

Environmental Health and Safety The University of Texas at El Paso



Respiratory Protection Program

I. Foreword

The University of Texas at El Paso (UTEP) has a fundamental commitment and responsibility to protect the health and safety of its faculty, students, employees, and the visiting public when participating in official activities. Many occupational diseases can be effectively prevented by minimizing or eliminating the breathing of air that may be contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors. This shall be accomplished as far as feasible by accepted engineering control measures such as 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, it is the aim of this program to ensure that respiratory protection is provided, utilized, and maintained in an appropriate and safe manner.

II. Purpose

The purpose of this program is to ensure the protection of all UTEP personnel from respiratory hazards through the proper use of approved respirators. Job-specific respirators shall be recommended by the Department of Environmental Health and Safety (EH&S) and are to be used when engineering controls for respiratory hazards are not feasible or ineffective, while engineering controls are being installed or repaired, and for emergency or other temporary situations.

Voluntary respirator use (when exposures are below the permissible exposure limit) is permitted at the request of the employee or student and upon review by Environmental Health and Safety and subsequent to a medical evaluation and fit test. The procedures set forth in this program comply fully with the requirements of the Occupational Safety and Health Administration's (OSHA) 29 CFR 1910.134. Procedures apply to all UTEP faculty, students, and staff. Non-UTEP personnel working at UTEP must observe procedures that are equivalent to or exceed the requirements of the UTEP respiratory protection program.

III. Responsibilities

A. Environmental Health and Safety (EH&S) will:

- Manage the Respiratory Protection Program. The Assistant Vice President of Environmental Health and Safety or his delegate will serve as the Respiratory Protection Program administrator.
- Provide Respiratory Protection training
- Conduct fit testing
- Maintain documentation of training and fit testing
- Recommend appropriate respirators and cartridges
- Conduct periodic monitoring to assess concentrations of airborne contaminants
- Conduct periodic inspections of respirator storage and use, and ensure that these inspections are properly documented.
- Pay invoices from PLHCP for medical costs associated with medical evaluation of employees or students,

B. A Physician or other Licensed Health Care Professional (PLHCP) will:

- Perform and document initial and subsequent medical evaluation of all respirator wearers at no cost to the student or employee.
- Invoice EH&S for medical costs associated with the medical evaluation of the employee or student.

C. Employee Supervisor/ Principal Investigator will:

- Identify personnel who may need to utilize respiratory protection
- Purchase appropriate respirators, cartridges, and approved replacement parts at no cost to student/employee
- Ensure that employees/students have had medical evaluation as required by this program
- Ensure that employees/students are properly trained before utilizing respiratory protection and that employees/students receive any required refresher training (at least annually)
- Contact EH&S to perform any initial or follow-up monitoring
- Report any problems with respiratory protection to EH&S
- Ensure that employees/students are up-to-date for fit testing (annual requirement)
- Ensure that employees/students who are required to wear a respirator because of potential exposure, do so, as a condition of employment

D. Respirator User will:

- Complete the Occupational Health Questionnaire (annually)
- Complete the Respiratory Protection Questionnaire for first evaluation and again if needed
- Schedule Medical evaluation visit with the PLHCP when instructed by EH&S
- Comply with all requirements of the PLCHP as part of the medical evaluation
- Schedule annual fit testing with EH&S
- Attend Respiratory Protection training (annually)
- Clean and inspect respirator before and after each use
- Store respirator in a resealable plastic bag in a clean area away from possible contaminants
- Use respirator in accordance with manufacturer's recommendations
- Properly wear respirator and all related equipment as trained
- Report any problems with respiratory protection to the department supervisor and EH&S

IV. Determination of Need for Respiratory Protection

It is each supervisor's/principal investigator's responsibility to ensure that EH&S is notified of all practices that may present the need for students or employees to wear respiratory protection. Respiratory protection use is required when engineering controls for achieving respiratory protection is neither technologically nor economically feasible, for tasks such as, but not limited to:

- A. Those that liberate harmful dusts, mists, fumes, vapors, or gases

B. Those that occur in areas in which unacceptable levels of exposure could result from the processing, handling, storing, or disposing of hazardous substances

Exposure determinations will be conducted by EH&S to confirm or justify the need for, or continued use of, respiratory protection. EH&S must also be notified when engineering or procedural changes occur, which could affect employee or student exposures, or when new hazards are introduced into the workplace, to allow for subsequent exposure determinations to be initiated.

