Respiratory Protection Program Administrator of operation changes or health status changes that could affect the safe use of the equipment.

Occupational Health Physician or other Licensed Health Care Professional (PLHCP)

The PLHCP is responsible for:

- Performing initial and periodic medical evaluations and any necessary follow-up examinations of employees and students to determine their ability to wear a respirator.
- Providing a written evaluation of the employee's ability to use a respirator to the Respiratory Protection Program Administrator.
- Conducting periodic medical evaluation of respirator users as necessary.
- Maintaining records of medical evaluations.

PROGRAM ELEMENTS

1. Site-specific programs and program administration

1.1 General. Wherever any type of respirator is worn for any reason, frequency, or duration, a formal, written, site-specific program meeting the requirements of 29 CFR 1910.134 (c) (summarized below) is required.

This requirement applies even when respirator use is voluntary (see sections 1.2 and 1.3 of this section).

1.2 Content of program when respirator use is mandatory. When respirator use is mandatory, the written program shall include (as applicable):

- Procedures for selecting respirators for use in the workplace;
- Medical evaluations of employees required to use respirators;
- Fit testing procedures for tight-fitting respirators;
- Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations;
- Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators;
- Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators;
- Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations;
- Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance; and
- Procedures for regularly evaluating the effectiveness of the program.

1.3 Content of program when respirator use is voluntary. When respirator use is voluntary, the written program may be limited to the following:

- Medical evaluations of employees required to use respirators;

- Respirator cleaning, storage and maintenance so that its use does not present a health hazard to the user.
- Training as outlined in section 8.3 below.

1.4 Program administration. Each location which uses any type of respiratory protection, for any reason, duration, or frequency, must appoint a Respiratory Protection Program Administrator (RPPA). The RPPA must be qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness.

2. Exposure monitoring and respirator selection

2.1 General. To the extent feasible, the U of M will evaluate and document employees' exposures to airborne contaminants and select respirators appropriate for the type and extent of hazards.

2.2 Exposure monitoring. Whenever community members or their supervisors identify new substances, processes, or equipment that may represent an occupational safety and health hazard, they **must** contact the Department of Environmental Health & Safety (DEHS) at (612) 626-6002 to request a workplace exposure assessment.

2.3 Voluntary or mandatory use. Based on data collected, the need for respiratory protection will be determined. DEHS must be contacted and conduct a workplace exposure assessment when engineering or procedural changes occur that may affect community members' exposures.

2.4 Selection of respirators. Selection of a respirator for a specific operation and/or contaminants **shall** be made by DEHS in consultation with occupational health experts, industrial hygienists, etc. as appropriate. Selection **shall** be made from a sufficient number of models and sizes to allow proper fit.

The selection of a proper respirator for any given situation **shall** require evaluation of workplace respiratory hazards, including identification of the following:

- A reasonable estimate of the employee exposures to respiratory hazard(s)
- The contaminant's chemical state (valence state) and physical form (gas, vapor, particulate, etc.).

Any respirator usage by U of M community members, either required or voluntary, **shall** be pre-approved by DEHS. U of M community members **shall** only wear the specific respirator-type(s) for which they were pre-approved.

2.5 End of Service Life Indicators (ESLI)/Change schedules. Air purifying respirators worn for protection against gases or vapors must be equipped with an End of Service Life Indicator (ESLI) certified by NIOSH for contaminant at hand. If there is no ESLI for the contaminants encountered, then a written change schedule, based on objective written exposure data will be developed, to ensure that respirators are not worn beyond their useful service life. Cartridge change-out schedules will be developed by DEHS.

2.6 NIOSH approval and labeling. Only respirators certified by the National Institute of Occupational Safety and Health (NIOSH) **shall** be selected and all appropriate filters, cartridges, and canisters **shall** be labeled and color coded with the NIOSH approval label. Labeling **shall not** be removed and **shall** remain legible.

2.7 Cost of respirators. Employees who are required to wear any type of respirator will have respirators provided to them at no cost. In some cases, employees may wish to wear a respirator voluntarily, or mandatory respirator users may wish to use a respirator which is costlier than the style or model provided. In these cases, the U of M reserves the right to hold the employee financially responsible for the additional cost.

3. Medical evaluation and approval

3.1 General. Using a respirator, in particular a negative pressure respirator, may place additional physiological burden on employees. This burden may vary with the type of respirator worn, the job and workplace conditions, environmental factors, and more importantly, the medical status of the user.

The U of M will provide medical evaluation to determine the employee's ability to safely use a respirator before the employee is fit tested, or required or permitted to use a respirator.

3.2 Information provided to PLHCP prior to evaluation. The following information will be provided to the PLHCP before the PLHCP makes a recommendation concerning the employee's ability to use a respirator:

- The type and weight of the respirator to be used.
- The duration and frequency of use (including use for rescue and escape).
- The expected physical work effort.
- Additional protective clothing and equipment to be worn.
- Temperature and humidity extremes that may be encountered.
- A copy of the written respiratory protection program.

