Western Carolina University | Safety and Risk Management

RESPIRATORY PROTECTION PROGRAM

1910.134 OSHA Respiratory Protection Standard

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Introduction

Western Carolina University is committed to maintaining a safe and healthy work environment. Managers and supervisors are responsible for establishing and maintaining good health and safety practices. When effective engineering or administrative controls are not feasible or practical, or in emergency situations, the use of personal respiratory protective equipment may be necessary to protect the health of employees.

The Respiratory Protection Program is designed to protect employees by establishing accepted practices for selection, use, and care of respirators**.** This program is intended to meet the OSHA requirements for general industry outlined in 29 CFR 1910.134**.** This program applies to all employees who are required to wear a respirator to prevent unnecessary exposure to airborne concentrations of toxic materials equal to or greater than the permissible exposure limits and for those who choose to use a respirator voluntarily.

Section 1: Responsibilities

Safety and Risk Management Office

Safety and Risk Management serves as the Program Administrator and has the primary responsibility for the implementation and enforcement of the program. Duties and responsibilities include the following:

- Developing, implementing, and evaluating the Respiratory Protection Program to ensure compliance.
- Assisting with identifying the task or environment requiring the use of a respirator.
- Recommending appropriate respirators and filtering media for tasks that require the use of a respirator.
- Providing general information and training related to respiratory protection for affected employees.
- Notifying affected staff whenever a new procedure/policy change is introduced and providing additional training on the equipment.
- Reviewing fit testing of employees.
- Coordinating the medical evaluation program for employees.
- Maintaining a list of employees medically approved for use of respiratory protective equipment.
- Evaluating the effectiveness of the program.

Supervisor Responsibilities

Supervisors in support and administrative areas are responsible for providing the necessary direction and support to ensure the effective implementation of the Respiratory Protection Program for their work areas. Supervisors are responsible for the following:

- Contacting the Safety and Risk Management Office when a respirator is planned to be used.
- Ensuring that employees **required** to use a respirator for their work submit the Mandatory Respirator Use Form (Appendix A) to be enrolled in the medical evaluation and fit testing requirements.

- Ensuring that employees are provided with respirators at no cost when the use is mandatory under the program.
- Conducting regular inspections and evaluations to determine the effectiveness of the program.
- Attending training on the proper use and storage of a respirator.
- Ensuring that employees are fit tested for a respirator when required under the program.
- Ensuring the employee completes the medical evaluation when required under the program.
- Ensuring employees properly maintain the respirator to manufacture recommendations.
- Ensuring that employees using a filtering facepiece respirator (i.e. N95) **voluntarily** are provided with the information in Appendix B.
- Ensuring that employees using an elastomeric or half-mask respirator **voluntarily** are provided with the information in Appendix C.

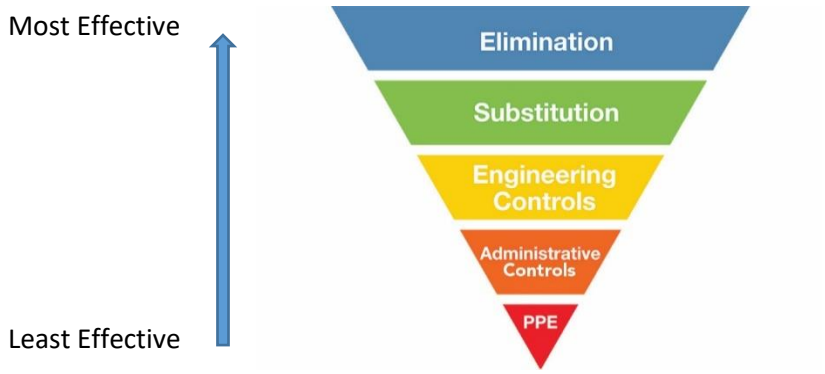
Employee Responsibilities

Employees who are required to use respiratory protection shall:

- Comply with all requirements under the Respiratory Protection Program.
- Participate in medical clearance procedures, training sessions, tests for competency validation, and fit testing.
- Inspect their reusable respirators before each use and clean/disinfect after each use according to procedures for reusable respirators.
- Ensure that respirators are not being worn when there is a physical impediment to continuous contact between the sealing surface of the respirator and the wearer's face.
- Respirators will be used, maintained, cleaned, and stored away from contamination in a clean, sanitary place, and on a flat surface in a sealed container. Avoid extreme temperatures. Do not hang a respirator by its straps and always disinfect in accordance with manufacturer recommendations.
- Remove all facial hair when a respirator is required to be worn.
- Report any significant changes or problems to their supervisor.
- Do not reuse a contaminated N95 respirator and dispose of the mask properly.

Section 2: Hierarchy of Controls to Minimize Hazardous Exposure

The requirement to wear a respirator should be the last resort in the hierarchy of risk controls. The hierarchy is provided below in order of effectiveness, with one being the most effective:



1. **Elimination:** The primary objective is to prevent atmospheric contamination by eliminating the hazard by removing the work process.
2. **Substitution:** Use less toxic materials in place of hazardous components.
3. **Engineering Controls:** Use enclosures or confinement for the operation with general and local ventilation to reduce exposure to contaminants.
4. **Administrative Controls:** Scheduling to reduce time of exposure, and following all safety policies in place to prevent unnecessary exposure (i.e. wet mopping to reduce dust).
5. **Personal Protective Equipment (PPE):** This should be the final step in the hierarchy of risk controls and includes items used to protect the health and safety of the employee such as, gloves, safety glasses, coveralls, safety shoes, dust masks, and respirators.

Section 3: Respiratory Program Elements

3.1 Respirator Use Requirements

Respirators are considered an acceptable method of protecting the health of employees only under the following circumstances:

- When it has been determined by all parties that there are no feasible engineering or work practice controls that can be used to adequately control the hazard.
- Where required during intermittent and non-routine operations.
- During the interim periods when engineering controls are being designed and/or installed for a particularly hazardous operation.
- During emergency situations.
- During voluntary use where respiratory protection is not required.

3.2 Respirator Selection Procedures

Respirators will be selected based on many factors including the nature of the hazard, the concentration of the contaminant to which an employee is exposed, extent of the hazard, regulatory requirements, work requirements and conditions, and the characteristics and limitations of available respirators.