V. Medical Evaluation

Employees and/or students will not be assigned to tasks requiring use of respirators unless it has been determined that their health and physical condition will enable them to do so safely. The PLHCP will determine this at no cost to the employee or student before fit testing or use of a respirator. It is possible, if requested, that an employee or student may use his or her personal health care practitioner to provide a medical evaluation. In this case, however, the employer is required to contact the PLHCP and provide him/her with a copy of the respiratory protection standard and other required supplemental information, such as any workplace variables that may increase pulmonary and cardiovascular stress during respirator use. The PLHCP will conduct a medical evaluation. The PLHCP will be asked to sign a respirator user's approval document stating that the user is physically able to work while wearing a respirator (Appendix B). The respirator user's medical status will be reviewed periodically as determined by the health care practitioner in his/her written medical opinion.

VI. Types of Respirators

There are two primary types of respiratory protective equipment one may utilize when appropriate engineering controls are not feasible. These types of respirators are referred to as air-purifying respirators and atmosphere supplying respirators. The following is a description of air purifying and atmosphere supplying respirators and their limitations for use:

A. Air Purifying Respirators:

Air-purifying respirators remove particulate, vapor, and gas contaminants from the air we breathe prior to inhalation. Some common examples of these contaminants include welding fumes, asbestos fibers, solvent vapors, and pesticide mists. Contaminants of this type are removed by a cartridge or canister, which is fixed to the respirator face piece. The cartridges and canisters remove contaminants by various filtering and absorption mechanisms.

Air-purifying respirators may be powered or non-powered units. The use of a non-powered air-purifying respirator may result in additional physical stress due to an increased difficulty in breathing. A powered air-purifying respirator is equipped with a blower, which passes ambient air through the air-purification unit and the supplies the purified air to the respirator face piece.

Limitations:

Air-purifying respirators must not be used in oxygen-deficient atmospheres (<19.5%) or in atmospheres that are Immediately Dangerous to Life and Health (IDLH). Examples of work place situations that may be oxygen-deficient or IDLH include confined spaces and work areas that have high air-borne concentrations of toxic chemicals. Work environments such as this will require a higher level of protection (see Atmosphere-Supplying Respirators).

The Maximum Use Concentration (MUC) may be determined with a simple calculation if the concentration of the air-borne contaminant is known. The MUC is calculated by determining the OSHA Permissible Exposure Limit (PEL) for a specific hazard and multiplying it by the Assigned Protection Factor (APF) for the respirator. The assigned protection factor is the level of protection a respirator provides if worn properly; the greater the number, the greater the protection (See Tables 1 and 2). In order to ensure that the appropriate cartridge or canister is being used with your respirator, EH&S will recommend one specific to the particular hazards of your job.

B. Atmosphere-Supplying Respirators:

Atmosphere-Supplying respirators provide the user with breathable air independent of the ambient air. These types of respirators may be used to provide protection in oxygen-deficient atmospheres and in highly toxic atmospheres. There are several different types of atmosphere-supplying respirators that offer a superior degree of protection against atmospheric contaminants and require specialized training for use:

Self-Contained Breathing Apparatus:

The self-contained breathing apparatus (SCBA) is a unit that allows the user to carry their breathing atmosphere with them. SCBA's are normally used when there is a short-term need to enter and escape from atmospheres that are or may be immediately dangerous to life and health (IDLH). The most important limitation associated with using the SCBA is the oxygen capacity of the device. Most SCBA's only have a 15-30 minute oxygen supply, which may be rapidly depleted if the work rate increases or if the atmospheric pressure changes.

Supplied Air Respirator

The supplied air respirator (SAR) is a unit whose use is not limited to the amount of oxygen one can carry with them into a hazardous atmosphere. SAR's are typically in line with a high-volume/high pressure breathing air cylinder cascade. Alternatively, these respirators may be in line with an air blower, which blows uncontaminated ambient air into the face piece. These types of respirators, regardless of mode of operation, allow the user to remain in the contaminated atmosphere much longer than would be possible with an SCBA. These units are lightweight but limit the range of user mobility. They are normally used when there are extended work periods required in atmospheres that are not IDLH.