Any of the information previously provided to the PLHCP need not be provided for subsequent medical evaluation if the information is the same from employee to employee.

3.3 Initial screening. An initial screening of each respirator user will be made by requiring the user to complete the standard medical questionnaire (see 29 CFR 1910.134, appendix C). Alternatively, the U of M reserves the right to arrange for a medical evaluation that obtains the same information as the questionnaire. Once the employee has completed the questionnaire, it will be forwarded directly and immediately to the HealthPartners Environmental and Occupational Medicine, the University's occupational health services provider, for review.

3.4 Follow-up initial screening. A follow-up medical evaluation will be provided to any employee who gives a positive response to any question among questions 1 through 8 in section 2, part A of the questionnaire or whose initial medical evaluation demonstrates a need for follow up medical evaluation. The follow up medical evaluation will include any tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

3.5 Periodic follow-up screening. In addition to the initial questionnaire and follow up screening, periodic screening will be provided if/when:

- An employee reports signs or symptoms that are related to ability to wear a respirator.
- A PLHCP, supervisor/PI, program administrator, or other suitably qualified and authorized person believes an employee needs to be re-evaluated.
- Information from the respiratory protection program, including observations made during fit testing or program evaluation, indicated a need for re-evaluation.
- A change in workplace conditions (e.g., physical work load, temperature, humidity, protective clothing, etc.) that may result in a substantial increase in physiological burden.

3.6 Medical determination. The PLHCP will issue a written recommendation regarding the employee's ability to safely use a respirator. The recommendation will provide only the following information:

- Any limitations on respirator use related to the medical condition of the employee, or related to workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator.
- The need, if any, for follow-up medical evaluations (annually, bi-annually, etc.)
- A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

3.7 Special provisions for negative pressure respirators. If the employee is required or permitted to wear a negative pressure respirator and the PLHCP observes a medical condition which precludes the employee from wearing a negative pressure respirator, then the U of M will provide to the employee (at no cost) a Powered Air Purifying Respirator (PAPR). If/when subsequent medical evaluation shows that the employee may safely wear a negative pressure respirator, then the U of M may opt to no longer provide the PAPR.

3.8 Administration of the questionnaire and other medical evaluations. The medical questionnaire and other medical evaluations will be administered confidentially during the employee's normal working hours, or at a time and location convenient to the employee.

4. Fit testing

4.1 General. Before an employee may be *required* to use any respirator with a positive or negative pressure tight-fitting face piece, the employee must be fit tested with the same make, model, style and size of the respirator that will be used.

4.2 When fit testing is to be provided. Employees using a tight-fitting respirator will be fit tested only after they have been medically approved for respirator use. Employees will be fit tested at their time of initial assignment and at least annually thereafter.

Additional fit testing will be provided when/if the employee reports, or the PLHCP, supervisor/PI, Respiratory Protection Program Administrator, or other qualified person 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.

4.3 Fit testing. All fit testing will comply with 29 CFR 1910.134, appendix A and/or the respirator manufacturer instructions.

4.4 Records of fit testing. A record of each fit test will be maintained until the next fit test is required, and will include at least:

- The name or identification of the employee tested.
- Type of fit test performed (i.e. qualitative or quantitative, challenge media, etc.).
- Specific make, model, style, and size of respirator tested.
- Date of test.
- The pass/fail results of qualitative fit tests, or the fit factor and strip chart recording or other recording of the test results for quantitative fit tests.

DEHS or the contracted service provider will provide records of fit testing to the Respiratory Protection Program Administrator in the Office of Occupational Health and Safety.

5. Use of respirators

5.1 Face piece seal protection. Respirators with tight-fitting face pieces shall not be worn by employees who have:

- Facial hair that comes between the sealing surface of the face piece and the face or that interferes with valve function; or
- Any other condition that interferes with the face-to-face piece seal or valve function.

5.2 Continuing respirator effectiveness. Appropriate surveillance will be maintained of work areas and degree of employee exposure and stress. When/if there is a change in work area condition or degree of employee exposure or stress that may result in increased employee exposure or risk, respirator effectiveness will be re-evaluated by DEHS and/or OHS.

5.3 Procedures for IDLH environments and/or structural fire fighting. No U of M employee is to knowingly engage in any type of work in an area which is, or is suspected of being, Immediately Dangerous to Life and Health (IDLH); nor is any employee to engage in any type of structural firefighting.

6. Storage, maintenance, care, and repair of respirators

6.1 General. All respirators will be cared for, cleaned, maintained, stored, and repaired, as directed by the manufacturer.

