West Virginia University

Environmental Health and Safety

RESPIRATORY PROTECTION PROGRAM

Revised – January 2017

29 CFR 1910.134

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1. PURPOSE AND SCOPE

1.1. Purpose: The Respiratory Protection Program ensures that University faculty, staff, and students are protected against inhalation hazards. This program contains the procedures for selection, use, and care of respiratory protection devices as outlined in 29 CFR 1910.134.

1.2. Scope:

This program shall apply to University employees and students, including Divisional Campuses.

2. Roles and Responsibilities

2.1. Environmental Health and Safety (EHS)

1. The Industrial Hygiene Specialists will be the Respiratory Protection Program Administrator.
2. Develop the WVU *Respiratory Protection Program* with periodic review and revision as necessary.
3. Distribute the Program to each affected worksite.
4. Conduct analyses of the respiratory hazards in the workplace.
5. Identify employees who may require respiratory protection equipment.
6. Provide guidance and training to the campus community regarding the need, selection, use, limitations, maintenance, and storage of respiratory equipment.
7. Provide respirator fit-testing for employees.
8. Maintain training, fit-testing, and exposure monitoring records.
9. Conduct periodic worksite audits of respiratory protection activities in affected departments.
10. Assist with developing and implementing controls to reduce, or eliminate, the need for respiratory protection.
11. Act as an information resource for the problems and questions related to respiratory protection.
12. Communicate the need for medical monitoring, based on exposure monitoring results.

2.2. Occupational Medicine

1. Schedule appointments for respirator users receiving services at the Occupational Medicine Department.
2. Provide or direct all required or recommended medical examinations appropriate for evaluation of respiratory wearers.
3. Maintain medical records relating to consultations, examinations, and medical surveillance as required by law.
4. Provide written certification that persons required to wear respirators are physically able to do so without adverse medical consequences.

5. Notify the Respiratory Program Administrator that respirator users have successfully completed evaluations and medical exams.
6. As deemed necessary by EHS, assist in conducting respiratory fit tests and training.

2.3. Supervisors, Laboratory Managers, Deans/Directors

1. Identify respiratory hazards in the workplace. Direct concerns to EHS for analysis.
2. Consult toxicology information and safety data (i.e. Safety Data Sheets and Standard Operating Procedures) to identify hazards to workers under their control that require respiratory protection.
3. Complete the Respiratory User Hazard Assessment Form and submit it to EHS for review (Attachment **1**).
4. Schedule initial medical examinations, follow-up medical, fit-testing, and training for employees required to wear respirators.
5. Ensure respiratory protection equipment recommended by the Respiratory Program Administrator is purchased, properly used, cleaned, stored, and maintained.
6. Maintain an inventory of spare parts, filters, and new respirators as necessary to ensure employee access to properly-functioning equipment.
7. Ensure that defective respiratory protection equipment is removed from service immediately and not used until approved repairs are completed.
8. Maintain records of respirator equipment inspections and exposure hazard evaluations.
9. Notify the Respiratory Protection Program Administrator of any problems with respirator use, or any changes in work processes that would impact airborne contaminant levels.
10. Notify the medical provider of any changes in an employee's medical condition, work environment, or workload that might impact the safe use of the respiratory equipment.

2.4. Employees

1. Comply with all required components of the WVU *Respiratory Protection Program*.
2. Properly store, clean, inspect, and maintain all assigned respirator equipment.
3. Report any respirator deficiencies or malfunctions to the supervisor.
4. Inform supervisor(s) of new situations that may require a change in the use of respiratory protection equipment or if contaminant levels are expected to increase.
5. Inform supervisor(s) of any change in medical condition that might affect the safe use of respiratory protection equipment.
6. Immediately follow emergency procedures and leave the respirator use area if a respirator fails to provide proper protection.

3. TRAINING

1. All employees who use a respirator in the performance of their work are required to complete the training program before initial use, and at least annually thereafter. Training program objectives include specific procedures applicable to their work areas and assignments as contained in the written WVU *Respiratory Protection Program*.
2. Each respirator wearer shall be given initial training covering the following topics:
   a. Contents of the OSHA Respiratory Protection Standard
   b. Respiratory Hazards and Health Effects
   c. How Respirators Work
   d. Medical Evaluation
   e. Respirator Selection Rationale
   f. Proper Use and Limitations of Respirators
   g. Proper Use in Emergency Situations
   h. Fit-Testing
   i. Respirator Donning/Doffing
   j. User Seal Checks
   k. Maintenance, Cleaning, and Storage
   l. Recognizing medical signs and symptoms that may limit or prevent effective use of respirators.
   m. Locations where respirator use is required.