Combination Respirators:

A combination air-line respirator with auxiliary SCBA is available which provides users with the highest degree of protection possible. These units allow the wearer to escape dangerous atmospheres if the SAR fails during use. These respirators are used when there are extended work periods required in atmospheres that are or may be IDLH.

VII. Selection of Respirators

Only respirators that have been certified by the National Institute for Occupational Safety and Health (NIOSH) will be used. Respirators are certified as an assembly, and substitution of parts from other manufacturers or models is strictly prohibited. The respirator shall be used in compliance with the conditions of its certification, and the NIOSH label on the cartridge or filter must not be obscured, removed, or defaced while it is in service. A respirator will be issued by the employees' supervisor to an individual for his or her exclusive use and shall not be used by another employee.

Selection of appropriate respirators will be based on the specific respiratory hazard(s) to which the worker is exposed and workplace and user factors that affect respirator performance and reliability (29CFR 1910.134 (d) (1) (i)). In order to assist employees in determining exposure levels, EH&S will conduct area monitoring to determine workplace hazards such as oxygen deficiency and air contamination by particulates, vapors, or gases. Half-face and full-face air-purifying respirators equipped with the appropriate respirator filters/cartridges will be used to provide protection against specific hazards in atmospheres that are NOT:

- Oxygen deficient
- Immediately dangerous to life and health (IDLH)
- Exceeding the limitations of the selected respirator filters or cartridges

VIII. Training

To ensure the proper and safe use of a respirator, each user will be thoroughly trained at the time of initial fit testing and annually thereafter. The training will be conducted by a member EH&S. This training will be documented and information retained by EH&S. The training will include, but not necessarily be limited to:

- Why a respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator;
- What the limitations and capabilities of the respirator are;
- How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions;
- How to inspect, put on and remove, use, and check the seals of the respirator;
- What the procedures are for maintenance and storage of the respirator;

- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators;
- The nature, extent, and effects of respiratory hazards in the workplace
- The need to inform their supervisors of any problems experienced by them or their coworkers;
- An explanation of why a particular type of respirator has been selected for a specific respiratory hazard;
- Successful completion of a fit test;
- An opportunity to handle a respirator;
- Demonstrate knowledge of the above training elements;
- Employees who voluntarily use respirators need to attend training.

IX. Respirator Fit Testing

All employees required to wear a respirator that has a tight-fitting face piece must be properly fit tested according to OSHA approved procedures. These fit testing procedures shall be performed before the first use of the respirator using the same make, model, style, and size respirator that will be used on the job. Additional fit testing will be performed if a different face piece is to be used or if a supervisor notices a change in the user's physical condition that may compromise the fit of the respirator face piece. Although quantitative fit testing is the preferred and more complete method of verifying the adequacy of the seal, situations may arise where it is not feasible to perform a quantitative fit test (i.e. emergencies, test equipment malfunctions). In the latter situations, qualitative fit testing is an acceptable alternative.

The use of 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 which interferes with valve function (i.e. beards, "handlebar" mustaches, sideburns) is prohibited. Other conditions that may prohibit tight-fitting respirator use include, but are not limited to; missing dentures, facial scars, severe acne, or the use of headgear or eyewear that projects under the face piece seal. Respirator use is permitted as long as a condition does not prevent an adequate seal.

Fit testing is performed before initial use of the respirator and at least annually thereafter. The test will be conducted by a trained member of Environmental Health and Safety.

