



BGSU's Respiratory Protection Program Training

INTRODUCTION

Policy Statement

"It is Bowling Green State University's policy to comply with the occupational safety and health standards of the Ohio Public Employees Risk Reduction Act and all applicable Federal, State, and Local rules, regulations, and directives."

Approved October 7, 1994
Board of Trustees

Forward

In 1970, the United States Congress established the right of workers to have "safe and healthful working conditions" through the Occupational Safety and Health Act. This act created the Occupational Safety and Health Administration (OSHA). In July, 1994 the state of Ohio adopted and incorporated by reference many of the Federal OSHA standards through the Public Employee Risk Reduction Act, Ohio Revised Code 4167.07. This act and its subsequent rules (Ohio Administrative Code 4101:17-3-01) required Bowling Green State University and other state institutions to comply with all applicable OSHA standards.

Bowling Green State University's Respiratory Protection Program has been established to comply with Ohio's Public Employee Risk Reduction Act and the OSHA Respiratory Protection Standard 29 CFR 1910.134.

Objective

The primary objective is to prevent overexposure to occupational dusts, fumes, mists, radionuclides, gases, and vapors. This is accomplished as far as feasible by accepted engineering and work practice control measures. When protective engineering controls are not feasible, or while they are being implemented or evaluated, respiratory protection may be required to achieve this goal. In these situations, respiratory protection is provided at no cost to the employees. This program will be used in conjunction with other BGSU policies and procedures involving the protection of workers from hazards in the work place, including the University's Hazardous Waste Manual, the Personal Protective Equipment Program, the Hazard Communication Program, and the Chemical Hygiene Plan.

Applicability

This program pertains to employees who are or would be potentially over exposed to occupational dusts, fumes, mists, radionuclides, gases, and vapors. Employees who wear respiratory protection on a voluntary basis are also covered under parts of this program.

Responsibilities

Occupational Safety and Health Specialist/Program Administrator is responsible for

- identifying employees with potential respiratory hazards in the workplace through the BGSU Personal Protective Equipment Program;
- coordinating the respiratory protection program;
- conducting exposure assessments of respiratory hazards, developing standard operating procedures, maintaining records, and conducting program evaluations;
- selection, training, record keeping, and fit testing of all respirators used at BGSU;
- making recommendations on any and all matters relating to the operation and administration of the respiratory protection program.

The Occupational Safety and Health Specialist is an employee in Bowling Green State University's Department of Environmental Health and Safety.

Evaluating Physician is responsible for

- evaluating the health of university employees who are being considered for inclusion in BGSU's Respiratory Protection Program via a comprehensive medical evaluation;
- notifying the Occupational Safety and Health Specialist of the employee's status regarding their ability to wear a respirator.

Director of Design and Construction is responsible for

- directing and coordinating engineering projects which are directly related to respiratory protection.

The Engineering Project Director is Bowling Green State University's Director of Planning and Construction, an employee of the Office of Design and Construction.

Management (Department Chairpersons and Directors) are responsible for

- determining and reporting to the Occupational Safety and Health Specialist specific applications they believe may require the use of respiratory protective equipment;
- providing proper respiratory protective equipment to meet the needs of each specific application;
- provide employees with adequate training and instructions on all equipment;
- employees' respirator costs and medical fees.

Supervisors are responsible for

- insuring that all personnel under their supervision are completely knowledgeable of the respiratory protection requirements for the areas in which they work;
- notifying the Occupational Safety and Health Specialist of any new employees or a transferee to a job that requires respiratory protection;
- insuring that their subordinates comply with all facets of BGSU's Respiratory Protection Program, including respirator inspection and maintenance;
- enforcing BGSU's Respiratory Protection Program;
- Reporting to management any task they believe may require respiratory protection to be worn.

Employees are responsible for

- having an awareness of the respiratory protection requirements for their work areas (as explained by management, supervisors, and Occupational Safety and Health Specialist);
- wearing and maintaining the appropriate respiratory protective equipment according to proper instructions;
- Reporting to their supervisor any tasks they believe may require respirators to be worn.

Program Enforcement

A violation of a University employee's responsibility must be reported to the employee's immediate supervisor for appropriate action.

Recordkeeping

All medical evaluations, fit testing records, another miscellaneous records will be retained in the following manner:

- Medical Evaluations and are retained and made available, in accordance with 29 CFR 1910.1020, by the physician or other Licensed Health Care Professional, PLHCP
- Fit testing records will be kept in the Occupational Safety and Health Specialist office and shall be retained for respirator users until the next fit test is administered.
- The documentation for respirator selection will be kept in the Occupational Safety and Health Specialist office.
- The Occupational Safety and Health Specialist will maintain all exposure assessments.

