Respiratory Protection Program

Table of Contents

Introduction

Forward

In 1970, the United States Congress established the right of workers to "safe and healthful working conditions" through the Occupational Safety and Health Act. This act created the Occupational Safety and Health Administration (OSHA). House Bill 308 incorporates by reference all federal OSHA standards found in the Code of Federal Regulations (CFR), Title 29 Parts 1910, 1926 and 1928 as Ohio Public Employment Risk Reduction Standards. All adopted Ohio Public Employment Risk Reduction Standards are found in Chapter 4167 of the Ohio Revised Code and the Ohio Administrative Code.

This program has been established by Bowling Green State University to comply with OSHA's Respiratory Protection Standard, 29 CFR 1910.134.

Objective

Wearing respiratory protection, like any form of personal protective equipment, is always a last resort in protecting employees from hazards. When elimination, substitution, engineering controls, administrative controls, or a combination thereof fail to adequately protect an employee from harmful levels of dusts, fogs, fumes, mists, gases, smokes, sprays, vapors, etc., wearing respiratory protection may be warranted. This program sets forth all required elements of OSHA's Respiratory Protection Standard.

Applicability

This program applies to the Campus Operations painters, a select few employees in Public Safety who are on special task forces, the Greenhouse Manager, and anyone who chooses to wear a respirator on a voluntary basis. Although the term "employee" is used throughout this program, all provisions within, whether a respirator is required or voluntary, will apply to students as well for their protection.

Program Enforcement

A violation of a university employee's responsibility must be reported to the employee's supervisor for appropriate action. A violation of a student's responsibility must be reported to the instructor and/or person responsible for the area for appropriate action.

Responsibilities

Employees required to wear respiratory protection:

- Wearing assigned respirator when and where required and in an approved manner per the manufacturer.
- Maintaining respirator and cartridges/canisters according to manufacturer's instructions and storing them in a clean and sanitary location.
- Informing supervisor of detected leaks or when the respirator no longer fits well.

- Informing supervisor of any respiratory hazards that have not been assessed in the workplace and any other concerns regarding this program.
- Completing a medical evaluation at frequencies specified in this program.
- Refraining from completing tasks that require respiratory protection until use approval has been obtained from the evaluating physician and Environmental Health and Safety (EHS) has performed a fit test.
- Completing initial and annual respirator training and fit testing.
- Notifying supervisor of the need for a new respirator or respirator part replacements.
- Complying with all aspects of this program.

Supervisors and Instructors of Students:

- Ensuring all personnel under direct supervision comply with all aspects of this program where applicable.
- Notifying the Program Administrator of any new employees or a transferee to a job that requires respiratory protection.
- Reporting to the Program Administrator any respiratory hazards that need assessed in the workplace and any other concerns regarding this program.
- Providing required respiratory protective equipment to staff free of charge. Students are typically handled differently. See instructor for class specifics.
- Informing Program Administrator of reported conditions regarding detected leaks or a respirator that no longer fits an employee well.
- Allowing affected employees to attend annual training and fit testing and complete required periodic medical evaluation paperwork during normal working hours.

Program Administrator: Sr. Industrial Hygienist, EHS

- Addressing any concerns reported regarding this program.
- Identifying employees with potential respiratory hazards and assessing those exposures.
- Developing procedures where needed to reduce and/or eliminate respiratory exposures.
- Performing an annual review of this program for any needed changes to maintain or increase effectiveness.
- Informing affected individuals of respirator use approval or denial.
- Selecting and fit testing any respirators where use is required.
- Administering annual training for employees required to wear respirators.

Campus Community

- Informing the Program Administrator of any potential respiratory hazards that need evaluated.
- Refraining from the use of any respirators on a voluntary basis without receiving clearance from the Program Administrator. Those wishing to use NIOSH approved N, P, or R 95, 99, or 100 filtering facepieces (e.g. dust masks) need only sign the Voluntary Use Form (see Appendix B) and submit a signed copy to the EHS department.