- Respirators are to be selected based on the respiratory hazard(s) to which the worker is exposed along with workplace and user factors that affect respirator performance and reliability.
- Each supervisor is to evaluate the respiratory hazards in the workplace and identify relevant workplace and user factors. Safety and Risk Management can help supervisors evaluate potential air contaminants and inhalation hazards. The evaluation of respiratory hazards is to include a reasonable estimate of employee exposure and an identification of the contaminant's chemical state and physical form. If an unsafe exposure situation exists, the feasibility of engineering or administrative controls will be considered. If these preferred methods of controlling exposures are not feasible, appropriate respirators shall be provided and used.
- Tight-fitting air purifying respirators shall not be worn when conditions prevent a good face seal. Such conditions include, but are not limited to, growth of a beard, sideburns, any piece of clothing that projects under the facepiece or temple pieces on glasses. When employees are required to use tight-fitting air purifying respirators and have facial hair that interferes with seal of the respirator, such as a beard or goatee, the employee shall use a Powered Air Purifying Respirator (PAPR) equipped with a loose-fitting hood. This is the only acceptable respirator to be used under these circumstances.

Respirator types offer differing levels of protection. There are advantages and disadvantages to each type of respirator so it is important to select the type that is best suited to the work setting and exposure hazards. Appendix D provides an image and summary of the types of respirators available and compliance requirements for each based on usage.

3.3 IDLH Atmosphere Respirators

Immediately Dangerous to Life and Health (IDLH) atmospheres warrant special consideration. All oxygen-deficient atmospheres, less than 19.5% oxygen, are considered IDLH. The following respirators are to be used in IDLH atmospheres:

1) A Self Contained Breathing Apparatus (SCBA) used in the pressure-demand mode, certified by NIOSH for a minimum service life of thirty minutes
2) A combination full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply

Respirators provided only for escape from IDLH atmospheres are to be NIOSH-certified for escape from the atmosphere in which they will be used. All employees who will be required to use SCBA must be trained, tested, and certified prior to use.

3.4 Medical Evaluation

Employers must provide medical evaluations for employees who are required to wear a respirator for their work to determine if the employee is medically able to wear a respirator. The evaluation is also required for voluntary use of an elastomeric type respirator. Respirators can make breathing more difficult and some health conditions could prevent respirator use such as a heart condition, lung disease, or psychological condition (i.e. claustrophobia).

The medical evaluation is confidential and considers health, job description, type of respirator used, and workplace conditions. The employer is required to fund all costs associated with the medical evaluation.

The medical evaluation is provided as an online questionnaire. The employee must be allowed to complete the questionnaire during working hours. The evaluation is conducted by board-certified occupational medicine doctors not associated with WCU. Data is handled according to strict data control and HIPAA standards. The employer will only receive notice that the employee has been cleared for respiratory use or if further medical evaluation is necessary.

The medical evaluation must be conducted by a licensed health care professional and the screening questions must meet the requirements listed in Appendix F. A follow-up medical exam must be provided to employees who give a positive response to any of the questions 1-9 in Section 2 of the questionnaire.

3.5 Fit Testing

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

General requirements for mandatory respirator use:

- The program administrator or other designated personnel shall perform required fit tests following receipt of the medical clearance.
- At a minimum, all personnel must pass a qualitative respirator fit test (QLFT) before being allowed to use a tight-fitting face piece respirator. At the discretion of Safety and Risk Management, some personnel and/or task may require a Quantitative Fit Test (QNFT).
- Respirator users shall pass a fit test prior to initial use of the respirator, or whenever a different respirator (size, style model, or make) is used, and at least annually thereafter.
- Respirator users shall pass an additional fit test whenever the supervisor or respiratory protection program administrator observes changes in the employee's physical condition that could affect the fit of the respirator (facial scarring, dental changes, cosmetic surgery, or obvious body weight change).

Fit tests shall be administered using procedures specified by OSHA in 29 CFR 1910.134(f) and are provided in Appendix H. Fit testing includes the following:

1. Showing the proper way to don a respirator, proper positioning, strap tension, and determining if there is an acceptable fit.

2. Employee conducts a user seal check in accordance with manufacturer recommendations.
3. Saccharin and/or Bitrix qualitative fit testing procedures to include:

    - Normal breathing - one minute.
    - Deep breathing - one minute (slow deep breaths in order not to hyperventilate).
    - Turn head from side to side - inhale at each side – one minute.
    - Move head up and down - inhale in the up position – one minute.
    - Talk - Read prepared text or count backward from 100.
    - Bend over - at waist, pretend touching toes, or jogging in place – one minute.

4. Fit testing documentation will include:

    - The name or identification of the employee tested.
    - Type of fit test performed.
    - Specific make, model, style and size of respirator tested.
    - Date of test.
    - Pass or fail results of the fit test.

3.6 Respirator Training

Training shall be provided so employees will understand the purpose and function of the program.

- Supervisors shall ensure personnel required to use or to supervise other personnel using respiratory protective devices are provided training.
- Personnel that are required to use respirators will be trained concerning the reasons for the use of respiratory protective devices and instructions on proper selection, use, and maintenance.
- Training will be provided prior to the utilization of respiratory protection in the workplace.
- Refresher training will be administered annually and in the following situations: 1) When there is a change in workplace conditions. 2) When there is a change in the type of respirator used, rendering the previous training obsolete. 3) When there are indications that the respirator user did not retain the sufficient knowledge or skills necessary to properly utilize a respirator.

Supervisors and employees shall be instructed by a competent person knowledgeable in the area of respiratory protection or by electronic means approved by the Safety and Risk Management Office. Training shall cover the general requirements of 1910.134 and include:

- Reasons to use a respirator.
- How improper fit, usage or maintenance can compromise the protective value of the respirator.
- Limitations and capacities of the respirator.
- Emergency use of the respirator including times when the respirator malfunctions.
- How to inspect, put on, remove and check the seals of the respirator.
- Proper procedures for maintenance and storage of the respirator.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.

3.7 Recordkeeping

The Safety and Risk Management Office maintains a list of employees using respirators at WCU, training records, and fit testing documentation. Records are retained for a period of 30 years after the employee's last day of state employment.

The medical evaluations are retained by the licensed health care provider under HIPAA regulations.

3.8 Respiratory Program Evaluation

Program evaluation will be conducted to ensure compliance and ensure the following elements:

- Employee's ability to use assigned respirator properly without interfering with effective workplace performance.
- Employee is using the correct respirator in accordance with identified task.
- Respirators being used are certified by the National Institute for Occupational Safety and Health (NIOSH).
- Medical evaluation is conducted for employees using respirators when applicable.
- Respirators are maintained properly in the work area to manufacturer recommendations.
- Training of employees to recognize potential hazards during routine and emergency situations.
- Training of employees on how to properly use a respirator and what the limitations are.

