Miami University

Respiratory Protection Program

Environmental Health and Safety Offices
2004

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RESPIRATORY PROTECTION
WRITTEN PROGRAM

INTRODUCTION

Purpose

This program outlines the procedures governing the selection and use of respirators. Ohio's Public Employment Risk Reduction Program's (PERRP) Respiratory Protection Standard requires that Miami University develop this program to reduce or eliminate employee exposure to harmful air contaminants. Environmental Health and Safety Offices (EHSO) has determined that employees performing the following tasks are exposed to respiratory hazards during routine operations:

- Asbestos Removal
- Asbestos Removal Oversite
- Pesticide/Herbicide Application
- Hazardous Residual Handling
- Spray Painting
- Carpet Cleaning
- Welding, Cutting, and Brazing
- Pool Chemical Handling
- Boiler Maintenance
- Maintenance Response

These hazards include particulates, vapors, gases, mists, dust, and fumes.

Engineering controls (e.g., enclosure or confinement of the operation, general or local ventilation) and product substitution shall be the primary methods in reducing or eliminating employee exposure to air contaminants. Respiratory protection shall be used when engineering controls or product substitution is not feasible or when required by a particular PERRP standard. The tasks or operations requiring the use of respiratory protection are outlined in the Scope and Application of this program.

Additionally, some employees occasionally choose to use respiratory protection where respirators are not required. EHSO will evaluate voluntary respirator usage on a case-by-case basis. Employees shall be required to comply with selected portions of this program to use respirators on a voluntary basis.

SCOPE AND APPLICATION

This program applies to all Miami University employees performing the aforementioned routine tasks who are required to wear a respirator. This includes employees in the Environmental Health and Safety Offices, Physical Facilities Department, and the Department of Recreational Sports. Employees performing these tasks in these areas shall comply with all provisions of this Respiratory Protection Program.

Additionally, employees who voluntarily use a respirator when respiratory protection is not required shall comply with selected provisions of this program, to include medical evaluations, cleaning, maintenance, and storage of respirators. The employee shall be responsible for providing their own respirator, with prior approval by EHSO. The voluntary use of filtering facepieces (i.e., dust masks) is not addressed in this program.
Respirators shall be provided by Miami University (i.e., the affected department) when such equipment is necessary to protect the health of the employee. Respirators shall be provided to employees who have had medical surveillance, training, and fit testing for the purpose

intended. The expense associated with employee training and medical evaluations shall be the responsibility of the department. Appendix A outlines the required respirator and associated task or process for each department. The appendix also addresses voluntary respirator use.

RESPONSIBILITIES

Program Administrator

EHSO is responsible for administering the Respiratory Protection Program. Responsibilities include:

- Conducting audits of the workplace and processes to determine if respiratory protection is necessary (i.e., personal exposure monitoring), when engineering controls are not feasible.
- Selecting the proper respiratory protection.
- Auditing affected departments to ensure compliance with the Respiratory Protection Program.
- Administering the medical surveillance program.
- Maintaining records required by the program.
- Evaluating and updating the program, when necessary.

Supervisors

Affected department's supervisors shall make this document readily accessible to employees or their representatives through posting, inserting in a departmental procedures manual, or by providing photocopies upon request. The master copy shall be on file in EHSO. In addition, the supervisor is responsible for the following:

- Understanding the requirements of the program.
- Ensuring that employees receive annual training, fit testing, and medical evaluations.
- Providing the appropriate respiratory equipment (i.e., through the Program Administrator).
- Ensuring that employees understand and comply with the program. This includes proper use, care, and, maintenance.
- Understanding which processes require the use of respiratory protection.

Employees

The employee shall use respirators according to instructions and training received. Employees are responsible for the following:

- Care and maintenance of respirators.
- Notifying their supervisor if the respirator no longer fits properly. This could occur if there is a substantial weight loss or gain, or a change in facial configuration.
- Informing their supervisor or EHSO of any concerns they have with the program.