RESPIRATORY HAZARD EVALUATION AND CONTROL

Respiratory Hazard Evaluation

The Occupational Safety and Health Specialist shall identify employees with respiratory hazards in the workplace through the BGSU Personal Protective Program. Management and supervisors must also notify the Occupational Safety and Health Specialist if they believe an application requires respiratory protection. The Occupational Safety and Health Specialist shall evaluate the respiratory hazard of the employee. This evaluation shall include:

- A reasonable estimate of employee exposure to respiratory hazards through personal air monitoring within a representative work period, exposure assessments based on analogous processes, or professional judgement. Personal monitoring shall be used in accordance with accepted Industrial Hygiene Standards to sample each work area.
- Identification of the contaminant's chemical state and physical form.

If the Occupational Safety and Health Specialist cannot reasonably estimate the employee exposure, the Occupational Safety and Health Specialist shall consider the atmosphere to be IDLH.

Personal Air Monitoring Results

The Occupational Safety and Health Specialist shall review the personal air monitoring data. The Occupational Safety and Health Specialist will determine if the employee has been over exposed.

Voluntary Use

Employees whose exposure assessment has indicated they are not at a potential for being over exposed, may choose to voluntarily use respiratory protection. The Occupational Safety and Health Specialist will provide the voluntary respiratory user with a copy of the Voluntary Use Appendix.

If the employee chooses to wear a respirator voluntarily the employee must:

- use their own or the department/area must provide one at no cost to the employee;
- be cleared to wear the respirator by the evaluating physician at no cost to the employee and;
- follow all requirements regarding cleaning, storing, and maintenance of respirators applicable to voluntary use.

Employees who voluntarily use a filtering face piece (dust mask), are exempt from the medical evaluation requirements.

Engineering Controls

Potential engineering controls will be explored for feasibility for those employees whose exposure assessment has indicated a potential overexposure.

The Occupational Safety and Health Specialist shall discuss with the employee and the employee's supervisor possible chemical substitutions to reduce the employee's exposure to the chemical. If chemical substitution is performed, additional personal air monitoring may be necessary to evaluate the employee's exposure to the new chemical.

If chemical substitution is not feasible, isolation or enclosing the chemical process is the next control to explore and determine feasibility.

Local exhaust ventilation is the final engineering control option to be explored for feasibility. The Occupational Safety and Health Specialist shall contact the Director of Planning and Construction to determine the feasibility of installing a local exhaust system.

The employee will be included in the Respiratory Protection Program if

- respiratory protection is needed while engineering controls are being implemented or;
- engineering controls are not feasible.

The exposure assessment is performed prior to commencing any routine or non-routine task requiring respiratory protection. A review of the exposure assessment will be made to determine if respiratory protection continues to be required periodically thereafter as required by OSHA substance specific standards or every 12 months. If respiratory protection is still necessary, the previously chosen respirators will be reviewed to assure that they still provide adequate protection.

RESPIRATOR SELECTION

The Occupational Safety and Health Specialist will select and approve a respirator for individual employees. The selection is based upon the physical and chemical properties of the air contaminants, the respiratory hazard (s) to which the worker is exposed, the user factors that affect respirator performance and reliability, and the concentration level likely to be encountered by the employee.

Determination of the proper respirator will be made by consulting the most logical guidelines including ANSI, OSHA, NIOSH, and the respirator manufacturer.

All respirators must be NIOSH certified. The respirator shall be selected based on the condition of its certification. Respirators must be purchased from sources that are recommended by the Occupational Safety and Health Specialist.

Respirators shall be selected from a sufficient number of models and sizes so that the respirator is acceptable and correctly fits the user.

For protection against gases and vapors, the employee shall be provided with

- An atmosphere-supplying respirator or;
- An air-purifying respirator, provided that:
 - The respirator is equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant.
 - If there is no ESLI appropriate for conditions in the employee's workplace, a change schedule must be implemented for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. The Occupational Safety and Health Specialist shall describe in the employee's respiratory selection the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data.

For protection against particulates, the employee shall be provided with

- An atmosphere-supplying respirator or;
- An air-purifying respirator equipped with a filter certified by NIOSH under 30 CFR part 11 as a high efficiency particulate air (HEPA) filter, or an air-purifying respirator equipped with a filter certified for particulates by NIOSH under 42 CFR part 84.
- For contaminants consisting primarily of particles with mass median aerodynamic diameters (MMAD) of at least 2 micrometers, an air-purifying respirator equipped with any filter certified for particulates by NIOSH.

