ILLINOIS STATE UNIVERSITY RESPIRATORY PROTECTION PROGRAM

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1. PURPOSE AND SCOPE

Environmental Health and Safety (EHS) of Illinois State University establishes this Respiratory Protection Program to assist in the efforts to protect the health of University employees and to assure compliance with state and federal occupational health and safety standards. This program meets the requirements of the Occupational Safety and Health Administration's (OSHA) 29 CFR 1910.134 Respiratory Protection standard, as enforced by the Illinois Department of Labor (IDOL).

It is the policy of Illinois State University to provide its employees with a safe and healthful working environment. This is accomplished as far as feasible with accepted engineering and administrative controls. Where these controls are non-feasible or inadequate, respiratory protection is provided at no cost to the employees. In these instances, employees will use respirators to reduce employee exposure to harmful ambient contaminant concentrations. Respiratory protection shall also be used during an interim period while engineering or administrative controls are being implemented.

This program will apply to all CAMPUS PERSONNEL who are required to wear respirators during normal work operations and during some non-routine or emergency operations, such as a spill of a hazardous substance.

Any person who voluntarily wears a respirator, including an N-95, when a respirator has been deemed not necessary is subject to the medical evaluation section located in 4. c. of this program. Annual fit testing is not required for voluntary use- See Appendix G - Respirator Training Info for Voluntary Respiratory Use. Employees who voluntarily wear nuisance dust masks(single strap non rated masks) are not subject to these program provisions.

EHS will assist individual departments or units using respirators to develop operational guidelines to supplement this overall respiratory protection program. See Appendix A – Safe Operating Procedures Form.

2. RESPONSIBILITIES

a. Environmental Health and Safety

- Serve as Program Administrator.
- Conduct an annual review of the Respiratory Protection Program.
- Assist departments in identifying work areas, processes or tasks that require workers to wear respirators.
- Conduct hazard evaluations and/or air monitoring to assure that adequate protection of employees is provided.
- Assist employees in the selection of appropriate respiratory protection.
- Assure that all respirators used meet the requirements of standard are NIOSH-certified.
- Provide or arrange respiratory protection training for campus personnel.
- Ensure potential respirator wearers are medically evaluated.
- Provide supplemental information about worker/job to PLHCP.
- Conduct fit testing of respirator wearers.
- Maintain training and fit-test tracking databases.
- Inspect and maintain self-contained breathing apparatus in a ready state.
- Assure fit testing equipment is maintained and current on factory calibarations and service.

b. Department Directors

- Assist EHS in developing departmental guidelines to supplement this overall respiratory protection program.
- Promote and ensure compliance with the Respiratory Protection Program.
- Ensure appropriate respirators, training, and medical evaluations are available at no cost to the employee.
- Establish and maintain budget support of this program for the unit.

c. Supervisors/Designees

- Identify all work activities where there is airborne contaminant exposure or potential for exposure to hazardous chemicals.
- Ensure that the requirements of the program are observed for their employees with respect to hazard evaluation, selection of respirators, medical evaluations, fit testing, training, and recordkeeping.
- Coordinate with the Program Administrator on how to address respiratory hazards or other concerns regarding this program.

d. Employees

- Attend training, medical evaluation, and fit testing as required by this program.
- Wear and maintain assigned respirators and follow the program guidelines.
- Notify supervisor of a change in health status, weight gain or loss of 20 pounds or more, a change in dental situation, or substantial scarring in the facial area.
- Inform supervisor or Program Administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program.

e. Outside Contractors

- Are expected to comply with OSHA's Respiratory Protection Standard 1910.134.

3. DEFINITIONS

The following definitions are important terms used in this 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.

Assigned protection factor (APF): the workplace level of respiratory protection that a respirator or class of respirators is expected to provide employees when the employer implements a continuing, effective respiratory protection program as specified by 29 CFR 1910.134

Atmosphere-supplying respirator: a respirator that supplies the respirator user 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: 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 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: 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 : 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 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. (See also Qualitative fit test QLFT and Quantitative fit test QNFT.)

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 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.

Interior structural firefighting: the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures, which are involved in a fire situation beyond the incipient stage. (See 29 CFR 1910.155)

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

Maximum use concentration (MUC): 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.

Negative pressure respirator (tight fitting): 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: National Institute for Occupational Health and Safety. a Department of Health and Human Services organization that conducts research of occupational safety and health issues.

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 Section 5.3.

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 the 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.

Program Administrator: Individual responsible for administering the Respiratory Protection Program. Director of Environmental Health and Safety or his designee will serve in this capacity.

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 respirator fit by numerically measuring the amount of leakage into the respirator.

Respiratory inlet covering: that portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a facepiece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.

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. Types of tight fitting face pieces include half face and full face respirators, SCBA's and N/P95 respirators.

User seal check: an action conducted by the respirator user to determine if the respirator is properly seated to the face.

4. PROGRAM ELEMENTS

a. Hazard Evaluation

Supervisors or persons in charge are responsible for conducting a hazard evaluation for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency. EHS will assist in those evaluations upon request.

The hazard evaluation will include:

- Identification and development of a list of hazardous substances used in the workplace.

• Review of work processes to determine where potential exposures to these hazardous substances may occur. The review will be conducted by surveying the workplace, reviewing process records, and talking with employees and supervisors.
• If it is determined that potential exposure exists, EHS should be contacted to perform exposure monitoring to quantify the potential hazardous exposure.

Where contaminant concentrations cannot be estimated by objective data or sampling results, the atmosphere should be assumed to be IDLH.

b. Selection

EHS will assist departments in selecting the proper size and type of respirator(s) based on known hazard assessments of operations and work environments. EHS will maintain a database of known respirator users and fit test schedules. Only NIOSH - approved respirators will be issued to respiratory users. The respirator must be used in conformance with the known conditions of its approval.

Illinois State University will provide the following respirators for employee use in IDLH atmospheres:

• Full face piece pressure demand SCBA certified by NIOSH for a minimum service life of 30 minutes.
• Escape respirator and bottle approved by NIOSH for emergency escape.

Illinois State University will provide respirators appropriate for the atmosphere, chemical and physical state of the contaminants:

• For protection against gases and vapors:

  o Air-purifying respirators equipped with an End of Service Life Indicator (ESLI) certified by NIOSH for the contaminant, or
  o If there is no ESLI appropriate for conditions in the workplace, EHS will monitor use conditions and recommend a change schedule for canisters and cartridges that is based on objective information.

• For protection against particulates:

  o Air-purifying respirators equipped with a filter certified by NIOSH under 30 CFR part 11as a high efficiency particulate air (HEPA) filter, or
  o An air-purifying respirator equipped with a filter certified for particulates by NISOH 42 CFR part 84.
  • A filtering face piece to include an N95 or P95 rated respirator certified by NIOSH

c. Physician's Written Medical Evaluation

No campus personnel shall be allowed to use or be assigned a tight fitting respirator until they are medically evaluated and determined eligible to wear a respirator. Medical evaluations are conducted by Student Health Services, Illinois State University's designated licensed health care professional (PLHCP), or other designated medical facilities. The evaluations require individuals to provide relevant information to the PLHCP regarding his/her job functions and tasks through a series of questionnaires listed below.

• New Asbestos Team member, Initial Medical Questionnaire – Asbestos. See Appendix B.
• Current Asbestos Team members, Periodic Medical Questionnaire – Asbestos. See Appendix C.
• Basic Use Respirator Wearers, Medical Evaluation for Respirator Users Questionnaire. See Appendix D.

The PLHCP at Illinois State University's Student Health Services or other designated medical facility shall provide written documentation as to the ability of an individual to wear a respirator to EHS. EHS or supervisory staff will provide supplemental information to the PLHCP or other medical facility, including type of respirator used, level of work effort, extent of usage, special work conditions, description of employees' duties, expected exposures, and PPE. See Appendix E, Medical Determination with Supplemental Information.

The medical evaluation will be based upon the type of potential work exposure:

• In compliance with OSHA regulations and at the physician's discretion, Asbestos Team members will complete a chest x-ray, pulmonary function test, medical questionnaire (initial and periodic), and medical evaluation.
• All other employees will complete the medical questionnaire and the medical evaluation.

The medical evaluation will occur according to the following schedule:

• Before the initial fit testing and before the respirator is used for the first time.
• Every 12 months for licensed asbestos workers who conduct asbestos abatement.
• Every 3 years for non asbestos workers
• At the frequency required by OSHA substance-specific standards.
• If an employee reports medical signs or symptoms related to the ability to use respirator.
• Student Health Services, PLHCP, Program Administrator, or Supervisor recommends re-evaluation.
• Information from the respirator program, including observations made during fit testing and program evaluation, indicates a need.
• Change occurs in workplace conditions that may substantially increase the physiological burden on an employee.

d. Fit-testing

Fit testing is required for all employees using negative or positive pressure, tight-fitting respirators. Fit testing will not be conducted until the respirator wearer has received a PLHCP's written approval to wear a respirator. Fit testing will not be conducted on individuals who are not clean shaven where sealing surfaces of the respirator come in contact with the face. Each individual will be fit tested with the same make, model, style, and size of respirator that will be used. Fit testing is provided by EHS. Tight-fitting respirators users must pass either a qualitative fit test (QLFT) or a quantitative fit test (QNFT).

A fit test is not required for voluntary users of filtering face pieces or for escape-only respirators.

• See Appendix H – Fit Testing Procedures – QNFT and QLFT.
• See Appendix I – Fit Testing Record – QNFT.
• See Appendix J – Fit Testing Record – QLFT.
• See Appendix M – Fit Testing N95

After the initial fit test, either the QLFT or the QNFT will occur annually.

An additional fit test shall occur whenever the employee, EHS, the PLHCP, or the supervisor reports visual observations of changes in the employee's physical condition that could affect respirator fit. These conditions include, but are not limited to facial scarring, dental changes, cosmetic surgery, or obvious changes in body weight.

Employees have the responsibility to immediately notify the supervisor, EHS, or the PLHCP about concerns related to the respirator use. Upon notification the employee will undergo a fit test for the respirator type in question. Changes will be made as necessary to ensure a proper fit.

QLFT may be used to fit test negative pressure air-purifying respirators, if the units will only be worn in atmospheres that are less than ten times the Permissible Exposure Limit (PEL). That is, the respirator must achieve a fit factor of 100 or less.

For atmospheric concentrations greater than ten times the PEL, QNFT shall be used. When quantitative fit testing is used, all full-face piece respirators shall meet or exceed a fit factor of 500. Half-mask respirators shall meet or exceed a fit factor of 100.

For all positive pressure, atmosphere-supplying respirators, either qualitative or quantitative fit testing may be used. While atmosphere-supplying respirators are fit-tested in the negative pressure mode, these respirators are most often used as positive pressure respirators in the workplace. Positive pressure atmosphere-supplying respirators that pass the QLFT fit test may be used at the higher protection factors assigned these respirators.