REFERENCES

Occupational Safety and Health Administration**.** ***Code of Federal Regulations*****, Chapter 29, Part 1910, Section 134, "Respiratory Protection." (29 CFR 1910.134)**

ABBREVIATIONS

EHSO	Environmental Health and Safety Office
IDLH	Immediately Dangerous to Life or Health
ESLI	End-of-Service-Life Indicator
NIOSH	National Institute for Occupational Safety and Health
PAPR	Powered Air-Purifying Respirator
PERR(P)	Public Employment Risk Reduction (Program)
PLHCP	Physician or other Licensed Health Care Professional
QLFT	Qualitative Fit Test
QNFT	Quantitative Fit Test
SCBA	Self-Contained Breathing Apparatus
OSHA	Occupational Health and Safety Administration
APR	Air Purifying Respirator

REVISIONS

EHSO shall review the Respiratory Protection Program at least annually to ensure departments and affected employees are supporting and following the requirements herein. This may include inspections of respirators used, maintenance records, and real-time industrial hygiene sampling. Only EHSO can add, delete, or modify any provisions in this program.

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.

ANSI: An abbreviation for the American National Standards Institute.

Atmosphere supplying (air-supplying) **respirator**: Respirator devices that provide a respirable atmosphere to the wearer independent of the ambient atmosphere.

Cartridge or canister: A container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

Dust: Solid particles generated by handling, crushing, grinding, rapid impact, detonation, and decrepitation of organic or inorganic materials.

Employee: A Miami University faculty member, staff member, student worker, or contract employee.

End-of-Service-Life Indicator: A warning system for the respirator user, which indicates the approach of the end of adequate respiratory protection (e.g., color change in sorbent material).

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 test (QLFT) and Quantitative fit test (QNFT.)

Fog: A mixture consisting of liquid particles dispersed in a gaseous medium.

Fume: Small solid particles usually generated by condensation from the gaseous state of a metal or plastic after volatilization.

Gas: A state of matter in which the material has very low density and viscosity; can expand and contract greatly in response to changes in temperature and pressure; easily diffuses into other gases; readily and uniformly distributes itself throughout any container.

Immediately Dangerous to Life and Health (IDLH): Acute exposure that poses an immediate threat of loss of life, immediate or delayed irreversible adverse effects on health, or an exposure that would prevent escape from a hazardous environment.

Miami University: The Miami University main campus in Oxford, Ohio and its regional campuses.

Mist: Suspended liquid droplets generated by condensation from the gaseous to the liquid state or by breaking up a liquid into a dispersed state. Mist is formed when a finely divided liquid is suspended in air.

Negative-Pressure Respirator: A type of respirator in which the air pressure inside is lower relative to the outside air pressure.

NIOSH: An abbreviation for the National Institute for Occupational Safety and Health.

Oxygen deficient atmosphere: An atmosphere with less than 19.5% oxygen content.

Powered air-purifying respirator (PAPR): A type of respirator in which filtered air is delivered under positive pressure to the wearer's breathing zone.

Qualitative fit test (QLFT): Means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent (e.g., irritant smoke).

Quantitative fit test (QNFT): An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator

Self-contained breathing apparatus (SCBA): A type of respirator in which the wearer is independent of the surrounding atmosphere because he/she is breathing with a system

that is portable and admits no outside air, thus providing respiratory protection against toxic gases and oxygen-deficient atmospheres.

Smoke: An air suspension (aerosol) of particles, originating from combustion or sublimation.

Standby worker: A worker who monitors other workers in IDLH work environments and is able to initiate rescue operations in case of an emergency.

Supplied-air respirators: A type of respirator that delivers breathing air through a supply hose connected to the wearer's facepiece or enclosure.

User: A Miami University employee who is assigned to tasks that require respiratory protection and is authorized to wear respiratory protective equipment through training and meeting specific physical and medical requirements.

Vapor: A term used for a substance that, although present in the gaseous phase, usually exists as a liquid or solid at room temperature and pressure.

