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Respiratory Protection Safety Program

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Respiratory Protection Standard Appendix's

[1910.134 App A - Fit Testing Procedures \(Mandatory\).](#)

[1910.134 App B-1 - User Seal Check Procedures \(Mandatory\).](#)

[1910.134 App B-2 - Respirator Cleaning Procedures \(Mandatory\).](#)

[1910.134 App C - OSHA Respirator Medical Evaluation Questionnaire \(Mandatory\).](#)

[1910.134 App D - \(Mandatory\) Information for Employees Using Respirators When not Required Under Standard.](#)

INTRODUCTION

In the Respiratory Protection program, hazard assessment and selection of proper respiratory PPE are conducted in the same manner as for other types of PPE. In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used.

References: [OSHA Standards Respiratory Protection](#) (29 CFR 1910.134)

SCOPE

This program applies to all faculty and staff employed by The University of North Carolina at Pembroke, who are required to wear respiratory protection. This written Respiratory Protection Program includes policies and procedures for the following functions:

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

RESPONSIBILITIES

Environmental Health & Safety Office

The Environmental Health and Safety Office (EH&S); upon the request of an employee, supervisor, or other departmental representative; will identify; through a respiratory job hazard analysis, or respiratory assessment form, those employees required to wear respirators while performing specific tasks as part of their work duties as a result of hazardous air contaminants.

- If a respiratory hazard is thought to exist at a work site, the affected employee(s) should report them to their supervisor and he/she should contact EH&S for consultation. If necessary, EH&S will conduct on-site inspections and perform air monitoring, as needed, to determine the extent of hazardous airborne contaminants.

- EH&S will make a determination as to the need for and type of control measures to be instituted. The primary objective will be to prevent atmospheric contamination through the use of accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators will be selected and placed into service for affected workers.
- EH&S is responsible for administration of the Respiratory Protection Program. The respiratory protection standard requires that an administrator be appointed to oversee the Respiratory Protection Program and its implementation. The Administrator must be qualified by appropriate training to administer and oversee the respiratory protection program. The Program Administrator will conduct evaluations of the program's effectiveness. The Program Administrator will require department supervisors, managers or directors (departmental representative) of those employees required to use respirators to act as assistants to the program administrator to ensure departmental compliance.

Departments/Supervisors

Departments with employees required to wear respirators must provide the applicable and suitable equipment (i.e., respirators, cleaning supplies, spare parts, etc.) for the purpose intended. The provision of respirators for voluntary use (no documented need) by employees will be at the discretion of EH&S and the employees' department.

Departments with employees using respirators must have departmental personnel responsible for the following:

- Implementing and overseeing the Respiratory Protection Program within the department.
- Supervising those required to wear respiratory protective equipment.
- Ensure the proper use of respirators.
- Be available for consultation by employees, as needed.
- Identifying respiratory hazards and contacting EH&S for risk assessment consultation.
- Ensuring all employees that are enrolled in the respiratory protection program complete medical surveillance, fit testing and training;
- Enforcing the respiratory protection program safety requirements;
- Allocating or securing funds for respiratory equipment and medical exams as needed.

Respirator Users

Employees who use respiratory protective equipment (mandatory use and voluntary use) are required to comply with the policies and procedures found in this document.

- Understanding and complying with the Respiratory Protection Program requirements. Wearing, storing, cleaning and maintaining the respirator that they were fitted for during their fit testing.
- Reporting any defects in the equipment or any respiratory usage symptoms of illness to his or her supervisor.
- Following both oral and written instructions from his or her supervisor.
- Requesting information and training when unsure if respiratory protection is necessary.

Designated Occupational Health Care Provider

- Conduct medical aspects of program.

DEFINITIONS

The following definitions are important terms used in the respiratory protection standard and in The University of North Carolina at Pembroke's Respiratory Protection Program.

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

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

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

Demand respirator: An atmosphere-supplying respirator that admits breathing air to the face piece only when a negative pressure is created inside the face piece by inhalation.

Emergency situation: Any occurrences such as, but not limited to, equipment failure, rupture of containers or failure of control equipment resulting in an uncontrolled significant release of an airborne contaminant.

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

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

Escape-only respirator: A respirator intended to be used only for emergency exit.

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

Filtering face piece (dust mask): 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 factor: A quantitative estimate of the fit of a particular respirator to a specific individual and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

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

Helmet: A rigid respiratory inlet covering that also provides head protection against impact and penetration.

