

**ILLINOIS INSTITUTE OF TECHNOLOGY  
SAFETY POLICY COMMITTEE**

**RESPIRATORY PROTECTION PROGRAM**

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**Approved: August 17, 2012**

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## 1. Purpose

In compliance with 29 CFR Sections 1910.134 and 1910.1450, the purpose of this Respiratory Protection Program (“Program”) is to preserve the health of personnel by preventing exposure to harmful levels of air contaminants or areas of low oxygen content.

Engineering controls, such as ventilation and substitution of less toxic materials, are the first line of defense at the university; however, engineering controls are not always feasible for some operations, or are not always capable of completely controlling the identified hazards. In these situations, respirators and other protective equipment must be used. Respirators are also needed to protect employees' health during emergencies.

Some personnel may wish to wear respirators during certain operations that do not require respirator protection. As a general policy, the university will review each of these requests on a case-by-case basis. If the use of respirator protection in a specific case will not jeopardize the health or safety of the worker(s), the university will provide respirators for voluntary use. As outlined in the Scope and Application section of this program, voluntary respirator use is subject to certain requirements of this Program.

## 2. Scope and Application

The Program is designed for undergraduate students, graduate students, full-time, part-time, temporary and student employees who use respirators. These include, but are not limited to, half-masks, full face-piece respirators, powered-air-purifying respirators (PAPR), airline respirators, and self-contained breathing apparatus (SCBA), and filtering facepieces.

Any personnel who voluntarily wears a respirator when a respirator is not required is subject to the medical evaluation, cleaning, maintenance, and storage elements of this Program and must be provided with certain information specified in this section of the Program.

Personnel participating in the respiratory protection program do so at no cost to themselves. The expense associated with training, medical evaluations and respiratory protection equipment will be borne by the university.

## 3. Definitions

**Air-purifying Respirator (APR)** - 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 to employees when the employer implements a continuing, effective respiratory protection program.

**Atmosphere-Supplying Respirator (ASR)** - 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 facepiece only when a negative pressure is created inside the facepiece by inhalation.

**Designated Safety Officer (DSO)** - A person appointed by the head of a department from the faculty or staff thereof. The DSO has the responsibility for developing, implementing and monitoring his or her department's plan. A department head may appoint Assistant DSO's as needed in order to assist the DSO or perform one or more clearly defined responsibilities.

**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.

**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 is no longer effective.

**Filter or Air Purifying Element** - A component used in respirators to remove solid or liquid aerosols from the inspired air.

**Filtering Facepiece (Dust Mask)** - A negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

**Fit Test** - The use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also Qualitative fit tests QLFT and Quantitative fittestQNFT.)

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

**Loose-fitting Facepiece** - 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. The MUC can be determined mathematically by multiplying the assigned protection factor specified for a respirator by the required OSHA permissible exposure limit, short-term exposure limit, or ceiling limit. When no OSHA exposure limit is available for a hazardous substance, an employer must determine an MUC on the basis of relevant available information and informed professional judgment.

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

**Oxygen Deficient Atmosphere** - An atmosphere with an oxygen content below 19.5% by volume or if the ambient pressure is less than one atmosphere.

**Personnel Exposure** - Exposure to a concentration of an airborne contaminant that would occur if personnel were not using respiratory protection

**Personnel** - Undergraduate students, graduate students, full-time employees, part-time employees, temporary employees, visiting researchers, contractors and student employees.

**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 paragraph (e) of this section.

**Positive Pressure Respirator** - A respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator during all phases of the breathing cycle.

**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 facepiece when the positive pressure is reduced inside the facepiece by inhalation.

**Project Administrator** - The individual assigned responsibility for a particular project covered by this Program. This may include an employee's supervisor, a Principle Investigator, a faculty instructor, a DSO, a Facilities Engineer, or a Facilities Architect.

**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 comparing concentrations of a test agent or dust inside and outside the facepiece.

**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 Facepiece** - A respiratory inlet covering that forms a complete seal with the face.

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

#### **4. Responsibilities**

**The Office of Environmental Health and Safety**, through its Director (“DEHS”), is responsible for administering the Program. Duties include:

- 1) Assist in identifying work areas, processes or tasks that require workers to wear respirators, and evaluating hazards.
- 2) Assist in selection of respiratory protection options.
- 3) Approve selection of respiratory protection options.
- 4) Approve Standard Operating Procedures.
- 5) Conduct training.
- 6) Administer the medical surveillance program.
- 7) Make appropriate forms available to personnel and Project Administrators.
- 8) Assist in ensuring proper storage and maintenance of respiratory protection equipment.
- 9) Conduct qualitative fit testing.
- 10) Administer quantitative fit testing.
- 11) Coordinate exposure monitoring.
- 12) Maintain records required by the Program.
- 13) Evaluate the Program.
- 14) Update the Program, as needed.