Evaluation, Controls, Selection, and Use of Respirators

Hazard Evaluation

When a potential respiratory hazard has been identified, the Program Administrator will evaluate the following at a minimum:

- Any applicable safety data sheets of products being used
- Location, quantity, duration, frequency of use
- Manner in which the products are being used
- The chemical state and physical form of any contaminants
- Current controls in place
- Number of employees impacted, work shifts, and any potential differences in processes between these

An employee's exposure to any respiratory hazards must be monitored or reasonably estimated using objective data. If the employee's exposure cannot be monitored or reasonably estimated, the atmosphere must be considered immediately dangerous to life or health (IDLH). If air monitoring is conducted, the Program Administrator is required to notify affected employees within 15 working days following receipt of any results, in writing either individually or by posting results in an appropriate location that is accessible to employees.

Control Methods

Use of personal protective equipment is an absolute last measure for protecting employees from hazards in the workplace. Short of placing the university out of business, all other controls must be evaluated when employees are being exposed above safe working levels. The standard hierarchy of controls include:

- Elimination
    - Physically remove the hazard
- Substitution
    - Replace the hazard
    - Depending on what the substitution is, additional air monitoring or use of objective data may be needed
    - Switching to a process that uses less force, speed, temperature, or electrical current
- Engineering Controls
    - Isolate employees from the hazard
    - Enclosing the process, local exhaust hoods, etc.
- Administrative Controls
    - Change the way employees work

Employees will be included in the Respiratory Protection Program:

- While controls are being evaluated; and
- If all controls were evaluated and none were found to be adequate in controlling exposures to a safe level.

Selection

The Program Administrator will select an appropriate respirator based on the respiratory hazard(s) to which the employee is exposed and workplace and user factors that affect respirator performance and reliability. This selection will be from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user. The respirator must also be NIOSH-certified and used in compliance with the conditions of its certification.

The Program Administrator does not anticipate employees working in any atmospheres considered IDLH, so provisions for such environments are not addressed in this program. Should this condition occur in the future, OSHA's Respiratory Protection Standard, 29 CFR 1910.134, will be followed for this type of environment and information will be added to this program at that time.

Other selection criteria:

1. Assigned protection factors listed in Table 1 must be used when selecting a respirator that meets or exceeds the required level of employee protection based on the air monitoring results or objective data used.

Table 1 - Assigned Protection Factors[5]

Type of respirator[1] [2]	Quarter mask	Half mask	Full facepiece	Helmet/hood	Loose-fitting facepiece
1. Air-Purifying Respirator	5	[3]10	50		
2. Powered Air-Purifying Respirator (PAPR)		50	1,000	[4]25/1,000	25
3. Supplied-Air Respirator (SAR) or Airline Respirator					
• Demand mode		10	50		
• Continuous flow mode		50	1,000	[4]25/1,000	25
• Pressure-demand or other positive-pressure mode		50	1,000		
4. Self-Contained Breathing Apparatus (SCBA)					
• Demand mode		10	50	50	
• Pressure-demand or other positive-pressure mode (e.g., open/closed circuit)			10,000	10,000	

Notes:

[1]Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required respirator use is independent of concentration.

[2]The assigned protection factors in Table 1 are only effective when the employer implements a continuing, effective respirator program as required by this section (29 CFR 1910.134), including training, fit testing, maintenance, and use requirements.
[3]This APF category includes filtering facepieces, and half masks with elastomeric facepieces.
[4]The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.
[5]These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(ii).

2. A respirator that maintains the employee's exposure to the hazardous substance, when measured outside the respirator, at or below the maximum use concentration (MUC). When the calculated MUC exceeds the IDLH level for a hazardous substance, or the performance limits of the cartridge or canister, the maximum MUC must be set at the lower limit.
3. Selection shall be appropriate for the chemical state and physical form of the contaminant.
4. For protection against gases and vapors, employees shall be provided with:
    a. An atmosphere-supplying respirator, or
    b. An air-purifying respirator, provided that:
        i. The cartridge, canister, etc. is equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant; or
        ii. If there is no ESLI appropriate for conditions in the workplace, the Program Administrator shall implement a change schedule that is based on objective data that will ensure cartridges, canisters, etc. are changed before the end of their service life. If this occurs, the Program Administrator shall describe in this program the information and data relied upon, the basis for the change schedule, and the basis for reliance on the data.
5. For protection against particulates, employees shall be provided:
    a. An atmosphere-supplying respirator; or
    b. 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; or
    c. 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.

