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## Contents

**PURPOSE**

The University of Illinois at Urbana-Champaign (University), through the Division of Safety and Compliance, Occupational Safety and Health Department (OSH), has established this Respiratory Protection Program to protect the health of university students, faculty and staff and to assure compliance with State and Federal occupational safety and health standards.

This Program provides the minimum requirements for unit-specific respiratory protection programs. It is expected that campus units will utilize this Respiratory Protection Program to develop unit-specific standard operating procedures (SOP) including completion and submission of Appendix A to OSH.

**POLICY**

It is the policy of the University to protect its students, faculty and staff from respiratory hazards. This is accomplished as far as feasible with effective engineering controls, employee training, and administrative controls. In cases where these controls are not adequate, personnel must be provided with respiratory protection to eliminate the potential exposure to respiratory hazards.

This Respiratory Protection Program impacts all students, faculty and staff who are required or elect to wear respiratory protection as part of their employment. Only respirators which are applicable and suitable for the purpose intended shall be used. Individuals who voluntarily wear filtering facepieces (dust masks) are covered by this Program as addressed in the Voluntary Use section. Additional instructions for respiratory protection may be found in other Programs addressing specific hazards (e.g. Asbestos or Lead).

**RESPONSIBILITIES**

**Occupational Safety and Health (OSH)**

OSH is responsible for the administration of this Program, which includes determining the need for respiratory protection based on the hazard assessment, respirator selection, initial training and annual fit-testing. OSH maintains copies of all records for services provided by OSH pertaining to this Program. An OSH program coordinator is designated to provide guidance, regulatory interpretation and oversight for this Program and to review this Program annually.

**Deans, Department Heads, and Directors (Campus Units)**

Campus Units shall designate a Responsible Person that will be charged with implementing this Program and Unit-Specific SOPs.

**Campus Unit Responsible Person**

The Responsible Person shall work with Campus Unit Supervisors to identify personnel that may be required to wear a respirator and shall keep OSH apprised of new potential hazards entering the work area for both new-hire personnel and for those having a change in their job duties. In addition, personal protective equipment (PPE) assessments of work processes and tasks, described in the University's Personal Protective Equipment Program; must be completed to ensure that all personnel within their unit affected by this Program receive medical clearance, and proper training and fit-testing. The Responsible Person shall ensure that Unit-Specific SOPs are reviewed annually.

**Supervisors of Respirator Wearers (Supervisors)**
Supervisors and Principle Investigators (PIs) are responsible for enforcing proper respirator use, care, maintenance and storage of respirators for the wearers under their responsible charge in accordance with this Program and Unit-Specific SOPs. They shall assist in the development and annual review of Unit-Specific SOPs. They shall ensure that all their personnel who wear a respirator receive training and fit-testing on an annual basis. They must also ensure that all personnel have had a medical evaluation as dictated by the medical provider. The medical is at no cost to the individual.

**Respirator Wearers**
Affected faculty, staff and students, herein called respirator wearers, are responsible for obtaining a medical clearance to wear a respirator, to be fit-tested and to receive training. The respirator wearer shall use the respirator when required by the specified work activity and ensure that the respirator is donned, cleaned, stored and maintained according to the provisions of this Program, Unit-Specific SOPs, and manufacturer instructions.

**PROCEDURES**
**Request for Respirator Use**
A Request for Respirator Use must be submitted to OSH for any individual wanting to wear a respirator. The request will be evaluated through review of procedures, established engineering and administrative controls, and exposure monitoring. All costs associated with exposure monitoring will be at the expense of the requesting unit. Upon completion of the evaluation OSH will provide a written determination of the need for a respirator and assist in the selection of appropriate respiratory protection. All Requests for Respirator Use must be submitted through the form located at http://go.illinois.edu/respirator_request.

**Training**
Initial training, with the exception of Unit-Specific SOPs, may be provided by OSH. An alternative provider may be used but the Campus Unit Responsible Person or Supervisor shall ensure that all affected personnel receive training on the following topics prior to initial use and annually thereafter.

- Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
- The limitations and capabilities of the respirator.
- If applicable, wearers should know 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 contents of this Program; and
- Unit-Specific SOPs.

Retraining may be required more than annually if workplace conditions change, new types of respirators are used, or if the Responsible Person or Supervisor determines there are inadequacies in the employee's knowledge or use.

A record of this training shall be kept by the Campus Unit. Subsequent refresher trainings may be completed online, via a live training with OSH, or through an alternative provider. If refresher training is received through a provider other than OSH, the Responsible Person shall retain copies and provide documentation of training to OSH upon request.

**Medical Evaluations**

The use of a respirator places unusual stress on the wearer to the extent that personnel entering the program must be evaluated by a physician or other licensed health care professional. The purpose of the evaluation is to screen personnel for pre-existing conditions not conducive to respirator use, confirm that the individual can handle the additional stress caused by the respirator. After being medically cleared, the respirator wearer will then complete fit-testing.

Additional medical evaluations shall be provided if a respirator user reports medical signs or symptoms that are related to their ability to use a respirator, a PLHCP, supervisor, or the respirator program administrator informs the Campus Unit 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; or a change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

Reevaluation of personnel must occur according to the recommendations of the medical provider.

**Fit-testing**

All tight-fitting respirators must be fit-tested before initial use and annually thereafter. Fit-testing is also required when a change in the facial structure of a wearer occurs or a different make/model of respirator is purchased. A record of the fit-test shall be kept and retained until the next fit-test is administered.

Qualitative or quantitative fit-tests may be used to determine if the respirator mask provides an acceptable fit to the wearer. Qualitative fit-test procedures rely on a subjective sensation (taste, irritation, smell) of the respirator wearer to a particular test agent while a quantitative fit-test uses measuring instruments to measure face-seal leakage. Qualitative fit-tests shall be performed in accordance with the procedures outlined in *29 CFR 1910.134 Appendix A "Fit Testing Procedures."* Quantitative fit-tests shall be performed with a quantitative fit-testing equipment with current calibration for all tight-fitting elastomeric respirators.

Fit-testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators (PAPR's) shall be accomplished by performing quantitative fit-testing in the negative pressure mode.

Loose fitting, hood-style PAPRs do not require fit-testing.

Wearers of tight-fitting elastomeric full-facepiece respirator shall not wear eye glasses having a protruding earpiece extending beyond the facepiece seal. Individuals requiring corrective lenses may

wear contact lenses or the Campus Unit may purchase an adapter set of prescription lenses to mount in the respirator.

Filtering facepiece respirators, commonly called dust masks, which are required for the work activity and hazard present, are considered respirators and must be fit-tested. All filtering facepiece respirator users must be fit-tested qualitatively initially and yearly thereafter.

Fit-testing of respirators may be provided by personnel other than OSH, including personnel within the Campus Unit or a third party. Fit-testers must have the knowledge to properly administer fit-testing through documented education, experience, or training. A record of the OSH-provided fit-testing shall be submitted to the respective Campus Unit by OSH no later than 30 days after completion.

**Recordkeeping**

Medical evaluations, training, and fit-testing records shall be established and maintained for every individual required to wear a respirator. Copies of all training and fit-testing records provided by OSH shall be submitted to the respective Campus Unit by OSH no later than 30 days after completion. These records shall be maintained for 30 years beyond the last date of employment/enrollment of the respirator users.

Records for substance-specific OSHA Standards shall be maintained according to the specific OSHA Standard by the Campus Unit for 30 years beyond the last date of employment.

Campus Units are responsible for reviewing, maintaining and updating PPE hazard assessments as outlined in the University's Personal Protective Equipment Program. Quantitative exposure assessments shall be maintained for 30 years beyond the last date of employment/enrollment of the respirator users.