   Note: more frequent retraining will be required if:
   i. There are changes in the work area that impact respirator use (rendering previous training obsolete),
   ii. The employee no longer has the skill and understanding to follow and use the respirator per previous training and terms of the WVU *Respirator Protection Program*, or
   iii. Any other situations occurring that cause the supervisor or program administrator to recommend that the employee be retrained.
3. Training will be conducted before fit testing and include all required components as stipulated in OSHA regulation 29 CFR 1910.134.

4. PROCEDURES

Assistance will be provided by EHS to any Department requesting guidance, exposure monitoring, fit-testing, or training to satisfy the implementation of this policy. For additional information or if you have any questions, please contact the Respiratory Program Administrator at 304-293-3792.

4.1. Respirator Use Requirements

1. Employee inclusion into the respiratory protection program is limited to employees who have a documented need to utilize such equipment, pass and maintain an appropriate medical evaluation, attend annual training, and complete annual fit-testing. Voluntary use

of respirators are permitted as outlined in section 3.11 Voluntary Use.

2. Respirators shall only be used to protect employees from inhalation hazards in the following circumstances:
   a. When other options for hazard control (i.e. use of engineering controls or substitution of less toxic materials) are infeasible.
   b. While engineering controls are installed or repaired.
   c. During emergencies (i.e. hazardous material release).
3. When respirators are to be used, all requirements contained within the WVU *Respiratory Protection Program* shall be followed.
4. For purposes of compliance with regulations and the WVU *Respiratory Protection Program*, a respirator shall be defined as a device worn to:
   a. Reduce or eliminate inhalation exposure to any hazardous biological, chemical, or particulate material, or
   b. Supply breathing air to the wearer.

   Note: This includes respirators used to protect employees in an emergency.

4.2. Documentation of Respirator Needs

1. Respirators are only to be used in situations where engineering controls are infeasible or during installation of such controls. Respirators shall be provided by the employer (supervisor) when such equipment is necessary to protect the health of the employee.
2. The supervisor is required to identify the potential respiratory hazard(s) in the workplace and have these hazards evaluated by EHS to determine appropriate respiratory protection equipment.

4.3. Respiratory User Hazard Assessment

The supervisor must initiate the Respirator User Hazard Assessment Form (Attachment **1**) for each job task that has a respiratory hazard concern. EHS will partner with the supervisor to complete the form. This form shall be forwarded to Respiratory Program Administrator for documentation of hazard evaluations and determination of appropriate level(s) of respiratory protection equipment. EHS will then forward the information on to the medical provider to determine appropriate levels of medical surveillance of the identified tasks. Copies of the completed form will also be provided to the supervisor and the affected employee.

4.4. Medical Evaluation

Prior to initial respirator fit-testing, workers must be medically certified capable of wearing a respirator without adverse health consequences. Certification of medical capability shall be provided by Occupational Medicine or other licensed health care professional (PLHCP). Medical evaluations may be discontinued when the employee is no longer required to use a respirator.

4.5. Fit-Testing

The safe and effective use of respiratory protection equipment, especially negative pressure

respirators, requires that the respirator be properly fitted to the employee. Poorly-fitting respirators fail to provide the expected degree of protection. Additionally, no single model or size of respirator is capable of fitting all people. Several models may be needed to determine which provides an acceptable fit. Prior to being issued a reusable, tight-fitting respirator, the employee must successfully pass a fit-test for that brand, model, and size of respirator. WVU is responsible for fit-testing employees.

An employee cannot be fit-tested nor wear a face-sealing respirator if there is any facial hair present between the skin and the face mask sealing surface. Any facial hair that is more than a slight stubble at the sealing surface is considered excessive. This includes large sideburns or chops. Employees may be permitted to keep well-groomed mustaches that do not interfere with the respirator seal and/or valve function. Any other condition that interferes with the sealing surface of the facepiece or interferes with valve function shall be identified during fit-testing and corrected. Any employee who experiences difficulty breathing or exhibits a severe psychological reaction during any phase of the fit-testing shall be referred to the University medical provider to reevaluate whether the employee is capable of wearing a respirator.