X. Use and Maintenance of Respirators

A. Visual Inspection:

Without regular respirator inspection, users cannot be sure that they are receiving adequate protection from airborne hazards. In fact, wearing poorly maintained or malfunctioning respirators may be more dangerous than not wearing a respirator at all. The employee's department must replace, repair, or discard a respirator that is not functioning properly, and a defective respirator must, with no exceptions, be replaced or repaired before the user enters or returns to any possibly contaminated area. All respirator users should closely inspect the following parts of the respirator before and after each use and during cleaning (See Appendix C):

Rubber face piece:

- Cracked or broken air-purifying element holder(s)
- Excessive dirt
- Cracks, tears, or holes
- Distortion
- Cracked, scratched, or loose-fitting lens (full face)
- Incorrectly mounted full face piece lens or broken/missing mounting clips

Head Strap:

- Breaks or tears
- Loss of elasticity
- Broken or malfunctioning buckles/attachments
- Excessively worn serrations on head piece
- Harness which might allow the face piece to slip

Inhalation/Exhalation Valves:

- Detergent residue, dust particles, dirt, or hair on valve or valve seat
- Cracks, tears, distortion in valve material or valve seat
- Improper insertion of the valve body in the face piece
- Cracks, breaks, or chips in the valve body, particularly in the sealing surface
- Improper installation of the valve in the valve body

Filter elements:

- Incorrect cartridge, canister, or filter for the hazard
- Missing or worn gaskets
- Worn threads
- Cracks or dents in filter housing
- Incorrect installation, loose connections, or cross-threading in holder
- Outdated use of cartridge or canister (see Section XI: Change-out Schedule)

B. Seal Checks:

The wearer of a respirator equipped with a tight fitting face piece must check the seal of the face piece routinely prior to each entry into a potentially contaminated area. The seal may also be checked during use if the user questions the fit. Either the positive and negative pressure checks listed below or the respirator manufacturer's recommended user seal check method shall be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

1. Positive pressure check:
Close off the exhalation valve with the palm of the hand and exhale gently into the face piece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the face piece without any evidence of air leakage at the seal.
2. Negative pressure check:
Close off the inlet opening of the canister(s) or cartridge(s) by covering with the palms of the hands and inhale gently so that the face piece collapses slightly. Hold the breath

for ten seconds. The face piece should remain slightly collapsed with no inward leakage.

C. Cleaning and Disinfection:

The individual user following each use should clean respirators. Procedures recommended by the respirator manufacturer or those set forth in the following description may be used: (29CFR 1910.134 App B-2)

1. Remove filters, cartridges, or canisters. Disassemble face pieces 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 (43°C/110°F maximum) water with a mild detergent or a disinfectant cleaner recommended by the manufacturer. A stiff bristle (**not wire**) brush may be used to facilitate the removal of dirt.
3. Rinse components thoroughly in clean, warm (43°C/110°F maximum) water, preferably running water. Drain.
4. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
 - a. Hypochlorite solution (50ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43°C/110°F; or
 - b. Aqueous solution of iodine (50ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100cc of 45% alcohol) to one liter of water at 43° C / 110° F; or
 - c. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
 - d. Rinse components thoroughly in clean, warm (43°C/110°F maximum) water, preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on face pieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
 - e. Components should be hand-dried with a clean, lint-free cloth or air-dried
 - f. Reassemble face piece, replacing filters, cartridges, and canisters where necessary.
 - g. Test the respirator to ensure that all components work properly.

D. Storage:

“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.” (29CFR (h) (2) (i)) Respirators should be stored in sealable plastic bags or in containers with tight fitting lids.

Respirators should not be hung by their straps as this could cause distortion of the mask area and damage to the straps. Follow the manufacturer's directions for specific storage requirements.

XI. Change-Out Schedule

A change out schedule is a document that is required by OSHA as of October 1998. It explains how long a particular chemical cartridge or canister used with an air-purifying respirator may be used in a specific work environment. A schedule of this nature is based on objective data obtained through various research institutes, such as NIOSH, and from individual cartridge and canister manufacturers. The schedule may also take into consideration work rate, relative humidity, chemical concentration, and multiple chemical contaminants. To ensure that these cartridges are changed before they are no longer effective, a usage log is necessary (See Appendix D).

Respirator users may no longer rely on warning properties as the sole basis for determining change schedules. However, respirator users should be trained to understand that abnormal odor or irritation is evidence that respirator cartridges need to be replaced. When there is a mix of contaminants, the service life will be based on the contaminant with the shortest breakthrough time. Many manufacturers are now installing End of Service Life Indicators (ESLI's) on respirator cartridges. An ESLI is a system that changes color, therefore alerting the user that the cartridge must be replaced. The respirator user must strictly follow the manufacturer's guidelines to prevent health risks.