High efficiency particulate air (HEPA) filter: A filter that is at least 99.97% efficient in removing mono-disperse particles of 0.3 micrometers, and larger, in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the 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 or 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 a dangerous atmosphere.

Loose-fitting face piece: A respiratory inlet covering that is designed to form a partial seal with the face.

Negative pressure respirator (tight fitting): A respirator in which the air pressure inside the face piece is negative during inhalation with respect to the ambient air pressure outside the respirator.

NIOSH: The National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services. This organization tests and certifies respirators and filter media for use in the workplace.

Oxygen deficient atmosphere: An atmosphere with oxygen content below 19.5% by volume.

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 by the respiratory protection standard.

Positive pressure respirator: A respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Powered air-purifying respirator (PAPR): An air-purifying respirator that uses a blower to force ambient air through air-purifying elements to the inlet covering.

Pressure demand respirator: A positive pressure atmosphere-supplying respirator that admits breathing air to the face piece when the positive pressure is reduced inside the face piece by inhalation.

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

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

Respiratory inlet covering: The 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 a mouthpiece respirator with nose clamp.

Respiratory protection standard: [Title 29 US Code of Federal Regulations Section 1910.134](#).

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

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

Supplied-air respirator (SAR) or airline respirator: An atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

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.

VOLUNTARY USE OF RESPIRATORS

When respiratory protection is not mandated by the need to protect the health of the employee as determined by job site evaluation, provisions may be made for the voluntary or elective use of respirators. The decision to use non-mandatory respiratory protection will be made by the employing department in consultation with EH&S. Such situations may occur on job sites where nuisance dust is generated below the permissible exposure limit, where objectionable odors are present below hazardous exposure levels or when mold exposure is resulting in reactions in sensitive individuals.

Non-mandatory use of respirators does not carry the same program requirements as mandatory use. At the minimum, if elective respirator use is permissible, the plan administrator will provide the respirator users with the information contained in [Appendix D](#) of the respiratory protection standard titled "Information for Employees Using Respirators When Not Required under the Standard" as follows.

- Voluntary use of a filtering face piece (i.e. dust mask) does not require medical clearance prior to use.
- Voluntary use of a tight-fitting respirator (i.e. full-face or half-face air purifying; or supplied air respirators) does require medical clearance prior to use.
- The plan administrator will establish and implement those elements of a written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is able to use that respirator.
- The respirator must be cleaned, stored and maintained so its use does not present a health hazard to the user. If elective use of respirators involves only the use of filtering face pieces (dust masks), this use is not required to be included in the written respiratory protection program. Provisions for the elective use of filtering face pieces will be made on a case-by-case basis.

PROGRAM EVALUATION

Evaluations of the workplace are necessary to ensure that the written respiratory protection program is being properly implemented. This includes consulting with employees to ensure that they are using the respirators properly. Evaluations shall be conducted as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.

Program evaluation will include discussions with employees required to use respirators to assess the employees' views on program effectiveness and to identify any problems. Any problems that are identified during this assessment shall be corrected. Factors to be assessed include, but are not limited to:

- Respirator fit (including the ability to use the respirator without interfering with effective workplace performance).
- Appropriate respirator selection for the hazards to which the employee is exposed.
- Proper respirator use under the workplace conditions the employee encounters; and
- Proper respirator maintenance.

RECORD KEEPING

The University of North Carolina at Pembroke will retain written information regarding medical evaluations, fit testing, and the respirator program. This information will facilitate employee involvement in the respirator program, assist the university in auditing the adequacy of the program, and provide a record for compliance determinations by OSHA.

TRAINING AND INFORMATION

Effective training for employees who are required to use respirators is essential. The training must be comprehensive, understandable, and recur annually, and more often if necessary. Training will be provided prior to requiring the employee to use a respirator in the workplace. The training shall ensure that each employee can demonstrate knowledge of at least the following:

- Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
- Limitations and capabilities of the respirator.
- How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
- How to inspect, put on and remove, use, and check the seals of the respirator.
- What the procedures are for maintenance and storage of the respirator.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and
- The general requirements of this program.

Retraining shall be conducted annually and when:

- Changes in the workplace or the type of respirator render previous training obsolete.
- Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill; and
- Other situation arises in which retraining appears necessary to ensure safe respirator use.