Records on respirator inspection for positive pressure respirators (airline or SCBA) shall be maintained by the Campus Unit until replaced by a more recent inspection record. Records on maintenance on a positive pressure respirator shall be maintained until the respirator is no longer in service by the Campus Unit

**Respirator Selection and Use**

Respirators shall be worn when any of the following conditions apply:

- OSH, with assistance from the Campus Unit Responsible Person, has identified and evaluated respiratory hazards and determines the need for respiratory protection based on quantitative exposure assessments or a reasonable estimate of the employee's exposure to respiratory hazard(s) given the contaminant's chemical state and physical form. Quantitative exposure assessments shall be conducted at the expense of the Campus Unit.
- Personnel are working in areas where contaminant levels may become unsafe without warning, such as in emergency response situations to an unknown spill of hazardous material. In these situations where exposures cannot be identified or reasonably estimated, the work area shall be considered immediately dangerous to life or health (IDLH). These IDLH atmospheres require air-supplied respirators along with specialized training.

- The Safety Data Sheet (SDS) or chemical label specifically requires the use of a respirator for the task being performed.
- Significant levels of infectious biological contaminants may become aerosolized. OSH, in conjunction with the Institutional Biosafety Committee (IBC), and University Biosafety Officer, will determine the appropriate level of respiratory protection that may be required.
- Medical personnel performing high hazard procedures on patients, cadavers or in a laboratory that may generate an infectious aerosol are required to wear at least an N95 respirator and to comply with the appropriate sections of this Program.
- Personnel are engaged in activities that are addressed in other University policies, such as asbestos or lead abatement, which require the use of respiratory protection.

Only respirators approved by the National Institute for Occupational Safety and Health (NIOSH), under the provisions of 30 CFR Part 11 and 42 CFR Part 84, shall be used. Since respirators are approved as a unit, parts from different manufacturers or models shall not be interchanged, and no modification of a respirator is permitted.

Individuals who have facial hair beyond a neatly trimmed mustache that does not interfere with the seal shall not wear tight-fitting facepiece respirators. This includes full beards and goatees. Respirators that do not rely on a tight face seal, such as hoods or helmets, may be used by bearded individuals when appropriate to the hazards presented.

Individuals who wear glasses that interfere with the sealing surface of a full-face respirator shall not be issued a tight-fitting respirator unless they can safely work without the aid of eye glasses; or if provisions have been made for the acquisition of glasses that fit into the respirator facepiece.

Each Campus Unit is responsible for providing respirators, replacement parts, and cartridges/filters as necessary to personnel who have been identified as needing respirators.

**User Seal Check Procedures**

Individuals using a tight-fitting respirator shall perform a user seal check to ensure that an adequate seal is achieved each time when putting on the respirator. Either the positive and negative pressure checks listed in this section 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.

**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. The design of the inlet opening of some cartridges cannot

be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. 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.

**Manufacturer's Recommended User Seal Check Procedures**
The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure seal check procedures provided that the employer demonstrates that the manufacturers' procedures are equally effective.

**Use of Respirators in IDLH Atmospheres**
The following respirators shall be used in an IDLH atmosphere:

- A full-facepiece, pressure demand self-contained breathing apparatus (SCBA) certified by NIOSH for a minimum service life of thirty minutes; or
- A combination full-facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.

Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

Respirator users must be prepared for emergency rescue or respirator failure whenever working inside of an IDLH atmosphere. When IDLH atmospheres exist the Unit-Specific SOPs shall require:

- Buddy system. In IDLH atmospheres or potential IDLH atmospheres at least one additional trained individual properly equipped with respiratory protection shall be present;
- Communications. Communications (visual, voice, or signal line) shall be maintained between personnel present in IDLH atmospheres; and
- Rescue. Stand-by personnel must be available with suitable rescue equipment: pressure demand or other positive pressure SCBAs or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA, safety harnesses and safety lines (for removing persons working in IDLH atmospheres).

**Breathing Air Quality and Use**
Compressed and liquid oxygen shall meet the United States Pharmacopoeia requirements for medical or breathing oxygen.