#### **The Project Administrator Must:**

- 1) Be knowledgeable about the Program and its requirements.
- 2) In coordination with the DEHS, as appropriate, identify work areas, processes or tasks that require workers to wear respirators, and evaluate hazards. The hazard evaluation will include:
  - a) Identification and development of a list of hazardous substances used in the workplace, by department, or work process.
  - b) Review of work processes to determine where potential exposures to these hazardous substances may occur. This review shall:
    - i) Be conducted by surveying the workplace,
    - ii) Review process records,
    - iii) Communicate with personnel, and
    - iv) Create a Standard Operating Procedure.

- c) Where required, exposure monitoring to quantify potential hazardous exposures. Monitoring will be coordinated through the DEHS.
- 3) Select respiratory protection options.
- 4) Inform personnel of the potential hazards associated with the tasks to be performed.
- 5) Submit Standard Operating Procedures to DEHS for approval.
- 6) Complete Respirator Request Form and send to DEHS for approval.
- 7) Assure Personnel's Respirator Checklist is up-to-date:
  - a) Keep a copy on file, and.
  - b) If it is out of date, contact DEHS.
- 8) Provide equipment for proper storage and maintenance of respiratory protection equipment.
- 9) Arrange for purchase and payment of respirator physical, respirator, replacement parts, respirator cartridges, filters and repairs.
- 10) Verify that Personnel are trained on the Program and approved Standard Operating Procedure for their work area.
- 11) Post a copy of the approved Standard Operating Procedure in the work area.
- 12) Supervise the performance of personnel by monitoring respirator use to ensure that respirators are used in accordance with their certifications.
- 13) Check that respirators fit well and do not cause discomfort.
- 14) Ensure that Personnel are following proper storage and maintenance of respiratory protection equipment.
- 15) Ensure that respirators that require repair be removed from service until the repair has been made or respirator is replaced.
- 16) Maintain records required by the program.
- 17) Coordinate with the DEHS on how to address respiratory hazards or other concerns regarding the program.

**Personnel Must:**

- 1) Be aware of the work area hazard.
- 2) Attend training.
- 3) Schedule and receive the yearly medical evaluation.
- 4) Receive fit testing.
- 5) Present completed Respirator Checklist to the Project Administrator.
- 6) Understand and follow the Program.
- 7) Understand and follow the Standard Operating Procedure.
- 8) Wear the respiratory protection equipment provided, according to the instructions and training received.
- 9) Wear only the respirator trained upon and properly fitted to use.
- 10) Inspect, store, and maintain the respiratory protection equipment provided, according to the instructions and training received.
- 11) Report any change in health to the project administrator, DEHS or the approving physician.
- 12) Perform positive or negative pressure checks each time the respirator is put on, if using a tight-fitting respirator.
- 13) Inform the Project Administrator whenever there is a concern about the atmospheric conditions within a work area, so that the area can be evaluated, and respirators prescribed as necessary.

- 14) Eliminate conditions, such as beard growth, long side burns, large mustaches, which could prevent a good facepiece-to-face seal or could interfere with the proper function of the respirator.
- 15) Be aware that Personnel have the responsibility to wear the respirator when required
- 16) Inform their Project Administrator if the respirator no longer fits well and request a new one that fits properly.
- 17) Inform Project Administrator if Respirator Checklist is about to expire.
- 18) Inform the Project Administrator and/or DEHS of any respiratory hazards that are not adequately addressed in the work area and of any other concerns that they have regarding the program.

## **5. Voluntary Respirator Use**

- 1) Personnel may request, from the Project Administrator, a respirator or may be permitted to use their own respirator, where a respirator is not required.
- 2) The Project Administrator and DEHS will determine that such use in itself will not create a hazard.
- 3) The Project Administrator and DEHS shall authorize voluntary use of respiratory protective equipment as requested by all personnel on a case-by-case basis, depending on specific workplace conditions and the results of the medical evaluations.
- 4) If Personnel are permitted to wear a respirator, other than a filtering face piece respirator (dust mask), where not required, Personnel will be included in all elements of the Program.
- 5) Voluntary use of a filtering facepiece respirator (dust mask).
  - a) Personnel may be fitted with filtering face pieces with P95, P99, P100, N95, N99 or N100 capabilities.
  - b) Personnel must be provided with a written copy of Appendix E hereto for employees who request voluntary use of respiratory protection.
  - c) The DEHS and the Project Administrator of the Personnel must maintain assigned copy documenting the Personnel has received and read Appendix E hereto.
- 6) The University will provide respirators at no charge to employees for voluntary use for the following work processes:
  - a) Maintenance and Housing Staff may wear half-facepiece APRs with appropriate cartridges, while removing intact asbestos resilient flooring.
  - b) Maintenance staff may wear the appropriate filtering facepiece masks (dust masks) while operating the fluorescent tube crusher.
- 7) The DEHS or Project Administrator will provide all personnel who voluntarily choose to wear either of the above respirators with a copy of Appendix D of the standard. (Appendix D details the requirements for voluntary use of respirators by employees.)
- 8) Personnel must sign Appendix D and return it to the Project Administrator. The Project Administrator will send a copy to DEHS.
- 9) Personnel choosing to wear a half-facepiece APR must comply with the procedures for Medical Evaluation, Respirator Use, and Cleaning, Maintenance and Storage.