Training will be conducted by EH&S staff or qualified personal who have adequate knowledge of OSHA training requirements. Training is divided into the following sections:

Classroom Instruction

1. Overview of the Respiratory Protection Program & OSHA Standard.
2. Respiratory Protection Safety Procedures.
3. Respirator Selection.
4. Respirator Operation and Use.
5. Why the respirator is necessary.
6. How improper fit, usage, or maintenance can compromise the protective effect.
7. Limitations and capabilities of the respirator.
8. How to use the respirator effectively in emergency situations, including respirator malfunctions.
9. How to inspect, donning (putting on) and doffing (removing) them, and check the seals of the respirator.
10. What the procedures are for maintenance and storage of the respirator.
11. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and
12. Change out schedule and procedure for air purifying respirators (APR).

Fit Testing

For each type and model of respirator used.

Hands-on respirator Training

1. Respirator Inspection.
2. Respirator cleaning and sanitizing.

3. Record Keeping.
4. Respirator Storage.
5. Respirator Fit Check; and
6. Emergencies.

BASIC RESPIRATORY PROTECTION SAFETY PROCEDURES

1. Only authorized and trained employees may use respirators. Those employees may use only the respirator that they have been trained on and properly fitted to use.
2. Only physically qualified employees may be trained and authorized to use respirators. A pre-authorization and annual certification by a qualified physician will be required and maintained. Any changes in an employee's health or physical characteristics will be reported to the program administrator and will be evaluated by a qualified physician.
3. Only the properly prescribed respirator or SCBA may be used for the job or work environment. Air-purifying respirators may be worn in work environments when oxygen levels are 19.5 percent to 23.5 percent and when the appropriate cartridge, (as determined by the manufacturer and approved by NIOSH), for the known hazardous substance is used. SCBAs will be worn in oxygen deficient and oxygen rich environments (below 19.5 percent or above 23.5 percent oxygen).
4. Only SCBAs will be used in oxygen deficient environments, environments with an unknown hazardous substance or unknown quantity of a known hazardous substance, or any environment that is determined "Immediately Dangerous to Life or Health" (IDLH).
5. Each employee who uses a respirator will be responsible for proper storage and sanitation of their respirator.
6. All respirators will be stored in a clean, convenient and sanitary location.
7. In the event that Employees must enter a confined space; work in environments with hazardous substances that would be dangerous to life or health should an RPE (Respiratory Protection Equipment) fail (a SCBA is required in this environment); and/or conduct a HAZMAT entry, a "buddy system" detail will be used with a Safety Watchman with constant voice, visual or signal line communication. Employees will follow the established Emergency Response Program and/or Confined Space Entry Program when applicable.
8. Management will establish and maintain surveillance of jobs and work place conditions and degree of Employee exposure or stress to maintain the proper procedures and to provide the necessary RPE.
9. Management will establish and maintain safe operation procedures for the safe use of RPE with strict enforcement and disciplinary action for failure to follow all general and specific safety rules.

SELECTION OF RESPIRATORS

All respirators used by employees of UNCP must be NIOSH-certified models. All use of selected respirators must be in compliance with the conditions of their NIOSH certification.

Prior to the selection and use of respirators, EH&S will identify and evaluate the respiratory hazard(s) in each work site for each job task through a job hazard analysis (JHA); and document the findings on the **Respiratory Hazard Evaluation Form**. This evaluation will include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Where the employee exposure cannot be identified or reasonably estimated, EH&S will consider the atmosphere to be IDLH.

References such as product labels, safety data sheets (SDS), reference texts and communication with product manufacturers will be used to determine the chemical and physical form of air contaminants. Monitoring equipment and/or personal dose exposure cassettes/badges will be used to quantify the level of employee exposure to air contaminants, where feasible. Where monitoring is not feasible, reference to accepted, published research and consensus standards will be used to estimate exposures. Contaminant identity and exposure levels will be compared to OSHA exposure limits and/or accepted consensus standards to determine the degree of respiratory protection required for each task.

In addition to employee exposures, workplace and user factors affecting respirator performance and reliability will be considered. Such workplace and user factors include:

- Other personal protective equipment necessary for the job task that may affect the fit of the respirator or the stress experienced by the user.
- The duration and frequency of respirator use and whether it is routine, periodic or emergency use.
- Worksite factors such as temperature, humidity and expected physical work effort.
- Any physical limitations of the employee or their tolerance to job site stressors that may limit the use of a respirator. These will be assessed during the Medical Evaluation.