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. The positive and negative pressure checks listed below, or the respirator manufacturers recommended user seal check method shall be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

User Seal Check Procedures

Appendix B-1 to § 1910.134: User Seal Check Procedures (Mandatory)

I. The individual who uses a tight-fitting respirator is to perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed in this appendix, 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.

II. Facepiece Positive and/or Negative Pressure Checks

Positive pressure check Close off the exhalation valve 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 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 face piece 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 face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

III. 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 check procedures provided that the employer demonstrates that the manufacturer's procedures are equally effective.

e. Use of Respirators

Employees with facial hair that interferes with the sealing surface of the respirator shall not be issued a tight-fitting respirator because there is no assurance that the respirator will fit under conditions of use. Employees who have been issued a respirator shall remain clean-shaven in the seal area when required to wear a tight-fitting respirator.

Employees who wear glasses that interfere with the sealing surface of a full-face respirator shall not be issued a tight-fitting respirator unless the employee can safely work without the aid of eyeglasses. Exception: If provisions have been made for the acquisition of temple-less glasses which fit into the respirator face piece then a tight-fitting, full-face respirator may be used.

Negative and/or positive fit-checks shall be demonstrated in training and shall be performed by the respirator wearer each time the individual dons a tight-fitting respirator.

Regular surveillance of the effectiveness of the respirator program will occur through periodic communications or on-site observations of workplaces requiring the use of respirator usage. Also, notations of any problems regarding the effectiveness of the respirators shall be communicated to EHS by employees or supervisors.

No work area policies shall prohibit or impede employees who wear respirators from leaving the areas should there develop either a significant problem with the respirator or a need to replace the filters or cartridges. Anyone who must leave the area after a significant respirator failure shall not re-enter a workplace without first assuring the proper functioning of the respirator.

Cartridge change schedules shall be based upon objective data such as; respirator manufacturers, industry organizations, and chemical characteristics. Where change schedules are not listed EHS will assist users in determining change schedule.

f. Maintenance and Care

i. Inspection

All negative and positive pressure respirators used in routine situations shall be inspected before each use and during cleaning. Each department will provide and maintain respirators for use in emergency situations. They should be inspected at least monthly and in accordance with the manufacturer's recommendations, and checked for proper function before and after each use. A written certification of this inspection which includes date, name of inspector and respirator identification (e.g. serial number) shall be maintained until the next inspection is recorded. EHS maintains a limited stock of emergency respirators and cartridges which may be obtained during an emergency by contacting The Program Manager.

- See Appendix K – Respirator Inspection Checklist

Emergency escape-only respirators shall be inspected before being carried into the workplace for use. Inspection shall include items specific to the respirator and general items as identified in Appendix 15 – Respirator Inspection Checklist.

ii. Cleaning and Disinfecting

Tight Fitting re-usable Respirators issued to an individual shall be cleaned and disinfected after each use. Manufacturer's recommended procedures shall be followed when cleaning a respirator. Generally, respirators shall be disassembled and cleaned in warm, soapy water. If the cleaner does not contain a sanitizing agent, the respirator components should be immersed for two minutes in a bleach solution one-liter water to one-milliliter household bleach). Respirators shall then be thoroughly rinsed in warm water and dried.
Facilities and supplies for cleaning will be made available through the respective department.

These procedures are provided for employer use when cleaning respirators. They are general in nature, and the employer as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators used by their employees, provided such procedures are as effective as those listed in this Appendix. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth in this Appendix i.e., 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.

Procedures for Cleaning Respirators

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 (43 deg. C [110 deg. 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 (43 deg. C [110 deg. F] maximum), 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 (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43 deg. C (110 deg. F); or,
b. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43 deg. C (110 deg. 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.

4. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. 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, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.

5. Components should be hand-dried with a clean lint-free cloth or air-dried.

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

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

iii. Repairing

Respirators are to be properly maintained at all times in order to ensure that they function properly and adequately protect the employee. Conduct thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use.

Only manufacturer's approved replacement parts for the specific respirator shall be used for repairs. Consult with The Program Manager prior to underrating any repair operations.

SCBA’s shall only be repaired by manufacturer or appropriately trained technician.

iv. Change Schedules

When air-purifying respirators are routinely used, filters and cartridges should be changed to reflect the use schedule. ESLI, visible particulates on a HEPA filter, and /or difficulty breathing can be used as indicators to judge when cartridges are ready for replacement.
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.

Change Schedule for Respirator Cartridges and Canisters

Data and information relied upon to establish the schedule must be included in the respirator program (include in the SOP). The requirements for several of OSHA's chemical specific standards already address this issue and are listed below:

1. Acrylonitrile 1910.1045(h)(2)(ii) end-of-service life or end of shift (whichever occurs first)
2. Benzene 1910.1028(g)(2)(ii) end-of-service life or beginning of shift (whichever occurs first)
3. Butadiene 1910.1051 (h)(2)(ii) every 1, 2 or 4 hours dependent on concentration according to Table 1 (1910.1051 (h)(3)(i) and at beginning of each shift
4. Formaldehyde 1910.1048 (g)(2)(ii) -for cartridges every three hours or end of shift (whichever is sooner); for canisters, every 2 or 4 hours according to the schedule in (g)(3)(iv)
5. Vinyl chloride 1910.1017(g)(3)(ii) end-of-service life or end of shift which they are first used (whichever occurs first)

6. Methylene chloride - 1910.1052 (g)(2)(ii) canisters may only be used for emergency escape and must be replaced after use.

Change schedules for all other gases and vapors must be established and implemented. A brief description of some currently available approaches or methods for respirator cartridge change schedules is presented below. This is not intended to be an exhaustive list, but a summary of some reasonable methods that a supervisor/instructor may take in creating a change schedule. No matter which method is used, the supervisor/instructor must maintain any data used in making their decision as part of their program (include in the SOP). Additional information and assistance on the following methods may be found on the internet at:

https://www.osha.gov/SLTC/etools/respiratory/change_schedule.html

Manufacturers Objective Data: Respirator cartridge model-specific objective data that is available from the manufacturer or through a distributor may be used to establish change schedules. Objective data may be presented in tabular or graphical format or simply provided verbally over a manufacturer's telephone help line. Some manufacturers have developed elaborate computer programs available on the Internet that provide the necessary objective data to the user.

Experimental Methods: Experimental breakthrough-time data from a laboratory based on worst case testing of simulated workplace conditions. This method can provide fairly accurate service life data compared to other available methods.

Mathematical Predictive Modeling: One tool that has demonstrated value is the use of mathematical modeling based on predictive equations. These models are typically complex and require considerable expertise to apply. They also require proprietary information from the respirator manufacturer. OSHA fully supports the further development and validation of these models. The agency believes that respirator manufacturers may be in the best position to apply them to their products.

Analogous Chemical Structures: Employer would rely on service life values from other chemicals having analogous chemical structure to the contaminant under evaluation for breakthrough. Or in some cases a chemical with known migration may reasonably be anticipated to act as a surrogate for a similar chemical that would have less rapid migration (e.g., an employer could assume that a heavier, less volatile compound than another in the same chemical series that had been tested for breakthrough would breakthrough no faster than the latter compound, such as benzene versus toluene.) The use of this method requires a substantial amount of judgment and assumption of similar chemical properties. The use of analogous chemical structures should be infallible as long as objective data or information for lower molecular weight compounds is used to predict the breakthrough times for higher molecular weight analogues containing only additional methyl or phenyl groups. Data from higher molecular weight groups should not be used to predict the behavior of analogous substances with lower molecular weight. This approach relies heavily on experimental data and expert analysis. This method may be less accurate than others and should be used only when better information is not available.

Workplace Simulations: Invalidated methods exist or are under development where the respirator cartridge is tested in workplace in "real time" and under actual conditions of use. Simple designs have been informally described to the agency. Workplace air during representative conditions is drawn over the cartridge at a rate approximating normal breathing at a higher work rate. An air sampling/analytic device would be placed on the other side of the filter to measure the time of breakthrough. Employers could incorporate this type of testing into their air monitoring program using sampling strategies established in their workplace. In theory, these approaches should be an accurate method for determining change schedules and could accommodate fluctuating conditions of humidity, concentration, etc., to allow less conservative schedules that utilize a larger fraction of the true service life.

Rules of Thumb: Generalized rules or guidance can be generated from experimental work. Presented below is a rule of thumb for estimating organic vapor service life found in Chapter 36 of the American Industrial Hygiene Association publication "The Occupational Environment Evaluation and Control".

*If a chemical's boiling point is >70° C and the concentration is less than 200 ppm you can expect a service life of 8 hours at a normal work rate.

Note: This first rule of thumb needs further review.

* Service life is inversely proportional to work rate.
* Reducing concentration by a factor of ten will increase service life by a factor of five.
* Humidity above 85% will reduce service life by 50%.

These generalizations should only be used in concert with one of the other methods of predicting service life for specific contaminants

v. Storage

Respirators shall be properly stored to protect against physical 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.

Care must be taken to ensure that respirators are stored in such a manner as to protect against dust, harmful chemicals, sunlight, extreme temperatures, and moisture.
Non-emergency respirators shall be stored in plastic bags or other means (e.g., rigid plastic containers with tight fitting lids).

Respirators should be stored so that the face piece and the elastomeric parts will rest in a normal position. Respirators shall be stored with the shield side down. Do not hang the respirator by its straps. This is to ensure that proper function will not be impaired by the distortion of the respirator or its straps. If cartridges are stored for reuse, they shall be stored in a zip-lock bag that is dated as to the first day of use of the cartridge.

EHS emergency-use SCBA respirators are to be stored in their hard shell storage case in room 16 at Nelson Smith Buildingwhere they are easily accessible. Instructions for proper use shall be included in the storage case.

vi. Breathing Air Quality and Use

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/m3 of air or less; carbon monoxide of 10 ppm or less; carbon dioxide of 1,000 ppm or less; and the lack of a noticeable odor.

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.

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.

5. EDUCATION AND TRAINING

EHS or an EHS-designated trainer will furnish required training to employees who wear respirators. This training must be provided before an employee’s use of a respirator in the workplace.

Training as identified in Appendix 6 – Respirator Training Information, will be administered annually, and more often if EHS (or EHS-designee) or an employee's supervisor determines retraining appears necessary. Retraining may be necessary to ensure the safe use of the unit or in response to changes in the workplace or the type of respirator.

The training will be documented with an attendance form and recorded in the EHS Training Database. See Appendix 7 – Respirator Training Attendance. An integral part of the training employees will be required to demonstrate knowledge of the following:

- Reasons for the need of the respirator and how improper fit, usage, or maintenance can compromise the protective effect of the unit.
- Limitations and capabilities of the respirator.
- How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
- How to properly inspect, put on and remove, use, and check the seals of the respirator.
- Procedures for maintenance and storage of the respirator.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- Responsibilities of ISU and the employee regarding respiratory protection.

Training records will be kept by the employing department and EHS. Records of departmental training shall be forwarded to EHS.