MEDICAL EVALUATION

Every employee who is being considered for inclusion in the Respiratory Protection Program must participate in a medical evaluation. A medical examination is made initially upon employment and when an existing employee is placed into a job classification requiring respiratory protection. Subsequent medical exams shall be made following NIOSH Guidelines except when:

- greater frequency is recommended by the evaluating physician for individuals of concern.
- greater frequency as specified as stated in a substance specific standard.
- an employee reports medical signs or symptoms that are related to ability to use a respirator.
- a Physician, supervisor, or the Occupational Safety and Health Specialist determines when the employee needs to be re-evaluated.
- information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee re-evaluation.
- a change occurs in the workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

NIOSH Guidelines

The suggested frequency of medical fitness determinations as given by NIOSH.

	Worker age (years)		
	<35	35 - 45	>45
Most work conditions conditions requiring respirators	Every 5 years	Every 2 years	1 - 2 years
Strenuous work conditions with SCBA	Every 3 years	Every 18 mos.	Annually

NIOSH Guide to Industrial Respiratory Protection, 1987; pg. 230.

Ready Works, a Division of the Wood County Hospital, will perform the medical evaluations using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire. The Physician or other Licensed Health Care Professional (PLHCP) with this establishment will oversee the medical evaluation.

The employee will fill out the Medical Questionnaire for Respirator Users, available from the Occupational Safety and Health Specialist, which will be reviewed by the PLHCP. A follow up medical exam is provided for an employee who gives a positive response to any question among questions 1 through 8 in Section 2, Part A of the Medical Questionnaire for Respirator Users or whose initial medical examination demonstrates the need for a follow-up medical examination. The purpose of the questionnaire and or the examination is to assure that the employee is physically and psychologically able to perform their work while wearing respiratory protective equipment. The medical clearance for respirator use will also be provided to the physicians. If

the physician denies approval, the employee will not be able to participate in the Respiratory Protection Program and will not be allowed to perform tasks that require respirator use.

The medical questionnaire and examinations shall be administered confidentially during the employee's normal work hours or at a time that is convenient to the employee. The employee is also given the opportunity to discuss the questionnaire and examination results with the PLHCP.

A copy of the Medical Clearance for Respirator Use for each respirator wearer is available from the Occupational Safety and Health Specialist. The Occupational Safety and Health Specialist will ensure that the information required for the first half of the form is provided to the physician or occupational health nurse. A copy of the written respiratory protection program and the medical evaluation section of 29 CFR 1910.134 will also be provided to the PLHCP.

After the evaluating physician has determined that the employee is physically fit to wear a respirator, the PLHCP will provide a written recommendation regarding the employee's ability to use a respirator.

RESPIRATOR USE

All tight fitting respirators (both negative and positive pressure) and loose fitting face pieces shall not be used by employees with facial hair or any condition that interferes with the face to face piece seal. The respirator shall be used in compliance with conditions of its certification.

Employees wearing corrective glasses or goggles or other personal protective equipment while wearing a respirator must be worn in a manner that does not interfere with the seal of the face piece to the face of the user.

For all tight-fitting respirators, the employees must perform a user seal check each time they put on the respirator using the procedures in the User Seal Check Appendix or procedures recommended by the respirator manufacturer that the employer demonstrates are as effective as those in the User Seal Check Appendix of this program.

The employee must leave the respirator use area

- to wash their faces and respirator face pieces as necessary to prevent eye or skin irritation associated with respiratory use;
- if they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece and/or;
- to replace the respirator or the filter, cartridge, or canister elements.

If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece, the respirator must be replaced or repaired before allowing the employee to return to the work area.

RESPIRATOR TRAINING AND FITTING

Training and Information For Voluntary Use

The employee shall be provided with the handout "Information for Employees Using Respirators When Not Required Under the Standard."

The employee will receive training regarding how the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user. Exception: BGSU is not required to include in a written respiratory protection program those employees whose only use of respirators involves the voluntary use of filtering face pieces (dust masks).

Training and Information For Required Use

The training shall be conducted in a manner that is understandable to the employee and shall include

- why the 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, including situations in which the respirator malfunctions;
- how to inspect, put on and remove, use, and check the seals of the respirator;
- what the procedures are for maintenance and storage of the respirator;
- how to recognize medical signs and symptoms that may limit or prevent the effective use of respirators;
- the general requirements of this program.

The employee must receive the training prior to using the respirator in the workplace. Retraining shall be administered every twelve months, and when the following situations occur:

- Changes in the workplace or the type of respirator render previous training obsolete.
- Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill.
- Any other situation arises in which retraining appears necessary to ensure safe respirator use.

Fit Testing

Before an employee may be required to use any respirator with a negative or positive pressure tight-fitting face piece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used. Below are the kinds of fit tests allowed, the procedures for conducting them, and how the results of the fit tests must be used.