## **6. Immediately Dangerous to Life or Health**

The DEHS has not identified any area as presenting the potential for Immediate Danger to Life or Health conditions.

## **7. Selection of Respiratory Equipment**

- 1) Respirators shall be selected on the basis of the hazards to which Personnel is exposed. The respirator shall be adequate to protect the health of personnel and to ensure compliance with all OSHA requirements. Respirator selection shall include consideration of the following factors:
  - a) The type of respiratory hazard, including physical and chemical properties of the contaminant and its effect on humans,
  - b) The concentration of the contaminant,
  - c) The duration of exposure and the period of time respiratory protection are needed,
  - d) The activities of the workers during exposure and respirator use,
  - e) The characteristics, capabilities and limitations of the various types of respirators, and
  - f) The protection factor assigned to the respirator.
- 2) All respirators and particulate filters used at the university shall be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in compliance with the conditions of its certification.
- 3) For protection against gases and vapors, the air-purifying respirator shall be equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant. If there is no ESLI appropriate for the conditions, a change schedule for canisters and cartridges will be formulated based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life.

## **8. Respirator Use**

- 1) All Personnel must first receive proper training, fit testing and current medical evaluation before wearing, or being assigned to wear, a respirator.
- 2) Personnel shall not wear a tight-fitting facepiece respirator whenever any condition exists which could affect the seal of the respirator or valve function (e.g. beards, sideburns, facial hair, missing dentures, skull caps, personal protective equipment (PPE), or eyeglass temple pieces that projects under the respirator.)
- 3) Special spectacle kits or other devices shall be made available for individuals who wear corrective lenses, and who also must use a tight-fitting full-facepiece respirator.

## **9. Fit Testing**

- 1) Fit testing is required for Personnel wearing all respirators including dust masks.
- 2) Personnel who are required to wear respirators will be fit tested:
  - a) Prior to being allowed to wear any respirator with a tight fitting facepiece,
  - b) Annually, and

- c) When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.).
- 3) Personnel will be fit tested with the make, model, and size of respirator that they will actually wear. Personnel will be provided with several models and sizes of respirators so that they may find an optimal fit. Fit testing of PAPRs is to be conducted in the negative pressure mode.
- 4) The DEHS will arrange for fit tests following the OSHA approved Biter Solution Aerosol QLFT Protocol in Appendix A (B4) of the Respiratory Protection standard.
- 5) The DEHS has determined that QNFT is not required for the respirators used under current conditions at the university. If conditions affecting respirator use change, the DEHS will evaluate on a case-by-case basis whether QNFT is required.

## **10. Training and Information**

- 1) Personnel will be trained such that they can demonstrate knowledge of at least:
  - a) Why the respirator is necessary and how improper fit, use, or maintenance can compromise its protective effect.
  - b) Limitations and capabilities of the respirator.
  - c) Effective use in emergency situations.
  - d) How to inspect, put on and remove, use and check the seals.
  - e) Proper maintenance and storage.
  - f) Recognition of medical signs and symptoms that may limit or prevent effective use.
  - g) The general requirements of the OSHA standard.
- 2) Training shall be provided prior to use.
- 3) Retraining is required annually, and when:
  - a) Changes in the workplace or type of respirator render previous training obsolete.
  - b) Other situations arise in which retraining appears necessary.
- 4) When DEHS had completed training they will sign and date the Personnel's Respirator Checklist.

## **11. Medical Evaluation**

- 1) Personnel who are either required to wear respirators, or who choose to wear an APR voluntarily, must pass a medical exam before being permitted to wear a respirator on the job. Personnel are not permitted to wear respirators until a physician has determined that they are medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use.
- 2) A licensed physician, chosen by the university, will provide the medical evaluations. Medical evaluation procedures are as follows:
  - a) The medical evaluation will be conducted using the questionnaire provided in Appendix C to Sec. 1910.134: OSHA Respirator Medical Evaluation Questionnaire. DEHS will provide a copy of this questionnaire to all Personnel requiring medical evaluations.
  - b) To the extent feasible, the university will assist (by providing help in reading the questionnaire) personnel who are unable to read the questionnaire. When this is not possible, Personnel will be sent directly to the physician for medical evaluation.