Section 4: Respirator Seal Checks

Facepiece Seal Protection

Respirators with tight-fitting facepieces are to be worn in a manner that does not interfere with the facepiece seal. Employees with facial hair, or any other condition, that interferes with the sealing surface of the facepiece and the face, or with valve function, are not permitted to wear tight fitting facepieces. Corrective glasses or goggles or other personal protective equipment is to be worn in a manner that does not interfere with the seal of the facepiece to the face of the user.

User Seal Check Procedures

For all tight-fitting respirators, employees are to perform a user seal check each time that the respirator is put on, before entering an area containing hazardous atmospheres, and periodically while wearing the respirator in the contaminated area. Both the positive and negative pressure checks listed below and/or the respirator manufacturer's additional recommended user seal check method is to be used.

Positive Pressure Check

Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators, this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

Negative Pressure Check

Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the facepiece collapses slightly, and hold the breath for

ten seconds. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

Section 5: Maintenance and Care of Respirators

Storing Respirators

All respirators are to be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals.

- Routinely used respirators, such as dust masks, should be placed in sealed Ziploc bags.
- Store respirators to prevent deformation of the facepiece and exhalation valve. Do not hang or crush respirators by cramming into small containers.
- Emergency respirators are to be kept accessible to the work area, stored in compartments or in covers that are clearly marked as containing emergency respirators, and stored in accordance with any applicable manufacturer instructions.

Cleaning and Disinfecting Respirators

Employees with required use are to be provided with respirators that are clean, sanitary, and in good working order.

- Respirators issued for the exclusive use of an employee are to be cleaned and disinfected as often as necessary to be maintained in a sanitary condition
- Respirators issued to more than one employee are to be cleaned and disinfected before and after being worn by different individuals
- Respirators maintained for emergency use are to be cleaned and disinfected after each use
- Disposable respirators shall be disposed of when no longer fit for use and at a minimum daily.
- Respirators used for fit testing and training will be cleaned after each use.

Respirators are to be cleaned and disinfected using the following procedures, or equivalent procedures recommended by the respirator manufacturer.

1. Remove filters, cartridges, or canisters. Disassemble facepieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
2. Wash components in warm (110°F, 43°C maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt. Rinse components thoroughly in clean, warm running water and let drain.
3. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
    - Hypochlorite solution (50 parts per million (ppm) of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of warm water (110°F, 43°C maximum)
    - Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of warm water (110°F, 43°C maximum)

- Another commercially available cleanser of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer

4. Rinse components thoroughly in clean, warm running water and let drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
5. Components should be hand-dried with a clean lint-free cloth or air-dried.
6. Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.
7. Test the respirator to ensure that all components work properly.

Cartridge-Canister Change Procedures

Half face or full face air purifying respirators equipped with chemical cartridges for protection against airborne hazards such as gasses and vapors (e.g. solvent vapors) must implement a chemical cartridge change out schedule prior to the use of the respirator to ensure that replacements occur before the end of the cartridge or canister service life.

The service life of a cartridge depends upon many factors, including environmental conditions such as humidity, breathing rate of the respirator user, cartridge filtering capacity, and the concentration of contaminants in the air.

Detection of chemicals by taste, smell, or irritation is not an acceptable indicator to replace respirator chemical cartridges. An established change out schedule will help prevent “break-through” of the chemical cartridge and will prevent detection of chemicals by taste, smell, or irritation as a result of the overuse of a saturated cartridge.

Many of the Respirator Manufactures such as North, 3M, and MSA, have cartridge service life estimator computer tools on their company websites to help determine acceptable change out schedules. Contact Safety and Risk Management for assistance with change schedules.

Respirator Inspection

Respirators will be inspected before each use and during cleaning. The respirator inspection will include a check of function, tightness of connection, and condition of parts such as the face piece, head strap, valves, and filters. The elastomeric parts will be checked for pliability and signs of deterioration.

Respirators that fail inspection or are otherwise found to be defective will be removed from service and repaired or disposed of.

Respirator cartridges and filters shall be marked with dates of service. Service life of the cartridge or filter must be checked during routine inspections.

Emergency Use Inspections

All respirators maintained for use in emergency situations are to be inspected at least monthly in accordance with the manufacturer recommendations, and are to be checked for proper function before and after each use. Emergency escape-only respirators are to be inspected before being carried into the workplace for use.

SCBA Inspections

Self-contained breathing apparatus (SCBA) are to be inspected monthly. Air and oxygen cylinders are to be maintained in a fully charged state and are to be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level. The inspection is to include a determination that the regulator and warning devices function properly. Documentation of inspections for respirators maintained for emergency use is to be provided on a tag or label that is attached to the storage compartment for the respirator, is kept with the respirator, or is included in inspection reports stored as paper or electronic files. This information is to be maintained until replaced following a subsequent certification. The documentation is to include:

- The date the inspection was performed
- The name (or signature) of the person who made the inspection
- The findings
- Required remedial action
- A serial number or other means of identifying the inspected respirator

Repairs to Respirators

Respirators that fail an inspection or are otherwise found to be defective are to be removed from service, and either be discarded, repaired, or adjusted. Repairs or adjustments to respirators are to be made only by persons appropriately trained and use only the manufacturer's NIOSH-approved parts designed for that particular respirator. Repairs are to be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed. Reducing and admission valves, regulators, and alarms are to be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

Section 6: Voluntary Usage

Sometimes people may wear a respirator to avoid exposure, even if the amount of hazardous substance does not exceed the regulatory exposure limits. If you use a respiratory voluntarily, you need to take certain precautions to ensure that the respirator itself does not present a hazard.

Employee Responsibilities for Voluntary Use

Employees who voluntarily use a respirator shall:

- Contact your supervisor for approval to use a respirator.
- Contact the Safety and Risk Management Office when a respirator is planned to be used.
- Review the information contained in this program.
- Read and sign Appendix B for voluntary use of a filtering facepiece respirator (i.e. N95 dust mask). Submit the form to the Safety and Risk Management Office.
- Read and sign Appendix C for voluntary use of an elastomeric half-mask respirator. Submit the form to the Safety and Risk Management Office.
- Read and adhere to all instructions provided by the manufacturer on use, maintenance, cleaning, care and warnings regarding the reusable respirator limitations.
- Choose respirators certified for use to protect against the contaminant of concern. A label of

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.

