

THE UNIVERSITY OF THE INCARNATE WORD

Respiratory Protection Program



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1.0 Purpose

This document establishes The University of the Incarnate Word's written respiratory protection program, as required by the Occupational Safety and Health Administration (OSHA) under Title 29, Code of Federal Regulations Part 1910.134. This Respiratory Protection Program addresses the use of respiratory protection as a method to protect University employees from exposures to airborne biological, chemical, and physical agents to safe levels below exposure limits, as well as from oxygen deficient atmospheres. Whenever feasible, engineering controls and work practice controls will first be used to maintain worker exposures below exposure limits and at a safe level. It is understood that respiratory protection shall only be required if these controls are not feasible or are not able to reduce exposures adequately.

Respirators shall be provided by UIW at no cost to the employee (29 CFR 1910, 134) when such equipment is necessary to protect the health of UIW employees.

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2.0 Responsibilities

The University of the Incarnate Word departments and its employees have responsibilities under this program.

2.1 Environmental Health Safety and Risk Management

- *EHSRM will be responsible for:*
 - Administrating the Respiratory Protection Program
 - Providing and/or overseeing respirator fit-testing and training
 - Maintaining records of exposure assessments, training, fit testing and medical evaluation
 - Providing guidance to supervisors in the selection and purchase of approved respirators.
 - Monitoring and evaluating respirable hazards in the workplace
 - Conducting a program evaluation

2.2 Departments

- *Supervisors will be responsible for:*
 - Providing new employees with informal on-the-job training about potential respirable hazards, personal protective equipment requirements, and this Program
 - Notifying EHSRM about workplace conditions and potentially affected employees
 - Making information and training materials available to potentially affected employees
 - Ensuring that affected employees receive medical surveillance
 - Ensuring that affected employees receive respirator training and fit-testing prior to working with the respirator, and annually thereafter
 - Supplying approved respirators to affected employees free-of-charge
 - Requiring affected employees to wear respirators

2.3 Employees

- *Employees will be responsible for:*
 - Observing the procedures and requirements outlined in this document.
 - Attending training sessions and obtaining medical surveillance.
 - Wearing approved respirators as required.
 - Notifying supervisors of changes in the workplace that could change exposures.

3.0 Respirator Selection

UIW will provide an appropriate respirator based on the employee's respiratory hazards and user factors that can affect respirator performance. UIW will only use respirators that are certified by the National Institute for occupational Safety and Health (NIOSH). Respirators will only be issued to an individual for his or her own personal use since you will be Fit Tested to your individual respirator. UIW will provide a sufficient number of respirators to make sure that the respirator correctly fits the user.

3.1 Respirator Types

Respirators are devices that protect workers from inhaling harmful substances. These substances can be in the form of airborne vapors, gases, dust, fogs, fumes, mists, smokes, or sprays. Some respirators also ensure that workers do not breathe air that contains dangerously low levels of oxygen.

Respirators provide protection from respiratory hazards only when they are used properly.

Major types of respirators:

- **Air-purifying respirators**, which remove contaminants from the air.
- **Atmosphere-supplying respirators**, which provide clean air from an uncontaminated source.
*****UIW currently does not use Atmosphere-supplying respirators*****
- **N-95**, filters at least 95% of airborne particles but is not resistant to oil.
- **Dust**, helps protect against dust (i.e. fiberglass, drywall, silica, etc.).

Air- purifying respirator



Atmosphere supplying respirators



Filtering Facepiece (Dust)



N-95



4.0 Medical Screening

Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. The University of the Incarnate Word shall provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace.

Additional medical evaluations will be provided if:

- Employee reports any medical signs or symptoms that are related to his or her ability to use a respirator;
- UIW supervisor or Program Administrator thinks the employee needs a new screening;
- A condition from the original medical screening requires follow up;
- A change occurs in the workplace that may result in a substantial increase in the physiological burden placed on an employee.

UIW will select a physician or other licensee health care professional (PLHCP) to perform the medical evaluations. UIW will provide the OSHA Respirator Medical Evaluation Questionnaire (Appendix C to 1910.134). This form will be completed by the employee during normal working hours and be administered confidentially. The questionnaire will be administered in a manner that ensures that the employee understands its content. A copy of the UIW's written respiratory protection program and a copy of section 1910.134 will be given to the University's PLHCP.