Compressed breathing air must meet at least the requirements for Grade D breathing air. The American National Standards Institute (ANSI) Compressed Gas Association (CGA) g.7-1 – 1989 specifies the contents of Grade D breathing air as:

- Oxygen (volume/volume) of 19.5% to 23.5%;
- Hydrocarbon (condensed) of 5 $mg/m^3$ of air or less;
- Carbon monoxide of 10 ppm or less;
- Carbon dioxide of 1,000 ppm or less; and
- Lack of noticeable odor.

Compressed oxygen shall not be used in atmosphere-supplying respirators that have previously used compressed air.

Oxygen concentrations greater than 23.5% shall only be used in equipment designed for oxygen service or distribution.

Air cylinders used to supply breathing air shall be marked with a NIOSH approval label.

Cylinders of purchased breathing air shall have a certificate of analysis from the supplier that the breathing air meets the required Grade D air and moisture content. They shall also certify the moisture content in the cylinder shall not exceed a dew point of -50° F (-45.6° C) at 1 atmosphere pressure.

Compressors used to supply breathing air to respirators shall be constructed and situated so as to:

- Prevent entry of contaminated air into the air-supply system;
- Minimize moisture content so that the dew point at 1 atmosphere pressure is 10° F (5.56° C) below the ambient temperature;
- Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters shall be maintained and replaced or refurbished periodically following the manufacturer's instructions;
- Have a tag containing the most recent change date and the signature of the person authorized by the employer to perform the change. The tag shall be maintained at the compressor;
- For compressors that are not oil-lubricated, it shall be staged to ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm; and
- For oil-lubricated compressors, there shall be a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply shall be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.
- All breathing air couplings must be incompatible with those of non-respirable air or other gases used on the campus to prevent inadvertent servicing of air-line respirators with non-respirable gases or oxygen.

**Voluntary Use of Respirators**

OSH shall make the final determination if voluntary use of a respirator is permissible. Only filtering facepiece respirators may be worn voluntarily. Use of any other type of respirator requires medical clearance, and annual fit testing and training.

OSH, in conjunction with the Campus Unit, shall make a reasonable effort to ensure that the respirator does not interfere with the respirator users' ability to work safely and its use does not create a hazard.

All voluntary filtering facepiece respirator wearers shall sign a notice of responsibilities, provided by OSH, before voluntary use is permitted, in lieu of a Unit-Specific SOP. Copies shall be maintained with the employee's training records

**PROGRAM EVALUATION**

This Program will be reviewed annually by OSH. The written Unit-Specific SOPs shall be reviewed and updated by the respective Campus Unit at least annually and more frequently as hazards, tasks, procedures and/or equipment change.

## APPENDIX A – UNIT-SPECIFIC STANDARD OPERATING PROCEDURES

**Campus Unit:** _____

It is the policy of the above-mentioned unit to comply with the University of Illinois Respiratory Protection Program. The purpose of this document is to complement the University Program with site-specific written standard operating procedures.

**PROGRAM ADMINISTRATION**

The University of Illinois recognizes the fact that supervisors are not necessarily experts in the area of respiratory protection. However, as outlined in the Campus Administrative Manual policy number RB-13, "The immediate managers of employees or supervisors of other members of the campus community are responsible for maintaining a healthy and safe environment within their areas under their supervision and are responsible for the safety of activities, procedures and operations under their control or direction." OSH and other qualified personnel will assist supervisors and individuals in fulfilling these obligations upon request.

The following individual has responsibility for the administration of respiratory protection in the above-mentioned unit. It is the responsibility of this person to supervise the use of respirators and to ensure that respirators are used when they are required and in a manner in which the wearer has been trained.

_____ _____

(Name) (Title)

**SELECTION**

Respirator types selected for use (include manufacturer and model number):

| Manufacturer | Model |
|---|---|
| | |
| | |
| | |

Cartridges and filters to be worn and hazard:

| Hazard | Cartridge/Air Source |
|---|---|
| | |
| | |
| | |

**MEDICAL EVALUATIONS**

A determination of the capability of each individual to physically and psychologically perform his or her normal work duties while wearing a respirator is made by a physician or other licensed health care professional (PLHCP) from _____.