- Keep track of the respirator so another person's respirator is not used by mistake.
- Do not wear the respirator into atmospheres containing contaminants for which the respirator is not designed. For example, a respirator designed to filter dust particles will not protect against gases, vapors, or very small solid particles of fumes or smoke.
- Inspect the respirator before each use.
- Report any significant changes or problems to the supervisor.

Employer Responsibilities for Voluntary Use

The employer, or supervising department, has responsibilities based on the type of respirator used voluntarily.

1) Filtering Facepiece (N, R, P - 95, 99, or 100), synonymous with dust mask.

- Employers must determine that the masks themselves do not pose a hazard to workers.
- Employers must provide a copy of Appendix D of the OSHA Respiratory Protection Standard 29 CFR 1910.
- Employees must be trained on respirator use and limitations.
- Submit the Voluntary Use of Filtering Facepiece Respirator Form (Appendix B) to the Safety and Risk Management Office.
- Medical evaluation and fit-testing is not required for voluntary use of a filtering facepiece.
- Facial hair is not a restriction for voluntary use of a respirator.

2) Elastomeric Respirator (tight-fitting, negative pressure, air-purifying), i.e. half-mask respirator with purifying cartridges.

- Employer must determine that the respirator itself does not create a hazard.
- Employers must provide a copy of Appendix D of the OSHA Respiratory Protection Standard 29 CFR 1910.
- Medical evaluation is required for voluntary use of an Elastomeric Half-Mask respirator.
- Ensure that the respirators are properly cleaned, stored, and maintained.
- Submit the Voluntary Use of Elastomeric Half-Mask Respirator Form (Appendix C) to the Safety and Risk Management Office.
- Fit-testing is not required for voluntary use of an elastomeric respirator.
- Facial hair is not a restriction for voluntary use of a respirator.

The Department supervising the employee is responsible for:

- Funding the medical evaluation for voluntary elastomeric respirator use.
- Providing respirator cleaning equipment.
- The employer is not required to pay for respirators used voluntarily.

Appendix A: Mandatory Respirator Use – Fit Testing Authorization

Return this signed form to the Safety and Risk Management Office (safety@wcu.edu or via intercampus mail to Facilities Management – Safety Office).

When the form is received, you will be enrolled in the online medical evaluation system. When the medical questionnaire is completed, you will be notified by the Safety and Risk Management Office to conduct the fit-testing for your respirator.

Employee Name	
Employee Email	
Employee 92#	
Employment Status (Faculty, Staff, Graduate Student, Student Worker)	
Department	
Supervisor Name	
Supervisor Email	

Type of Respirator Used (filtering facepiece N95, half mask, full face mask, etc):

_____

Reason for Respirator Use (describe work activities and conditions):

Employee Signature: _____ Date: _____

Supervisor Signature: _____ Date: _____

Department Billing Account: _____

(For Medical Evaluation Fee)

Department Billing Contact: _____ Phone: _____

Appendix B: Voluntary Use of Filtering Facepiece Respirator Form

Employee shall review and initial each of the following points:

1. FILTERING FACEPIECE RESPIRATORS AND OSHA REQUIREMENTS

____Filtering Facepiece Respirators (also called dust masks) are considered true respirators according to OSHA.
____N95 refers to the NIOSH certification of the filter media that comprises the facepiece. N means that it is not oil resistant and 95 refers to it being 95% effective at filtering particles at the 0.3-micron level.
____N95 is the most common type of filtering facepiece respirator. Other NIOSH-certified filtering facepiece respirators include N100, R95, P95, and P100 (R, oil resistant; P, oil proof; N not oil resistant).
____Voluntary use is defined as use for employee comfort purposes only. No hazard exists that requires use of a respirator and the use of the respirator does not produce any additional hazard.
____If an employee is required to wear a filtering facepiece respirator (to protect against a respiratory hazard or as required by the employer), full compliance with the University's Respiratory Protection Program is required, which includes a medical evaluation by a licensed health care professional, respirator training, and fit testing.
____OSHA requires that all employees voluntarily wearing filtering facepiece respirators receive basic information on respirators as provided in Appendix D of the Respirator Standard, 1910.134 (found at the end of this document). Signature of this training form certifies receipt of Appendix D to 1910.134, as required by OSHA.

2. HOW TO USE AND WEAR A FILTERING FACEPIECE RESPIRATOR

____Inspect respirators prior to use, including new units out of the box. Check for rips and tears. Make sure straps are securely attached, nose piece is attached properly, and that no obvious defects exist.
____Proper use of the respirator is important. Without it, the respirator is ineffective against the workplace contaminants. Follow manufacturer instructions for use.
____Beards and other facial hairs negate the effectiveness of the respirator because they prevent an adequate seal between the respirator and the face. Skin afflictions, such as dermatitis, or scars, could affect the ability to produce a seal.
____User seal checks confirm that an adequate seal with the face is achieved when the mask is applied. User seal checks should be done every time the mask is put on and every time it is re-adjusted on the face.

3. LIMITATIONS OF PPE

____Filtering facepiece respirators are only useful for protection against particulates. They are not to be used in oxygen-deficient atmospheres or atmospheres that contain hazards that are immediately dangerous to life and health (IDLH). Odors will still be noted when using the respirator because it does not filter out gases or vapors. The respirator will not provide adequate protection if a good seal with the face is not achieved.

4. CARE, MAINTENANCE, USEFUL LIFE, AND DISPOSAL OF PPE

____Filtering facepiece respirators are considered disposable PPE. They cannot be cleaned, especially when they become wet or soiled. They cannot be shared with other employees.
____New respirators should be stored in a clean, dry location, protected from sunlight, chemicals, water, and physical damage.

Voluntary Use of Filtering Facepiece Respirator Form, Page 2 of 2

Appendix D to OSHA Respiratory Protection Standard Section 29 CFR 1910.134

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 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 for which your respirator is not designed to provide protection. 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.

Employee Name: _____ 92#: _____

Employee Signature: _____Date: _____

Department: _____Supervisor: _____

Supervisor Signature: _____ _____ Date: _____

****Return page 1 and page 2 of the Voluntary Use of Filtering Facepiece form to the Safety and Risk Management Office (safety@wcu.edu or via intercampus mail to Facilities Management – Safety Office).**

Appendix C: Voluntary Use of Elastomeric Half-Mask Respirator Form

Employee shall review and initial each of the following points:

1. ELASTOMERIC RESPIRATORS AND OSHA REQUIREMENTS

____Voluntary use is defined as use for employee comfort purposes only. No hazard exists that requires use of a respirator and the use of the respirator does not produce any additional hazard.