The selection of respirators will be made from a sufficient number of respirator models and sizes so the respirator is acceptable to and correctly fits the user.

Filter Classifications

These classifications are marked on the filter or filter package.

N-Series: Not Oil Resistant

- Approved for non-oil particulate contaminants
- Examples: dust, fumes, mists not containing oil

R-Series: Oil Resistant

Approved for all particulate contaminants, including those containing oil

- Examples: dusts, mists, fumes
- Time restriction of 8 hours when oils are present

P-Series: Oil Proof

Approved for all particulate contaminants including those containing oil

- Examples: dust, fumes, mists
- See Manufacturer's time use restrictions on packaging

Respirators for IDLH atmospheres

University personnel are prohibited from entering an atmosphere that is suspected for being oxygen-deficient, oxygen-enriched, or has unknown or potentially IDLH concentrations of a hazardous chemical. Pembroke Rural Fire Department personnel are equipped with Self Contained Breathing Apparatus (SCBA) equipment that will allow for safe entry into IDLH atmospheres if necessary. The following recognized conditions have the capability to present IDLH atmospheres on campus:

- The release of refrigerants from chiller units in various campus facilities can produce IDLH atmospheres. Mechanical rooms in various campus facilities are equipped with air conditioning chiller units that use refrigerants. If a large quantity of refrigerant is released from a chiller unit an IDLH atmosphere can be produced within the mechanical room due to oxygen displacement. Refrigerants are heavier than air and can settle out in low lying areas such as sumps and pits. Mechanical rooms with chiller equipment are equipped with refrigerant detection alarm devices to warn entrants of hazardous atmospheric conditions due to refrigerant release.
- University employees and contractors are not permitted to enter the mechanical rooms when the refrigerant alarm is sounding unless the unit is being tested or serviced and it is known that there is no refrigerant release or leak. Pembroke Rural Fire Department personnel that are equipped with SCBA or supplied air respirator may enter an oxygen deficient atmosphere if conditions require entry.
- Manholes and other confined spaces can contain oxygen deficient or hazardous IDLH atmospheres, such as hydrogen sulfide and carbon monoxide, if not properly ventilated prior to entry. UNC-Pembroke personnel and contractors are required to ventilate confined spaces prior to entry if atmospheric conditions are shown to be hazardous by a multi-gas meter or equivalent equipment. The confined space must be tested in a stratified method to show that the entire space has safe oxygen levels and is free from hazardous atmospheric constituents throughout its entirety. Confined space entry procedures must be followed to enter any permit required confined space.

Respirators for atmospheres that are not IDLH

- The respirators selected shall be adequate to protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations. The respirator selected shall be appropriate for the chemical state and physical form of the contaminant.

For protection against gases and vapors, the respirator selected shall be:

- An atmosphere-supplying respirator; or
- An air-purifying respirator, provided that:
 - The respirator is equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant; or
 - If there is no ESLI appropriate for the work site conditions, a change-out schedule to be implemented for canisters and cartridges based on objective information or data that will ensure canisters and cartridges are changed before the end of their service life. This information shall be documented in a department-specific respiratory protection program.

For protection against particulates, the respirator selected shall be:

- A filtering facepiece (dust mask) with a filter rating of at least 95% to 99.97% rating, in removing monodisperse particles of 0.3 micrometers and larger in diameter, with a P (oil Proof), N (Not resistant to oil) or R (Resistant to oil) prefix depending upon application; or,
- An atmosphere-supplying respirator; or,
- An air-purifying respirator equipped with a filter certified by NIOSH as a high efficiency particulate air (HEPA) filter, or,
- An air-purifying respirator equipped with a filter certified for particulates by NIOSH; or,
- For contaminants consisting primarily of particles with diameters of at least 2 micrometers and larger, an air-purifying respirator equipped with any filter certified for particulates by NIOSH.

A Respiratory Hazard Evaluation Form shall be completed for each work site and task prior to a final respirator selection. This form will document the workplace conditions, airborne contaminants, physical factors and other protective equipment needed for the job site. This form will serve as a guide for the evaluator to ensure all necessary elements are considered in the selection of respirators.

Identification of Filters & Cartridges

All filters and cartridges shall be labeled and color coded with the NIOSH approval label. The user shall ensure that the label is not removed and remains legible. A change out schedule for filters and cartridge has been developed to ensure these elements of the respirators remain effective.

