Respiratory Protection Program

Purpose

This program is applicable to all WKU employees, including student employees. Kentucky Occupational Health and Safety (KOSHA) states that only after administrated and engineering control measures (such as, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials) have not been effective in removing air contaminates then the selection of respirators may be introduced. KOSHA standards are not applicable to students in academic or recreational setting, however, it is of upmost importance that the University ensure that the exposure of students to airborne contaminants be kept at the lowest level possible and below the permissible exposure level.

Scope

The provisions of this document have been established per the requirements listed in the Federal Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.134, as enforced at WKU by the Commonwealth of Kentucky Labor Cabinet.

The following program establishes guidelines for safe practice in the use of respiratory protective devices of WKU employees when all preferred methods of protecting them from breathing contaminated air have been determined to be insufficient to reduce the contamination to nonhazardous levels. This program also applies to employees who voluntarily wear respirators although respirators are not required.

Responsibilities

EH&S

- Department of Environment, Health & Safety is responsible for administering the respiratory protection program.
- Conducting training.
- Conducting qualitative fit testing with Bitrex and or saccharin.
- Administering the medical surveillance program.
- Will conduct air monitoring when deemed necessary, and will maintain records of such air monitoring. Air monitoring results must also be communicated to affected workers.
- Maintaining training records and fit testing records required by the program.
- Evaluating the program.
- Updating written program, as needed.
Supervisors

Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. Duties of the supervisor include:

- Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing, and medical evaluation.
- Ensuring the availability of appropriate respirators and accessories. Being aware of tasks requiring the use of respiratory protection.
- Enforcing the proper use of respiratory protection when necessary.
- Ensuring that respirators are properly cleaned, maintained, and stored according to the respiratory protection plan.
- Ensuring that respirators fit well and do not cause discomfort.
- Continually monitoring work areas and operations to identify respiratory hazards.
- Coordinating with EH&S on how to address respiratory hazards or other concerns regarding the program.

Employees

Each employee has the responsibility to wear his or her respirator when and where required and in the manner in which they were trained. Employees must also:

- Care for and maintain their respirators as instructed, and store them in a clean sanitary location.
- Inform their supervisor if the respirator no longer fits well, and request a new one that fits properly.
- Inform their supervisor or EH&S of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program.
- Guard against damage to the respirator

Students

Students are responsible for following all health and safety standards and rules.

Professors, Instructors, Graduate Assistants

Professors, Instructors, and Graduate Assistants who are in charge of students must first use all means by implementing administrative controls or engineering controls to rule out the possibility of respirator use. When the uses of respirators are required each particular area must institute a respirator program for that area.
General Requirements

General requirements for the respirator program according to 29 CFR 1910.134 including pertinent guidelines as follows:

Respirators will be selected based on:

(a.) The type of hazards to which the worker will be exposed;
(b.) The estimated concentration of the contaminant; and
(c.) Pertinent OSHA standards (substance-specific health standards)

Only NIOSH approved respirators shall be used.

Before wearing a respirator at WKU, the user must first pass a medical exam that states the user is capable of wearing a respirator. The user shall be instructed and trained in the proper use of respirators and their capabilities and limitations. Training shall be given to the user initially and annually thereafter. This training may be conducted by an appropriate manufacturer's representative, the Environment, Health and Safety Department, or other qualified individuals.

User shall conduct user seal checks each time that they wear respirator. Positive or negative pressure checks shall be performed.

Tight-fitting respirators are not to be worn if employees have any condition, such as facial scars, facial hair, or missing dentures, that prevents them from achieving a good seal. Employees are not permitted to wear headphones, jewelry, or other articles that may interfere with the facepiece-to-face seal.

Voluntary Use

Any employee who voluntarily wears a NIOSH approved elastomeric respirator (reusable) when a respirator is not required is subject to the medical evaluation, cleaning, maintenance, and storage elements of this program, and must be provided with Appendix D (“Information for Employees Using Respirators When Not Required Under the Standard”). There may be tasks that employees perform that do not cause a respiratory health risk but could result in more of a respiratory discomfort; a dust mask may be chosen to make the employee feel more at ease. For the safety of the employee, appendix D must be been signed and on file with EHS. Precautions must be taken to ensure that the limitations of the dusk mask are understood and that these masks are disposed of properly after each use. Dust masks are not to be shared between users; discard the mask if it gets wet or becomes soiled, and do not store for reuse.
Training

- The reasons for the need of respiratory protection;
- The nature, extent, and effects of respiratory hazards to which one may be exposed;
- An explanation of why engineering controls are not available, or are not adequate and if feasible, what effort is being made to reduce or eliminate the need for respirators;
- An explanation of why a particular type of respirator has been selected
- An explanation of the operation, capabilities, and limitations of the respirator;
- Instruction in inspecting, donning, and wearing the respirator;
- Instruction of positive and negative pressure fit checks,
- An opportunity to handle the respirator, learn how to don and wear it properly;
- Instructions in how to recognize and cope with emergency situations;
- An explanation of how to maintain, clean and store the respirator; and
- Actual "fit testing" at which time several brands and sizes of respirators will be made available. For follow up fit tests it is recommended that the employee bring the respirator that is worn at work to the fit test. The Environment, Health and Safety Department will conduct fit testing.