- c) All affected Personnel will be given a copy of the medical questionnaire to fill out. Personnel will be permitted to fill out the questionnaire on university time.
  - d) Follow-up medical exams will be granted to Personnel as required by the standard and/or as deemed necessary by the examining physician.
  - e) All Personnel will be granted the opportunity to speak with the physician about their medical evaluation, if they so request.
  - f) DEHS will provide the examining physician with a copy of this Program, a copy of the Respiratory Protection standard, the list of hazardous substances by work area, and for each person requiring evaluation: his or her work area or job title, proposed respirator type and weight, length of time required to wear respirator, expected physical work load (light, moderate, or heavy), potential temperature and humidity extremes, and any additional protective clothing required.
  - g) Any Personnel required for medical reasons to wear a positive pressure air purifying respirator will be provided with a powered air purifying respirator.
  - h) After each Personnel has received clearance and begun to wear his or her respirator, additional medical evaluations will be provided under the following circumstances:
    - i) Personnel reports signs and/or symptoms related to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing;
    - ii) The examining physician or Project Administrator informs DEHS that the employee needs to be reevaluated;
    - iii) Information from this Program, including observations made during fit testing and program evaluation, indicates a need for reevaluation; or
    - iv) A change occurs in workplace conditions that may result in an increased physiological burden on personnel.
- 3) All examinations and questionnaires are to remain confidential between the Personnel and the physician.

## **12. Cleaning**

- 1) Respirators are to be regularly cleaned and disinfected at a designated respirator cleaning station.
- 2) Respirators issued for the exclusive use of Personnel shall be cleaned as often as necessary, but at least once after each use.
- 3) The following procedure is to be used when cleaning and disinfecting respirators.
  - a) Disassemble respirator, removing any filters, canisters, or cartridges.
  - b) Wash the facepiece and associated parts in a mild detergent with warm water. Do not use organic solvents.
  - c) Rinse completely in clean warm water.
  - d) Wipe the respirator with disinfectant wipes (70% Isopropyl Alcohol) to kill germs.
  - e) Air-dry in a clean area.
  - f) Reassemble the respirator and replace any defective parts.
  - g) Place in a clean, dry plastic bag or other air tight container.

## **13. Maintenance**

- 1) Respirators are to be properly maintained at all times in order to ensure that they function

properly and adequately protect Personnel. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components will be replaced or repairs made beyond those recommended by the manufacturer. Repairs to regulators or alarms of atmosphere-supplying respirators will be conducted by the manufacturer.

- 2) The following checklist will be used when inspecting respirators:
  - a) Facepiece:
    - i. Cracks, tears or holes,
    - ii. Facemask distortion, and
    - iii. Cracked or loose lenses/face shield.
  - b) Headstraps:
    - i. Breaks or tears, and
    - ii. Broken buckles.
  - c) Valves:
    - i. Residue or dirt, and
    - ii. Cracks or tears in valve material.
  - d) Filters/Cartridges
    - i. Approval designation,
    - ii. Gaskets,
    - iii. Cracks or dents in housing, and
    - iv. Proper cartridge for hazard.
- 3) Personnel are permitted to leave their work area to perform limited maintenance on their respirator in a designated area that is free of respiratory hazards. Situations when this is permitted include to wash their face and respirator facepiece to prevent any eye or skin irritation, to replace the filter, cartridge or canister, and if they detect vapor or gas breakthrough or leakage in the facepiece or if they detect any other damage to the respirator or its components.

#### **14. Change Schedules**

- 1) Personnel wearing APRs with P100 filters for protection against wood dust and other particulates shall change the cartridges on their respirators when they first begin to experience difficulty breathing (i.e., resistance) while wearing their masks.
- 2) Personnel voluntarily wearing APRs with organic vapor cartridges shall change the cartridges on their respirators at the end of each work week to ensure the continued effectiveness of the respirators.

#### **15. Storage**

- 1) Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations. Each Personnel will clean and inspect their own air-purifying respirator in accordance with the provisions of this Program and will store their respirator in a plastic bag in the area designated by their Project Administrator. Each Personnel will have his/her name on the bag and that bag will only be used to store that Personnel's respirator.

- 2) The Project Administrator will store the supply of respirators and respirator components in their original manufacturer's packaging.

#### **16. Respirator Malfunction**

For any malfunction of an APR (e.g., such as breakthrough, facepiece leakage, or improperly working valve), the respirator wearer should inform his or her supervisor that the respirator no longer functions as intended and go to the designated safe area to maintain the respirator. The Project Administrator must ensure that Personnel receives the needed parts to repair the respirator or is provided with a new respirator.

