

YOUNGSTOWN STATE UNIVERSITY

RESPIRATORY PROTECTION PROGRAM

Reviewed August 17, 2007

Introduction

The Occupational Safety and Health Administration (OSHA) sets maximum exposure standards for airborne toxic materials. If employee exposure to these substances exceeds the standards, the employer is required by law to install or institute feasible engineering controls and/or administrative controls to reduce employee exposure to acceptable levels. If these controls do not prove feasible, or while they are being installed or instituted, the employer is required to provide appropriate respiratory protection for the employee. Respiratory protection is also required when working in oxygen-deficient atmospheres, i.e., where the oxygen content in the breathable air is insufficient. Respiratory protection may also be necessary for routine but infrequent operations, for non-routine operations in which the employee is exposed briefly to high concentrations of hazardous substance, e.g., during maintenance or repair activities, or during emergency conditions.

Program Policy

Youngstown State University will endeavor to prevent atmospheric contamination through engineering and administrative controls. When engineering and administrative controls are not feasible, employees will be required to wear respirators for protection from the respiratory hazards of contaminated air. This procedure is based on the American National Standard 288.2-1980 and the Occupational Health and Safety Standard 1910.134.

Program Responsibility

The Department of Environmental and Occupational Health and Safety shall be responsible for the implementation of and adherence to the provisions of the respiratory program.

The University shall (1) provide approved respirators when such equipment is necessary to protect the health of the employee, (2) provide respirators which are suitable for the intended purpose, and (3) establish and maintain a respiratory protection program which shall address the following aspects:

1. selection of respiratory protective equipment
2. medical surveillance
3. issuance of respiratory equipment
4. fit testing

5. cleaning and disinfecting
6. storage
7. inspection and repair
8. periodic program evaluation
9. employee training

It will be the responsibility of the Respirator Program Coordinator (RPC) to assure that all the elements of this program are followed.

Employee Responsibility

Employees who are issued respiratory protective equipment are responsible for (1) using the provided respiratory protection in accordance with instructions and training received, (2) guarding against damage to the respirator, and (3) reporting any malfunction of the respirator to a responsible person (i.e., supervisor, RPC).

PROGRAM FOR AIR-PURIFYING RESPIRATORS

The air-purifying respirator shall be worn only in a non-emergency condition for protection against low concentrations of dusts, gases and vapors.

The program for air-purifying respirators has been divided into a procedure for the routine (frequent) user and the non-routine (infrequent) user. This has been done to obtain maximum protection for the non-routine user as well as the routine user.

The respirator program consists of the following:

Selection of Equipment

Only respirators approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) for the airborne hazards present in the work area shall be used. Selection of the proper respirator equipment for any given situation will take into consideration (1) the nature of the hazard, (2) exposure time, (3) work requirements and conditions, and (4) characteristics and limitations of the respirator.

Medical Surveillance

A medical survey of employees to be trained in respirator use shall be reviewed by the employee's physician to determine any health or physical condition which might limit or

restrict the use of the respirator by the employee. Only those employees who are medically able to wear respiratory protective equipment shall be issued one. In addition, a review of the employee's health status will be made annually.

Medical factors to be considered include:

- emphysema
- asthma
- breathing difficulty when wearing a respirator
- chronic bronchitis
- heart disease
- hypertension
- anemia
- hemophilia
- hernia
- diabetes
- lack of use of fingers or hands
- epileptic seizures
- punctured eardrum
- other factors which might inhibit the ability of an employee to wear a respirator

An indication by the employee that he has any of the above conditions constitutes a warning sign regarding the use of respirators. A medical opinion to confirm any of the above in regards to the ability to wear a respirator will be required.

Availability, Issuance and Control of Respiratory Protective Equipment

Each employee that requires a respirator will be issued one at the University's expense with replacement parts, cartridges and filters. Respirators will be issued through the Materials Center upon authorization by the RPC. Each department will be responsible for purchasing and maintaining respiratory equipment for their employees. All equipment must be approved by the RPC prior to purchase.

Training

Each respiratory user will be trained how to use and maintain the respirator based on this respirator use and maintenance program.

The RPC will be responsible for training employees in the care and use of their respirators. Training will cover the following areas:

- hazards from which the respirator will protect the employee
- the engineering and administrative controls being used and the need for a respirator to provide protection
- the function, capabilities, and limitations of the selected respirator (i.e., oxygen deficient atmosphere, asbestos respirator not good for organic vapors, half mask negative pressure respirator not good for more than ten (10) times the permissible exposure limit, etc.)
- donning of the respirator
- fitting procedures for each type of respirator (including positive and negative fit test for air purifying half mask respirators)
- cleaning and disinfecting respirators
- inspection of respirator
- maintenance of respirator
- proper storage and handling of respirator
- periodic review and retraining

The employee must be able to apply the elements of this program in daily use, care and safekeeping of the respirator.

To insure availability of the respirator program at all times, copies shall be distributed to the department head, immediate supervisor, and the respirator user.

Employees who are non-routine users of respirator equipment shall be provided with a respirator that fits properly. They will be given instruction on proper fit seal and operation immediately prior to actual use by the supervisor.