6. RECORDKEEPING

An electronic record of Medical evaluations and fit test evaluations shall be maintained in the EHS Safety Information Database according to 29 CFR 1910.1020 (Access to Employee Exposure and Medical Records Standard) for each employee required to wear a respirator as a condition of his or her employment. This will include: Name and job title of the respirator wearer; ISU identification number. Hard copies of any information provided to the physician and the copy of the physician's written opinion on initial, periodic and special medical examinations shall be stored in the respective departmental folder maintained by EHS.

Medical records will be maintained for 30 years beyond the last date of employment of the employee. Training records shall be maintained for five years beyond the last date of employment. Records for substance-specific OSHA Standards shall be maintained according to the specific OSHA Standard.

Reports of emergency incidents requiring respiratory equipment shall document the circumstances leading to the emergency and measures that can be taken to prevent future occurrences. These reports shall be maintained for a minimum of 30 years. Surveillance reports documenting work area air quality or exposures shall be maintained for a minimum of 30 years.

A written copy of the current respirator program shall be retained by Environmental Health and Safety.

7. PROGRAM ELECTIVES

The Illinois State University Respiratory Protection Program shall be reviewed annually by EHS. See Appendix L – Program Evaluation Checklist.

EHS will assist in the Departmental review of standard operating procedures regarding respiratory protection shall be reviewed and updated by the departments annually and more frequently as hazards, tasks, procedures, or equipment change.

8. EFFECTIVE DATE

This program is effective 10/30/95, updated last on 6-15-16

9. APPENDICES (A-M)

Appendix A: Safe Operating Procedure

Safe Operating Procedure Form **Page 1 of 2**
SOP # _____
Organization/Department_____
Date _____ Revision Date _____

(NOTE: add additional pages as necessary)

Description of work area:

Potential hazardous air contaminants. List physical form (e.g. gas, vapor, mist, fume, dust or Combination(s) and reasonable estimate of exposure to each:

Conditions under which respirators are required:

Temperature: Humidity: Work Rate (light, moderate, heavy):

Expected Time Use: Type of respirator to be used:

End-of-Service-Life Indicator (certified by manufacturer or NIOSH) or Change Schedule (describe data relied upon and basis for change schedule):

Checklist of conditions required before respirator use:

- ❑ Evaluation of work conditions by supervisor and proper choice of respirator
- ❑ Annual training
- ❑ Medical evaluation of user
- ❑ Annual respirator fit testing for user
- ❑ Oxygen in air not deficient, > 19.5%
- ❑ Air not immediately dangerous to life or health
- ❑ Beards, sideburns, temple pieces on glasses not allowed

General Procedures:

1. Check respirator for any damage or deterioration; if damaged, repair if possible, otherwise do not wear and report to supervisor.

2. Put on respirator using instructions given during training and fit testing; tighten straps.

3. Respirator must have a complete seal; self test each time respirator is put on: 1) cover exhalation valve with hand and exhale, if air leaks around the seal adjust straps, repeat until no air leakage is detected; 2) cover inhalation mechanism(s) and inhale, if mask does not contract, adjust straps, repeat until mask contracts slightly.

4. During respirator use, leave the contaminated area at once if 1) end-of-service-life indicator or change schedule is reached for filtering mechanism; 2) you feel ill, disoriented, or claustrophobic; 3) you detect, irritation, odor or taste; or 4) breathing becomes difficult. If situation cannot be fixed by changing filters, masks, or by repairing respirator, report to supervisor.

5. After respirator use or at end of work day, throw disposable respirators away and filtering media (e.g. cartridges) in respirators used by more than one person. For reusable respirators 1) take apart where parts can be removed, 2) clean and disinfect all parts (except filters and cartridges) by scrubbing with soap and water and wiping with rubbing alcohol (if other disinfectant not used), 3) rinse in fresh warm water and air dry, 4) check for tightness of connections and the condition of the face piece, headbands, valves, and cartridges, 5) check rubber or elastomer parts for pliability and signs of deterioration, stretch and manipulate parts with a massaging action to keep them pliable and flexible, and 6) after dry, store in plastic sealed bag in a safe area such as a locker or sturdy box, protected from physical stress, dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals.

Job Specific Procedures (add additional pages if necessary):

Supervisor signature _____ Date_____

Appendix B: Initial Medical Questionnaire – Asbestos

Illinois State University Asbestos Initial Medical Questionnaire Part I (OSHA 1910.1001)

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient for you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers. Please take this questionnaire to your physician for review.

Name: _____ **UID:**_____-_____-_____
Today's date:_____ **DOB:**_____ **Gender:** ☐ **Male** ☐ **Female**
Race:_____ **Highest grade completed in school**_____
Place of Birth:_____ **Marital Status:**_____
Job Title:_____ **Department:**_____
Campus address:_____
Work phone #:_____ **Cell Phone #:**_____
E-mail address:_____

Occupational History

1A. Have you ever worked full time (30 hours per week or more) for 6 months or more? ☐ yes ☐ no

If yes to 1A

B. Have you ever worked for a year or more in any dusty job? ☐ does not apply ☐ yes ☐ no
Specify job/industry:_____ Total years worked:_____
Was dust exposure: ☐ Mild ☐ Moderate ☐ Severe

C. Have you ever been exposed to gas or chemical fumes in your work? ☐ yes ☐ no
Specify job/industry:_____ Total years worked:_____
Was exposure ☐ Mild ☐ Moderate ☐ Severe

D. What has been your usual occupation or job, the one you have worked at the longest?
Job occupation:_____
Number of years employed in this occupation:_____
Position/job title:_____
Business, field or industry:_____

Have you ever worked?

In a mine?	☐ yes ☐ no	How many years?_____
In a quarry?	☐ yes ☐ no	How many years?_____
In a foundry?	☐ yes ☐ no	How many years?_____
In a pottery?	☐ yes ☐ no	How many years?_____
In a cotton, flax or hemp mill?	☐ yes ☐ no	How many years?_____
With asbestos?	☐ yes ☐ no	How many years?_____

2. Medical history

A. Do you consider yourself to be in good health? ☐ yes ☐ no
If "**no**" state reason:_____
B. Do you currently take any medications? ☐ yes ☐ no
If "**yes**" please list:_____
C. Do you have any vision defect? ☐ yes ☐ no
If "**yes**" state nature of defect_____
D. Do you have any hearing defect? ☐ yes ☐ no
If "**yes**" state nature of defect_____
E. Are you suffering from or have you ever suffered from:

Epilepsy (or fits, seizures, convulsions)?	☐ yes ☐ no
Rheumatic fever?	☐ yes ☐ no
Kidney disease?	☐ yes ☐ no
Bladder disease?	☐ yes ☐ no
Diabetes?	☐ yes ☐ no
Jaundice?	☐ yes ☐ no

3. Chest colds and chest illnesses

If you get a cold, does it usually go to your chest? ☐ Don't get colds ☐ yes ☐ no

(Usually means more than ½ the time)

4A. During the past 3 years, have you had any chest illnesses that have kept you off work, indoors at home, or in bed? ☐ yes ☐ no

If **yes** to 4A

B. Did you produce phlegm with any of these chest illnesses? ☐ Does not apply ☐ yes ☐ no

In the last 3 years, how many such illnesses with (increased) phlegm did you have which lasted a week or more? ☐ No such illnesses Number of illnesses_____

5. Did you have any lung trouble before the age of 16? ☐ yes ☐ no

6. Have you ever had any of the following?

A. Attacks of bronchitis ☐ yes ☐ no

If **yes**: Was it confirmed by a doctor? ☐ yes ☐ no

At what age was your first attack? Age in years_____

B. Pneumonia (include bronchopneumonia) ☐ yes ☐ no

If **yes**: Was it confirmed by a doctor? ☐ yes ☐ no

At what age did you first have it? Age in years_____

C. Hay Fever? ☐ yes ☐ no

If yes: Was it confirmed by a doctor? ☐ yes ☐ no

At what age did it start? Age in years_____

7. Have you ever had chronic bronchitis? ☐ yes ☐ no

If **yes**: Do you still have it? ☐ yes ☐ no

Was it confirmed by a doctor? ☐ yes ☐ no

At what age did it start? Age in years_____

8. Have you ever had emphysema? ☐ yes ☐ no

If **yes**: Do you still have it? ☐ yes ☐ no

Was it confirmed by a doctor? ☐ yes ☐ no

At what age did it start? Age in years_____

9. Have you ever had asthma? ☐ yes ☐ no

If **yes**: Do you still have it? ☐ yes ☐ no

Was it confirmed by a doctor? ☐ yes ☐ no

At what age did it start? Age in years_____

If you no longer have it, at what age did it stop? Age stopped_____

10. Have you ever had:

A. Any other chest illness? ☐ yes ☐ no

If **yes**, please specify_____

B. Any chest operations? ☐ yes ☐ no

If **yes**, please specify_____

C. Any chest injuries? ☐ yes ☐ no

If **yes**, please specify_____

11. Has a doctor ever told you that you had heart trouble? ☐ yes ☐ no

If **yes**: Have you ever had treatment for heart trouble in the past 10 years? ☐ yes ☐ no

12. Has a doctor ever told you that you had high blood pressure? ☐ yes ☐ no

If **yes**: Have you had any treatment for high blood pressure (hypertension) in the past 10 Years? ☐ yes ☐ no

13. When did you last have your chest X-rayed? Year:_____

14. Where did you last have your chest X-rayed?_____

What was the outcome?_____

- Family History

15. Were either of your natural parents ever told by a doctor that they had a chronic lung condition such as:

	Father			**Mother**		
	Yes	No	Don't know	Yes	No	Don't know
Chronic bronchitis	☐	☐	☐	☐	☐	☐
Emphysema	☐	☐	☐	☐	☐	☐
Asthma	☐	☐	☐	☐	☐	☐

Lung cancer	☐	☐	☐		☐	☐	☐	
Other chest condition	☐	☐	☐		☐	☐	☐	
Is parent currently alive?	☐	☐	☐		☐	☐	☐	

Please specify _____ Age, if living _____ Age, if living

_____ Age at death _____ Age at death

_____ Don't know _____ Don't know

Please specify cause of death:_____ _____

16A. Do you usually have a cough?) ☐ yes ☐ no

(Count a cough with first smoke or on first going out of doors. Exclude clearing of throat.)

If **No**, skip to question 16C

B. Do you usually cough as much as 4 to 6 times a day 4 or more days out of the week? ☐ yes ☐ no

C. Do you usually cough at all on getting up or first thing in the morning? ☐ yes ☐ no

D. Do you usually cough at all during the rest of the day or at night? ☐ yes ☐ no

If yes to any above(16A,B,C,D), answer the following. If no to all, check does not apply and go to question 21.