General Respirator Use Information

All tight-fitting respirators (both negative and positive pressure) and loose-fitting facepieces shall not be used by employees with facial hair or any condition that interferes with the face to facepiece seal. This includes maintaining a good seal while wearing corrective glasses or other personal protective equipment. To ensure a good seal has been achieved on a tight-fitting respirator, employees are required to perform a user seal check each time they don a respirator

using the procedures provided by the respirator manufacturer. Respirators shall only be used within the conditions of its certification for employee protection.

Some conditions in which an employee must leave a respirator usage area include but are not limited to:

- [1]Detection of vapor or gas breakthrough, changes in breathing resistance, leakage through the facepiece, damage to respirator or respirator attachments;
- Replacement of the respirator, filter, cartridge, canister, etc.;
- Cleansing of respirator and parts.

Note:

[1]If the employee detects any of these, appropriate measures must be taken before allowing the employee back into the space. These include but are not limited to repairing or replacing respirator, completing a seal check, completing a fit test, changing of filtering medium, etc.

Voluntary Use

Employees whose exposure assessment indicates a respirator is not required, may choose to voluntarily use respiratory protection. The university must supply voluntary users of any filtering facepiece or respirator with the information contained in Appendix D of OSHA's Respiratory Protection Standard, 29 CFR 1910.134 (see Appendix B of this program). For individual users, EHS requires that a signed form be on file (just provides proof the information was given to the user). For academic areas where multiple people are affected, posting the information in the area of use is sufficient.

If an employee chooses to wear a respirator voluntarily:

- The university is not responsible for providing or paying for the respirator of choice;
- Employee must be medically cleared to wear the respirator at no cost to the employee (department must pay if allowing the voluntary use);
- Employee must 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.

Medical Evaluation

Using a respirator may place a physiological and/or psychological 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. Therefore, all employees required to wear a respirator (including the required use of filtering facepieces) must be medically cleared to do so by Employer Services at Falcon prior to initial fit testing. Those who wish to wear a respirator on a voluntary basis (excluding filtering facepieces) will also be medically cleared before respirator use is allowed. To obtain this clearance, the affected employee must complete a medical questionnaire and submit it to Employer Services at Falcon to review (see Appendix C).

A follow up medical exam is required for an employee who gives a positive response to any question among questions 1 through 8 in Section 2, Part A of the questionnaire. EHS works

closely with the medical provider to ensure all required information is provided. Approval, denial, and any medical restrictions for an employee regarding respirator use will be communicated to EHS, as appropriate. EHS will then communicate this information to the affected employee. If a 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.

Additional Medical Evaluations

A person's medical status can change at any time, so those required to wear a respirator shall be medically evaluated every 5 years at a minimum per university policy. At the time of evaluation, the physician will determine if re-evaluation should occur more regularly. EHS will contact users if this determination is made. Additional medical evaluations will also occur when:

- An employee reports medical signs or symptoms that are related to respirator use;
- A physician, supervisor, or program administrator informs the employee of the need 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 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; and
- A substance specific standard requires it.

Medical questionnaires and examinations shall be administered confidentially during the employee's normal work hours or at a time that is convenient to the employee. Employees are also given the opportunity to discuss the questionnaire and examination results with the evaluating physician.

Inspection, Maintenance, and Storage of Respirators

Inspection

Employees are responsible for inspecting their respirator before each use to ensure there are no defects that would compromise the protective effectiveness of the unit. This inspection includes the following:

Examining the face piece for:
- Excessive dirt, cracks, tears, holes, or distortion;
- Inflexibility (stretch and massage to restore flexibility);
- Cracks or badly scratched lenses in full-face pieces; and
- Incorrectly mounted full-face lens or broken or missing mounting clips.