Fit-testing shall be conducted at least annually or more frequently if any change occurs which may alter respirator fit. Such changes may include, but are not limited to:

1. Weight change
2. Significant facial scarring in areas of the face seal
3. Dental changes (e.g. multiple extractions or new dentures)
4. Reconstructive or cosmetic surgery in the head/face
5. Any condition suspected to affect the face-respirator seal (e.g. broken nose)

4.6. Quantitative Fit-Tests

Personnel must successfully pass the quantitative fit-test before being issued a respirator, and at least annually thereafter. Fit-testing methods shall conform to the minimum requirements as detailed in the OSHA Respiratory Protection Standard (29 CFR 1910.134).

A particle counting machine (Porta Count) instrument is used to accurately measure respirator fit by comparing the dust concentration in the surrounding air with the dust concentration inside the respirator.

Either WVU EHS (Facilities Management) or Occupational Medicine (all other employees) are responsible for ensuring employees are fit-tested at least once per year. If any conditions or circumstances are observed by medical monitoring, or the supervisor, which may impact the fit of an employee's respirator, the respirator should no longer be worn, and fit testing must be repeated. Copies of fit-test reports will be forwarded to: supervisors, individual employees, and the EHS medical monitoring program coordinator. Supervisors are to ensure that employees are provided the specific brand, model, and size respirator indicated in the fit-test report. Respirators shall not be used unless successful fit-testing has been demonstrated.

4.7. Failed Fit-Tests

In the event that an employee is unable to pass a quantitative fit-test, and their work environment

permits, the employee will be placed in a Powered Air Purifying Respirator (PAPR) Hood or Helmet assembly. EHS will work with the employee's department to ensure that the correct equipment is purchased.

4.8. Selection of Respirator

WVU will follow the NIOSH Guide to Industrial Respiratory Protection for selection of respirator equipment. Additional information concerning types and descriptions of these respirators (including their limitations) is available from EHS.

All respirators used by WVU personnel shall be approved by NIOSH for the inhalation hazard presented to the employee. Selection of respiratory protection equipment shall be based upon:

1. The nature of the respiratory hazard
2. The extent or concentration of the hazard
3. Work requirements and conditions
4. Characteristics and limitations of available respirators
5. Minimum equipment requirements established by regulation or policy

Air purifying respirators shall not be used:

1. If atmospheres are oxygen-deficient (i.e. <19.5%)
2. If contaminant concentrations are considered "Immediately Dangerous to Life and Health" (IDLH)
3. If contaminant concentrations are unknown, or
4. For emergencies where the concentrations and/or type of contaminant is unknown.

Selection criteria will be documented with the Respirator User Hazard Assessment Form. It is often necessary to perform exposure monitoring to evaluate the need for and type of respiratory protection appropriate for the task(s). EHS is responsible for final determination of employees' respiratory protection needs.

Supervisors are required to have respirator selection criteria reassessed whenever circumstances change that may compel use of different levels of respiratory protection (e.g. introduction of new inhalation hazards, work practice modifications resulting in increased chemical exposures, etc.), or if the work environment places increased physical demands upon the employee. Documentation of these changes will be made by the supervisor via the Respirator User Hazard Assessment Form (Attachment **1**).

4.9. Respirator Cleaning, Storage, Inspection, and Maintenance

Disposable filtering facepiece respirators should be disposed of and replaced at the end of each shift or sooner if it becomes dirty or saturated.

The following information is intended as a guide for appropriate cleaning, storage, inspection, and maintenance practices for tight-fitting (elastomeric) facepiece respirators.

1. Cleaning and Disinfecting

Respirators shall be regularly cleaned and disinfected. Cleaning frequencies, facilities, and materials used for cleaning/disinfecting must be determined by the supervisor. Shared respirators or emergency-use respirators must be cleaned and disinfected after each use.
Manufacturer recommendations shall be followed when cleaning respirators.
The following procedure can be used when cleaning and disinfecting respirators:

a. Disassemble respirator, removing any filters, canisters, or cartridges.
b. Wash the facepiece and associated parts in a mild detergent with warm water. Do not use organic solvents.
c. Rinse completely in warm water.
d. Wipe the respirator with disinfectant wipes (70% Isopropyl Alcohol) to kill germs.
e. Air-dry in a clean area.
f. Reassemble the respirator and replace any defective parts.
g. Place in a clean, dry plastic bag or other air tight container.