E. Do you usually cough like this on most days for 3 consecutive months or more during the year?

☐ does not apply ☐ yes ☐ no

F. For how many years have you had the cough? Number of years_____ ☐ does not apply

17A. Do you usually bring up phlegm from your chest? ☐ yes ☐ no

(Count phlegm with the first smoke or on first going out of doors. Exclude phlegm from the nose. Count swallowed phlegm)

If **no,** skip to question 17C)

B. Do you usually bring up phlegm like this as much as twice a day 4 or more days out of the week?

☐ yes ☐ no

C. Do you usually bring up phlegm at all on getting up or first thing in the morning? ☐ yes ☐ no

D. Do you usually bring up phlegm at all during the rest of the day or at night? ☐ yes ☐ no

If yes to any above (17A,B,C,D), answer the following. If no to all, check does not apply and go to question 18.

E. Do you bring up phlegm like this on most days for 3 consecutive months or more during the year?

☐ does not apply ☐ yes ☐ no

F. For how many years have you had trouble with phlegm**?** Number of years_____☐ does not apply

Episodes of cough and phlegm

18. Have you had periods or episodes of (increased*) cough and phlegm lasting for 3 weeks or more each year? (For persons who usually have cough and/or phlegm) ☐ yes ☐ no

If **yes:**

For how long have you had at least 1 such episode per year? Number of years_____ ☐does not apply

Wheezing

19. Does your chest ever sound wheezy or whistling?

1. When you have a cold? ☐ yes ☐ no
2. Occasionally apart from colds? ☐ yes ☐ no
3. Most days or nights? ☐ yes ☐ no

If **yes** to 1,2or 3: For how many years has this been present? Number of years_____☐ does not apply

20. Have you ever had an attack of wheezing that has made you feel short of breath? ☐ yes ☐ no

If **yes:**

How old were you when you had your first such attack? Age in years_____☐ does not apply

Have you ever had 2 or more such episodes? ☐ does not apply ☐ yes ☐ no

Have you ever required medicine or treatment for the(se) attacks? ☐ does not apply ☐ yes ☐ no

Breathlessness

21. If disabled from walking by any condition other than heart or lung disease, please describe and proceed to question 23A. Nature of condition(s):_____

22A. Are you troubled by shortness of breath when hurrying on the level or walking up a slight hill? ☐ yes ☐ no

If **yes:**

B. Do you have to walk slower than people of your age on the level because of breathlessness?

☐ does not apply ☐ yes ☐no

C. Do you ever have to stop for breath when walking at your own pace on the level?

☐ does not apply ☐ yes ☐no

D. Do you ever have to stop for breath after walking about 100 yards (or after a few minutes) on the level?

☐ does not apply ☐ yes ☐no

E. Are you too breathless to leave the house or breathless on dressing or climbing one flight of stairs?

☐ does not apply ☐ yes ☐no

- Tobacco smoking

23A. Have you ever smoked cigarettes? ☐ yes ☐ no

(**No** means less than 20 packs of cigarettes or 12 oz. of tobacco in a lifetime or less than 1 cigarette a day for 1 year)

If **yes:**

B. Do you now smoke cigarettes (as of one month ago) ☐ does not apply ☐ yes ☐ no

C. How old where you when you first started regular cigarette smoking? Age in years____ ☐ does not apply

D. If you have stopped smoking cigarettes completely, how old where you when you stopped?

Age stopped _____ ☐ Check if still smoking ☐ does not apply

E. How many cigarettes do you smoke per day now? Cigarettes per day _____ ☐ does not apply

F. On the average of the entire time you smoked, how many cigarettes did you smoke per day?

Cigarettes per day_____ ☐ does not apply

G. Do or did you inhale the cigarette smoke? ☐ Does not apply ☐Not at all ☐ Slightly ☐ Moderately ☐ Deeply

24A. Have you ever smoked a pipe regularly? ☐ yes ☐ no

(**Yes** means more than 12 oz. Of tobacco in a lifetime)

If **yes to 24A.**

- For persons who have ever smoke a pipe

B. How old were you when you started to smoke a pipe regularly? Age_____

If you have stopped smoking a pipe completely, how old were you when you stopped?

Age stopped _____ ☐ Check if still smoking ☐ does not apply

C. On the average over the entire time you smoked a pipe, how much pipe tobacco did you smoke per week?

_____oz per week (a standard pouch of tobacco contains 1-1/2oz.) ☐ does not apply

D. How much pipe tobacco are smoking now? _____ oz per week ☐ Not currently smoking a pipe

E. Do you or did you inhale the pipe smoke? ☐Never smoked ☐ Not at all ☐ Slightly ☐ Moderately ☐ Deeply

25A. Have you ever smoked cigars regularly? (Yes means more than 1 cigar a week for a year) ☐ yes ☐ no

If **yes to 25A.**

- For persons who have ever smoked cigars

B. How old were you when you started smoking cigars regularly? Age_____

If you have stopped smoking cigars completely, how old were you when you stopped?

Age stopped _____ ☐ Check if still smoking ☐ does not apply

C. On the average over the entire time you smoked cigars, how many cigars did you smoke per week?

Cigars per week_____ ☐ does not apply

D. How many cigars are you smoking per week now? Cigars per week _____ ☐ Not smoking cigars currently

E. Do or did you inhale cigar smoke? ☐Never smoked ☐ Not at all ☐ Slightly ☐ Moderately ☐ Deeply

Date:_____ Signature:_____

PHYSICIAN: PLEASE FILE COPY WITH PATIENT RECORDS
DO NOT RETURN THIS FORM TO EHS

Appendix C: Periodic Medical Questionnaire – Asbestos

Illinois State University Asbestos Periodic Medical Questionnaire Part II (OSHA 1910.1001)

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient for you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers. Please take this questionnaire to your physician for review.

Name: _____ **UID:**_____-_____-_____
Today's date:_____ **DOB:**_____ **Gender:** ☐ **Male** ☐ **Female**
Race:_____ **Highest grade completed in school**_____
Place of Birth:_____ **Marital Status:**_____
Job Title:_____ **Department:**_____
Campus address:_____
Work phone #:_____ **Cell Phone #:**_____
E-mail address:_____

-
- Occupational History

1A. In the past year, did you work full time (30 hours per week or more) for 6 months or more? ☐ yes ☐ no

If **yes** to 1A:
B. In the past year, did you work in a dusty job? ☐ does not apply ☐ yes ☐ no
C. Was dust exposure: ☐ mild ☐ moderate ☐ severe
D. In the past year, were you exposed to gas or chemical fumes in your work? ☐ yes ☐ no
E. Was exposure: ☐ mild ☐ moderate ☐ severe
F. In the past year, what was your: Job/occupation:_____
Position/job title:_____

- Recent Medical History

2A. Do you consider yourself to be in good health? ☐ yes ☐ no
If **no**, state reason_____
B. Do you currently take any medications? ☐ yes ☐ no
If **yes**, please list:_____
C. In the past year, have you developed?
Epilepsy (or fits, seizures, convulsions)? ☐ yes ☐ no
Rheumatic fever? ☐ yes ☐ no
Kidney disease? ☐ yes ☐ no
Bladder disease? ☐ yes ☐ no
Diabetes? ☐ yes ☐ no
Jaundice? ☐ yes ☐ no

- Chest colds and chest illnesses

3. If you get a cold, does it usually go to your chest? ☐ Don't get colds ☐ yes ☐ no
(Usually means more than ½ the time)
4A. During the past 3 years, have you had any chest illnesses that have kept you off work, indoors at home, or in bed? ☐ yes ☐ no
If **yes** to 4A
B. Did you produce phlegm with any of these chest illnesses? ☐ Does not apply ☐ yes ☐ no
In the last 3 years, how many such illnesses with (increased) phlegm did you have which lasted a week or more? ☐ No such illnesses Number of illnesses_____

- Respiratory System

In the past year have you had:

Asthma ☐ yes ☐ no
If **yes**, explain_____

Bronchitis ☐ yes ☐ no
If **yes**, explain_____

Hay Fever ☐ yes ☐ no
If **yes**, explain_____

Other allergies ☐ yes ☐ no
If **yes**, explain_____

Pneumonia ☐ yes ☐ no
If **yes**, explain_____

Tuberculosis ☐ yes ☐ no
If **yes**, explain_____

Chest Surgery ☐ yes ☐ no
If **yes**, explain_____

Other Lung Problems ☐ yes ☐ no
If **yes**, explain_____

Heart Disease ☐ yes ☐ no
If **yes**, explain_____

Do you have:

Frequent colds ☐ yes ☐ no
If **yes**, explain_____

Chronic cough ☐ yes ☐ no
If **yes**, explain_____

Shortness of breath when walking
Or climbing on flight of stairs ☐ yes ☐ no
If **yes**, explain_____

Do you:

Wheeze ☐ yes ☐ no
If **yes**, explain_____

Cough up phlegm ☐ yes ☐ no
If **yes**, explain_____

Smoke cigarettes: Packs per day_____ How many years_____ N/A☐

Date:_____ Signature:_____

PHYSICIAN: RETAIN A COPY FOR EMPLOYEE HEALTH RECORDS
DO NOT RETURN THIS FORM TO EHS

Appendix D: Medical Evaluation for Respirator Users Questionnaire – General

Illinois State University Respirator Medical Evaluation Questionnaire (OSHA 1910.134)

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient for you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers. Please take this questionnaire to your physician for review.

PATIENT'S NAME:_____ EMPLOYEE ID:_____ DEPT:_____ DATE:_____

PHONE #:_____ BEST TIME TO REACH YOU AT GIVEN NUMBER:_____ HEIGHT:_____WEIGHT:_____

AGE (TO NEAREST YEAR):_____ SEX (CIRCLE ONE): **MALE** / **FEMALE** JOB TITLE:_____

HAS YOUR EMPLOYER TOLD YOU HOW TO CONTACT THE HEALTH CARE PROFESSIONAL WHO WILL REVIEW THIS QUESTIONNAIRE (CIRCLE ONE): **YES** / **NO**

CHECK THE TYPE OF RESPIRATOR YOU WILL USE (YOU CAN CHECK MORE THAN ONE):