Cleaning

Respirators shall be cleaned and disinfected (by the user) after each use, daily, or as often as necessary to ensure sanitary use of the respirator. In the event that respirators are shared, they must be cleaned and disinfected after each use. Respirators should be assigned to individual workers for their exclusive use whenever possible.

Change-Out Schedules

Employees wearing APRs with P 100 filters for protection against dust particles and other particulates shall change the cartridges on their respirators if they become wet, if they become dirty, or if breathing becomes difficult.

Employees using an organic vapor cartridge shall change the cartridges after an 8-hour work day or if used only occasionally at each use. Example: Painters and Zone techs

Employees using an acid cartridge shall change the cartridge after each use. Example: HVAC workers.

Storage

Respirators need to be stored in a clean dry location, out of the direct sun and heat, and away from chemicals that could cause contamination. Store respirators in a sealed container or a sealable plastic bag and where they will not be deformed.
**Inspection**

Respirators should be inspected before use. If the respirator fails inspection do not use but replace or repair. Inspection shall include

(a.) Face piece  
(b.) Straps  
(c.) Inhalation and exhalation valves  
(d.) Filters or cartridges

Any sign of damage or excessive wear shall be reported to the employee's supervisor immediately.

**Note:** There are Self Contained Breathing Apparatus (SCBAs) stored in a number of mechanical rooms across campus. These units are placed by, and for the use of, outside vendors. WKU employees are not authorized to utilize this equipment.

**Medical Evaluation**

Employees who are either required to wear respirators, or who choose to wear an air purifying respirator voluntarily, must pass a medical exam before being permitted to wear a respirator on the job. Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use. The respirator user’s medical status will be reviewed periodically. Employees must complete a medical questionnaire (Appendix B) and be approved to wear a respirator by a health physician at WKU Health Services. The doctor will provide a written medical opinion to the EHS office.

Medical records will be kept at Health Services the only record medically that is maintained at EH&S is the opinion from the doctor if employee is fit to wear a respirator.

An employer may provide respirators at the request of employees or permit employees to use their own respirators, if the employer determines that such respirator use will not in itself create a hazard. If the employer determines that any voluntary respirator use is permissible, the employer shall provide the respirator users with the information contained in Appendix C to this section ("Information for Employees Using Respirators When Not Required Under the Standard"); If an employee uses a respirator voluntarily, he/she must be made aware of the proper use and limitations of the respirator so that the respirator itself does not present a hazard.

For further information contact the WKU Department of Environment, Health and Safety at 745-2395.
Fit Testing Procedures

Employees will be informed of the steps involved in fit testing at the beginning of the session:

1. Taste Threshold Screening is performed without wearing a respirator. It is intended to determine whether the individual being tested can detect the taste of the testing agent (Bitrex, Saccharine or Banana Oil). It is done in a separate room from the fit testing area. A test enclosure is worn during threshold screening as well as during fit testing. Throughout the threshold-screening test, the test subject shall breathe through his or her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a distinctive taste. If the testing agent cannot be detected at the end of 30 squeezes of the nebulizer (administered 10 squeezes at a time), a different testing agent will be used. The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.

2. The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

3. The test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. The respirator shall be worn for at least 5 minutes before the start of the fit test.

4. The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use, which could interfere with respirator fit.

5. The test subject shall conduct a user seal check, using the negative and positive pressure seal checks. Another face piece shall be selected and re-tested if the test subject fails the user seal check tests.

6. The test shall not be conducted if there is any hair growth between the skin and the face piece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel, which interferes with a satisfactory fit, shall be altered or removed.

7. The test subject shall don the fit test enclosure while wearing the respirator selected. The respirator shall be properly adjusted and equipped with any type particulate filter. Fit test solution is sprayed into the hood (ten squeezes at a time). As before, the test subject shall breathe through his or her slightly open mouth with tongue extended, and be instructed to report if he/she detects the testing agent.
8. If a test subject exhibits difficulty in breathing during the test, she or he shall be re-evaluated by a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing his or her duties. (Note: All employees are evaluated by a physician to determine if they are physically able to wear a respirator before being fit tested.)

9. The test subject shall perform exercises, in the test environment, in the following manner:

(a.) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.

(b.) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

(c.) Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

(d.) Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

(e.) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized piece.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

(f.) Jogging in place shall be substituted for bending over and touching toes.

(g.) Normal breathing

10. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.
11. The test subject shall indicate to the test conductor if at any time during the fit test the taste of the testing agent is detected. If the test subject does not report tasting the testing agent, the test is passed.
Voluntary Use

Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under Standard

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

You should do the following:

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

Signature: __________________________  Date: ________________