Examining the head straps or head harness for:
- Breaks;
- Loss of elasticity;
- Broken or malfunctioning buckles and attachments; and
- Excessively worn serrations on the head harness that might permit slippage.

Examining the exhalation and inhalation valves for:
- Foreign material, such as detergent, particles, or human hair under the valve seat;
- Cracks, tears, or distortion in the valve material;
- Improper insertion of the valve body in the face piece;
- Cracks, breaks, or chips in the valve body, particularly in the sealing surface; and
- Missing or defective valve covers, improper installation of the valve body.

Examining the filter(s) for:
- Loading of filter(s) (replacement date on filter, ESLI, etc.)

Examining cartridge(s) for:
- Worn threads;
- Cracks in housing; and
- Worn or missing cartridge gasket.

Following the inspection, employees should perform a user seal check per manufacturer's instructions to ensure a good fit and seal.

Repair

The use of defective respirators is not permitted. Respirators that fail an inspection or are otherwise found to be defective shall be 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 only use 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

It is the responsibility of the respirator wearer to ensure that all respiratory protective equipment is cleaned and sanitized. Cleaning and disinfecting shall occur according to the manufacturer's instructions 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 maintained for emergency use shall be cleaned and disinfected after each use; and
- Respirators used in fit testing and training shall be cleaned and disinfected after each use.

To properly clean respiratory equipment, 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. Further guidance is as follows:

- Wash components in warm (49ºC [120ºF] 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 (49ºC [120ºF] maximum), preferably running water.
- If 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 household bleach to one liter of water at 49ºC (120ºF); or,
    - Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of iodine tincture (6–8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 49ºC (120ºF); or
    - Other commercially available cleansers of equivalent disinfectant quality when used as directed if their use is recommended or approved by the respirator manufacturer.
    - Disinfecting wipes designed for respirators can also be used. Do NOT use alcohol wipes because these can denature the rubber face piece.
- Rinse components thoroughly in clean, warm 49ºC (120ºF), preferably running water. 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.
- Test the respirator to ensure that all components work properly.

Storage

Respirators not discarded after one shift use, shall be stored in a suitable and sealable container away from areas of contamination. Respirators must also be stored in a location where they are protected from sunlight, dust, heat, cold, moisture, and damaging chemicals. Reusable respirators shall be marked in such a manner to assure that they are only worn by the assigned employee. Markings shall be made on the storage bag or container and not directly on the respirator.

Respirator Training and Fitting

Training and Information for Required Use

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

- 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; and
- The general requirements of this program.

Employees must receive training prior to using a respirator in the workplace. Retraining shall occur annually 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; and
- Any other situation that arises in which retraining appears necessary to ensure safe respirator use.

Fit Testing

If an employee is required to use a respirator with a negative or positive pressure tight-fitting face piece, the employee must be fit tested prior to use. The test shall be performed using the same make, model, style, and size of respirator that the employee will be using for the tasks requiring respirator usage. Below are the kinds of fit tests allowed, the procedures for conducting them, and how the results of the fit tests will be used.

- The Program Administrator shall ensure that employees using a tight-fitting face piece respirator pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT).
- The Program Administrator shall ensure that employees using a tight-fitting face piece respirator are 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 Program Administrator shall conduct an additional fit test whenever the employee reports or when the evaluating physician, supervisor, or Program Administrator 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 fit test, the employee subsequently notifies the Program Administrator, 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 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 QLFT or QNFT in the negative pressure mode, regardless of the mode of operation (negative or positive pressure) that is used for respiratory protection.
- QLFT 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.
- QNFT 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:
- Facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function; or
- Any condition that interferes with the face-to-facepiece seal or valve function.

Recordkeeping

All medical evaluations, fit test records, training, and other miscellaneous records will be retained in the following manner:
- Medical Evaluations are retained and made available, in accordance with 29 CFR 1910.1020, by Employer Services at Falcon.
- All other records pertaining to this program will be kept on file in the EHS office.