Copies of the PLHCP's written opinion determining an individual capability of wearing a respirator can be located in the individual's personnel file in the following location: _____.

**RESPIRATOR TRAINING AND FIT-TESTING**

Annual training for the individuals in this unit wearing respirators will be provided by _____.

Annual fit-testing for the individuals in this unit wearing respirators will be provided by_____.

Records of training and fit-testing for the individuals in this unit who will be wearing respirators can be found in _____.

**INSPECTION AND MAINTENANCE OF SHARED OR EMERGENCY USE RESPIRATORS**

_____ is responsible for the overall maintenance and inspection of respirators that are shared or for emergency-use.

Emergency-use respirators are found in the following locations: _____

_____

_____

_____

Inspection records of these emergency-use respirators are found in _____.

**INSPECTION**

All respirators shall be inspected before each use and during cleaning.

Respirators shall be checked for tightness of connection and general condition of the various parts including, but not limited to the facepiece, head straps, valves, connecting tube, cartridges, and a check of elastomeric parts for pliability and signs of deterioration.

Emergency use respirators shall be inspected at least monthly and in accordance with the manufacturer's recommendations. Emergency use respirators shall be checked for proper function before and after each use, before being carried into the workplace for use, have documentation that lists the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings and required remedial action needed; and a serial number or other means of identifying the inspected respirator.

All information provided above shall be 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 shall be maintained until replaced following a subsequent inspection.

Breathing cylinders of any self-contained breathing apparatus (SCBA) shall be inspected to assure that the cylinder pressure is maintained at 90% of the manufacturer’s recommended pressure level and that regulator and low-pressure warning devices function properly.

**REPAIRS AND REPLACEMENT PARTS**

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

- Only persons appropriately trained to perform such operations, using parts designed for the particular respirator shall make repairs;
- No repairs shall be performed that are outside the manufacturer's recommendations concerning the type and extent of repairs that can be performed; and
- Only the manufacturer or appropriately trained technician shall conduct repairs of reducing or admission valves on a SCBA.

Where air-purifying respirators are routinely used, filters and cartridges shall be replaced on a regular basis.

- When filters become difficult to breathe through they shall be replaced; and
- Chemical cartridges shall be replaced:
  - After being exposed to the contaminant hazard for 8 hours;
  - When the end-of-service-life indicator indicates replacement; or
  - Where it is evident by odor or irritant properties that a contaminant has broken through the filtering parts, the chemical cartridges shall be replaced immediately.

**CLEANING AND DISINFECTING PROCEDURES**

Respirators shall be cleaned and disinfected using the following procedures, or procedures recommended by the respirator manufacturer, provided that such procedures are of equivalent effectiveness. Equivalent effectiveness simply means that the procedures used must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

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 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.

3. Rinse components thoroughly in clean, warm (110° F maximum), preferably running water. Drain.

4. When the cleaner used does not contain a disinfecting agent, respirator components should be disinfected by using a respirator approved disinfectant wipe or by the procedure listed below:

5. Run 2 gallons of warm water in a bucket. The water temperature should not be above 110° F.

6. Add 1 oz. of household bleach per 2 gallons of water to make a hypochlorite solution.

7. Immerse the components in the hypochlorite solution for 2 minutes.

8. Rinse components thoroughly in clean, warm (110° F maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.

9. Components should be hand-dried with a clean lint-free cloth and then air-dried in a clean environment for 30 minutes. Keep the respirator out of sunlight and direct heat.

10. Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.

11. Test the respirator to ensure that all components work properly.

The respirators shall be cleaned and disinfected at the following intervals:

- Respirators issued for the exclusive use of an employee shall be cleaned and disinfected as often as necessary to be maintained in a sanitary condition;
- Respirators issued to more than one employee shall be cleaned and disinfected before being worn by different individuals;
- Respirators maintained for emergency use shall be cleaned and disinfected after each use; and
- Respirators used in fit-testing and training shall be cleaned and disinfected after each use.