#### **17. Defective Respirators**

- 1) Respirators that are defective or have defective parts shall be taken out of service immediately. If, during an inspection, Personnel discover a defect in a respirator, he or she is to bring the defect to the attention of his or her supervisor or Project Administrator.
- 2) The Project Administrator will decide whetherto:
  - a) Temporarily take the respirator out of service until it can be repaired,
  - b) Perform a simple fix on the spot such as replacing a head strap, or
  - c) Dispose of the respirator due to an irreparable problem or defect.
- 3) When a respirator is taken out of service for an extended period of time, the respirator will be tagged out of service and Personnel will be given a replacement of similar make, model, and size. All tagged out respirators will be kept in the storage cabinet inside the Project Administrator's office or disposed of.

#### **18. Documentation and Recordkeeping**

A written copy of this Program and the OSHA standard will be kept in the Project Administrator's office or an online copy will be made easily available to all Personnel who wish to review it.

Also maintained in the Project Administrator's office and the DEHS's office are copies of the Respirator Request Form and the Respirator Checklist. These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted.

The completed medical questionnaire, which is Appendix C to Sec. 1910.134: OSHA Respirator Medical Evaluation Questionnaire, and the physician's documented findings are confidential and will remain with the examining physician. The university will only retain the physician's written recommendation on the respirator checklist, regarding each employee's ability to wear a respirator.

#### **19. Updating the Hazard Assessment**

The Project Administrator must revise and update the hazard assessment as needed (i.e., any time work process changes may potentially affect exposure). If personnel feel that respiratory protection is needed during a particular activity, he or she is to contact his or her Project

Administrator. The Project Administrator will evaluate the potential hazard, arranging for DEHS assistance as necessary. The Project Administrator will then communicate the results of that assessment back to Personnel and DEHS. If it is determined that respiratory protection is necessary, all other elements of this Program will be in effect for those tasks and this Program will be updated accordingly.

## **20. Program Evaluation**

DEHS will conduct periodic evaluations of the workplace to ensure that the provisions of this Program are being implemented. The evaluations will include regular consultations with employees who use respirators and their supervisors, site inspections, air monitoring and a review of records.

Problems identified will be noted in an inspection log and addressed by the DEHS. These findings will be reported to appropriate university management, and the report will list plans to correct deficiencies in the respirator program and target dates for the implementation of those corrections.

## **21. Approval**

The IIT Safety Policy Committee has reviewed this Program and recommended its adoption on August 13, 2012, and this Respiratory Protection Program is approved and effective this 17<sup>th</sup> day of August 2012. The Safety Policy Committee will review the contents, implementation and effectiveness of this Program no less than annually (but as often as necessary) and will make modifications as necessary to ensure that it meets all required legal and regulatory requirements and is adequately providing a safe and healthful environment for IIT faculty, employees and students. Any modifications to this Policy have been reviewed and approved, and are effective as of the date noted on the cover page.

By: /s/ Alan W. Cramb  
Provost and Senior Vice President

By: /s/ John P. Collins  
Vice President for Business & Operations

**APPENDIX A  
REFERENCES**

Occupational Safety and Health Standards - 29 CFR 1910.134, Personal Protective Equipment – Respiratory Protection:

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134>

Occupational Safety and Health Standards – 29 CFR 1910.1450(e)(3)(i), Toxic and Hazardous Substances – Occupational Exposure to Hazardous Chemicals in Laboratories:

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1450>

## APPENDIX B RESPIRATOR REQUEST FORM

### Personnel Information

Name:	I.D. Number:
Email:	Department:

### Project Administrator Information

Name:	I.D. Number:
Contact Number:	Email:
Work Address:	

### Hazard Identification – Attach Material Safety Data Sheets (MSDS)

Check all that Apply and list below: <input type="checkbox"/> Acids <input type="checkbox"/> Bases <input type="checkbox"/> Organics <input type="checkbox"/> Asbestos <input type="checkbox"/> Lead <input type="checkbox"/> Other <input type="checkbox"/> Biological Agents <input type="checkbox"/> Radiological Agents <input type="checkbox"/> Other Chemical Agents							
Air Contaminant Identification	PEL	STEL	TLV	REL	Warning Properties: i.e. odor, symptoms, etc..	Can substances be absorbed through the skin or cause skin irritation?	
						<input type="checkbox"/> YES	<input type="checkbox"/> NO
						<input type="checkbox"/> YES	<input type="checkbox"/> NO
						<input type="checkbox"/> YES	<input type="checkbox"/> NO
PEL- Permissible Exposure Limit, STEL – Short-term Exposure Limit, TLV – Threshold Limit Value, REL- Recommended Exposure Limit							