Program Evaluation

The Program Administrator will review this program on an annual basis at a minimum for any required changes. Workplace evaluations and consulting employees required to use respirators will be on-going to ensure the program is being implemented and remains effective in protecting the health and safety of affected personnel. The latter may involve but is 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; and
- Proper respirator maintenance.

Appendix A – Definitions

Air-purifying respirator means 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) means 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 as specified by this section.

Canister or cartridge means a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

Emergency situation means 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) means a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Filter or air purifying element means a component used in respirators to remove solid or liquid aerosols from the inspired air.

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.

Fit factor means a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit test means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also Qualitative fit test QLFT and Quantitative fit test QNFT.)

Helmet means a rigid respiratory inlet covering that also provides head protection against impact and penetration.

High efficiency particulate air (HEPA) filter means a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

Hood means a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

Immediately dangerous to life or health (IDLH) 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.

Maximum use concentration (MUC) means 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) means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Physician or other licensed health care professional (PLHCP) means an individual whose legally permitted scope of practice (e.g., 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 means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Powered air-purifying respirator (PAPR) means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Pressure demand respirator means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

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.

Quantitative fit test (QNFT) means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Respiratory inlet covering means 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) means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Supplied-air respirator (SAR) or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

This section means this respiratory protection standard.

Tight-fitting facepiece means 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.

Appendix B – Voluntary Use Form

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 a respirator has been provided for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

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

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

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

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

By signing below, I acknowledge that I have received a copy of this form, which satisfies the mandatory requirement of 29 CFR 1910.134 Appendix D – Information For Employees Using Respirators When Not Required Under Standard.

Print Name	Signature	Date

NOTE: Return a signed copy of this form to Environmental Health and Safety (EHS) via fax 419-372-2194, email envhs@bgsu.edu, or interoffice mail or in-person to the Huntington building. If you want to wear an elastomeric mask (rubber facepiece) voluntarily, please see the "Voluntary Respirator Usage Guidance" document on EHS's website for additional requirements.

Appendix C – Medical Questionnaire for Respirator Users

Applicability: All BGSU faculty, staff, and student employees as part of the university's Respiratory Protection Program, and students in academic programs who have been cleared by their supervisor/department/instructor to wear respirators on a voluntary basis, or when respirator usage (all types) is mandated by the Environmental Health & Safety department through a thorough exposure assessment. When worn on a voluntary basis, this applies to all respirators except filtering facepieces (dust masks).

Directions: This form must be completed in its entirety, if applicable, as described above. The affected university department is responsible for funding medical clearances when respirator use is mandated or approved on a voluntary basis. Because of this, please make sure the billing information on the last page is accurate. See your supervisor or instructor for this information. All questionnaire responses will be kept confidential (only you and the evaluating physician will have access). EHS will only receive a copy of the last page indicating an approval status. After completing the questionnaire, place it in an envelope and mail it directly to Employer Services at Falcon (formally Ready Works; 838 E. Wooster St. Bowling Green, OH 43402), fax it to them at 419-354-8764 (a secured fax), or email it to dibles@woodcountyhospital.org. You will not be permitted to wear a respirator until the evaluating physician has given you clearance. You and your supervisor or instructor will be notified as soon as clearance is received. This can take up to a week once Employer Services at Falcon has received the medical questionnaire.

This form will remain in the employee's medical file at Employer Services at Falcon. Do not send it to Bowling Green State University.

Respirator Physical Form (please print all answers)

Part A. Section 1

Your Name: _____ Today's Date: _____

Your BGSU ID #: _____

Supervisor or instructor/department or class: _____/_____

Job Title (if applicable): _____

Your age (to nearest year): _____ Sex (circle one): Male/Female

Your height: _____ ft. _____ in. Your weight: _____ lbs.

A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): (_____)_____

The best time to phone you at this number: _____

Has a representative of BGSU told you how to contact the health care professional who will review this questionnaire (check one): Yes___ No___

Check the type of respirator you will use (you can check more than one category):
A. _____ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
B. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied air, self-contained breathing apparatus).