N, R, OR P DISPOSABLE RESPIRATOR (FILTER-MASK, NON-CARTRIDGE TYPE ONLY):___

OTHER TYPE (EXAMPLE: HALF- OR FULL-FACEPIECE TYPE, POWERED–AIR PURIFYING, SUPPLIED-AIR, SCBA):___

HAVE YOU WORN A RESPIRATOR BEFORE: **YES** / **NO** IF "YES", WHAT TYPE:_____

---

1. DO YOU CURRENTLY SMOKE TOBACCO OR HAVE YOU SMOKED TOBACCO IN THE LAST MONTH: **YES** / **NO**

2. HAVE YOU EVER HAD ANY OF THE FOLLOWING CONDITIONS:

   a. SEIZURES: **YES** / **NO** b. DIABETES: **YES** / **NO** c. CLAUSTROPHOBIA: **YES** / **NO**

   d. ALLERGIC REACTIONS THAT INTERFERE WITH YOUR BREATHING: **YES** / **NO**

   e. TROUBLE SMELLING ODORS: **YES** / **NO**

3. HAVE YOU EVER HAD ANY OF THE FOLLOWING PULMONARY OR LUNG PROBLEMS:

   a. ASBESTOSIS: **YES** / **NO** b. ASTHMA: **YES** / **NO** c. CHRONIC BRONCHITIS: **YES** / **NO**

   d. EMPHYSEMA: **YES** / **NO** e. PNEUMONIA: **YES** / **NO** f. TUBERCULOSIS: **YES** / **NO**

   g. SILICOSIS: **YES** / **NO** h. PNEUMOTHORAX: **YES** / **NO** i. LUNG CANCER: **YES** / **NO**

   j. BROKEN RIBS: **YES** / **NO** k. ANY CHEST INJURIES OR SURGERIES: **YES** / **NO**

   l. ANY OTHER LUNG PROBLEM THAT YOU'VE BEEN TOLD ABOUT: **YES** / **NO**

4. DO YOU CURRENTLY HAVE ANY OF THE FOLLOWING SYMPTOMS OF PULMONARY OR LUNG ILLNESS:

   a. SHORTNESS OF BREATH: **YES** / **NO**

   b. SHORTNESS OF BREATH WHEN WALKING FAST ON LEVEL GROUND OR WALKING UP INCLINE: **YES** / **NO**

   c. 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: **YES** / **NO**

   h. COUGHING THAT WAKES YOU UP EARLY IN THE MORNING: **YES** / **NO**

   i. COUGHING THAT OCCURS MOSTLY WHEN YOU ARE LYING DOWN: **YES** / **NO**

   j. COUGHING UP BLOOD THE LAST MONTH: **YES** / **NO**

   k. WHEEZING: **YES** / **NO** l. WHEEZING THAT INTEREFERES WITH YOUR JOB: **YES** / **NO**

   m. CHEST PAIN WHEN YOU BREATHE DEEPLY: **YES** / **NO**

   n. ANY OTHER SYMPTOMS THAT YOU THINK MAY BE RELATED TO LUNG PROBLEMS: **YES** / **NO**

5. HAVE YOU EVER HAD ANY OF THE FOLLOWING CARDIOVASCULAR OR HEART PROBLEMS:

a. HEART ATTACK: **YES** / **NO** b. STROKE: **YES** / **NO** c. ANGINA: **YES** / **NO**

d. HEART FAILURE: **YES** / **NO** e. SWELLING IN YOUR LEGS OR FEET: **YES** / **NO**

f. HEART ARRHYTHMIA: **YES** / **NO** g. HIGH BLOOD PRESSURE: **YES** / **NO**

h. ANY OTHER HEART PROBLEM THAT YOU'VE BEEN TOLD ABOUT: **YES** / **NO**

6. HAVE YOU EVER HAD ANY OF THE FOLLOWING CARDIOVASCULAR OR HEART PROBLEMS:

a. FREQUENT PAIN OR TIGHTNESS IN YOUR CHEST: **YES** / **NO**

b. PAIN OR TIGHTNESS IN YOUR CHEST THAT DURING PHYSICAL ACTIVITY: **YES** / **NO**

c. PAIN OR TIGHTNESS IN YOUR CHEST THAT INTEREFERES 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 MAY BE RELATED TO HEART OR CIRCULATION PROBLEMS: **YES** / **NO**

7. DO YOU CURRENTLY TAKE MEDICATION FOR ANY OF THE FOLLOWING PROBLEMS:

a. BREATHING OR LUNG PROBLEMS: **YES** / **NO** b. HEART TROUBLE: **YES** / **NO**

c. BLOOD PRESSURE: **YES** / **NO** d. SEIZURES: **YES** / **NO**

8. IF YOU'VE USED A RESPIRATOR, HAVE YOU EVER HAD ANY OF THE FOLLOWING PROBLEMS (IF NOT, SKIP TO #9)

a. EYE IRRITATION: **YES** / **NO** b. SKIN ALLERGIES OR RASHES: **YES** / **NO** c. ANXIETY: **YES** / **NO**

d. GENERAL WEAKNESS OR FATIGUE: **YES** / **NO**

f. ANY OTHER PROBLEMS THAT INTERFERES WITH YOUR USE OF A RESPIRATOR: **YES** / **NO**

10. WOULD YOU LIKE TO TALK TO THE HEALTHCARE PROFESSIONAL WHO WILL REVIEW THIS QUESTIONNAIRE ABOUT YOUR ANSWERS TO THIS QUESTIONNAIRE?: **YES** / **NO**

QUESTIONS 10-15 MUST BE ANSWERED BY EVERY EMPLOYEE WHO HAS BEEN SELECTED TO USE EITHER A FULL-FACEPIECE RESPIRATOR OR A SELF-CONTAINED BREATHING APPARATUS (SCBA). FOR EMPLOYEES WHO HAVE BEEN SELECTED TO USE OTHER TYPES OF RESPIRATORS, 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 EAR DRUM: **YES** / **NO**

13. DO YOU CURRENTLY HAVE ANY OF THE FOLLOWING HEARING PROBLEMS:

a. DIFFICULTY HEARING: **YES** / **NO** b. WEAR A HEARING AID: **YES** / **NO**

c. ANY OTHER HEARING OR EAR PROBLEM: **YES** / **NO**

14. HAVE YOU EVER HAD A BACK INJURY: **YES** / **NO**

15. DO YOU CURRENTLY HAVE ANY OF THE FOLLOWING MUSCULOSKELETAL PROBLEMS:

a. WEAKNESS IN ANY OF YOUR ARMS AND LEGS: **YES** / **NO** b. BACK PAIN: **YES** / **NO**
c. DIFFICULTY FULLY MOVING YOUR ARMS AND LEGS: **YES** / **NO**
d. PAIN OR STIFFNESS WHEN YOU LEAN FORWARD OR BACKWARD AT THE WAIST: **YES** / **NO**
e. DIFFICULTY FULLY MOVING YOUR HEAD UP OR DOWN: **YES** / **NO** f. SIDE TO SIDE: **YES** / **NO**
g. DIFFICULTY BENDING AT YOUR KNESS: **YES** / **NO** h. DIFFICULTY SQUATTING: **YES** / **NO**
i. CLIMBING A FLIGHT OF STAIRS OR A LADDER CARRYING MORE THAN 25 POUNDS: **YES** / **NO**

j. OTHER MUSCLE OR SKELETAL PROBLEM THAT INTERFERES WITH USING A RESPIRATOR: **YES** / **NO**

16. HAVE YOU EVER WORKED OR DO YOU WORK IN OR WITH:

a. FOUNDRY: **YES** / **NO** b. MINE: **YES** / **NO** IF "YES", WHAT TYPE:_____ c. QUARRY: **YES** / **NO**

d. ASBESTOS: **YES** / **NO** c. SANDBLASTING: **YES** / **NO** e. TEXTILE MILL: **YES** / **NO**

f. WELDING FUMES: **YES** / **NO** g. OTHER DUSTS, FUMES, SMOKE: **YES** / **NO**

h. TOXIC CHEMICALS: **YES** / **NO**

IF “YES”, CIRCLE WHICH ONES:
BENZENE FORMALDEHYDE CARBON TET PESTICIDES HERBICIDES OTHER:_____

17. AT WORK OR AT HOME, HAVE YOU EVER BEEN EXPOSED TO HAZARDOUS SOLVENTS, HAZARDOUS AIRBORNE CHEMICALS (E.G. GASES, FUMES, OR DUST), OR HAVE YOU COME INTO SKIN CONTACT WITH HAZARDOUS MATERIALS: **YES / NO** IF “YES”, NAME THE CHEMICALS IF YOU KNOW THEM: _____

18. HAVE YOU BEEN IN THE MILITARY SERVICES: **YES / NO**
IF “YES”, WERE YOU EXPOSED TO BIOLOGICAL OR CHEMICAL AGENTS: **YES / NO**

19. HAVE YOU EVER WORKED ON A HAZMAT TEAM: **YES / NO**

20. WILL YOU BE USING ANY OF THE FOLLOWING ITEMS WITH YOUR RESPIRATOR:
    a. HEPA FILTERS: **YES / NO**
    b. CANISTERS (E.G. GAS MASKS) **YES / NO**
    c. CARTRIDGES: **YES / NO**
21. HOW OFTEN ARE YOU EXPECTED TO USE THE RESPIRATOR (ANSWER ALL THAT APPLY):
    a. ESCAPE ONLY: **YES / NO**
    b. EMERGENCY RESCUE ONLY: **YES / NO**
    c. LESS THAN 5 HOURS/WEEK: **YES / NO**
    d. LESS THAN 2 HOURS/DAY: **YES / NO**
    e. 2-4 HOURS/DAY: **YES / NO**
    f. OVER 4 HOURS/DAY: **YES / NO**
22. WILL YOU BE WEARING PROTECTIVE CLOTHING AND/OR EQUIPMENT WHEN USING THE RESPIRATOR: **YES / NO**

23. OTHER THAN MEDICATIONS FOR BREATHING AND LUNG PROBLEMS, HEART TROUBLE, BLOOD PRESSURE, AND QUESTIONNAIRE, ARE YOU TAKING ANY OTHER MEDICATIONS FOR ANY REASON (INCLUDING OVER-THE-COUNTER MEDICATIONS): **YES** / **NO**

24. DURING THE PERIOD YOU ARE USING THE RESPIRATOR(S), IS YOUR WORK EFFORT:

    a. LIGHT (LESS THAN 200 KCAL/HOUR): **YES** / **NO**

    IF “YES”, HOW LONG DOES THIS PERIOD LAST DURING THE AVERAGE SHIFT:_____

    EXAMPLES OF LIGHT WORK EFFORT ARE SITTING WHILE WRITING, TYPING, DRAFTING, OR PERFORMING LIGHT AS DRILL PRESS (1-3 POUNDS) OR CONTROLLING MACHINES.

    b. MODERATE (200-350 KCAL/HOUR): **YES** / **NO**

    IF “YES”, HOW LONG DOES THIS PERIOD LAST DURING THE AVERAGE SHIFT:_____
    EXAMPLES OF MODERATE WORK EFFORT ARE SITTING WHILE NAILING OR FILING; DRIVING A TRUCK OR BUS IN URBAN TRAFFIC; STANDING WHILE DRIVING, NAILING, PERFORMING ASSEMBLY WORK, OR TRANSFERRING A MODERATE LOAD (ABOUT 35 POUNDS) AT TRUNK LEVEL; WALKING ON A LEVEL SURFACE ABOUT 2 MPH OR DOWN A 5-DEGREE GRADE ABOUT 3 MPH; OR PUSHING A WHEELBARROW WITH A HEAVY LOAD (ABOUT 100 POUNDS) ON A LEVEL SURFACE.

    c. HEAVY (ABOVE 35O KCAL/HOUR): **YES** / **NO**

    IF “YES”, HOW LONG DOES THIS PERIOD LAST DURING THE AVERAGE SHIFT:_____
    EXAMPLES OF HEAVY WORK ARE LIFTING A HEAVY LOAD (ABOUT 50 POUNDS) FROM THE FLOOR TO YOUR WAIST OR SHOVELING; STANDING WHILE BRICKLAYING OR CHIPPING CASTINGS; WALKING UP AN 8-DEGREE GRADE ABOUT 2 MPH; CLIMBING STAIRS WITH A HEAVY LOAD (ABOUT 50 POUNDS).