____Voluntary use of a respirator, other than a filtering facepiece, includes a medical evaluation by a licensed health care professional.

____If an employee is required to wear a respirator (to protect against a respiratory hazard or as required by the employer), full compliance with the University's Respiratory Protection Program is required, which includes a medical evaluation by a licensed health care professional, respirator training, and fit testing.

____OSHA requires that all employees voluntarily wearing respirators receive basic information on respirators as provided in Appendix D of the Respirator Standard, 1910.134 (found at the end of this document). Signature of this training form certifies receipt of Appendix D to 1910.134, as required by OSHA.

2. HOW TO USE AND WEAR A RESPIRATOR

____Inspect respirators prior to use, including new units out of the box. Check for rips and tears. Make sure straps are securely attached, nose piece is attached properly, and that no obvious defects exist.

____Proper use of the respirator is important. Without it, the respirator is ineffective against the workplace contaminants. Follow manufacturer instructions for use.

____Beards and other facial hairs negate the effectiveness of the respirator because they prevent an adequate seal between the respirator and the face. Skin afflictions, such as dermatitis, or scars, could affect the ability to produce a seal.

____User seal checks confirm that an adequate seal with the face is achieved when the mask is applied. User seal checks should be done every time the mask is put on and every time it is re-adjusted on the face.

3. LIMITATIONS OF PPE

____Elastomeric air-purifying respirators are only useful for protection indicated on the air-purifying cartridges. They are not to be used in oxygen-deficient atmospheres or atmospheres that contain hazards that are immediately dangerous to life and health (IDLH). The respirator will not provide adequate protection if a good seal with the face is not achieved.

4. CARE, MAINTENANCE, USEFUL LIFE, AND DISPOSAL OF PPE

____Do not share respirators with other employees.

____New respirators should be stored in a clean, dry location, protected from sunlight, chemicals, water, and physical damage.

Voluntary Use of Elastomeric Half-Mask Respirator Form, Page 2 of 2

Appendix D to OSHA Respiratory Protection Standard Section 29 CFR 1910.134

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 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 for which your respirator is not designed to provide protection. 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.

Employee Name: _____ 92#: _____

Employee Signature: _____Date: _____

Department: _____Supervisor: _____

Department Billing Account (For Medical Evaluation): _____

Billing Contact: _____ Phone: _____

Supervisor Signature: _____ Date: _____

****Return both pages of the Voluntary Use of Elastomeric Respirator form to the Safety and Risk Management Office (safety@wcu.edu or via intercampus mail to Facilities Management – Safety Office).**

Appendix D: Respirator Types and Program Requirements

Respirator Type	Description	Example Image	Fit Testing		Medical Evaluation	
			Required Use	Voluntary Use	Required Use	Voluntary Use
Filtering Facepiece (Example N95)	Half-mask covering nose and mouth, tight-fitting, air-purifying. Whole facepiece functions as the filter. Some with exhalation valve to help exhaled breath exit the facepiece. Filter out particulates only. Do not protect against gas or vapor.		Yes	No	Yes	No
Elastomeric Half-Mask	Tight-fitting, air-purifying, replaceable filters (for particulates) or cartridges or canisters (for gases and vapors) attached to a rubber or silicone facepiece that covers the nose and mouth.		Yes	No	Yes	Yes
Elastomeric Full Face-Mask	Tight-fitting, air-purifying, replaceable filters (for particulates) or cartridges or canisters (for gases and vapors) attached to a rubber or silicone facepiece that covers the eyes and entire face.		Yes	Not permitted for voluntary Use	Yes	Not permitted for voluntary Use

Respirator Type	Description	Example Image	Fit Testing		Medical Evaluation	
			Required Use	Voluntary Use	Required Use	Voluntary Use
Powered Air Purifying Respirator (PAPR)	Loose fitting facepiece. Blower pulls air through attached filters and then pushes the filtered air into the facepiece covering the entire face.		No	Not permitted for voluntary Use	Yes	Not permitted for voluntary Use
PAPR Full Face or Half Mask	Tight fitting elastomeric facepiece. Blower pulls air through attached filters and then pushes the filtered air into the facepiece covering the entire face.		Yes	Not permitted for voluntary Use	Yes	Not permitted for voluntary Use
Supplied Airline Respirator (SAR)	Supplied clean air source from a cylinder or compressor to either a hood or a facepiece through a long hose.		Yes, for tight-fitting facemask	Not permitted for voluntary Use	Yes	Not permitted for voluntary Use
Self-Contained Breathing Apparatus (SCBA)	Tight-fitting elastomeric facepiece covering the whole face. Supplied air from a cylinder of compressed breathing air that is carried by the respirator user. Provides the highest level of protection.		Yes	Not permitted for voluntary Use	Yes	Not permitted for voluntary Use

Appendix E: Definitions

Action Level: Used by OSHA or NIOSH to express a health or physical hazard. Used to indicate the level of a harmful or toxic substance which requires medical surveillance, increased industrial hygiene monitoring, or biological monitoring.

Air Purifying Respirator: A type of respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Negative Pressure Respirators: A respirator that fits tightly to the face, where ambient air is drawn through the air purifying element by the pressure of the inhalation of the wearer, creating a lower air pressure inside the face piece than the outside air.

Positive Pressure Air Purifying Respirator: A respirator where ambient air is drawn through the air purifying element by a motor or similar device and pumped into the face piece, creating a greater air pressure inside the face piece than the outside air.

Atmosphere Supplying Respirators: Respirators which provide air to the wearer from a source other than the ambient air, such as an air cylinder or air compressor.

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

Elastomeric Respirators: Half or full facepiece, tight-fitting respirators that are made of synthetic or rubber material permitting them to be repeatedly disinfected, cleaned, and reused. They are equipped with exchangeable filter cartridges.

Exposure: The potential or actual exposure to a concentration of an airborne contaminant/pathogen that would occur if the employee is not wearing respiratory protection.

Fit Factor: A quantitative estimate of the fit of a particular respirator to a specific individual, which typically estimates the ratio of the concentrate inside the respirator when worn.

Filter: A component used in respirators to remove solid or liquid aerosols from inspired air.

Filtering Face Piece: A negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece composed of the filtering medium.

Fit Test: A protocol to quantitatively or qualitatively evaluate the fit of a tight-fitting respirator on an individual.