- The Occupational Safety and Health Specialist shall ensure that employees using a tight-fitting face piece respirator pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT).
- The Occupational Safety and Health Specialist shall ensure that an employee using a tight-fitting face piece respirator is fit tested prior to initial use of the respirator, whenever a different respirator face piece (size, style, model or make) is used, and at least annually thereafter.
- The Occupational Safety and Health Specialist shall conduct an additional fit test whenever the employee reports, or the evaluating physician, supervisor, or Occupational Safety and Health Specialist makes visual observations of, changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.
- If after passing a QLFT or QNFT, the employee subsequently notifies the Occupational Safety and Health Specialist, supervisor or evaluating physician that the fit of the respirator is unacceptable, the employee shall be given a reasonable opportunity to select a different respirator face piece and to be re-tested.
- The fit test shall be administered using an OSHA-accepted QLFT or QNFT protocol.
- QLFT may only be used to fit test negative pressure air-purifying respirators that must achieve a fit factor of 100 or less.
- If the fit factor, as determined through an OSHA-accepted QNFT protocol, is equal to or greater than 100 for tight-fitting half face pieces, or equal to or greater than 500 for tight-fitting full face pieces, the QNFT has been passed with that respirator.
- Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators shall be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode, regardless of the mode of operation (negative or positive pressure) that is used for respiratory protection.
- Qualitative fit testing of these respirators shall be accomplished by temporarily converting the respirator user's actual face piece into a negative pressure respirator with appropriate filters, or by using an identical negative pressure air-purifying respirator face piece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator face piece.
- Quantitative fit testing of these respirators shall be accomplished by modifying the face piece to allow sampling inside the face piece in the breathing zone of the user, midway between the nose and mouth. This requirement shall be accomplished by installing a permanent sampling probe onto a surrogate face piece, or by using a sampling adapter designed to temporarily provide a means of sampling air from inside the face piece.

- Any modifications to the respirator face piece for fit testing shall be completely removed, and the face piece restored to NIOSH-approved configuration, before that face piece can be used in the workplace.

NOTE: If it is determined that an individual cannot obtain an adequate fit or face seal with any negative pressure respirator, a powered air purifying or supplied air respirator may be required instead.

Fit testing shall not be performed on any employee that has:

- A stubble beard
- A beard
- Any facial hair that extends under the face seal of a respirator

RESPIRATOR INSPECTION, MAINTENANCE AND STORAGE

Inspection

The employee wearing a respirator is responsible for the daily inspection and cleaning of that respirator before and after each use. Training for how to inspect respirators will be given during wearer's annual fit test. Employees will perform mandatory inspections of respirators for fit, usage, and condition. Inspection procedures for respirators include a check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the face piece, head straps, valves, connecting tube, and cartridges, canisters or filters. Also included is a check of elastomeric parts for pliability and signs of deterioration. The use of defective respirators is not permitted. If a defective respirator is found during inspection, it must be returned to the supervisor.

Repair

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

- Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and shall use only the respirator manufacturer's NIOSH-approved parts designed for the respirator.
- Repairs shall be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed.
- Reducing and admission valves, regulators, and alarms shall be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

Cleaning

Respirators not discarded after one shift use, will be cleaned on a daily basis (or after each use if not used daily), according to the manufacturer's instructions, by the employee wearing the respirator or person(s) assigned to this task. Procedures for cleaning and disinfecting respirators are found in the Respirator Cleaning Appendix. The respirators shall be cleaned and disinfected at the following intervals:

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

Storage

Respirators not discarded after one shift use, will be stored in a suitable container away from areas of contamination. The respirators must be stored in a location where they are protected from sunlight, dust, heat, cold, moisture, and damaging chemicals. In addition to the above requirements, emergency respirators shall be kept accessible to the work area, stored in compartments or in covers that are clearly marked as containing emergency respirators, and stored in accordance with any applicable manufacturer instructions. Respirators not discarded after one shift use, will be marked and stored in such a manner to assure that they are worn only by the assigned employee. Exceptions to this rule must be approved by the Occupational Safety and Health Specialist.

PROGRAM EVALUATION

The Occupational Safety and Health Specialist shall conduct evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.

The Occupational Safety and Health Specialist shall regularly consult employees required to use respirators to assess the employees' views on program effectiveness and to identify any problems. Any problems that are identified during this assessment shall be corrected. Factors to be assessed include, but are not limited to:

- Respirator fit (including the ability to use the respirator without interfering with effective workplace performance.)
- Appropriate respirator selection for the hazards to which the employee is exposed.
- Proper respirator use under the workplace conditions the employee encounters.
- Proper respirator maintenance.