6.2 Frequency of cleaning. The required frequency of cleaning and disinfecting is as follows:

- An individually assigned respirator which is used routinely **shall** be cleaned as often as necessary to keep it in a sanitary condition.
- Respirators not individually assigned **shall** be cleaned and disinfected before each use. [EXCEPTION: Respirators kept for emergency/ rescue use or fit-testing **shall** be cleaned and disinfected after each use]

6.3 Additional inspection requirements for emergency use respirators. All Supervisors **shall** ensure that emergency use respirators are inspected as follows:

- Check for proper function before and after each use.
- Inspect at least monthly, and in accordance with manufacturer's recommendations; and certify the respirator by documenting inspection dates, the inspector's identification, findings, and remedial actions. The documentation **shall** be provided as a tag or label attached to the respirator's storage compartment and is included in inspection reports. This information **shall** be kept until replaced by a subsequent certification.
- Emergency escape-only respirators **shall** be initially inspected before bringing into the workplace for use.

6.4 Additional storage requirements for emergency use respirators. Emergency use respirators shall be stored in compartments or in covers that are clearly marked as containing emergency respirators.

7. Breathing air quality and use

7.1 General. The U of M will ensure that employees using atmosphere-supplying respirators (supplied-air and SCBA) are supplied with breathing gases of high purity.

7.2 Manufacturer's recommendations. The installation, use, maintenance, storage, inspection, etc. of any supplied air system will comply with manufacturer's instructions.

7.3 Grade D breathable air. Compressed breathing air shall meet at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:

- Oxygen content (v/v) of 19.5-23.5%;
- Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
- Carbon monoxide (CO) content of 10 ppm or less;
- Carbon dioxide content of 1,000 ppm or less; and
- Lack of noticeable odor.

7.4 Breathing air compressors and prevention of carbon monoxide exposures. Compressors used to supply breathing air to respirators shall be constructed and situated so as to:

- Prevent entry of contaminated air into the air-supply system;
- Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (5.56 deg. C) below the ambient temperature;

- Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters shall be maintained and replaced or refurbished periodically following the manufacturer's instructions.
- Have a tag containing the most recent change date and the signature of the person authorized by the employer to perform the change. The tag shall be maintained at the compressor.

For compressors that are not oil-lubricated, carbon monoxide levels in the breathing air shall not exceed 10 ppm. For oil-lubricated compressors, a high-temperature or carbon monoxide alarm, or both, shall be used to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply shall be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.

8. Training and communication

8.1 General. The U of M shall provide effective training to employees who are required to use respirators. The training must be comprehensive, understandable, and recur annually or more often if necessary. Employees shall be trained prior to using a respirator in the workplace.

8.2 Training for mandatory users. Training shall consist of, and employees must be able to demonstrate knowledge of, at least the following:

- Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator;
- What the limitations and capabilities of the respirator are;
- How to use the 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 the respirator;
- What the procedures are for maintenance and storage of the respirator;
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and
- The general requirements of this section.

8.3 Training for voluntary users. Before voluntary respirator use is approved by the Respiratory Protection Program, the U of M community member:

- Must receive *initial* training in the proper use, care, and limitations of the selected respirator.
- **Shall** read, sign, and submit the Voluntary Respirator Use Agreement (Appendix A).

8.4 Retraining. Retraining shall be administered annually, and when 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
- Any other situation arises in which retraining appears necessary to ensure safe respirator use.

PROGRAM EVALUATION

The U of M will conduct evaluations of the workplace to ensure that the written Respiratory Protection Program is being properly implemented, and to consult employees to ensure that they are using the respirators properly.

At least annually, a formal, documented review shall be conducted to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.

Respirator users shall be regularly consulted to assess the employees' views on program effectiveness and to identify any problems. Any problems that are identified during this assessment shall be evaluated and corrected when feasible. 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).
- Appropriate respirator selection for the hazards to which the employee is exposed.
- Proper respirator use under the workplace conditions the employee encounters.
- Proper respirator maintenance.

**APPENDIX A – INFORMATION FOR EMPLOYEES USING RESPIRATORS
WHEN NOT REQUIRED**

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 respirator's 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 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.

Voluntary Use Agreement Form

Employee Name: _____

Department: _____ **Employee ID#:** _____

I have read and understood the information provided above regarding voluntary respirator use.

Employee Signature

Date

**APPENDIX B – RESPIRATORY PROTECTION TRAINING
DOCUMENTATION**

Training Date	Time	Location	Trainer
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Training outline
<ul style="list-style-type: none"> • Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator; • What the limitations and capabilities of the respirator are; • How to use the 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 the respirator; • What the procedures are for maintenance and storage of the respirator; • How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and • The general requirements of this section.

Other topics discussed

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APPENDIX C – CONTRACTED SERVICE PROVIDERS

Online Medical Evaluations

Employer Health Services, LLC

Fit Testing and Respirator Physicals

HealthPartners Environmental and Occupational Medicine

On-site Fit Testing Clinics

Onsite Medical Services, Inc.

Please contact the Office of Occupational Health and Safety at (612) 626-5008 or uohs@umn.edu if you need assistance with Respiratory Protection Program services.