25. WILL YOU BE WORKING UNDER HOT CONDITIONS (TEMPERATURE EXCEEDING 77 DEGREES F): **YES** / **NO**

26. WILL YOU BE WORKING UNDER HUMID CONIDITIONS? (HUMIDITY EXCEEDING 80%?): **YES / NO**

PATIENT’S PRINTED NAME:_____

PATIENT’S SIGNATURE:_____ DATE:_____

TO BE COMPLETED BY EXAMINER

A. PRIOR TO DONNING RESPIRATOR: BLOOD PRESSURE:_____/_____ PULSE:_____

B. POST DONNING: BLOOD PRESSURE:_____/_____ PULSE:_____

ALLERGIC SKIN REACTION TO RESPIRATOR MATERIAL: **YES** / **NO**

C. COMMENTS:_____

THE PATIENT **DOES** / **DOES NOT** MEET THE PHYSICAL QUALIFICATIONS TO USE A RESPIRATOR.

EXAMINER’S PRINTED NAME AND TITLE:_____ AGENCY:_____

EXAMINER’S SIGNATURE:_____ DATE:_____

PHYSICIAN: RETAIN A COPY FOR EMPLOYEE HEALTH RECORDS
DO NOT RETURN THIS FORM TO EHS

Appendix E: Medical Determinations with Supplemental Information

ILLINOIS STATE UNIVERSITY
RESPIRATORY PROTECTION PROGRAM

Medical Determination for Respirator Use
Respirator Usage [1910.134]

Part I: (Information below this block to be completed by supervisor or EHS)

Name:	DOB:
UID:	Age:
Job Classification:	Today's Date:

Type of Respirator Used – check and circle all that apply

- ☐ Filtering Face Piece (Particulate, Disposable, Single Use, Dust Mask)
- ☐ Half Face (Filter, Chemical, Cartridge, Combination Chemical and Cartridge)
- ☐ Full Face (Filter, Chemical, Cartridge, Combination Chemical and Cartridge)
- ☐ Powered Air Purifying
- ☐ Supplied Air Respirator with back up ☐ Supplied Respirator without Backup
- ☐ Self Contained Breathing Apparatus (SCBA)

Level of Work Effort

- ☐ Light – Ex. Sitting, standing using 1-3 # drill
- ☐ Moderate – Ex. Assembly work standing, driving, pushing 100 lbs., carrying 35 lbs.
- ☐ Heavy – Ex. Lifting 50 lbs., climbing with 50 lbs., walking up an 8° grade at 2 mph.
- ☐ Strenuous – More than heavy

Extent of Usage ☐ Daily ☐ Weekly ☐ Less than once a week ☐ Rarely ☐ Emergency

Estimated Length of Use of Time Used per Session _____hrs _____minutes or _____hrs per day

Special Work Conditions:

- ☐ Special need for visual or auditory acuity ☐ High places ☐ Confined spaces
- ☐ High temp. ☐ Additional protective equipment required ☐ Other: _____

Part II: (To Be Completed By Physician)

☐ **No Restrictions on Respirator Use**	☐ **Temporarily Not Qualified**	☐ **Not Qualified**
Print:		
Sign:		
Date:		

The employee and employer have been provided with a copy of this determination by either mail or fax.

PHYSICIAN: PLEASE PROVIDE A COPY TO THE PATIENT AND FORWARD A COPY TO EHS @ CAMPUS BOX 1320 or FAX 438-3086

ILLINOIS STATE UNIVERSITY
RESPIRATORY PROTECTION PROGRAM

Medical Determination for Respirator Use

Asbestos/HAZMAT Team Respirator Usage [1910.1001] & [1910.120]

Part I: (Information below this block to be completed by supervisor or EHS)

Name:	DOB:
UID:	Age:
Job Classification:	Today's Date:

Description of Employee's Duties: Asbestos team members perform small repair and maintenance jobs where asbestos containing material (ACM) is likely to be disturbed. Class III repair and maintenance work consists of the removal or disturbance of < 3 sq. ft. or 3 ln. ft. of ACM. A majority of work is completed using glove bags, HEPA vacuums, and wet methods in order to prevent the release of asbestos fibers into the environment. Common jobs include ceiling tile removal and thermal pipe insulation removal.

HAZMAT team members respond to hazardous materials incidents on campus. This includes HAZMAT response and clean up operations. They are only capable of responding to Level-B incidents or below. These may involve large spills, but would not involve extremely toxic materials that would warrant Level-A response.

Employee's Anticipated Exposure Level: Asbestos team members are not expected to be exposed at or above the PEL (0.1 f/cc of air in 8 hour TWA) or EL (1.0 f/cc average over 30 minutes) for 30 days or more per year. Anticipated exposure is negligible because asbestos team members do not work with asbestos on a daily basis and conduct small scale asbestos abatement operations.

HAZMAT team members are not expected to be exposed to any chemical, biological, or physical hazard that exceeds OSHA PELs, ACGIH TLVs, or NIOSH RELs. HAZMAT team members are only capable of handling situations that warrant a Level-B response or below. The Bloomington Fire Department HAZMAT team serves as a backup for situations beyond our capabilities.

Description of Personal Protective Equipment and Respiratory Protection: Asbestos team members utilize air purifying half-face respirators with HEPA filters for respiratory protection. Protective clothing includes a disposal suit with taped wrists and ankles and gloves.

HAZMAT team members utilize Level-B suits (Pressure demand, full-face self contained breathing apparatus; chemical resistant clothing; inner and outer gloves; boots; hard hat), Level-C suits (Full or half-face air purifying, canister equipped respirator; chemical resistant clothing; boots, hard hat), and Level-D suits (coveralls; boots; safety glasses; hard hat).

Physician: Please reference any previous third-party medical examinations for employee

(To Be Completed By Physician)

No Restrictions on Respirator Use	**Temporarily Not Qualified**	**Not Qualified**
Print:		
Sign:		
Date:		

The employee and employer have been provided with a copy of this determination by either mail or fax.

PHYSICIAN: PLEASE PROVIDE A COPY TO THE PATIENT AND FORWARD A COPY TO EHS @ CAMPUS BOX 1320 or FAX 438-3086

Appendix F: Respirator Training Information

1. **Preliminary Questions:**
    - Have you had your physical exam?
    - What chemicals or materials do you work with?
    - Why do you believe you need a respirator?
2. **Identification of the Hazard - Reasons for the need of respiratory protection**
    - There are exposure standards set by OSHA for many airborne toxic materials and specific standards governing working environments to protect your health.
    - The number ONE reason is to protect your heath on the job.
    - Your supervisor, EH&S, or OSHA has made the assessment on whether the respirator was required.
    - This is due to the exposures you are around at any concentration, or because the concentration is above the limit (PEL set by OSHA).
    - The possibility that engineering controls are not available or not adequate.
1. **Evaluation of the Hazard - Nature, extent, effects of respiratory hazards to which you may be exposed**
    - The respirator has the potential to protect you from hazardous materials, but only when used properly.
    - When it is misused, you have little protection from these materials.
2. **Selection of appropriate respirators and cartridges**
    - There are different types of filter cartridges
        - o Must be NIOSH certified- Stated on label along with the use of the filter
        - o Black-Organic Vapor, an absorptive filter has shortened life (gasoline, paint)
        - o Purple-Dust (hepa), particulate asbestos
        - o Purple/yellow-Acid gas/organic vapor/Particulate
    - Different particulates that may be encountered are:
        - o Dust-solid particles from grinding, crushing, drilling, blasting, sanding
        - o Fumes-solid condensation particles from soldering, welding, brazing operations, molten metal processes
        - o Mists-tiny liquid droplets from when a liquid is sprayed, vigorously mixed, or agitated from spraying operations, plating and cleaning operations
    - If the wrong filter is used it is not protecting
    - Make sure 2 filter cartridges are used at all times
3. **Proper fit, usage, maintenance**
    - Improper fit may not protect as it is intended to
    - Facial hair may result in an improper fit by not sealing
    - Make sure it fits comfortably with the shape of your face and it is the proper size (which is on the front of mask)
    - May be uncomfortable resulting in non-usage-if current respirator is uncomfortable notify supervisor
        - o Have the choice of what type of respirator to use
            - Wilson
            - MSA
            - North
    - If not used properly it can result in acute or chronic health effects such as irritation to the throat, lung, or nose. Damage to your heart, lungs, liver, nervous or reproductive system. Can also lead to poisoning or asphyxiation.
    - If one does not take proper care of the respirator it may not fully protect you.
        - o It is left in the sun and now it is deformed and doesn't fit properly.
        - o Throw tool box on it and permanently deforms it
4. **When to change filter cartridges**
    - Plugged difficult to breathe
    - Break through odor-(only organic)if smell odor then not properly protecting either not fitted properly or need new filter
    - If work in hot damp area
    - Asbestos- at end of the day (don't dispose of in ordinary trash)
    - If dirty it doesn't necessarily mean it needs to be changed

(If need a filter or new respirator notify supervisor. one can be located through Central Stores (or EHS for Asbestos Team)

5. **Limitations on the use of the respirator and filter**
    - Take care of your respirator if you want it to take care of you
    - Make sure the filter cartridges are the proper ones for the job and that they are changed when necessary
    - Do not go into O2 deficient atmosphere (less than 19.5%)
    - Clean and maintain the respirator
    - Filter cartridges do have a life span-Carbon activated when exposed receptors begins to collect (like magnet)
    - Make sure Positive and Negative pressure checks are done before performing job
6. **Cleaning, maintaining, storage**
    - Use a detergent for thorough cleaning
    - No alcohol or bleach cleaner-deteriorates the mask
    - Can use antiseptic towelette when on the go
    - If using detergent, make sure rinse well-cause dermatitis
    - Make sure it is thoroughly dried-can mold

    Dry by:
        - Air drying-hang up
        - Cool air dryer-no heat
        - Use paper towel
    - Clean both before and after use
    - Do not share unless clean well
    - Do not leave in sun, will deform
    - Do not throw tools on them, will deform
7. **Respirator inspection**
    - Check inhalation and exhalation valves
        - o Doesn’t stick, no major discoloration
        - o Check for proper size
    - Replacement valves-supervisor-central stores
    - Check straps to ensure elasticity and proper tightness

Appendix G: Voluntary use of Respirators

VOLUNTARY USE OF RESPIRATORS
Review each of the following points with the employee (have employee initial boxes):

1. RESPIRATORS AND OSHA REQUIREMENTS

- Filtering facepiece respirators are considered true respirators according to OSHA. N95 refers to the NIOSH certification of the filter media that comprises the facepiece. N means that it is not oil resistant and 95 refers to it being 95% effective at filtering particles at the 0.3 micron level. N95 is the most common type of filtering facepiece respirator. Other NIOSH-certified filtering facepiece respirators include R95, P95, N100 and P100. Air purifying respirators (APRs) are usually ½ or full face respirators that remove contaminants from the atmosphere via cartridges or canisters. APRs have the ability to protect against particulates, vapors and gases, or a combination of both.