Respirator Filter & Canister Replacement

An important part of the Respiratory Protection Program includes identifying the useful life of cartridges and filters used on air-purifying respirators. Each filter and cartridge shall be equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant; or If there is no ESLI appropriate for the conditions, a change schedule for canisters and cartridges based on objective information or data that will ensure that canisters and cartridges

are changed before the end of their service life shall be implemented.

Filter & Cartridge Change Schedule

Stock of spare filters and cartridges shall be maintained to allow immediate change when required or desired by the employee.

Cartridges shall be changed based on the most limiting factor below:

- Prior to expiration date.
- Manufacturer's recommendations for the specific use and environment.
- After each use.
- When requested by employee.
- When contaminant odor is detected; and
- When restriction to air flow has occurred as evidenced by increase effort by user to breathe normally.

Cartridges shall remain in their original sealed packages until needed for immediate use.

Filters shall be changed on the most limiting factor below:

- Prior to expiration date.
- Manufacturer's recommendations for the specific use and environment.
- When requested by employee.
- When contaminant odor is detected.
- When restriction to air flow has occurred as evidenced by increase effort by user to breathe normally; and
- When discoloring of the filter media is evident.

Filters shall remain in their original sealed package until needed for immediate use.

PHYSICAL AND MEDICAL QUALIFICATIONS

Records of medical evaluations must be retained and made available in accordance with [29 CFR 1910.1020](#).

Medical evaluation required

Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. The department hiring an employee (that is required to wear a respirator due to an occupational exposure) is required to arrange a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace.

Medical evaluation procedures

The employee will be provided a medical questionnaire [Appendix C](#) of the respiratory protection standard titled, "OSHA Respirator Medical Evaluation Questionnaire (Mandatory)

by the designated Occupational Health Care Provider.

Follow-up medical examination

The university shall ensure that a follow-up medical examination is provided for an employee who gives a positive response to any question among questions in Part B of the questionnaire or whose initial medical examination demonstrates the need for a follow-up medical examination. The follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the Physician deems necessary to make a final determination.

Administration of the medical questionnaire and examinations

The medical questionnaire and examinations shall be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire shall be administered in a manner that ensures that the employee understands its content. The university shall provide the employee with an opportunity to discuss the questionnaire and examination results with the Physician.

Medical determination

In determining the employee's ability to use a respirator, the university shall obtain a written recommendation regarding the employee's ability to use the respirator from the Physician. The recommendation shall provide only the following information:

- Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator.
- The need, if any, for follow-up medical evaluations.
- A statement that the Physician has provided the employee with a copy of the Physician's written recommendation; and
- If the respirator is a negative pressure respirator and the Physician finds a medical condition that may place the employee's health at increased risk if the respirator is used, the university shall provide an APR if the Physician's medical evaluation finds that the employee can use such a respirator. If a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then the university is no longer required to provide an APR.

Additional Medical Evaluations

At a minimum, the university shall provide additional medical evaluations that comply with the requirements of this section if:

- An employee reports medical signs or symptoms that are related to ability to use a respirator.
- A Physician, supervisor, or the respirator program administrator informs the university that an employee needs to be reevaluated.
- Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation;

and

- A change occurs in workplace conditions (physical work effort, protective clothing, temperature, etc.) that may result in a substantial increase in the physiological burden placed on an employee.

RESPIRATOR FIT TESTING

Before an employee is required to use any respirator with a negative or positive pressure tight-fitting face piece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used. The university shall ensure that an employee using a tight-fitting face piece respirator is fit tested prior to initial use of the respirator, whenever a different respirator face piece (size, style, model or make) is used, and at least annually thereafter.

The university has established a record of the qualitative and quantitative fit tests administered to employees including:

- 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; and
- The pass/fail results for QLFTs or the fit factor and strip chart recording or other recording of the test results for QNFTs.

Additional fit tests will be conducted whenever the employee reports, or the university, Physician, supervisor, or program administrator makes visual observations of, changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

If after passing a QLFT or QNFT, the employee notifies the university, program administrator, supervisor, or Physician that the fit of the respirator is unacceptable, the employee shall be given a reasonable opportunity to select a different respirator face piece and to be retested.

Types of Fit Tests

The fit test shall be administered using an OSHA-accepted QLFT or QNFT protocol. The OSHA-accepted QLFT and QNFT protocols and procedures are contained in [Appendix A](#) of the respiratory protection standard titled, "Fit Testing Procedures (Mandatory)".