**Storage**

Respirators shall be properly stored to protect against damage, contamination, excessive moisture, extreme temperatures, sunlight, and damaging chemicals.

Emergency use respirators shall be stored in compartments or in covers, both of which shall be clearly marked as containing the emergency respirators. They shall be stored in compartments that will protect them from weathering, contamination, and deterioration.

Non-emergency respirators shall be stored in an airtight storage medium.

If cartridges are stored for reuse, they shall be placed in an airtight bag with the date indicating when the cartridge was put into service and amount of time the cartridge has been exposed to a hazard (e.g., 1hr, 2hrs, 2.5hrs, etc.).

**Name:** _____ **UIN:** _____ **Campus Unit:** _____

**Medical Exam Date:** _____ **Fit-test Date:** _____

The employee listed above has been fit-tested on the following respirator(s). This fit-testing is good only for the brand, model and size respirator listed. Respirators shall not be worn when conditions prevent a seal of the respirator to the wearer. If there are any factors which change after the fit-testing such as growth of facial hair which might affect the seal of the respirator, the use of spectacles or protective devices which interfere with the seal, or obvious changes in facial features (scars, missing dentures or weight gain), the fit-testing will be void.

**Brand and model of respirator:** _____

**Type of respirator:**

☐ Dust mask ☐ Half-mask ☐ Full-face
☐ Powered Air Purifying Respirator ☐ Self-Contained Breathing Apparatus

**Size of respirator:**

☐ Small ☐ Small/Medium ☐ Medium ☐ Medium/Large ☐ Large ☐ Other _____

**Cartridges expected to be used**:

☐ HEPA ☐ Organic Vapor (OV) ☐ Acid Gas (AG) ☐ OV/AG ☐ OV/HEPA
☐ AG/HEPA ☐ OV/AG/HEPA ☐ N/A ☐ Other _____

**Fit-test protocol**:

☐ Irritant Smoke ☐ Saccharin ☐ Isoamyl acetate ☐ Bitrex ☐ Other _____
☐ Portacount Fit-factor: _____

**Fit-test:**

☐ Pass ☐ Fail

**List of units and sizes that failed the fit-test:**

_____

**Comments:**

_____

**Fit-tester Name** _____

**Fit-tester Signature** _____ **Date** _____

**Employee Signature** _____ **Date** _____

## APPENDIX B – DEFINITIONS

**Acid Gas (AG)** means an acidic substance in a volatile state.

**Air Purifying Respirator (APR)** means a respirators with a purifying or cleansing filter, cartridge or canister that removes specific air contaminants through negative pressure.

**Assigned protection factor (APF)** means the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program as specified by this section.

**Atmosphere-supplying respirator** means a respirator that supplies the respirator wearer with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

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

**Demand respirator** means an atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.

**Emergency situation** means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

**Employee exposure** means 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)** means a system that warns the respirator wearer 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** means a respirator intended to be used only for emergency exit.

**Filter or air purifying element** means a component used in respirators to remove solid or liquid aerosols from the inspired air.

**Filtering facepiece (dust mask)** means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

**Fit factor:** A quantitative estimate of the fit of a particular respirator to a specific individual. Typically estimates of the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

**Fit-test** means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also Qualitative fit-test QLFT and Quantitative fit-test QNFT.)

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

**Immediately Dangerous to Life and Health (IDLH):** An atmosphere that poses an immediate threat to life that would cause irreversible adverse health effects or would impair an individual's ability to escape from a dangerous atmosphere.

**Loose-fitting facepiece** means a respiratory inlet covering that is designed to form a partial seal with the face.

**Maximum use concentration (MUC)** means the maximum atmospheric concentration of a hazardous substance from which an employee can be expected to be protected when wearing a respirator, and is determined by the assigned protection factor of the respirator or class of respirators and the exposure limit of the hazardous substance. The MUC can be determined mathematically by multiplying the assigned protection factor specified for a respirator by the required OSHA permissible exposure limit, short-term exposure limit, or ceiling limit. When no OSHA exposure limit is available for a hazardous substance, an employer must determine an MUC on the basis of relevant available information and informed professional judgment.