5.0 Fit-Test Procedures

All UIW employees required to wear a tight fitting respirator will be fit tested according to the OSHA standard. The employee will be allowed to select the most acceptable respirator from a sufficient number of respirator models and sizes. Fit testing will be performed before the initial use of the respirator and recur annually. If any conditions arise that may affect the way the respirator fits, the employee will be required to be fit-tested again

5.1 Restrictions

Respirators requiring a tight face seal for proper performance may not be worn if certain physical or health conditions prevent obtaining the tight seal. These may include: glasses (with tight fitting full face-piece respirators); missing denture(s); facial hair that interferes with the seal; punctured eardrum; articles of clothing that affect fit; other physical, health, or prosthetic conditions that interrupt or preclude an effective respirator fit test.

Each of these conditions may be remedied as follows:

- **Eyeglass Temple Pieces:** where a full-face respirator must be worn, a spectacle kit that fit the respirator must be provided to the employee free-of-charge. The employee will then need to visit an optometrist during regular working hours to arrange for the lens to be fabricated to their required prescription. Although the

practice is strongly discouraged, contact lenses may be worn provided the respirator is of full-face design.

- **Missing Denture(s):** will be addressed by a PLHCP and the reason for the missing dentures identified.
- **Facial Hair Impeding Effective Seal:** where an employee is required to wear a negative pressure respirator, and facial hair impedes an effective facial seal, the hair must be removed before the respirator can be worn.
- **Clothing:** clothing, jewelry, or other personal items worn that prevent making an effective facial seal must be removed so that the respirator can be properly worn.
- **Other Issues:** (e.g., prosthetics, handicaps, facial malformations) that could prevent the effective use of a respirator will be addressed on a case by case basis.

6.0 Respirator use

Upon donning a respirator the employee must perform a user seal check each time they put on the respirator.

The employee must either perform a positive and/or negative pressure check.

- **Positive Pressure check:**
 - Close off the exhalation valve with the palm of the hand and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of air at the seal.
- **Negative pressure check:**
 - Close off the inlet opening of the canister(s) or cartridge(s) by covering with the palms of the hands and inhale gently so that the facepiece collapses slightly, and held the breath for ten seconds. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

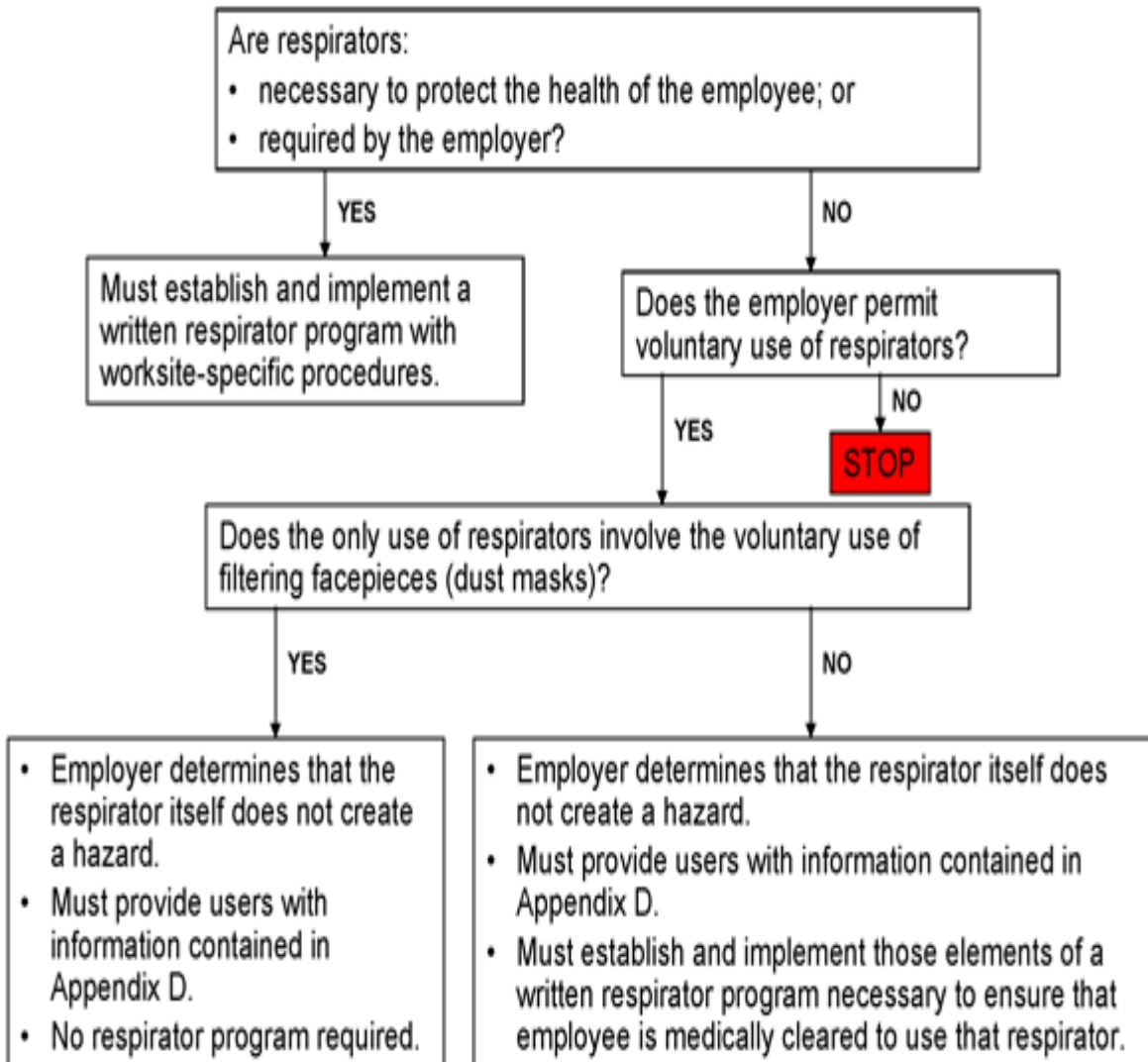
When using a respirator, employees must immediately stop work and leave the area if they:

- Detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece;
- Develop any signs or symptoms of over-exposure;
- Are alerted to end-of-service life indicator;
- Need to wash their face and respirator facepiece as necessary to prevent eye or skin irritation associated with respirator use;
- Need to replace the respirator or the filter, cartridge, or canister elements.

6.1 Flow Chart

Respirator Use Requirements Flow Chart

29 CFR 1910.134(c)



6.2 Voluntary Use

Voluntary Users of Respirators (including dust masks)

Information for employees using respirators when not required under the standard
(*Appendix D to Sec. 1910.134*)

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. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the level of hazardous substance does not exceed the limits set by OSHA standards. If The University of the Incarnate Word 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 and is effective.

You should do the following:

- Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
- 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.
- Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed. 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.
- Keep track of your respirator so that you do not mistakenly use someone else's respirator. Keep it in a clean place, and discard or clean it when it becomes visibly dirty or you suspect it might be contaminated.

7.0 Respirator Maintenance

Employees are responsible for properly maintaining all respirators by cleaning/disinfecting, properly storing and performing periodic inspections.

7.1 Cleaning

- Remove filters, cartridges, or canisters. Disassemble face pieces by removing speaking diaphragms, demand and pressure- demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
- 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.
- Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain.

- When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
 - 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,
 - 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,
 - Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
 - 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 face pieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
 - Components should be hand-dried with a clean lint-free cloth or air-dried.
 - Reassemble face piece, replacing filters, cartridges, and canisters where necessary.

7.2 Storing

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

7.3 Periodic Inspections

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

The respirator user shall inspect the respirator for: tightness of connections, condition of parts and the condition of the elastomeric parts for pliability and signs of deterioration. If a respirator fails an inspection it shall be taken out of service and repaired by a person appropriately trained to repair respirators. Only NIOSH approved parts shall be used to repair a respirator.

8.0 Training

Training will be given by the UIW department of Environmental Health Safety and Risk Management or contracted out to qualified contracted instructors. Training will be given in a manner that is understandable to the employee. This training will be given at the time of the first fit-test and annually thereafter.

The training will ensure employees can demonstrate knowledge on the following:

- Why a respirator is necessary and how improper fit, usage or maintenance can compromise the protective effect of the respirator;
- What the limitations and capabilities of the respirator are;
- How to use the respirator effectively in emergency situations (if required);
- How to inspect, put on and remove, use and check the seals of the respirator,
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.

9.0 Program Evaluation

The UIW department of Environmental Health Safety and Risk Management will conduct workplace evaluations as necessary to ensure that the current written Respiratory Protection Program is being effectively implemented and is effective.