### Hazard Assessment

1. Oxygen Content	<input type="checkbox"/> Below 19.5%	<input type="checkbox"/> Ambient	<input type="checkbox"/> Above 21.5%
2. Toxic Contaminant?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
3. Air Contaminant Type(s)	<input type="checkbox"/> Gas	<input type="checkbox"/> Vapor	<input type="checkbox"/> Mist
	<input type="checkbox"/> Dust	<input type="checkbox"/> Smoke	<input type="checkbox"/> Fumes
		<input type="checkbox"/> Spray	<input type="checkbox"/> Aerosol
4. If particulate are oil aerosols or droplets present in the workplace?	<input type="checkbox"/> "N" – No oil present	<input type="checkbox"/> "R" – Oil Possible	<input type="checkbox"/> "P" – Oil Present
5. Concentration of the contaminant:			
6. Minimum Protection Factor needed:			

## Engineering Controls in Place

Substitution by a less toxic material  
  Isolation or enclosure of process or operation  
  General dilution ventilation  
 Local exhaust, chemical fume hoods, special ventilation systems  
  Tools or equipment designed to minimize emissions  
 Other  
 (Specify) \_\_\_\_\_

## Administrative Controls in Place

Standard Operating Procedures (specify) \_\_\_\_\_  
  Employee Training  
  Other

## Conditions Requiring Respirator Use

Activities requiring Respirator Use:						
Frequency of Use:	<input type="checkbox"/> Daily	<input type="checkbox"/> Weekly	<input type="checkbox"/> Monthly	<input type="checkbox"/> Yearly	<input type="checkbox"/> Varies	<input type="checkbox"/> Rarely
Exertion Level:	<input type="checkbox"/> Light	<input type="checkbox"/> Moderate	<input type="checkbox"/> Heavy	<input type="checkbox"/> Strenuous	<input type="checkbox"/> All	
Duration of use per shift:	<input type="checkbox"/> < ¼ hour	<input type="checkbox"/> > ¼ hour	<input type="checkbox"/> > 2 hour	<input type="checkbox"/> variable		
Temperature during use:	<input type="checkbox"/> < 0 C	<input type="checkbox"/> 0 to 25 C	<input type="checkbox"/> > 25 C	<input type="checkbox"/> All Temps		
Location of Use:	<input type="checkbox"/> Lab	<input type="checkbox"/> Outdoors	<input type="checkbox"/> Indoors- No A/C	<input type="checkbox"/> Indoors – A/C		
	<input type="checkbox"/> Other					
Work area location:	<input type="checkbox"/> Bldg Name & Room #			<input type="checkbox"/> Various locations on Campus		

## Work Considerations

Emergency Escape Needed or Potentially Needed? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Uncontrolled Hostile Environment:	<input type="checkbox"/> Emergency escape	<input type="checkbox"/> Rescue operations	<input type="checkbox"/> Confined Spaces	<input type="checkbox"/> Spill Clean Up
	<input type="checkbox"/> Other:			

Other PPE Used:	<input type="checkbox"/> Hard Hat	<input type="checkbox"/> Gloves	<input type="checkbox"/> Eye Protection	<input type="checkbox"/> Boots	<input type="checkbox"/> Noise muffs	<input type="checkbox"/> Protective Clothing	<input type="checkbox"/> Other
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**Types of Respirators Requested (check all that apply)**

<input type="checkbox"/> Disposable Filtering Facepiece (dust mask)	<input type="checkbox"/> Air purifying, non-powered	<input type="checkbox"/> Powered air purifying (PAPR)
<input type="checkbox"/> Supplied-air pressure demand	<input type="checkbox"/> SCBA	<input type="checkbox"/> Supplied-air continuous flow
<input type="checkbox"/> Other (please specify):		
<input type="checkbox"/> ½ face	<input type="checkbox"/> Full face	<input type="checkbox"/> Hood

**Signature – Personnel Administrator**

Name (Printed):	Date:
Signature:	

**APPENDIX C  
RESPIRATOR CHECKLIST**

The following Checklist must be completed before personnel can wear a respirator at Illinois Institute of Technology.

Name of personnel: \_\_\_\_\_ Date \_\_\_\_\_

Respirator Type: \_\_\_\_\_

- 1. Is this a voluntary Respirator (circle one)? YES / NO
  - a. IF this is a voluntary respirator, has personnel signed and submitted the sheet titled "Information for Employees Using Respirators When Not Required Under Standard-29CFR1910.134 App D"? YES / NO
  - b. If voluntary respirator is a filtering face piece respirator (dust mask) this form is complete.