Note: The supervisor will ensure an adequate supply of appropriate cleaning and disinfecting material. If supplies are low, employees should contact their supervisor.

2. Storage
   When not in use, the respirators and cartridges shall be kept in a sealed container and stored in a clean, dry, moderate temperature, and non-contaminated environment. It is especially important to keep gas and vapor from the storage area and thereby reducing the filter service life.
   Emergency use respirators shall be stored in a sturdy compartment that is quickly accessible in the work area and clearly marked.
3. Maintenance of Respirator
   Respirators are to be properly maintained at all times to ensure they function properly and adequately to protect the employee. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components are to be replaced or repairs made beyond those recommended by the manufacturer.
   Each respirator shall be inspected routinely before and after use. A respirator shall be inspected by the user immediately prior to each use to ensure that it is in proper working condition. After cleaning, each respirator shall be inspected to determine if it is properly functioning or if it needs repairs or replacement of parts.
4. Replacement Parts
   Consult the manufacturer or distributor for replacement parts and filters. EHS can assist you with this process.

4.10. Respirator Cartridge Change-Out Schedules

Air-purifying respirators function by removing contaminants from the air before inhalation. Contaminants are removed by filtration (e.g. dust and fibers), adsorption (e.g. organic vapors), or by chemical reaction (e.g. ammonia). Filters or cartridges designed for contaminant removal have limited effective service lives. The service life of a cartridge depends upon many factors, including environmental conditions, breathing rate, cartridge filtering capacity, and the amount of contaminants in the air. EHS will develop a change schedule for air purifying respirator users which

specifies when cartridges are to be replaced and what information was relied upon to make this judgement. The change schedule will be documented on User Hazard Assessment Form (Attachment 1).

4.11. Voluntary Use

1. Disposable Filtering Facepiece Respirators
   Filtering facepiece respirators (e.g. disposable dust masks or N95's) are often used to provide relief from nuisance levels of dusts and mists. They cannot be used for protection against fumes, vapors, gases, asbestos, sandblasting, or paint sprays. If employees elect to voluntarily use disposable filtering facepiece respirators, and if concentrations do not exceed the OSHA Permissible Exposure Limit (PEL), disposable filtering facepiece respirators may be provided without medical certification or fit-testing. Employees utilizing disposable filtering facepiece respirators must be provided with the information contained in the Voluntary Respirator Use Fact Sheet (Attachment **2**) and 29 CFR 1910.134 Appendix D (**Attachment 3**). Supervisors and employees issuing disposable filtering facepiece respirators are responsible for providing this information to affected employees.
2. Tight-Fitting (Elastomeric) Facepiece Respirators
   If an employee wants to wear a respirator and EHS has determined that respiratory protection is not necessary, the employee's supervisor must contact WVU Occupational Medicine for an appointment. Occupational Medicine will determine if the employee is medically able to wear a tight-fitting facepiece respirator. The findings will be sent back to the employee. Once the employee is medically cleared to voluntarily wear a tight-fitting facepiece respirator, the employee is responsible for purchasing and maintaining their own respiratory protection equipment. Employees voluntarily utilizing tight-fitting (elastomeric) respirators must be provided with the information contained in the Voluntary Respirator Use Fact Sheet (Attachment 2) and 29 CFR 1910.134 Appendix D (Attachment 3).

4.12. Student (Non-Employee) Use of Respiratory Protection

Supervisors who believe a student may need respiratory protection must follow the same steps required for employees. The student's supervisor must complete a Respirator User Hazard Assessment Form (**Attachment 1**) and submit it to EHS for review

5. RECORDKEEPING

5.1. Supervisors will maintain employee training records. If training is not provided by EHS, the supervisor will submit a copy to EHS.

5.2. Fit-test records will be maintained by EHS (for Facilities Management employees) or Occupational Medicine (for all other employees). If fit-tests are provided by an outside vendor, the employee's supervisor shall forward the fit-test record to EHS.

Supervisors will maintain records of respirator equipment inspections and exposure hazard evaluations.