- Voluntary use is defined as use for employee comfort purposes only. No hazard exists that requires use of a respirator and the use of the respirator does not produce any additional hazard. All voluntary respirator users must be medically evaluated prior to respirator use. Medical evaluation can be in the form of a medical questionnaire review. Please contact Environmental Health and Safety for the appropriate forms.

- If an employee is required to wear a filtering facepiece or air purifying respirator (to protect against a respiratory hazard or as required by the employer), full compliance with the University's Respirator Policy is required, which includes a medical evaluation by the University's physician or other licensed health care professional, triennial medical evaluation in the form of a questionnaire review, annual respirator training, and annual fit testing.

- OSHA requires that all employees voluntarily wearing filtering facepiece and air purifying respirators receive basic information on respirators as provided in Appendix D of their Respirator Standard, 1910.134 (which is found at the end of this document). – **Review Appendix D with employee. Signature of this training form certifies receipt of Appendix D to 1910.134, as required by OSHA.**

2. HOW TO USE AND WEAR A RESPIRATOR

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

- Proper use of the respirator is important. Without it, the respirator is ineffective against the workplace contaminates. Follow manufacturers' instructions for use. – **Review manufacturer's instructions with employee. Have employee demonstrate proper use.**

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

- User seal checks confirm that an adequate seal with the face is achieved when the mask is applied. User seal checks should be done every time the mask is put on and every time it is re-adjusted on the face. – Review manufacturers' instructions for conducting user seal checks with employee.

3. LIMITATIONS OF PPE

- Filtering facepiece respirators are only useful for protection against particulates. Air purifying respirators are only useful for specific air contaminants in which they are designed. Respirators are designed to protect only against specific types of substances, in certain concentrations, and must be matched to the user, job, and contaminant. They are not to be used in oxygen-deficient atmospheres or atmospheres that contain hazards that are immediately dangerous to life and health (IDLH). The respirator will not provide adequate protection if a good seal with the face is not achieved.

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

- Filtering facepiece respirators are considered disposable PPE. They cannot be cleaned, especially when they become wet or soiled. They cannot be shared with other employees. Air purifying respirators should be cleaned after each use and as often as necessary to provide sanitary conditions. Respirators must be inspected prior to and after each use. Promptly remove damaged or defective respirators and discard them or have them repaired.

- Respirators should be stored in a clean, dry location and protected from sunlight, chemicals, water, extreme temperatures, and physical damage.

- Respirators can only be used in conjunction with a written respiratory protection program. The University's Respiratory Protection Program can be found at: http://ehs.illinoisstate.edu/services/occupational/respiratory.shtml

Employee Name: _ Dept.:_ _ _ _ _ _ _ _ _ _ _ _ _ Box / Phone: __ __ __ _ _ _ _ _ _

Signature: _ D ate: _ _ _ _ _ _ _ _ _

OSHA's Respiratory Protection Standard, 29CFR1910.134

Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.

2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.

4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Send copies of completed forms to Environmental Health and Safety:
Campus Box 1320 or Fax 438-3086 or sysenvironmental@Exchange.ilstu.edu

Appendix H: Fit Testing Procedures – QNFT & QLFT

General Requirements
Illinois State University shall conduct fit testing using the following procedures. The requirements in this appendix apply to all OSHA-accepted fit test methods, both QLFT and QNFT.

1. The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, because it is only a review.

3. The test subject shall be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.

4. The test subject shall be instructed to hold each chosen face-piece up to the face and eliminate those that obviously do not give an acceptable fit.

5. The more acceptable face-pieces are noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in the following item 6. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

6. Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:
   (a) Position of the mask on the nose
   (b) Room for eye protection
   (c) Room to talk
   (d) Position of mask on face and cheeks

7. The following criteria shall be used to help determine the adequacy of the respirator fit:
   (a) Chin properly placed;
   (b) Adequate strap tension, not overly tightened;
   (c) Fit across nose bridge;
   (d) Respirator of proper size to span distance from nose to chin;
   (e) Tendency of respirator to slip;
   (f) Self-observation in mirror to evaluate fit and respirator position.

8. The test subject shall conduct a user seal check, using the negative and positive pressure seal checks described in Appendix 13 or those recommended by the respirator manufacturer which provide equivalent protection. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another face-piece shall be selected and retested if the test subject fails the user seal check tests.

9. The test shall not be conducted if there is any hair growth between the skin and the face-piece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.

10.If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing her or his duties.

11.If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.

12.Exercise regimen. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.

13.The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use which could interfere with respirator fit.

14.Test Exercises.
(a) The following test exercises are to be performed for all fit testing methods prescribed in this appendix. The test subject shall perform exercises, in the test environment, in the following manner:

1) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.

2) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

3) Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

4) Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

5) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject will read from the Rainbow Passage:

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

6) Grimace. The test subject shall grimace by smiling or frowning. (This applies only to QNFT testing; it is not performed for QLFT)

7) Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.

(8) Normal breathing. Same as exercise (1).

(b) Each test exercise shall be performed for one minute except for the grimace exercise which shall be performed for 15 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.

Qualitative Fit Test (QLFT) Protocols

1. General

(a) The employer shall ensure that persons administering QLFT are able to prepare test solutions, calibrate equipment and perform tests properly, recognize invalid tests, and ensure that test equipment is in proper working order.

(b) The employer shall ensure that QLFT equipment is kept clean and well maintained so as to operate within the parameters for which it was designed.

2. Irritant Smoke (Stannic Chloride) Protocol

This qualitative fit test uses a person's response to the irritating chemicals released in the "smoke" produced by a stannic chloride ventilation smoke tube to detect leakage into the respirator.

General Requirements and Precautions:

(1) The respirator to be tested shall be equipped with high efficiency particulate air (HEPA) or P100 series filter(s).

(2) Only stannic chloride smoke tubes shall be used for this protocol.

(3) No form of test enclosure or hood for the test subject shall be used.

(4) The smoke can be irritating to the eyes, lungs, and nasal passages. The test conductor shall take precautions to minimize the test subject's exposure to irritant smoke. Sensitivity varies, and certain individuals may respond to a greater degree to irritant smoke. Care shall be taken when performing the sensitivity screening checks that determine whether the test subject can detect irritant smoke to use only the minimum amount of smoke necessary to elicit a response from the test subject.

(5) The fit test shall be performed in an area with adequate ventilation to prevent exposure of the person conducting the fit test or the build-up of irritant smoke in the general atmosphere.

Sensitivity Screening Check:

(1) The person to be tested must demonstrate his or her ability to detect a weak concentration of the irritant smoke.

(2) The test operator shall break both ends of a ventilation smoke tube containing stannic chloride, and attach one end of the smoke tube to an aspirator squeeze bulb. The test operator shall cover the other end of the smoke tube with a short piece of tubing to prevent potential injury from the jagged end of the smoke tube.

(3) The test operator shall advise the test subject that the smoke can be irritating to the eyes, lungs, and nasal passages and instruct the subject to keep his/her eYes closed while the test is performed.

(4) The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its irritating properties and to determine if he/she can detect the irritating properties of the smoke. The test operator shall carefully direct a small amount of the irritant smoke in the test subject's direction to determine that he/she can detect it.

Irritant Smoke Fit Test Procedure:

(1) The person being fit tested shall don the respirator without assistance, and perform the required user seal check(s).

(2) The test subject shall be instructed to keep his/her eyes closed.

(3) The test operator shall direct the stream of irritant smoke from the smoke tube toward the face seal area of the test subject, using the low flow pump or the squeeze bulb. The test operator shall begin at least 12 inches from the facepiece and move the smoke stream around the whole perimeter of the mask. The operator shall gradually make two more passes around the perimeter of the mask, moving to within six inches of the respirator.

(4) If the person being tested has not had an involuntary response and/or detected the irritant smoke, proceed with the test exercises.

(5) The exercises identified in section 14(a) of this appendix shall be performed by the test subject while the respirator seal is being continually challenged by the smoke, directed around the perimeter of the respirator at a distance of six inches.

(6) If the person being fit tested reports detecting the irritant smoke at any time, the test is failed. The person being retested must repeat the entire sensitivity check and fit test procedure.

(7) Each test subject passing the irritant smoke test without evidence of a response (involuntary cough, irritation) shall be given a second sensitivity screening check, with the smoke from the same smoke tube used during the fit test, once the respirator has been removed, to determine whether he/she still reacts to the smoke. Failure to evoke a response shall void the fit test.

(8) If a response is produced during this second sensitivity check, then the fit test is passed.

Quantitative Fit Test (QNFT) Protocols

1. General

(1) The employer shall ensure that persons administering QNFT are able to calibrate equipment and perform tests properly, recognize invalid tests, calculate fit factors properly and ensure that test equipment is in proper working order.
(2) The employer shall ensure that QNFT equipment is kept clean, and is maintained and calibrated according to the manufacturer's instructions so as to operate at the parameters for which it was designed.

2. Ambient aerosol condensation nuclei counter (CNC) quantitative fit testing protocol:

The ambient aerosol condensation nuclei counter (CNC) quantitative fit testing (Portacount TM) protocol quantitatively fit tests respirators with the use of a probe. The probed respirator is only used for quantitative fit tests. A probed respirator has a special sampling device, installed on the respirator, that allows the probe to sample the air from inside the mask. A probed respirator is required for each make, style, model, and size that the employer uses and can be obtained from the respirator manufacturer or distributor. The CNC instrument manufacturer, TSI Inc., also provides probe attachments (TSI sampling adapters) that permit fit testing in an employee's own respirator. A minimum fit factor pass level of at least 100 is necessary for a half-mask respirator and a minimum fit factor pass level of at least 500 is required for a full facepiece negative pressure respirator. The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

<u>Portacount Fit Test Requirements.</u>

(1) Check the respirator to make sure the sampling probe and line are properly attached to the facepiece and that the respirator is fitted with a particulate filter capable of preventing significant penetration by the ambient particles used for the fit test (e.g., NIOSH 42 CFR 84 series 100, series 99, or series 95 particulate filter) per manufacturer's instruction.

(2) Instruct the person to be tested to don the respirator for five minutes before the fit test starts. This purges the ambient particles trapped inside the respirator and permits the wearer to make certain the respirator is comfortable. This individual shall already have been trained on how to wear the respirator properly.