High Efficiency Particulate Air (HEPA) Filter: A filter that is at least 99.97% effective in removing monodisperse particles of 0.3 microns in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are N100, R100, and P100 filters.

Hood: A respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

Immediately Dangerous to Life and Health (IDLH): 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 the environment. For the purposes of this policy, potential oxygen deficient atmospheres are IDLH.

Loose Fitting Face Piece: A respiratory inlet covering that is designed to form a partial seal with the face.

N-95*:* The N95-level respirator is a 95% particulate respirator. It is used for solid and non-oil based particles. Applications include grinding, sanding, bagging and general processing of various minerals and other substances that do not contain oil or vapors.

Particulates*:* Air contaminants which are in solid or liquid states, such as dusts, fumes, mists, or fibers.

Parts Per Million (PPM): A measurement of the parts of an air contaminant per million parts of air.

Permissible Exposure Limit (PEL): The maximum concentration of an air contaminant to which a worker is allowed to be exposed, in accordance with the stated exposure limits in 29 CFR Part 1910 Subpart Z.

Physician or Other Licensed Health Care Professional (PLHCP): 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 for medical clearance in compliance with the OSHA respiratory protection standard.

Respirator Inlet Covering: 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 face piece, helmet, hood, suit, or mouthpiece respirator with hose clamp.

Self-Contained Breathing Apparatus (SCBA): An atmosphere-supplying respirator where the breathing air is designed to be carried by the user.

Supplied Air Respirator (SAR): An atmosphere-supplying respirator where the breathing air is supplied through an airline.

Threshold limit value (TLV): The value of a chemical substance is a level to which it is believed a worker can be exposed day after day for a working lifetime without adverse health effects.

Tight Fitting Face Piece: A respiratory inlet covering that forms a complete seal with the face.

User Seal Check: An action conducted by the respirator user to determine if the respirator is properly seated to the face.

Appendix F: Medical Evaluation Questionnaire

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 do not require a medical examination.

To the employee: Can you read (circle one): Yes No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

SECTION 1. PERSONAL INFORMATION (MANDATORY)

Date: _____ Name: _____

(first) (middle) (last)

DOB: _____ Sex (circle one): Male Female Height: ____ ft. ___in. Weight: _____lbs.

Job Title: _____ Department: _____

A phone number where you can be reached by the health care professional who reviews this questionnaire: _____ The best time to phone you at this number: _____

Has your employer told you how to contact the health care professional who will review this questionnaire?
(circle one): Yes No

Check the type of respirator you will use (you can check more than one category)

a. _____N, R, or P disposable respirator you will use (you can check more than one category)

b. _____Other type (for example, half- or full-face piece type, powered-air purifying, supplies-air, self-contained breathing apparatus)

Have you worn a respirator in the last year? (circle one): Yes No

If "yes," what type(s): _____

SECTION 2 (MANDATORY): Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator. Please circle "yes" or "no" to the following.

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month: Yes No

2. Have you ever had any of the following conditions?

a. Seizures (fits):	Yes	No
b. Diabetes (sugar disease):	Yes	No
c. Allergic reactions that interfere with your breathing:	Yes	No
d. Claustrophobia (fear of closed-in places):	Yes	No
e. Trouble smelling odors:	Yes	No

3. Have you ever had any of the following pulmonary or lung problems?

a. Asbestosis:	Yes	No
b. Asthma:	Yes	No
c. Chronic bronchitis:	Yes	No
d. Emphysema:	Yes	No
e. Pneumonia:	Yes	No
f. Tuberculosis:	Yes	No
g. Silicosis:	Yes	No
h. Pneumothorax (collapsed lung):	Yes	No
i. Lung cancer:	Yes	No
j. Broken ribs:	Yes	No
k. Any chest injuries or surgeries:	Yes	No
l. Any other lung problem that you've been told about:	Yes	No

4. Do you currently have any of the following symptoms of pulmonary or lung illness?

a. Shortness of breath:	Yes	No
b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline:	Yes	No
c. Shortness of breath when walking with other people at an ordinary pace on level ground:	Yes	No
d. Have to stop for breath when walking at your own pace on level ground:	Yes	No
e. Shortness of breath when washing or dressing yourself:	Yes	No
f. Shortness of breath that interferes with your job:	Yes	No
g. Coughing that produces phlegm (thick sputum) not associated with a cold:	Yes	No
h. Coughing that wakes you early in the morning:	Yes	No
i. Coughing that occurs mostly when you are lying down:	Yes	No
j. Coughing up blood in the last month:	Yes	No
k. Wheezing:	Yes	No
l. Wheezing that interferes with your job:	Yes	No
m. Chest pain when you breathe deeply:	Yes	No
n. Any other symptoms that you think may be related to lung problems:	Yes	No

5. Have you ever had any of the following cardiovascular or heart problems?

a. Heart attack:	Yes	No
b. Stroke:	Yes	No
c. Angina:	Yes	No
d. Heart failure:	Yes	No
e. Swelling in your legs or feet (not caused by walking):	Yes	No
f. Heart arrhythmia (heart beating irregularly):	Yes	No
g. High blood pressure:	Yes	No
h. Any other heart problem that you've been told about:	Yes	No

6. Have you ever had any of the following cardiovascular or heart symptoms?

a. Frequent pain or tightness in your chest:	Yes	No
b. Pain or tightness in your chest during physical activity:	Yes	No
c. Pain or tightness in your chest that interferes with your job:	Yes	No
d. In the past two years, have you noticed your heart skipping or missing a beat:	Yes	No
e. Heartburn or indigestion that is not related to eating:	Yes	No
f. Any other symptoms that you think may be related to heart or circulation problems:	Yes	No

7. Do you currently take medication for any of the following problems?

a. Breathing or lung problems:	Yes	No
b. Heart trouble:	Yes	No
c. Blood pressure:	Yes	No
d. Seizures (fits):	Yes	No

e. Other _____

8. If you've used a respirator, have you ever had any of the following problems?
(If you've never used a respirator, check the following space and go to question 9)

a. Eye irritation:	Yes	No
b. Skin allergies or rashes:	Yes	No
c. Anxiety:	Yes	No
d. General weakness or fatigue:	Yes	No
e. Any other problem that interferes with your use of a respirator:	Yes	No

9. Would you like to talk to the health care professional who will review this questionnaire?
about your answers to this questionnaire: Yes No

Questions 10-15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators
(e.g.-N-95 respirators), answering these questions is voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently): Yes No