Work area: A room or defined space in a workplace where hazardous conditions are or may be produced or used, and where employees are present.

Workplace: An establishment, job site, or project, at one geographical location containing one or more work areas.

PROGRAM REQUIREMENTS

Selection and Evaluation

EHSO will evaluate or coordinate the evaluation of the respiratory hazard(s) of each workplace, process, or work area where airborne contaminants may be present. The hazard evaluation will include:

- Identification of potentially hazardous contaminants used in the workplace.
- Evaluation of the work process to determine potential exposure to the hazardous contaminants. The evaluation will include observation of the work process, employee interviews, and workplace or user factors (e.g., temperature, humidity, and workload).
- Personal exposure monitoring to quantify employee exposure. This monitoring will be conducted by EHSO when feasible.

The results of the current hazard evaluation are as follows:

Asbestos Operations: In accordance with 29 CFR 1926.1101, respiratory protection is required during Class I, II, and III asbestos operations. Half-face APRs with P100 filters are required for employees performing these duties. Full-face PAPRs also are available for employees when exposures exceed 1 fiber per cubic centimeter (f/cc). Personal exposure monitoring has not been accomplished during Class I-III operations.

Asbestos Removal Oversite: Respiratory protection is required for employees conducting asbestos monitoring in Regulated areas, per 29 CFR 1926.1101. Half-face APRs and full-face PAPRs equipped with P100 filters are the required protection. Air sampling during this task has not yet been accomplished.

Pesticide/Herbicide Application: Campus Services and Special Facilities employees apply various types of liquid pesticides and herbicides to University grounds. Because the application of these materials is performed outside, exposure potential is anticipated to be low. However; employees continue to use half-face and full-face APRs equipped with organic vapor cartridges and pre-filters during specific tasks (e.g., material mixing, downwind application). Personal exposure monitoring has not yet been accomplished.

Pesticide application is performed by the Maintenance division's Pest Control employees in an effort to control the insect population. Various types of liquid and dry pesticides are applied. Potential exposure could occur during the mixing and application of these products. In 1998, air monitoring was conducted during the use of pyrethrum for fly treatment. Results showed exposures below the OSHA PEL. Until additional monitoring is performed, employees will continue to use half-face APRs with organic vapor cartridges and prefilters.

Hazardous Residual Handling: Employees in EHSO are potentially exposed to airborne concentrations of solvents, corrosives, and toxins during University wastestream minimization. This bulking process is performed at the Hazardous Residuals Facility either outside or in proximity to the fume hood, located inside B Building. Due to the number of chemicals encountered, many of which are unknown, personal exposure monitoring has not been accomplished. As a precaution, full-face airline respirators are being used during this process.

Painting Operations (Spray Application in Paint Booth): Various forms of paint and associated products (e.g., thinner) are used by PFD Paint Shop employees. Exposures are expected to be below the PEL since the operator does not typically position themselves between the object being painted and the paint booth filter face. Half-face APRs equipped with organic vapor cartridges are required. Air monitoring is currently being scheduled to determine employee exposure.

Carpet Cleaning Operations: Employees within Building Services are potentially exposed to petroleum distillates during carpet cleaning operations. Air monitoring has not been accomplished during this task. Personnel are required to use half-face APRs equipped with organic vapor cartridges.

Welding, Cutting, and Brazing Operations: Generally, local exhaust ventilation is used to control PFD employees' exposure to metal fumes during welding, cutting, and brazing operations. Occasionally, this work is performed in the field where mechanical ventilation is not feasible. Air sampling has not been accomplished. Half-face APRs with P100 filters are required when local exhaust ventilation is not employed.

Pool Chemical Handling Operations: Recreational Sports Center employees are potentially exposed to hydrochloric acid mists during pool maintenance activities. A full-face APR equipped with chemical cartridges is required. Exposure monitoring has not been performed.