6. REFERENCES

Occupational Safety & Health Administration (OSHA) Respiratory Protection Standard 29 CFR 1910.134.

7. PROGRAM REVIEW

7.1. Evaluation of Respirator Program Effectiveness

EHS staff will conduct evaluations of the workplace as necessary to ensure that the provisions of the current program are being effectively implemented. The evaluation may include: worksite inspections, interviews with respirator wearers, air-monitoring, and/or review of records.

Acceptance of respirators by users is important. Users will be consulted periodically about their acceptance of wearing respirators. This includes: comfort, resistance to breathing, fatigue, interference with vision, interference with communication, restriction of movement, interference with job performance, and confidence in the effectiveness of the respirator to provide adequate protection.

The above information can serve as an indication of the degree of protection provided by respirators and the effectiveness of the respirator program. Actions shall be taken to correct any deficiencies noted with the program

7.2. Worksite Audits

Supervisors are required to periodically evaluate the use of respiratory protection for areas/employees under their control. This can be done using the Worksite Audit Form (Attachment 4). The purpose of the audit is to identify deficiencies and issues that require correction or action. At a minimum, the following should be evaluated:

a. Are new materials being used that require hazard assessment?
b. Are all workers using respirators currently trained, fit-tested, and medically monitored?
c. Are respirators being properly used, stored, maintained, and cleaned?
d. Is the written WVU *Respiratory Protection Program* current and complete?
e. Have all workers who are voluntarily using respirators (including disposable models) received a copy of the Voluntary Use of Respirators Fact Sheet?
f. Are cartridges/filters changed according to the change-out schedule provided by WVU EHS.
g. Are workers routinely inspecting respirators?

Any problems or deficiencies identified during the audit must be expeditiously corrected. EHS will assist supervisors with appropriate guidance when requested.

8. PROGRAM REVISIONS

This program replaces the June 2014 revision.

9. APPROVAL SIGNATURE

10. ATTACHMENTS

West Virginia University
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Attachment 1
Respirator User Hazard Assessment Form

Employee Affected:

Job Title:

Department/Supervisor:

Job Task and Airborne Contaminant(s):

Respiratory Hazard(s) for Contaminant:

Eye Irritation Potential:

Regulatory Exposure Limit(s):

Exposure Estimate:

Control(s):

Respirator: ☐ Required Use ☐ Voluntary Use ☐ Not Required

Respirator Type:

Filter Change Schedule (for air-purifying respirators):

West Virginia University
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Attachment 2
Voluntary Respirator Use Fact Sheet
General Industry Requirements

WVU permits voluntary use of NIOSH approved respirators provided the respirator itself does not create a hazard to the user. Voluntary respirator users will be provided with the information contained in 29 CFR 1910.134 Appendix D (Attachment 3 in the *WVU Respiratory Protection Program)*.

Voluntary users of tight-fitting (elastomeric) respirators must be medically cleared to use the respirator. The user will be included in the respiratory protection program for the purposes of completing the medical evaluation paid for by the employer and adhering to the proper maintenance and storage requirements for the respirator.

Voluntary users of disposable filtering facepiece respirators (dust masks and N95) do not have the medical evaluation requirement and are not included in the respiratory protection program.

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Attachment 3
Information for Employees Using Respirators When Not Required Under the Standard
29 CFR 1910.134 Appendix D

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 respiratory 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 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 contamination 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.

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Attachment 4
Worksite Audit Form

Worksite Name: _____

Location: _____ Phone: _____

Audited by: _____ Date: _____

	Yes/No
Are new materials being used that require hazard assessment?	
Are workers using respirators currently trained, fit-tested, and medically monitored?	
Are respirators being properly used, stored, maintained, and cleaned?	
Is the written WVU *Respiratory Protection Program* current and complete?	
Have all workers who are voluntarily using respirators (including disposable models) received a copy of the Voluntary Use of Respirators Fact Sheet?	
Are cartridges/filters changed according to the change-out schedule contained in the WVU *Respiratory Protection Program*?	
Are workers routinely inspecting respirators?	

Any problems or deficiencies identified during this audit must be addressed immediately. Please contact Environmental Health & Safety with any questions at 304-293-3792.

Submit to: Environmental Health & Safety
Attention: Respiratory Program Administrator
PO Box 6551
Morgantown, WV 26506-6551