11. Do you currently have any of the following vision problems?

a. Wear contact lenses:	Yes	No
b. Wear glasses:	Yes	No
c. Color blind:	Yes	No
e. Any other eye or vision problem:	Yes	No

12. Have you ever had an injury to your ears, including a broken eardrum? Yes No

13. Do you currently have any of the following hearing problems?

a. Difficulty hearing:	Yes	No
b. Wear a hearing aid:	Yes	No
c. Any other hearing or ear problem:	Yes	No

14. Have you ever had a back injury? Yes No

15. Do you currently have any of the following musculoskeletal problems?

a. Weakness in any of your arms, hands, legs, or feet:	Yes	No
b. Back pain:	Yes	No
c. Difficulty fully moving your arms and legs:	Yes	No
d. Pain or stiffness when you lean forward or backward at the waist:	Yes	No
e. Difficulties fully moving your head up or down:	Yes	No
f. Difficulty fully moving your head side to side:	Yes	No
g. Difficulty bending at your knees:	Yes	No
h. Difficulty squatting to the ground:	Yes	No
i. Climbing a flight of stairs or a ladder carrying more than 25 lbs:	Yes	No
j. Any other muscle or skeletal problem that interferes with using a respirator:	Yes	No

The following questions are at the discretion of the Licensed Health Care Provider:

16. Has your health changed within the past year? If “yes”, describe: Yes No

Appendix G: Medical Approval Form

To be completed by a licensed health care professional and a copy provided to the employee. The employee must submit a copy of this approval form to the Safety and Risk Management Office. The medical evaluation records must be kept confidential and retained by the Health Care Provider.

Employee _____ ID#_____ Employer: _____

Working Environment Form

Categorization of Workload*	Light	Moderate	Heavy
	____	_____	_____

Will the user be working under hot conditions (temperature exceeding 77° F (circle one): Yes No

Hazards to be protected against (e.g., infectious diseases, dust, fumes, vapors):

Type of respirator to be assigned:

Special Considerations:

Medical Approval Form

_____This person can wear a respirator without restrictions
_____This person can wear a respirator subject to the following restrictions:

_____This person cannot use a respirator of the type described above.

_____ _____
Physician's Signature Date

Appendix H: Fit Testing Procedures

GENERAL PROCEDURES

1. The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.
2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, because it is only a review.
3. The test subject shall be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.
4. The test subject shall be instructed to hold each chosen facepiece up to the face and eliminate those that obviously do not give an acceptable fit.
5. The more acceptable facepieces are noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.
6. Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

a) Position of the mask on the nose
b) Room for eye protection
c) Room to talk
d) Position of mask on face and cheeks

7. The following criteria shall be used to help determine the adequacy of the respirator fit:

a) Chin properly placed
b) Adequate strap tension, not overly tightened
c) Fit across nose bridge
d) Respirator of proper size to span distance from nose to chin
e) Tendency of respirator to slip
f) Self-observation in mirror to evaluate fit and respirator position

8. The test subject shall conduct a user seal check using negative and positive pressure seal checks as demonstrated by the program administrator (see appendix F). Before conducting the negative or positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side to side and up and down slowly while taking in a few slow deep breaths. Another facepiece will be selected if the test subject fails the user seal check tests.
9. The test shall not be conducted if there is any hair growth between the skin and the facepiece-sealing surface, such as stubble beard growth, beard, mustache, or sideburns which cross the respirator-sealing surface. Any type of apparel that interferes with a satisfactory fit shall be altered or removed.
10. If a test subject exhibits difficulty in breathing during the tests, he/she shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing his or her duties.

11. If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.
12. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least five minutes before the start of the fit test.
13. The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during the actual respirator use, which could interfere with respirator fit.

SACCHARIN SOLUTION AEROSOL PROTOCOL

A. Taste Threshold Screening

This test is conducted to assure that the person being fit tested can detect the taste of the saccharin solution at very low levels. The sensitivity test solution is a 100 to 1 dilution of the fit test solution.

NOTE: Do not eat anything sweet or drink (except plain water), chew gum or smoke 15 minutes before the fit testing procedure.

1. Explain the entire screening and testing procedure to the test subject prior to conducting of the screening test.
2. Have the subject don the hood without a respirator.

(For, threshold screening and fit testing, employees shall use an enclosure about the head and shoulders that is approximately 12 inches in diameter by 14 inches tall with at least the front portion clear and that allows free movement of the head when a respirator is worn. An enclosure hood assembly, which comes with most fit testing kits, is adequate. The test enclosure shall have a three-quarter inch hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle).

3. Instruct the subject to breathe through an open mouth with tongue extended throughout the threshold screening test.
4. Using the sensitivity test solution, inject the aerosol into the hood. Inject ten squeezes of the bulb, fully collapsing and allowing the bulb to expand fully on each squeeze.
5. Ask the subject if they can detect the taste of the saccharin aerosol. If tasted note the number of squeezes and proceed with the fit test.
6. If the subject does not taste the sensitivity solution, inject an additional 10 full squeezes of the aerosol into the hood. Repeat with 10 more squeezes of the aerosol into the hood if still not tasted.
7. If 30 squeezes of the nebulizer were inadequate to produce a response from the subject, the test should be ended and another type of fit test (e.g. Bitrix) must be used.
8. Remove the hood and give the subject a few minutes to clear the taste from their mouth. The individual may wash face and rinse lips and mouth with water to remove the sensitivity test solution before beginning the fit testing procedure.

B. Fit Test Procedure

NOTE: Do not eat or drink anything sweet (except plain water), chew gum or smoke 15 minutes before the fit testing procedure.

1. Have the test subject don and properly adjust the respirator per instructions provided with the respirator. The fit test is to be performed with the test subject wearing a respirator for at least five minutes.
2. Have the test subject don and position the hood and to breathe through their mouth with tongue extended throughout the fit test.
3. Using the fit test nebulizer, inject the fit test aerosol through the hole in the hood using the same number of full bulb squeezes as required in the sensitivity test (10, 20, or 30 squeezes).
4. To maintain an adequate concentration of aerosol during test, inject one-half of the number of squeezes (5, 10, 15) used in step #3 above, every 30 seconds.
5. Instruct the subject to indicate if they detect the taste of saccharin aerosol at any time during the test.
6. After the initial aerosol is injected (step 3), instruct the test subject to perform the following exercises for 60 seconds each.