Boiler Maintenance Activities: Steam Plant employees routinely perform Boiler maintenance activities in confined spaces. Employees are potentially exposed to respirable dust above the PEL. Personal exposure monitoring has not been accomplished. Full-face APRs equipped with P100 filters are used during this task.

Maintenance Response: Respiratory protection is required for Mechanical Trades employees conducting emergency maintenance inside of active asbestos abatement

containments and in crawl spaces heavily contaminated by asbestos. In accordance with 29 CFR 1926.1101, half-face or full-face APRs equipped with P100 filters are the required protection. Air sampling during this task has not yet been accomplished.

Updating the Hazard Evaluation
EHSO shall repeat the hazard evaluation when necessary. This includes changes in the work process (i.e., engineering or administrative controls), or product. When employees feel that respirators may be necessary for a task, a baseline hazard assessment shall be accomplished, the results of which shall be communicated to the employee. New work processes or tasks will be added to this Respiratory Protection Program when it is determined that respirators are necessary, based on the results of the hazard evaluation.

Voluntary Respirator Use
Employees shall be responsible for providing their own respirator, with prior approval by EHSO. The Program Administrator will provide employees who use respirators on a voluntary basis a copy of Appendix D of OSHA's Respiratory Protection Standard. Employees choosing to war a half-face APR shall comply with the Medical Evaluation, Respiratory Use, and Cleaning, Maintenance and Storage provisions of this program.

Painting Operations (roller and brush application). Air monitoring has determined that personnel performing painting operations using roller and brush application methods are not exposed to hazardous air contaminants when using latex-based paints. However, the use of half-face APRs with orgranic vapor cartridges will be permitted.

Medical Evaluations
Employees shall not be assigned to tasks *requiring* the use of respirators or allowed to wear APRs voluntarily unless it has been determined that they are physically able to perform the work and use the respiratory protective device. Any employee refusing the medical evaluation will not be allowed to work in an area requiring the use of a respirator.

This medical evaluation shall be performed by a physician or other licensed health care professional (PLHCP) at *HTI, Inc*. The alternate PLHCP is the University of Cincinnati. The medical evaluation procedures are as follows:

- The *medical questionnaire* found in Appendix C, 29 CFR 1910.134. A copy of the questionnaire will be provided by Miami University's Program Administrator. When an employee is not capable of reading or understanding the medical questionnaire, Miami University send the employee directly to the PLHCP for medical evaluation.
- After completing the medical questionnaire, the employee will mail it to HTI, Inc. in a stamped and addressed envelope provided by Miami University. The employee will be allowed to complete the questionnaire during work hours.
- Miami University shall ensure that a follow-up medical examination is provided depending upon the results of the medical evaluation or where the initial medical examination demonstrates the need for a follow-up examination. HTI, Inc. will determine those employees requiring follow-up examinations. The follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the HTI, Inc. deems necessary to make a final determination.
- All employees will be given the chance to speak with the physician at HTI, Inc. about the results of their medical evaluation, if so requested.
- Miami University has provided a copy of the Respiratory Protection Program to HTI, Inc.

Additional Medical Examinations
At a minimum, Miami University will provide additional medical evaluations under the following circumstances:

- An employee reports medical signs or symptoms that are related to his/her ability to use a respirator;
- HTI, Inc., the employee's supervisor, or the Program Administrator feels the employee needs to be re-evaluated;
- Information from the Respiratory Protection Program, to include observations made during fit testing and routine program evaluations, indicate a need for employee reevaluation; or
- A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in an additional increase on employee burden.

Fit Testing
Prior to Miami University employees using a negative or positive pressure tight-fitting respirator (where respiratory protection is required), a *quantitative* fit test must be performed to determine adequacy of a face to facepiece seal. Employees voluntarily wearing half-face APRs may also be fit tested upon request. The employee must be fit tested with the same make, model, style, and size of respirator that will be used. Employees will be provided with several models and sizes or respirators so that they may choose a comfortable fit. All tight-fitting atmosphere supplying and powered air-purifying respirators will be fit tested in the negative pressure mode.