**Negative pressure respirator (tight-fitting)** means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

**NIOSH:** The National Institute for Occupational Safety and Health. A Department of Health and Human Services organization that conducts research on occupational safety and health issues.

**Organic Vapor (OV):** Synthetic or naturally occurring carbon-containing compound in the vapor state, which can be inhaled and cause undue respiratory harm.

**Oxygen deficient atmosphere** means an atmosphere with an oxygen content below 19.5% by volume.

**Permissible Exposure Limit (PEL):** An exposure limit published and enforced by OSHA as a legal standard.

**Physician or other Licensed Health Care Professional (PLHCP):** An individual whose legally permitted scope of practice (license, registration or certification) allows him or her to independently provide, or be delegated the responsibility to provide medical evaluations and consultation.

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

**Positive pressure respirator** means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

**Pressure demand respirator** means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece 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 the test agent.

**Quantitative Fit-test (QNFT):** An assessment of the adequacy of the respirator fit by numerically measuring the amount of leakage into the respirator.
**Respiratory inlet covering** means 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 facepiece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.

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

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

**Supplied Air Respirator (SAR):** Also known as airline respirators. An atmosphere-supplying respirator for which the source of breathing air is designed to be remotely located and supplied to the user by a pressurized airline.

**Tight-fitting facepiece** means a respiratory inlet covering that forms a complete seal with the face.

**User seal check** means an action conducted by the respirator wearer to determine if the respirator is properly seated to the face.

## APPENDIX C – PROGRAM AUDIT CHECKLIST

| | Yes | No |
|---|---|---|
| 1. Has a written respiratory protection program that includes work-site specific procedures on the use of respirators been established? | ☐ | ☐ |
| 2. Has a program administrator, with appropriate training and experience, been designated and identified in the written program? | ☐ | ☐ |
| 3. Where respirator use is required, does the written program include discussion or explanation of how: | ☐ | ☐ |
| a. Respirators are selected for the particular hazard(s) to which workers are exposed, including evaluation of workplace exposures? | ☐ | ☐ |
| b. Medical evaluations are performed for employees required to use respirators? | ☐ | ☐ |
| c. Fit-testing is done for tight-fitting respirators? | ☐ | ☐ |
| d. Respirators are used in routine and emergency situations? | ☐ | ☐ |
| e. Respirators are cleaned, disinfected on a regular basis, stored, inspected, repaired, discarded and maintained? | ☐ | ☐ |
| f. Adequate air quality, quantity and flow are ensured for atmosphere-supplying respirators? | ☐ | ☐ |
| g. Employees are trained in the proper use of respirators, including putting on and taking off, any limitations, and maintenance? | ☐ | ☐ |
| h. Program effectiveness is regularly evaluated? | ☐ | ☐ |
| 4. Where respirator use is voluntary: | | |
| a. Has a determination been made that the use of respirators does not create a hazard? | ☐ | ☐ |
| b. Have users been provided with a copy of the contents of 29 CFR 1910.134 Appendix D. | ☐ | ☐ |
| c. Except for voluntary use of dust masks, are employees given sufficient medical evaluations and training on respirator use, care and maintenance to prevent the respirator from creating a health hazard? | ☐ | ☐ |

## DOCUMENT REVISIONS

| Revision Dates | |
|---|---|
| March 26, 2020 | Minor formatting |
| February 26, 2020 | Updated medical clearance requirements, removed Appendices A-C |
| April 8, 2019 | Clarified voluntary use section |
| December 7, 2017 | New revisions throughout |
| April 11, 2016 | Review, update Fit-Test Record form, and revise page numbers |
| September 11, 2014 | Update to Medical Questionnaire |
| May 2, 2014: | Review and update appendices |
| February 4, 2013: | Update mailing address for student medical questionnaires |
| August 26, 2013: | Correct and update page numbers for appendices |