XII. Recordkeeping

EH&S will record and maintain appropriate documentation of this Respiratory Protection Program. The following is a list of those items that will be documented and who is responsible for each:

- 1. Medical Evaluation** – all documentation will be maintained by the PLHCP.
- 2. Fit testing** – all fit testing documentation will be maintained by EH&S.
- 3. Training** – all initial and follow up training documentation will be maintained by EH&S.

XIII. Program Surveillance

Periodic program evaluations will be conducted by EH&S to determine the continued effectiveness of the Respiratory Protection Plan. Program updates will be implemented as deemed appropriate by EH&S.

Appendix A: Medical Questionnaire



OSHA 29 CFR 1910.134 RESPIRATORY PROTECTION PROGRAM APPENDIX C—QUESTIONNAIRE (MANDATORY)

To the employee: Answers to questions in Section 1 and to question 9 in Section 2 of Part A do not require a medical examination.

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.

Part A. Section 1. The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: ____ / ____ / ____
2. Your name: _____ Student/Employee Id #: _____
3. Your age: _____
4. Sex (circle one): Male / Female Date of birth: _____
5. Your height: ____ ft. ____ in.
6. Your weight: ____ lb.
7. Your job title: _____ Dept. _____
8. Phone number where you can be reached by the health care professional who reviews this questionnaire (include area code): (____) _____
9. The best time to phone you at this number: _____
10. Has your employer told you how to contact the health care professional who will review this questionnaire?
Yes No
11. Check the type of respirator you will use (can check more than one category):
 - a. ____ N, R, or P disposable respirator (filter-mask, non-cartridge type only)
 - b. ____ other type (half-or full-facepiece type, powered air purifying, supplied air, self-contained breathing apparatus)
12. Have you worn a respirator? Yes No
if yes, what type(s): _____

Part A. Section 2. Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please check "yes" or "no").

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month? Yes No
If "yes," indicate: How many packs a day do you smoke: $\frac{1}{4}$ $\frac{1}{2}</math> $\frac{3}{4}</math> 1 2 3 4
How many years have you smoked: _____?$$
2. Have you ever had any of the following conditions?
 - a. Seizures: Yes No
If you answered "yes," when was the last time _____
 - b. Diabetes (sugar disease): Yes No
If "yes," do you have spells of hypoglycemia (low blood sugar): Yes No
 - c. Allergic reactions that interfere with your breathing: Yes No
If "yes," did you have problems in the past year: Yes No

- d. Claustrophobia (fear of closed-in places): Yes No
 If "yes," did you have problems in the past year: 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
 If "yes," when did you have your last episode? _____
 c. Chronic bronchitis: Yes No
 d. Emphysema: Yes No
 e. Pneumonia: Yes No
 If "yes," when did you have your last episode? _____
 f. Tuberculosis: Yes No
 If "yes," were you treated for it? Yes No
 For how long did you take medication? _____
 g. Silicosis: Yes No
 h. Pneumothorax (collapsed lung): Yes No
 i. Lung cancer: Yes No
 If "yes," were you treated for it: Yes No
 List whether you took chemotherapy, radiation, or surgery: _____
 Are you considered as "cured" at this time: Yes No
 j. Broken ribs: Yes No
 k. Any chest injuries or surgeries: Yes No
 l. Any other lung problem that you have 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): 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 symptom 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
 If "yes," when was it? ____ within the past 6 mo. / ____ >6 mo. ago
 b. Stroke: Yes No
 If "yes," when was it? ____ within past 6 mo. / ____ >6 mo. ago
 c. Angina: Yes No
 If "yes," how often does it occur? _____
 d. Heart failure: Yes No
 If "yes," when was it? _____
 e. Swelling in your legs or feet (not caused by walking): Yes No
 f. Heart arrhythmia (heart beating irregularly): Yes No
 If "yes," does this make you pass out or light headed? Yes No
 g. High blood pressure: Yes No
 h. Any other heart problem that you've been told about: Yes No
 Please give detail: _____

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
- Circle the "yes" answers that were in the last 6 months: a b c d e f