Fit testing will be conducted per the following schedule:

- Prior to initial use.
- Whenever a different respirator facepiece is used.
- Whenever physical conditions change (e.g., change in body weight, facial scarring), affecting seal.
- At least annually.

Under certain circumstances, t he Program Administrator may perform employee fit testing per the OSHA accepted protocol (Appendix A, 29 CFR 1910.134) using irritant smoke.

Respirator Use
See Appendix B for employees identified as being required to wear respiratory protection.

General Use Procedures

- To assure proper protection, employees will check the facepiece fit every time the respirator is put on. This will be accomplished by performing a positive or negative pressure fit check (depending on which test works best), specified in Appendix B-1 of the Respiratory Protection Standard.
- Respirators shall **not** be worn when conditions prevent a good face seal. For example, facial hair, facial scars, sideburns, temple pieces on glasses, missing dentures, or other articles that prevent a good seal. Special precautions need to be implemented for employees who wear corrective glasses and a full-face respirator. A proper seal cannot be established if the temple bars of eye glasses extend through the sealing edge of the full facepiece. Systems have been developed for mounting corrective lenses inside full facepieces. The use of contact lenses inside full-face respirators is permitted. To assure proper protection, the facepiece fit shall be checked by the wearer each time he/she puts on the respirator by following the facepiece fitting instructions.

- Supervisors shall ensure that employees leave the respirator use area as follows: to wash their face and respirator often to prevent skin irritation associated with respirator use; change filters or cartridges; replace parts; or to inspect respirator if it no longer functions properly.
- Employee work area conditions will be frequently monitored by supervisory personnel to ensure that the Respiratory Protection Program is adhered to. Employees will use respirators under conditions specified by the Respiratory Protection Program and in accordance with training received.

Respirator Malfunction
For any malfunction of a respirator (e.g., breakthrough, facepiece leakage, etc.), the employee should inform their supervisor that the respirator no longer functions as intended. The employee shall go to a designated safe area to repair the respirator.

Respirators for IDLH Atmospheres
Entry into all IDLH atmospheres is prohibited.

Respirator Maintenance and Care
Maintenance of respirators shall be adjusted to the type of working conditions and hazards involved. Therefore, the maintenance schedule for respirators used infrequently will not be as rigorous as for respirators used more often (e.g., weekly). Maintenance of respirators shall include inspections for defects and cleanliness. The inspection shall be made by the user to locate any worn, damaged, or deteriorated parts. The following outlines the respirator inspection schedule:

- All respirators shall be inspected routinely before and after each use by the user. A respirator that is not routinely used shall be inspected before and after each use and at least monthly to assure that it is in satisfactory working condition.
- Airline respirators shall be inspected monthly and prior to and following each use.

The respirator inspection shall include a check of the facepiece, headbands, valves, connecting tube, and filters or cartridge. The inspection criteria includes a check for tears, holes, broken hardware (e.g., buckles), dirt or residue, and obvious damage to the filter or cartridge. Airline respirators shall be fully charged according to the manufacturer's instructions. Regulator and warning devices shall be checked for proper function.

Replacement or repair shall be performed by experienced personnel only, using parts designed for the respirator. No attempt shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.

Respirators shall be regularly cleaned and disinfected in a designated sanitary area, free from contamination. Respirators shall be thoroughly cleaned and disinfected as often as necessary and after each use. Supplies for cleaning and disinfecting shall be made available by the affected employee's department. If supplies are low, employees should contact their supervisor. The following procedure is to be used when cleaning and disinfecting respirators:

- Disassemble respirator, removing the cartridge or filter.
- Wash the facepiece and associated parts in a mild detergent with warm water. Do not use solvent.
- Rinse completely with warm water.

- Wipe the respirator with disinfectant wipes (alcohol wipes) to kill germs.
- Air dry in a clean area by placing respirator on a clean paper towel.
- Reassemble the respirator.