(3) Check the following conditions for the adequacy of the respirator fit: a. Chin properly placed;
b. Adequate strap tension, not overly tightened;
c. Fit across nose bridge;
d. Respirator of proper size to span distance from nose to chin;
e. Tendency of the respirator to slip;
f. Self-observation in a mirror to evaluate fit and respirator position.

(4) Have the person wearing the respirator do a user seal check. If leakage is detected, determine the cause. If leakage is from a poorly fitting facepiece, try another size of the same model respirator, or another model of respirator.

(5) Follow the manufacturer's instructions for operating the Portacount and proceed with the test.

(6) The test subject shall be instructed to perform the exercises in section 14(a) of this appendix.

(7) After the test exercises, the test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried.

Portacount Test Instrument.

(1) The Porta-count will automatically stop and calculate the overall fit factor for the entire set of exercises. The overall fit factor is what counts. The Pass or Fail message will indicate whether or not the test was successful. If the test was a Pass, the fit test is over.
(2) Since the pass or fail criterion of the Porta-count is user programmable, the test operator shall ensure that the pass or fail criterion meet the requirements for minimum respirator performance in this Appendix.
(3) A record of the test needs to be kept on file, assuming the fit test was successful. The record must contain the test subject's name; overall fit factor; make, model, style, and size of respirator used; and date tested.

Appendix I: Fit Testing Record _ Quanitative Fit Test (QNFT)

05/15/2002

LAST NAME
FIRST NAME

FIT TEST REPORT
Fit test information

ID NUMBER	
LAST NAME	CUSTOM1
FIRST NAME	CUSTOM2
COMPANY	CUSTOM3
LOCATION	CUSTOM4
NOTE	
TEST DATE	PORTACOUNT S/N
TEST TIME	N95 COMPANION
DUE DATE	
RESPIRATOR	PROTOCOL
MANUFACTURER	PASS LEVEL
MODEL	
MASK STYLE	
MASK SIZE	
APPROVAL	
EFF. < 99%	

EXERCISE	SAMPLE TIME	FIT FACTOR	PASS

OVERALL FF

Appendix J: Fit Testing Record – Qualitative Fit Test (QLFT)

LAST NAME: _____ FIRST NAME: _____
ID NUMBER: _____ DEPARTMENT: _____

RESPIRATOR
MANUFACTURER: _____MODEL: _____
MASK STYLE: _____MASK SIZE: _____
TEST DATE:_____
MSA/NIOSH APPROVAL NO: _____
TEST CONDUCTED BY: _____
TEST AGENT USED: _____
EMPLOYEE SIGNATURE: _____ DATE: _____

Qualitative Fit Test
1. Subject shall perform the positive and negative pressure self fit tests.

2. Test conductor shall direct irritant smoke around the face seal beginning at about 12 inches away and moving to within about 1 inch, moving around the whole perimeter of the mask.

3. The following test exercises are to be performed. The test subject shall perform exercises for one minute, in the test environment, in the following manner:

4. Normal breathing. In a normal standing position, without talking, the subject shall breathe normally. Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

5. Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

6. Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

7. Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject will read from the Rainbow Passage:

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

8. Grimacing. The test subject shall make slight facial contortions.

9. Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.
10.Normal breathing. Same as exercise (1).

Appendix K: Respirator Inspection Checklist

Respirators shall be inspected to ensure that they are in proper working condition and to determine if it is in need of replacement parts or repairs, or if it should be discarded. Inspection shall include:

YES	NO	ITEM
		Air-purifying Respirators
		Facepieces must be checked for:
		Excessive dirt (clean all dirt from facepiece)
		Cracks, tears, or holes (obtain new facepiece)
		Distortion (allow facepiece to "sit" free from any constraints and see if distortion disappears, if not obtain new facepiece)
		Cracked, scratched, or loose-fitting lenses (contact respirator manufacturer to see if replacement is possible, otherwise obtain new facepiece)
		Headstraps should be checked for:
		Breaks or tears (replace headstraps)
		Loss of elasticity (replace headstraps)
		Broken or malfunctioning buckles or attachments (obtain new buckles)
		Slippage of facepiece (replace headstrap)
		Inhalation and exhalation valves should be checked for:
		Detergent residue, dust particles, or dirt on valve or valve seat (clean residue with soap and water)
		Cracks, tears, or distortion in the valve material or valve seat (contact manufacturer for instructions)
		Missing or defective valve cover (obtain valve cover from manufacturer)
		Filter element(s) should be checked for:
		Proper application
		Approval designation
		Missing or worn gaskets (contact manufacturer for replacement)
		Worn threads, both the filter threads and the facepiece, whichever is applicable
		Cracks or dents in filter housing (replace filter)
		Missing or loose hose clamps (obtain new clamps)
		Atmosphere-supplying Respirators
		Facepieces must be checked for:
		Excessive dirt (clean all dirt from facepiece)
		Cracks, tears, or holes (obtain new facepiece)
		Distortion (allow facepiece to "sit" free from any constraints and see if distortion disappears, if not obtain new facepiece)
		Cracked, scratched, or loose-fitting lenses (contact respirator manufacturer to see if replacement is possible, otherwise obtain new facepiece)
		Headstraps should be checked for:
		Breaks or tears (replace headstraps)
		Loss of elasticity (replace headstraps)
		Broken or malfunctioning buckles or attachments (obtain new buckles)
		Slippage of facepiece (replace headstrap)
		Inhalation and exhalation valves should be checked for:
		Detergent residue, dust particles, or dirt on valve or valve seat (clean residue with soap and water)
		Cracks, tears, or distortion in the valve material or valve seat (contact manufacturer for instructions)
		Missing or defective valve cover (obtain valve cover from manufacturer)
		Hood, helmet, or full suit, if applicable, should be checked for:
		Headgear suspension (adjust properly)
		Cracks or breaks in faceshield (replace faceshield)
		Protective screen to see that it is intact and fits correctly over the faceshield, (obtain new screen)
		Air supply system should be checked for:
		Breathing air quality
		Breaks or kinks in air supply hoses and end fitting attachments (replace hose and/or fitting)
		Tightness of connections
		Proper setting of regulators and valves (consult manufacturer's recommendations)
		Correct operation of air-purifying elements and carbon monoxide or high-temperature alarms
		Air cylinder, if present and used, is charged

Appendix L: Program Evalution Checklist

YES	NO	EVALUATION ITEM
		Is program responsibility vested in one individual who is knowledgeable and who can coordinate all aspects of the program?
		Are engineering controls being implemented, if feasible, to alleviate the need of respirators?
		Are there written procedures/statements covering the following aspects of the respirator program?
		Designation of administrator
		Respirator selection
		Purchase of approved equipment
		Medical aspects of respirator usage
		Issuance of equipment
		Fitting
		Maintenance, storage, repair
		Inspection
		Use under special condition
		Are work area conditions and employee exposures properly surveyed?
		Are respirators selected on the basis of hazards to which the employee is exposed?
		Are selections made by individuals knowledgeable of selection procedures?
		Are only approved respirators purchased and used and do they provide adequate protection for the specific hazard and concentration of the contaminant?
		Has a medical evaluation of the prospective user been made to determine their physical and psychological ability to wear respiratory protective equipment?
		Where practical, have respirators been issued to the users for their exclusive use, and are there records covering issuance?
		Are the users given the opportunity to try on several respirators to determine whether the respirator they will subsequently be wearing is the best fitting one?
		Is the fit tested at appropriate intervals?
		Are those users who require corrective lenses properly fitted?
		Are users prohibited from wearing contact lenses when using respirators?
		Is the facepiece to face seal tested in a test atmosphere?
		Are respirators cleaned and disinfected after each use when different people use the same device, or as frequently as necessary for devices issued to individual users?
		Are proper methods of cleaning and disinfecting utilized?
		Are respirators stored in a manner so as to protect them from dust, sunlight, heat, excessive cold or moisture, or damaging chemicals?
		Are respirators stored properly in a storage facility so as to prevent them from deforming?
YES	NO	CHECKLIST ITEM
		Is storage in lockers and tool boxes permitted only if the respirator is in a carrying case or carton?
		Are respirators inspected before and after each use and during cleaning?
		Are qualified individuals/users instructed in inspection techniques?
		Is respiratory protective equipment designated as "emergency use" inspected at least monthly (in addition to after each use)?
		Is a record kept of the inspection of "emergency use" respiratory protective equipment?
		Are replacement parts used in repair those of the manufacturer of the respirator?
		Are repairs made by knowledgeable individuals?
		Are repairs of SCBA made only by certified personnel or by a manufacturer's representative?
		Are users trained in proper respirator usage?
		Are users trained in the basis for selection of respirators?

Appendix M: N95 Particulate Respirator Fit Testing Procedures

N-95 User will conduct fit testing using the following procedures:

The employee will be referred to an Illinois State University physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing her or his duties. The employee will be allowed to pick the most acceptable respirator from at least 3 respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

During the selection process, the employee will be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. The Fit Test Administrator will be available to assist the subject in evaluating the fit and positioning of the respirator. The employee will be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.

However, it must be explained that overall, the NIOSH approved N-95 respirators provided have been selected for use based upon universal acceptance by a panel of employee representatives. Alternative NIOSH approved N-95 respirators will be made available if a satisfactory fit is not achievable with the initially selected model.An assessment of comfort should include a review of the following points with the employee and allowing each employee time to determine the comfort of the respirator:

- Position of the mask on the nose
- Room for eye protection
- Room to talk Position of mask on face and cheeks

Use the following criteria to help determine the adequacy of the respirator fit:

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

The user seal check and fit test will be performed while the employee is wearing any applicable safety equipment that may be worn during actual respirator use which could interfere with respirator fit. The user will be asked to wear the respirator for 5 minutes while conducting the seal check. The user seal check or fit test won't be conducted if there is any hair growth between the skin and the respirator sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface.

The Fit Test Administrator will demonstrate a user seal check. This will be either the negative and positive pressure seal checks described in Appendix B-1 of the OSHA Respiratory Protection Program or those recommended by the respirator manufacturer.

Before conducting the seal checks, the employee will be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths.

Another respirator will be selected and retested if the employee fails the user seal check tests.

When the employee passes the user seal check he or she will be administered a Quantitative fit test.

Quantitative fit testing at ILSTU utilizes a PortaCount to provide a numerical value to the quality of the fit of the respirator. This numerical value is referred to as a Fit Factor. Prior to the commencement of the Quantitative fit test, the test subject will be given a description of the fit test and their responsibilities during testing procedure. Every effort will be made to accomplish a satisfactory and passing Fit Factor.

Test Exercises

Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.

Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Rainbow Passage

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

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

Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.

The employee will be questioned by the Fit Test Administrator regarding the comfort of the respirator upon completion of the test. If it has become unacceptable, another model of respirator can be tried. The respirator will not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated. ILSTU EHS will make sure every effort is made to accomplish a satisfactory and passing Fit Factor as per 29CFR 1910.134 Appendix A