7. Do you currently take medication for any of the following problems?
- a. Breathing or lung problems: Yes No
 - b. Heart problems: Yes No
 - c. Blood pressure: Yes No
 - d. Seizures: Yes No
- List the medications: _____

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
- Circle the "yes" answers that were in the last 6 months: a b c d e f

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 to 15 below must be answered by every by every employee who has been selected to use either a full-face piece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of 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
 - d. 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 hearing problems?
- a. Difficulty hearing: Yes No
 - b. Wear a hearing aid: Yes No
 - c. Any other hearing or ear problems: 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
If "yes," specify which part: _____
 - b. Back pain: Yes No
If "yes," specify where it hurts: _____, how often: _____,
Do you take medication? Yes No
If "yes," name the medicine(s) _____
Have you had surgery on your back?: Yes No
 - c. Difficulty fully moving your arms and legs: Yes No
If "yes," specify which part: _____

- d. Pain or stiffness when you lean forward or backward at the waist: Yes No
- e. Difficulty moving your head up or down: Yes No
- f. Difficulty 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

Part B. Any of the following questions and other questions not listed may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (>5000 ft) or in a place that has lower than normal amounts of oxygen? Yes No

If “yes,” do you have feelings of dizziness, shortness of breath, and pounding in your chest, or other symptoms when you’re working under these conditions? Yes No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (for example: gases, fumes, dust), or have you come into skin contact with hazardous chemicals?

Yes No

If “yes,” name the chemicals if you know them: _____

3. Have you ever worked with any of the materials, or under any conditions, listed below?

- a. Asbestos: Yes No
- b. Silica (for example: sandblasting): Yes No
- c. Tungsten/ cobalt (for example: grinding or welding this material): Yes No
- d. Beryllium: Yes No
- e. Aluminum: Yes No
- f. Coal (for example, mining): Yes No
- g. Iron: Yes No
- h. Tin: Yes No
- i. Dusty environments: Yes No
- j. Any other hazardous exposures: Yes No

If “yes,” describe these exposures: _____

4. List any second jobs or side businesses you have: _____

5. List your previous occupations: _____

6. List your current and previous hobbies: _____

7. Have you been in the military services? Yes No

If “yes,” were you exposed to biological or chemical agents (either in training or combat):

Yes No

8. Have you ever worked on a HAZMAT team? Yes No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications)? Yes No

10. Will you be using any of the following items with respirator(s)?

- a. HEPA filters: Yes No
- b. Canisters (for example, gas masks): Yes No
- c. Cartridges: Yes No

11. How often are you expected to use the respirator(s)?

- a. Escape only (no rescue): Yes No
- b. Emergency rescue only: Yes No
- c. Time used [check the best answer]:
 - [] Less than 5 hours per week
 - [] Less than 2 hours per day
 - [] 2 to 4 hours per day

[] Over 4 hours per day

12. During the period you are using the respirator(s), is your work effort:

a. **Light** (less than 200 kcal per hour):

Yes No

If "yes," how long does this period last during the average shift: _____ hrs. _____ min.

Examples of light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

b. **Moderate** (200 to 350 kcal per hour):

Yes No

If "yes," how long does this period last during the average shift? _____ hrs. _____ min.

Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at truck level; walking on a level surface about 2 mph or own a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

c. **Heavy** (above 350 kcal per hour):

Yes No

If "yes," how long does this period last during the average shift: _____ hrs. _____ min.

Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/ or equipment (other than the respirator) when you're using the respirator? Yes No

If "yes," describe this protective clothing and/ or equipment: _____

14. Will you be working under hot conditions (temperature exceeding 770 F)? Yes No

15. Will you be working under humid conditions? Yes No

16. Describe the work you'll be doing while you're using the respirator(s):

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (For example, confined spaces, life-threatening gases): _____

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the second toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the third toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Give the name of other toxic substances that you'll be exposed to while using your respirator:

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, and security):

Appendix B: Respirator User's Approval Document



On ____ / ____ / ____, I do hereby attest that upon reviewing the medical questionnaire
(Date)
and based on my best medical judgment, _____ is (initial all that apply):
(Name)
approved to wear the following respirators:

- _____ Filtering Face Piece (N-95)
- _____ Escape Only Respirator
- _____ Half-face Mask Respirator
- _____ Full-face Mask Respirator
- _____ Powered Air Purifying Respirator (PAPR)

_____ required to come in for a medical evaluation before respirator clearance can be given.

_____ approved with the following conditions: _____

_____ not approved for respirator use.

Signature of PLHCP

Date



Appendix C: Respirator Use and Maintenance Log Respiratory Protection Program

Respirator Type: _____ Respirator I.D. #: _____

Manufacturer: _____ Date Placed in Service: _____

Model Number: _____ Date of Inspection: _____

I. Visual Inspection

A. Rubber Face Piece

- | | | |
|---|-----|----|
| 1. Is the face piece cracked or broken? | YES | NO |
| 2. Does it have excessive dirt? | YES | NO |
| 3. Are there cracks, tears or holes | YES | NO |
| 4. Is the Lens cracked, scratched, or loose-fitting lens (full face) | YES | NO |
| 5. Are there incorrectly mounted full face piece lens
Or broken/missing mounting clips | YES | NO |

B. Head Strap

- | | | |
|---|-----|----|
| 1. Is the head strap broken or torn | YES | NO |
| 2. Has it lost its elasticity | YES | NO |
| 3. Is it broken or have malfunctioning buckles/missing
Attachments | YES | NO |
| 4. Are there excessive worn serrations on head piece | YES | NO |
| 5. Is the harness allowing the face piece to slip | YES | NO |

C. Inhalation/Exhalation Valves

- | | | |
|---|-----|----|
| 1. Is there detergent residue, dust particles, dirt or hair
On valve or valve seat | YES | NO |
| 2. Are there cracks, tears, or distortion in the valve material
or valve seat | YES | NO |
| 3. Is there improper insertion of the valve body in the face piece | YES | NO |

D. Filter Elements

- | | | |
|--|-----|----|
| 1. Is the correct cartridge, canister, or filter being used for the hazard | YES | NO |
| 2. Does it have missing or worn gaskets | YES | NO |
| 3. Are there worn threads | YES | NO |
| 4. Are there cracks or dents in filter housing | YES | NO |
| 5. Is there incorrect installation, loose connections,
or cross-threading in holder | YES | NO |
| 6. Does it have an outdated cartridge or canister | YES | NO |

II. Seal Checks

- | | | |
|--|-----|----|
| 1. Is the mask able to sustain a positive seal | YES | NO |
| 2. Is the mask able to sustain a negative seal | YES | NO |

NOTES:



Appendix D: Respirator/Cartridge Usage Log

Name: _____

Type of respirator: _____

Date	Name/Type of Hazardous Material (e.g. acetone, oil-based paint, etc.)	Time In (HR:MM)	Time Out (HR:MM)	Total Hours Used	PAPR					Full Face and Half Face mask				
					PAPR Type	Battery Charge 100 % (Yes OR No)	Airflow (OK,Low)	Shroud Condition (Poor,Fair, Good)	Helmet & Shield (Poor,Fair ,Good)	Cartridge Type	Cartridge Condition (New or Used)	Rubber Face Piece condition (Poor,Fair, Good)	Head Strap condition (Poor,Fair, Good)	Inhalation/ Exhalation Valves condition (Poor,Fair, Good)

Appendix E: Revisions Made to Document

JUNE 2019

1. Page 2, regarding the “Responsibilities of EH&S”, the program’s administrator’s professional title was updated along with the responsibility of EH&S to pay the invoices from the PLHCP regarding services rendered for participants in the program.
2. Page 3, regarding the “Responsibilities of the PLHCP” a bullet was added to reflect their needing to invoice EH&S for services performed on students or staff in the program.
3. Page 3, “Medical Surveillance” was changed to “medical evaluation” throughout the document.
4. Page 3, under letter “D” language was edited regarding the filling out of the Respiratory Protection questionnaire not annually but once for initial evaluation and again if needed.
5. Page 3, under letter “D”, “when instructed by EH&S” was added to the third bullet.
6. Page 4, section IV, sentence under sub-section letter “C” was removed.
7. Page 6, Section VII., third paragraph, was removed.