Respirators shall be stored in a convenient, clean, and sanitary condition. Respirators shall be placed in designated areas in a sealed carrying case or plastic bag. After inspection, cleaning, and necessary repair, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators shall be packed or stored so that the facepiece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.

Filter and Cartridge Change Schedule
End-of-service-life indicators currently do not exist. Until ESLI's are incorporated by the manufacturers, experience and professional judgment shall be used to determine the appropriate change schedule.

Employees wearing APRs or PAPRs with P100 filters for protection against particulates or fibers shall change filters when they begin to experience breathing resistance. Employees using APRs and PAPRs with chemical cartridges shall change cartridges on their respirators at the end of each work week (when the respirator is used on a routine basis) to ensure effectiveness of the respirator cartridge.

NIOSH Certification
Only respirators approved by the National Institute for Occupational Safety and Health (NIOSH) will be used, regardless of whether the respirator is required or used voluntarily. In addition, all filters, cartridges, and canisters must be labeled with the appropriate NIOSH label.

Each cartridge shall be painted a distinctive color or combination of colors indicated. All colors used shall be such that they are clearly identifiable by the user and clearly distinguishable from one another. The color coating used shall offer a high degree of resistance to chipping, scaling, peeling, blistering, fading, and the effects of the ordinary atmospheres to which they may be exposed under normal conditions of storage and use. Appropriately colored pressure sensitive tape may be used for the stripes.

Color Coding Guidelines for Air-Purifying Cartridge Identification Labels

Atmospheric Contaminants to be Protected Against	Colors Assigned
Acid Gases	White
Hydrocyanic Acid Gas	White with 1/2-inch green stripe completely around the cartridge near the bottom.
Chlorine Gas	White with 1/2-inch yellow stripe completely around the cartridge near the bottom
Organic Vapors	Black
Ammonia Gas	Green
Acid Gases and Ammonia Gas	Green with 1/2-inch white stripe completely around the cartridge near the bottom.
Carbon Monoxide	Blue
Acid Gases and Organic Vapors	Yellow
Hydrocyanic Acid Gas and Chloropicrin Vapor	Yellow with 1/2-inch blue stripe completely around the cartridge near the bottom.
Acid Gases, Organic Vapors, and Ammonia Gases	Brown
Radioactive Materials, Except Tritium and Noble Gases	Purple (Magenta)
Particulates (Dusts, Fumes, Mists, Fogs, Or Smokes) In Combination With any of the above Gases or Vapors	Cartridge color for contaminant, as designated above, with 1/2-inch gray stripe completely around the cartridge near the top.
All of the Above Atmospheric Contaminants	Red with 1/2 -inch gray stripe completely around the cartridge near the top.

Important: Gray shall not be assigned as the main color for a cartridge designed to remove acids or vapors. Orange shall be used as a complete body, or stripe color to represent gases not included in this table. The user will need to refer to the cartridge label to determine the degree of protection the cartridge will afford.

Training

All respirator users will be instructed in respiratory protection and trained in the proper selection, use, and maintenance of a respirator. In addition, the user shall be instructed and trained in the proper use of respirators and their limitations. Instruction and training will be conducted by EHSO and HTI, Inc. to supervisors and employees annually or as needed upon written request or whenever there is reason to believe that the respiratory protection program may no longer be adequately protecting employees. Voluntary respirator users will be provided the basic information on respirators, as outlined in Appendix D, 29 CFR 1910.134.

Training shall provide the employees an opportunity to handle the respirator, have it fitted properly, test its face-piece-to-face seal, wear it in normal air for a long familiarity period, and to wear it in a test atmosphere. Employees will be retrained annually or as needed.

Every employee required to wear a respirator shall receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly.

Following training, employees must be capable of demonstrating knowledge of at least the following elements:

- Why respirators are necessary and why improper fit, usage, or maintenance can compromise it's effectiveness;
- Respirator limitations;
- Proper use of respirators in emergency situations;
- Proper inspection, donning, doffing, and seal check procedures;
- Procedures for maintenance and storage;
- How to recognize medical signs and symptoms that may limit or prevent the effective use of a respirator; and
- The general requirements of the Respiratory Protection Program.