For all Respirators that are not filtering face piece respirators (dust masks), the rest of this form must be completed:

- 1. Personnel has read and understands the IIT Respirator Protection Policy. YES / NO

\_\_\_\_\_  
Date: \_\_\_\_\_  
Personnel's Signature

- 2. Personnel has received Respirator Training. YES / NO

\_\_\_\_\_  
Date: \_\_\_\_\_  
Signature of person who supplied training

- 3. Personnel has passed a medical evaluation based on the OSHA Respirator Medical Evaluation Questionnaire – 29CFR1910.134 APP C. YES / NO

\_\_\_\_\_  
Date: \_\_\_\_\_  
Physician's Signature

- 4. Personnel has been fit tested for required respirator. YES / NO

\_\_\_\_\_  
Date: \_\_\_\_\_  
Signature of person who performed fit test

**APPENDIX D**  
**OSHA Respirator Medical Evaluation Questionnaire**

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** I
- **Subpart Title:** Personal Protective Equipment
- **Standard Number:** [1910.134 App C](#)
- **Title:** OSHA Respirator Medical Evaluation Questionnaire (Mandatory).

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

To the employee:

Can you read (circle one)?: Yes / No

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

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

1. Today's date: \_\_\_\_\_
2. Your name: \_\_\_\_\_
3. Your age (to nearest year): \_\_\_\_\_
4. Sex (circle one): Male / Female
5. Your height: \_\_\_\_\_ ft. \_\_\_\_\_ in.
6. Your weight: \_\_\_\_\_ lbs.
7. Your job title: \_\_\_\_\_
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): \_\_\_\_\_
9. The best time to phone you at this number: \_\_\_\_\_

10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one)?: Yes/No
11. Check the type of respirator you will use (you can check more than one category):
- \_\_\_\_\_ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
  - \_\_\_\_\_ Other type (for example, half- or full-facepiece type, powered-airpurifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (circle one)?: Yes /No

If "yes," what type(s)? \_\_\_\_\_  
 \_\_\_\_\_

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

- Do you *currently* smoke tobacco, or have you smoked tobacco in the last month? Yes /No
- Have you *ever had* any of the following conditions?
  - Seizures: Yes / No
  - Diabetes (sugar disease): Yes / No
  - Allergic reactions that interfere with your breathing: Yes /No
  - Claustrophobia (fear of closed-in places): Yes /No
  - Trouble smelling odors: Yes /No
- Have you *ever had* any of the following pulmonary or lung problems? Yes /No
  - Asbestosis: Yes / No
  - Asthma: Yes / No
  - Chronic bronchitis: Yes / No
  - Emphysema: Yes / No
  - Pneumonia: Yes/ No
  - Tuberculosis: Yes / No
  - Silicosis: Yes / No
  - Pneumothorax (collapsed lung): Yes / No
  - Lung cancer: Yes / No
  - Broken ribs: Yes / No
  - Any chest injuries or surgeries: Yes /No
  - Any other lung problem that you've been told about: Yes /No
- Do you *currently* have any of the following symptoms of pulmonary or lung illness?
  - Shortness of breath: Yes / No
  - Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes / No
  - Shortness of breath when walking with other people at an ordinary pace on level ground: Yes / No
  - Have to stop for breath when walking at your own pace on level ground: Yes /No

- e. Shortness of breath when washing or dressing yourself: Yes /No
  - f. Shortness of breath that interferes with your job: Yes /No
  - g. Coughing that produces phlegm (thick sputum): Yes /No
  - h. Coughing that wakes you early in the morning: Yes /No
  - i. Coughing that occurs mostly when you are lying down: Yes /No
  - j. Coughing up blood in the last month: Yes /No
  - k. Wheezing: Yes /No
  - l. Wheezing that interferes with your job: Yes /No
  - m. Chest pain when you breathe deeply: Yes /No
  - n. Any other symptoms that you think may be related to lung problems: Yes /No
5. Have you *ever had* any of the following cardiovascular or heart problems?
- a. Heart attack: Yes /No
  - b. Stroke: Yes /No
  - c. Angina: Yes /No
  - d. Heart failure: Yes /No
  - e. Swelling in your legs or feet (not caused by walking): Yes /No
  - f. Heart arrhythmia (heart beating irregularly): Yes /No
  - g. High blood pressure: Yes /No
  - h. Any other heart problem that you've been told about: Yes /No
6. Have you *ever had* any of the following cardiovascular or heart symptoms?
- a. Frequent pain or tightness in your chest: Yes /No
  - b. Pain or tightness in your chest during physical activity: Yes /No
  - c. Pain or tightness in your chest that interferes with your job: Yes /No
  - d. In the past two years, have you noticed your heart skipping or missing a beat: Yes /No
  - e. Heartburn or indigestion that is not related to eating: Yes /No
  - d. Any other symptoms that you think may be related to heart or circulation problems: Yes /No
7. Do you *currently* take medication for any of the following problems?
- a. Breathing or lung problems: Yes /No
  - b. Heart trouble: Yes /No
  - c. Blood pressure: Yes /No
  - d. Seizures (fits): Yes /No
8. If you've used a respirator, have you *ever had* any of the following problems?  
(If you've never used a respirator, check the following space and go to question 9:)
- a. Eye irritation: Yes /No
  - b. Skin allergies or rashes: Yes /No
  - c. Anxiety: Yes /No
  - d. General weakness or fatigue: Yes /No
  - e. Any other problem that interferes with your use of a respirator: Yes /No
9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire? Yes /No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, 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, hands, legs, or feet: Yes / No
  - b. Back pain: Yes / No
  - c. Difficulty fully moving your arms and legs: Yes / No
  - d. Pain or stiffness when you lean forward or backward at the waist: Yes / No
  - e. Difficulty fully moving your head up or down: Yes / No
  - f. Difficulty fully moving your head side to side: Yes / No
  - g. Difficulty bending at your knees: Yes / No
  - h. Difficulty squatting to the ground: Yes / No
  - i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes / No
  - j. Any other muscle or skeletal problem that interferes with using a respirator: Yes / No