- QLFT may only be used to fit test negative pressure air-purifying respirators that must achieve a fit factor of 100 or less.
- If the fit factor, as determined through an OSHA-accepted QNFT protocol, is equal to or greater than 100 for tight-fitting half face pieces, or equal to or greater than 500 for tight-fitting full face pieces, the QNFT has been passed with that respirator.
- Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered

air-purifying respirators shall be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode, regardless of the mode of operation (negative or positive pressure) that is used for respiratory protection.

- Qualitative fit testing of these respirators shall be accomplished by temporarily converting the respirator user's actual face piece into a negative pressure respirator with appropriate filters, or by using an identical negative pressure air-purifying respirator face piece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator face piece.
- Quantitative fit testing of these respirators shall be accomplished by modifying the face piece to allow sampling inside the face piece in the breathing zone of the user, midway between the nose and mouth. This requirement shall be accomplished by installing a permanent sampling probe onto a surrogate face piece, or by using a sampling adapter designed to temporarily provide a means of sampling air from inside the face piece.
- Any modifications to the respirator face piece for fit testing shall be completely removed, and the face piece restored to NIOSH approved configuration, before that face piece can be used in the workplace.

Fit test records shall be retained for respirator users until the next fit test is administered. Written materials required to be retained shall be made available upon request to affected employees.

RESPIRATOR OPERATION AND USE

Respirators will only be used following the respiratory protection safety procedures established in this program. The Operations and Use Manuals for each type of respirator will be maintained by EH&S and be available to all qualified users.

Surveillance by the direct supervisor shall be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, the university shall reevaluate the continued effectiveness of the respirator.

For continued protection of respirator users, the following general use rules apply:

- Users shall not remove respirators while in a hazardous environment;
- Respirators are to be stored in sealed containers out of harmful atmospheres;
- Store respirators away from heat and moisture;
- Store respirators such that the sealing area does not become distorted or warped; and
- Store respirator such that the face piece is protected.

Face piece seal protection

The university does not permit respirators with tight-fitting face pieces to be worn by employees who have:

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

If an employee wears corrective glasses or goggles or other personal protective equipment, the university shall ensure that such equipment is worn in a manner that does not interfere with the seal of the face piece to the face of the user.

Continuing Effectiveness of Respirators

The university shall ensure that employees leave the respirator use area:

- To wash their faces and respirator face pieces as necessary to prevent eye or skin irritation associated with respirator use;
- If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece; and
- To replace the respirator or the filter, cartridge, or canister elements.

If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece, the university will replace or repair the respirator before allowing the employee to return to the work area.

Procedures for IDLH atmospheres

No campus employee shall be allowed to work in an IDLH atmospheres.

MAINTANANCE AND CARE OF RESPIRATOR

Cleaning and Disinfecting: Respirator users shall be supplied with a respirator that is clean, sanitary and in good working order. Respirators must are cleaned and disinfected using the procedures in [Appendix B-2](#) of the respiratory protection standard titled, "Respirator Cleaning Procedures (Mandatory)", or procedures recommended by the respirator manufacturer, provided such procedures are of equivalent effectiveness. Each respirator shall be cleaned and disinfected after each use.

Cleaning and Storage of respirators assigned to specific employees is the responsibility of that Employee.

Respirator Inspection

All respirators/SCBAs, both available for "General Use" and those on "Permanent Check-out", will be inspected after each use and at least monthly. Should any defects be noted, the respirator/SCBA will be taken to the Program Administrator. Damaged respirators will be repaired or replaced. The inspection of respirators loaned on "Permanent Check-out" is the responsibility of that trained Employee.

Respirators shall be inspected as follows before each use and during cleaning.

Respirator inspections include the following:

- A check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the face piece, head straps, valves, connecting tube,

and cartridges, canisters or filters.

- Check of elastomeric parts for pliability and signs of deterioration.

Respirator Storage

Respirators are to be stored as follows:

- All respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they shall be packed or stored to prevent deformation of the face piece and exhalation valve.

Repair of Respirators

Respirators that fail an inspection or are otherwise found to be defective will be removed from service to be discarded, repaired or adjusted in accordance with the following procedures:

- Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and shall use only the respirator manufacturer's NIOSH-approved parts designed for the respirator.
- Repairs shall be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed; and
- Reducing and admission valves, regulators, and alarms shall be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.