Have you worn a respirator (circle one): Yes No

If "yes," what type(s): _____

Part A. Section 2 (please circle "yes" or "no")

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month: Yes No

2. Have you ever had any of the following conditions?

   A. Seizures (fits): Yes No

   B. Diabetes (sugar disease): Yes No

   C. Allergic reactions that interfere with your breathing: Yes No

   D. Claustrophobia (fear of closed-in places): Yes No

   E. Trouble smelling odors: Yes No

3. Have you ever had any of the following pulmonary or lung problems?

   A. Asbestosis: Yes No

   B. Asthma: Yes No

   C. Chronic bronchitis: Yes No

   D. Emphysema: Yes No

   E. Pneumonia: Yes No

   F. Tuberculosis: Yes No

   G. Silicosis: Yes No

   H. Pneumothorax (collapsed lung): Yes No

I.	Lung cancer:	Yes	No
J.	Broken ribs:	Yes	No
K.	Any chest injuries or surgeries:	Yes	No
L.	Any other lung problem that you've been told about:	Yes	No

4. Do you currently have any of the following symptoms of pulmonary or lung illness?

A.	Shortness of breath:	Yes	No
B.	Shortness of breath when walking fast on level ground or walking up a slight hill or incline:	Yes	No
C.	Shortness of breath when walking with other people at an ordinary pace on level ground:	Yes	No
D.	Have to stop for breath when walking at your own pace on level ground:	Yes	No
E.	Shortness of breath when washing or dressing yourself:	Yes	No
F.	Shortness of breath that interferes with your job:	Yes	No
G.	Coughing that produces phlegm (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
F.	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 everyone who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For those 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 eardrum: 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

1. 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 chemicals: Yes No

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

_____
_____
_____
_____

2. 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:_____
_____
_____
_____

3. List any second jobs or side businesses you have: _____
_____
_____

4. List your previous occupations:_____
_____
_____

5. List your current and previous hobbies:_____
_____
_____

6. 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

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

8. 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 know them: _____

9. Will you be using any of the following items with your respirator(s)?

   A. HEPA Filters:
   B. Canisters (for example, gas masks):
   C. Cartridges:

10. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers 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

11. During the period you are using the respirator(s), is your work effort:

   A. Light (less than 200 kcal per hour): Yes No

If "yes," how long does this period last during the average 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 the average 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 the average 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.).

12. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator:

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

13. Will you be working under hot conditions (temperature exceeding 77 deg. F):

14. Will you be working under humid conditions: Yes No

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

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

17. 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:
_____
_____
_____

18. 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):_____
_____
_____

BGSU
BOWLING GREEN STATE UNIVERSITY

Department of Environmental Health and Safety
1851 N. Research Dr.
Bowling Green, Ohio 43403
Telephone: (419) 372-2171
Fax: (419) 372-2194

Medical Clearance for Respirator Use

The two boxed sections should be completed by the student or employee (all fields are required). The remaining section is for the reviewing physician's use only as indicated.

Employee/Student Name:_____Date: [mm/dd/yy]: _____
Date of Birth: [mm/dd/yy]: _____
Department/Class: _____
Supervisor/Instructor: _____
Send invoice to (University department name & mailing address):_____
_____Name and phone number of university personnel handling payment (if known; if not known, please list the department's main phone number): _____
_____

Type or types of respirator(s) to be used by the employee/student:

[ ]	Air-purifying (non-powered)	[ ]	Combination air-line
[ ]	Air-Purifying (powered)	[ ]	Open circuit SCBA
[ ]	Continuous-flow air-line respirator	[ ]	Closed circuit SCBA
[ ]	Pressure demand air-line respirator		
[ ]	Combination continuous-flow air-line and air-purifying respirator		
[ ]	Combination pressure demand air-line and air-purifying respirator weight		

Reviewing Physician Use ONLY (below)

( ) No restrictions on respirator use ( ) Follow-up medical evaluation needed

( ) Some specific use restrictions ( ) No respirator use permitted

Restrictions: _____

Examining Physician: _____(Print Name)

Examining Physician: _____(Sign Name)

Date:_____

Return this page to: Bess Huyghe – Fax: 419-372-2194 or envhs@bgsu.edu