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

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen? Yes / No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions? Yes / No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemical?: Yes / No

If "yes," name the chemicals if you know them: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Have you ever worked with any of the materials, or under any of the conditions, listed below?
- a. Asbestos: Yes / No
  - b. Silica (e.g., in sandblasting): Yes / No
  - c. Tungsten/cobalt (e.g., grinding or welding this material): Yes / No
  - d. Beryllium: Yes / No
  - e. Aluminum: Yes / No
  - f. Coal (for example, mining): Yes / No
  - g. Iron: Yes / No
  - h. Tin: Yes / No
  - i. Dusty environments: Yes / No
  - j. Any other hazardous exposures: Yes / No

If "yes," describe these exposures: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

5. List your previous occupations: \_\_\_\_\_  
\_\_\_\_\_

6. List your current and previous hobbies: \_\_\_\_\_  
\_\_\_\_\_

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

If "yes," were you exposed to biological or chemical agents (either in training or combat)?  
Yes / No

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

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

If "yes," name the medications if you knowthem: \_\_\_\_\_

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

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

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for allanswers that apply to you)?

- a. Escape only (no rescue): Yes /No
- b. Emergency rescue only: Yes /No
- c. Less than 5 hours *per week*: Yes /No
- d. Less than 2 hours *per day*: Yes /No
- e. 2 to 4 hours per day: Yes /No
- f. Over 4 hours per day: Yes /No

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

- a. *Light* (less than 200 kcal per hour): Yes /No

If "yes," how long does this period last during theaverage shift: \_\_\_\_\_hrs. \_\_\_\_\_mins.

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

- b. *Moderate* (200 to 350 kcal per hour): Yes /No

If "yes," how long does this period last during theaverage shift: \_\_\_\_\_hrs. \_\_\_\_\_mins.

Examples of moderate work effort are *sitting* while nailing or filing; *driving* a truck or bus in urban traffic; *standing* while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at 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 lbs.) on a level surface.

- c. *Heavy* (above 350 kcal per hour): Yes /No

If "yes," how long does this period last during theaverage shift: \_\_\_\_\_hrs. \_\_\_\_\_mins.

Examples of heavy work are *lifting* a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; *shoveling*; *standing* while bricklaying or

chipping castings; *walking* up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

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

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

14. Will you be working under hot conditions (temperature exceeding 77 deg. F)? Yes / No

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

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

\_\_\_\_\_  
\_\_\_\_\_

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

\_\_\_\_\_  
\_\_\_\_\_

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

Name of the first toxic substance: \_\_\_\_\_

Estimated maximum exposure level per shift: \_\_\_\_\_

Duration of exposure per shift: \_\_\_\_\_

Name of the second toxic substance: \_\_\_\_\_

Estimated maximum exposure level per shift: \_\_\_\_\_

Duration of exposure per shift: \_\_\_\_\_

Name of the third toxic substance: \_\_\_\_\_

Estimated maximum exposure level per shift: \_\_\_\_\_

Duration of exposure per shift: \_\_\_\_\_

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

\_\_\_\_\_

**APPENDIX E**  
**INFORMATION FOR EMPLOYEES USING RESPIRATORS**  
**WHEN NOT REQUIRED UNDER THE STANDARD**

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** I
- **Subpart Title:** Personal Protective Equipment
- **Standard Number:** 1910.134 App D
- **Title:** (Mandatory) Information for Employees Using Respirators When Not Required Under Standard.

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

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to 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.

I, \_\_\_\_\_ (Print name here) attest that I have read the foregoing information and have had the opportunity to review the above-referenced OSHA regulations, including Appendix D thereto, on \_\_\_\_\_ (Print Date).

\_\_\_\_\_  
(Signature)