The UIW department of Environmental Health Safety and Risk Management and the UIW Director of Facilities Management will regularly consult with employees that are required to wear a respirator to ensure:

- Employee's respirator(s) fit and are appropriate for the job.
- Respirator(s) are being used properly under workplace conditions
- Respirator(s) are being properly maintained.

10.0 Recordkeeping

The department of Environmental Health Safety and Risk Management will maintain copies of the employee's medical evaluations, fit-test records, and a copy of the Respiratory Protection Program. All records will be retained and made available in accordance with *29 CFR 1910.1020*.

11.0 Definitions

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

- **Fit Test:** the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.
- **Immediately dangerous to life or health (IDLH):** means 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.
- **Service life:** the period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.
- **Tight-fitting facepiece:** a respiratory inlet covering that forms a complete seal with the face.
- **User Seal Check:** means an action conducted by the respirator user to determine if the respirator is properly seated to the face.
- **Filtering Facepiece (dust mask):** means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

Respiratory Hazards:

- **Dusts and fibers** are solid particles that are formed or generated from solid materials through mechanical processes such as crushing, grinding, drilling, abrading or blasting. Examples are lead, silica, and asbestos.
- **Fumes** are solid particles that are formed when a metal or other solid vaporizes and the molecules condense (or solidify) in cool air. Examples are metal fumes from smelting or welding. Fumes also may be formed from processes such as plastic injection or extrusion molding.
- **Mists** are tiny droplets of liquid suspended in the air. Examples are oil mist produced from lubricants used in metal cutting operations, acid mists from electroplating, and paint spray mist from spraying operations.
- **Gases** are materials that exist as individual molecules in the air at room temperature. Examples are welding gases, such as acetylene and nitrogen, and carbon monoxide produced from internal combustion engines.
- **Vapors** are the gaseous form of substances that are normally in the solid or liquid state at room temperature and pressure. They are formed by evaporation. Most solvents produce vapors. Examples include toluene and methylene chloride.
- **Biological hazards** include bacteria, viruses, fungi, and other living organisms that can cause acute and chronic infections if breathed in. Examples include Legionnaire's Disease, flour, and animal products (dander, excreta).

12.0 Contact Information

Department of Environmental Health Safety and Risk Management

- **Sam McDaniel**
Director of EHSRM / Sec. 504 & ADA Coordinator
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The University of the Incarnate Word

Environmental Health Safety and Risk Management

Transporting Biological Specimens

Guidelines for transporting biological specimens (i.e. human/animal blood, body fluids, tissues):

- Specimen containers should be watertight and leak-proof.
- If the specimen container is a tube, ensure it is tightly capped and placed in a rack to maintain an upright position. The caps on tubes can be wrapped with parafilm to ensure that there is no leakage.
- Single tubes can be placed in a Ziploc bag with the biohazard label on the bag. Absorbent (paper towels, kimwipes, diaper pads, etc.) should be placed inside the bag or in the transport box.
- When transporting multiple primary containers, package them in a manner that will prevent damage to the containers. For example, if you are preparing to transport a number of vacutainers, place these in a rack or tube holder that will prevent contact between the tubes. If possible, place rack inside a large Ziploc bag.
- Place specimen containers and racks in robust, leak-proof plastic or metal transport boxes with secure, tight fitting covers. Triple packaging should be employed. For additional containment, the transport box, which may be a cooler, can be placed inside a Rubbermaid type box with lid. Place absorbent inside the Rubbermaid container.
- Label each transport box appropriately, consistent with its contents, a biohazard symbol (or biohazard symbol on Ziploc bag inside the transport box), the name and telephone number of an emergency contact person, and the receiver's name address and telephone number.
- Specimen data forms and identification data should accompany each transport box.
- Keep spill kits containing absorbent material, a chloride disinfectant, a leak-proof waste container and PPE (gloves) in the transport vehicle.
- Secure the transport boxes in the transport vehicle.
- Travel directly from the pick up location to the drop off point.
- During transport, vehicle should only be used for that purpose.

Receiving packages or specimens:

- Before opening a package, shipment should be examined for the following:
 - Proper paperwork and labeling
 - Package integrity (report any leaking packages to the sending dept. and the PI)
- Package Delivery: deliver package directly to the designated person
- Opening the package: Open package in lab with appropriate safety equipment (PPE and Biological Safety Cabinet)

If you have any questions on the transporting of biological specimens, please contact the office of Environmental Health Safety and Risk Management at 210-829-6035 or 210-805-3068