PROGRAM EVALUATION

Regular evaluations of the workplace shall be performed to ensure that the Respiratory Protection Program is being properly implemented, and to consult employees to ensure that they are using the respirators properly. The evaluations shall be conducted by EHSO and supervisory personnel.

RECORDKEEPING

A written copy of this program and the OSHA standard is kept in the Program Administrator's office and is available to all Miami University employees. The Program Administrator also maintains records of employee quantitative fit testing and employee respirator training.

Medical records are maintained by HTI, Inc. and Miami University's Student Health Center. This includes the employee's medical history, pulmonary function tests, chest X-ray, and EKG results. EHSO shall only retain the physician's written opinion regarding each employee's ability to wear a respirator.

APPENDIX A

The following table outlines the required respirator and associated task or process for each department. In addition, the table addresses the use of respirators on a voluntary basis.

Respirator Type	Process/Department
Half-face Air Purifying Respirator (APR) with P100 filter	Removal of regulated asbestos-containing material; PFD
Half-face APR with P100 filter	Asbestos removal operations oversite; EHSO
Half-face APR with organic vapor cartridge and prefilter	Pesticide/herbicide application; PFD*
Full-face airline respirator	Hazardous residuals handling; EHSO
Half-face APR with organic vapor cartridge	Roller and brush painting operations; PFD (voluntary)
Half-face APR with organic vapor cartridge	Spray painting in paint booth; PFD*
Half-face APR with organic vapor cartridge	Carpet cleaning operations; PFD*
Half-face APR with P100 filter	Welding, cutting, and brazing operations; PFD*
Full-face APR with acid-gas cartridge	Pool chemical handling operations; PFD*
Half-face Air Purifying Respirator (APR) with P100 filter	Boiler maintenance activities, PFD*

* Use of respiratory protection is required until results of personal air monitoring determine exposure concentration, and engineering controls are evaluated (i.e., to reduce exposure to below PEL)

APPENDIX B

Respiratory protection is required for the following personnel:

Employee Name	Department	Job Description/ Work Procedure	Respirator
Adams, Doug	PFD	Welding	Half-face APR
Brewer, Barry	PFD	Carpet cleaning	Half-face APR
Clark, Matt	PFD	Chemical handling	Full-face airline
Coons, David	EHSO	Chemical handling, asbestos oversite	Full-face APR
Ellcessor, David	EHSO	Asbestos oversite	Half-face APR
Estes, Bill	PFD	Boiler maintenance	Half-face APR
Fitzgerald, Doug	RSC	Pool chemical handling	Full-face APR
Gurr, Harold	PFD	Carpet cleaning	Half-face APR
Hampton, Delbert	PFD	Pesticide handling	Half-face APR
Henning, Roger	PFD	Asbestos removal	Half-face APR, full-face PAPR
Hoelle, David	PFD	Boiler maintenance	Half-face APR
Hoelle, Mark	PFD	Pesticide handling	Half-face APR
Homan, Wesley	PFD	Pesticide handling	Half-face APR
Jackson, Dave	PFD	Painting	Half-face APR
Johnson, Jeff	EHSO	Asbestos oversite	Half-face APR
Kimball, Joseph	PFD	Maintenance Response	Half-face APR
Liming, Jeff	PFD	Maintenance Response	Half-face APR
Mays, Steve	PFD	Pesticide handling	Half-face APR
Pradhan, Sharmila	EHSO	Chemical handling	Full-face airline
Proffitt, David	RSC	Poll chemical handling	Full-face APR
Roy, Jamie	PFD	Boiler maintenance	Full-face APR
Saunders, Randall	PFD	Asbestos removal	Half-face APR, full-face PAPR
Sayers, Rick	PFD	Maintenance Response	Half-face APR
Smith, Greg	PFD	Pesticide handling	Full-face APR
Turner, Jerome	PFD	Painting	Half-face APR