Training the supervisor shall be the responsibility of the RPC or designee.

Periodic follow-up of proper use of the respirator by the employee should be made by the supervisor during its actual use.

Fit Testing

The RPC will be responsible for fit testing employees in the respirator(s) that they will use (for half-mask air purifying respirators only). Qualitative fit testing using isoamyl acetate vapor or irritant smoke and the fit test protocol will be conducted before assigning any respirator to be worn in a contaminated area. Only persons qualified to fit respirators will conduct the tests.

Fit testing shall be conducted annually (unless otherwise specified in a specific standard). In addition, fit testing will be repeated whenever an employee's face shape changes (loss of weight, teeth, etc.)

Problems in fitting an air-purifying respirator may result if facial hair prevents a good seal from forming between the skin and the sealing surface or if facial hair interferes with the valve function. Corrective lenses that have temple bars or straps may prevent proper sealing and should not be used when a full-face respirator is worn. An adapter kit to accommodate eyeglasses may be purchased from the manufacturer. Contact lenses should not be worn while wearing a respirator. A properly fitted respirator may stretch the skin around the eyes, thus increasing the possibility that a contact lens will fall out. Record of employee fit testing and training shall be kept by the RPC.

Repair of Respiratory Protective Equipment

Periodic repair or replacement of component parts (with the exception of filters and cartridges) must be done by a qualified individual. Replacement parts for respiratory protective equipment must be those of the manufacturer of the equipment.

Inspection of Equipment

All respirators shall be inspected before and after each use by the wearer. Respirator inspection shall include a check of the tightness of connections and the condition of the face piece, headbands, valves, connecting tube and cartridge or canister. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration. Equipment found to be in defective or questionable condition shall be returned immediately to the Materials Center for replacement.

Cleaning and Disinfecting

Each employee shall be responsible for the cleanliness of the respirator issued for his or her exclusive use. Respiratory protective equipment should be washed with detergent in warm water using a brush, thoroughly rinsed in clean water, and then air dried in a clean place. Care should be taken to prevent damage from rough handling. Detergents containing a bactericide should be used. Organic solvents should not be used, as they can deteriorate the rubber face piece. The cleaned and disinfected respirators should be rinsed thoroughly in clean water (120°F maximum) to remove all traces of detergent, cleaner, sanitizer and disinfectant.

Storage of Equipment

Respiratory protective equipment shall be stored so as to protect it from dust, sunlight, heat, extreme cold, excessive moisture, and damaging chemicals. After cleaning and disinfecting respirators, they should be placed individually in a resealable plastic bag until the next use. They should be stored in a single layer with the facepiece and exhalation valve in a more or less normal position to prevent the rubber or plastic from taking a distorted "set."

Monitoring Respirator Use

Supervisory personnel shall periodically monitor the use of respirators to ensure they are worn properly.

The concentration of the respiratory hazard in the work area shall be monitored initially prior to respiratory selection and periodically during respirator use to ensure that the proper type of respirator is being utilized.

Respirator Program Evaluation

The RPC shall monitor the effectiveness of this program by:

1. frequent unscheduled observation of employee activities to confirm proper respirator use;
2. observation of and discussion with new employees to confirm proper training has been carried out; and
3. periodic discussion with supervisors.

Surveillance of Working Conditions

Appropriate surveillance of the work area conditions shall be conducted. Employee exposure records shall be kept.

Dangerous Atmospheres

Written procedures shall be prepared covering safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies. Employees shall be familiar with these procedures and the available respirators.

Emergency Use of Respirators

Respirators for emergency use shall be inspected monthly. A record of inspection dates and findings shall be kept in the Environmental and Occupational Health and Safety Department.

PROGRAM FOR EMERGENCY ATMOSPHERE-SUPPLYING RESPIRATORS

The atmosphere-supplying respirator shall be worn in an emergency condition including an oxygen-deficient atmosphere. The respirator program will consist of the following:

Selection of Equipment

Only NIOSH-approved respirators shall be used. Only respirators that provide an independent, respirable atmosphere shall be used in oxygen-deficient atmospheres.

Training the User

All emergency response personnel and others who may be required to use self-contained breathing apparatus shall be trained by the qualified individuals from the Youngstown Fire Department.

Respirator wearers shall receive operating and fitting instructions including demonstrations and practice in how the respirator should be worn, adjusted and properly fit.

Availability of Equipment

When self-contained breathing apparatus is used in atmospheres immediately dangerous to life or health, a standby person or persons must be present with suitable rescue equipment.

Inspection of Equipment

All units will be inspected monthly and after each use. A record shall be kept of inspection dates and the condition of the equipment. These inspections will be performed by the Department of Environmental and Occupational Health and Safety.

Cleaning, Repair and Storage

After each use, the respirator shall be cleaned, disinfected and inspected before being returned to storage.

Repair or replacement of respirator parts should be done by the equipment manufacturer or his authorized representative. Only repair parts for the specific respirator shall be used.

Respirators shall be quickly accessible from storage compartments which have been clearly marked and sealed.

Medical Surveillance

Same procedure to be followed as for the air-purifying respirators.