I) Normal breathing. In a normal standing position, without talking, breathe normally

II) Deep breathing. In a normal standing position, breathe slowly and regularly taking caution not to hyperventilate.

III) Turning head from side-to-side. Standing in place, turn head from side to side. Do not to bump the respirator on the shoulders. Have the test subject inhale when his/her head is at the extreme position on either side.

IV) Nodding head up-and-down. Be certain motions are complete and made about every second. Alert the test subject not to bump the respirator on the chest. Inhale when his head is in the fully up position.

V) Talking. Talk aloud and slowly for several minutes. The following paragraph is called the Rainbow Passage. Reading it will result in a wide range of facial movements, and thus be useful to satisfy this requirement. Alternative passages or counting backwards from 100, which serve the same purpose, may also be used.

Rainbow Passage:

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

VI) Bending over the subject shall bend over at the waist as if he/she were going to touch his/her toes.

VII) Normal breathing. In a normal standing position, without talking, breathe normally.

7. If the entire test is completed without the subject detecting the taste of the saccharin aerosol, the test is successful and the respirator is deemed adequate.
8. If the test subject does detect the taste of the saccharin aerosol, terminate the test, (this indicates inadequate fit). Wait 15 minutes and perform the tests over with a different respirator.

CLEANING/REFILLING

Immediately after completing the test, pour the unused solutions back into respective bottles. Rinse the nebulizers with warm water to prevent clogging. Wipe out the inside of the hood with a damp cloth or paper towel to remove any deposited Test Solution. The Nebulizers must be thoroughly rinsed in water, shaken dry and refilled at least each morning and afternoon or at least every (4) hours.

BITRIX SOLUTION AEROSOL PROTOCOL

A. Taste Threshold Screening

This test is conducted to assure that the person being fit tested can detect the taste of the Bitrix solution at very low levels. The sensitivity test solution is a 100 to 1 dilution of the fit test solution.

NOTE: Do not eat or drink (except plain water), chew gum or smoke 15 minutes before the fit testing procedure.

1. Explain the entire screening and testing procedure shall to the test subject prior to conducting the screening test.
2. Have the subject don the hood without a respirator.

(For threshold screening and fit testing, employees shall use an enclosure about the head and shoulders that is approximately 12 inches in diameter by 14 inches tall with at least the front portion clear and that allows free movement of the head when a respirator is worn. An enclosure hood assembly, which comes with most fit testing kits, is adequate. The test enclosure shall have a three-quarter inch hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle).

3. Instruct the subject to breathe through an open mouth with tongue extended throughout the threshold screening test.
4. Using the sensitivity test solution, inject the aerosol into the hood. Inject ten squeezes of the bulb, fully collapsing and allowing the bulb to expand fully on each squeeze.
5. Ask the subject if they can detect the taste of the Bitrix aerosol. If tasted note the number of squeezes and proceed with the fit test.
6. If the subject does not taste the sensitivity solution, inject an additional 10 full squeezes of the aerosol into the hood. Repeat with 10 more squeezes of the aerosol into the hood if still not tasted.
7. If 30 squeezes of the nebulizer were inadequate to produce a response from the subject, the test should be ended and another type of fit test must be used.
8. Remove the hood and give the subject a few minutes to clear the taste from their mouth. The individual may wash face and rinse lips and mouth with water to remove the sensitivity test solution before beginning the fit testing procedure.

B. Fit Test Procedure

NOTE: Do not eat or drink (except plain water), chew gum or smoke 15 minutes before the fit testing procedure.

1. Have the test subject don and properly adjust the respirator per instructions provided with the respirator. The fit test is to be performed with the test subject wearing a respirator for at least five minutes.
2. Have the test subject don and position the hood and to breathe through their mouth with tongue extended throughout the fit test.
3. Using the fit test nebulizer, inject the fit test aerosol through the hole in the hood using the same number of full bulb squeezes as required in the sensitivity test (10, 20, or 30 squeezes).
4. To maintain an adequate concentration of aerosol during test, inject one-half of the number of squeezes (5, 10, 15) used in step #3 above, every 30 seconds.
5. Instruct the subject to indicate if they detect the taste of Bitrix aerosol at any time during the test.

6. After the initial aerosol is injected (step 3), instruct the test subject to perform the following exercises for 60 seconds each.

I) Normal breathing. In a normal standing position, without talking, breathe normally

II) Deep breathing. In a normal standing position, breathe slowly and regularly taking caution not to hyperventilate.

III) Turning head from side-to-side. Standing in place, turn head from side to side. Do not to bump the respirator on the shoulders. Have the test subject inhale when his/her head is at the extreme position on either side.

IV) Nodding head up-and-down. Be certain motions are complete and made about every second. Alert the test subject not to bump the respirator on the chest. Inhale when his head is in the fully up position.

V) Talking. Talk aloud and slowly for several minutes. The following paragraph is called the Rainbow Passage. Reading it will result in a wide range of facial movements, and thus be useful to satisfy this requirement. Alternative passages or counting backwards from 100, which serve the same purpose, may also be used.

Rainbow Passage:

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

VI) Bending over the subject shall bend over at the waist as if he/she were going to touch his/her toes

VII) Normal breathing. In a normal standing position, without talking, breathe normally

7. If the entire test is completed without the subject detecting the taste of the Bitrix aerosols, the test is successful and the respirator is deemed adequate.

8. If the test subject does detect the taste of the Bitrix aerosol, terminate the test, (this indicates inadequate fit). Wait 15 minutes and perform the tests over with a different respirator.

CLEANING/REFILLING

Immediately after completing the test, pour the unused solutions back into respective bottles. Rinse the nebulizers with warm water to prevent clogging. Wipe out the inside of the hood with a damp cloth or paper towel to remove any deposited Test Solution. The Nebulizers must be thoroughly rinsed in water, shaken dry and refilled at least each morning and afternoon or at least every (4) hours.

Appendix I: Fit Testing Approval Form

Respirator Selected:

Type_____ Manufacturer_____ Model_____

NIOSH Approval Number_____Size_____

Filters/Cartridges:

Particulate HEPA Filter _____

Sensitivity Test: (circle # of squeezes)	Sensitivity Results:	
Saccharin (# Squeezes 10, 20, 30)	Pass_____	Fail_____
Bitrx (#Squeezes 10, 20, 30)	Pass_____	Fail_____

Fit Test Agent:	Results:	
Saccharin	Pass_____	Fail_____
Bitrix	Pass_____	Fail_____

_____	_____	_____
Test Conducter's Name	Test Conducter's Signature	Date