Respiratory Protection Program

Office of Environmental Health and Safety

Revised, 2018

Cleveland State University
Respiratory Protection Program

Introduction

Final rules addressing the use of respiratory protection can be found in 29 CFR 1910.134 (Respiratory Protection) under the authority of the Occupational Safety and Health Administration (OSHA). Through the passage of the Public Employees Risk Reduction Act, the State of Ohio has adopted this OSHA and all public employers are required to comply with its provisions.

The OSHA Respiratory Protection Standard sets forth maximum exposure levels for concentrations of certain airborne contaminant materials. Should employee exposure concentrations exceed these levels, the University shall install appropriate engineering controls and/or implement administrative control methods to reduce employee exposure levels below established standards. These controls and methods include but are not limited to following specific operating procedures, confinement or containment of the material through local exhaust ventilation or chemical hoods, or substitution with a material of lower toxicity. In the event that such controls are not feasible, then employees shall be enrolled in the University's Respiratory Protection Program.

Program Scope

This program applies to all faculty and staff employed by Cleveland State University, who are required to wear respiratory protection. This program includes policies and procedures for the following items:

- Procedures for selecting respirators for use in the workplace.
- Medical evaluations of employees who are required to use respirators.
- Fit testing procedures for tight-fitting respirators.
- Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations.
- Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding and maintaining respirators.
- Procedures to ensure adequate air quality, quantity and flow of breathing air for atmosphere-supplying respirators.
- Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations.
- Training of employees in the proper use of respirators, including donning (putting on) and doffing (removing) them, any limitations to their use and their maintenance.
- Procedures for regularly evaluating the effectiveness of the Respiratory Protection Program.
- This plan does not address SCUBA users.

Program Elements

Administration

The Respiratory Protection Program is administered for Cleveland State University through the Office of Environmental Health and Safety shall act in the capacity as Respiratory Program Coordinator, and work to ensure all elements set forth in this Program are followed

The Office of Environmental Health & Safety Responsibilities:

- The Office of Environmental Health and Safety (EH&S); upon the request of an employee, supervisor, or other departmental representative; will identify; through a respiratory job hazard analysis, or respiratory assessment form, those employees required to wear respirators while performing specific tasks as part of their work duties as a result of hazardous air contaminants.
- If a respiratory hazard is thought to exist at a work site, the affected employee(s) should report them to their supervisor and he/she should contact EH&S for consultation. If necessary, EH&S will conduct on-site inspections and perform air monitoring, as needed, to determine the extent of hazardous airborne contaminants.
- EH&S will make a determination as to the need for and type of control measures to be instituted. The primary objective will be to prevent atmospheric contamination through the use of accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators will be selected and placed into service for affected workers.

Department/Colleges:

Departments with employees required to wear respirators must provide the applicable and suitable equipment (i.e., respirators, cleaning supplies, spare parts, etc.) for the purpose intended. The provision of respirators for voluntary use (no documented need) by employees will be at the discretion of the employees' department.

Departments with employees using respirators must have departmental personnel responsible for the following:

- Implementing and overseeing the Respiratory Protection Program within the department.
- Supervising those required to wear respiratory protective equipment.
- Ensure the proper use of respirators.
- Assist the OEHS in coordinating fit testing
- Be available for consultation by employees, as needed.

Respirator users:
Employees who use respiratory protective equipment (mandatory use and voluntary use) are required to comply with the policies and procedures found in this document. These are general policies and can be universally applied. Job site and job task-specific procedures may be in place and used for each department and task requiring respiratory protection and should be addressed in department specific standard operating procedures (SOPs).

Respiratory Hazards

Respiratory hazards may be classified as follows:

*Oxygen deficiency
*Vapor/gas contaminants
*Particulate Contaminants
*Combination of Vapor/Particulate Contaminants

Types of Respiratory Equipment

There are two basic types of respiratory equipment: air-purifying and supplied clean air.

*Air purifying respirators employ the use of filters or sorbents to remove contaminants from the employees' breathable air. They can range from basic disposable respirators to highly sophisticated powered air purifying respirators.

*Supplied clean air respirators are designed to provide breathable air from a clean air source other than the surrounding contaminated work atmosphere. Examples of such respirators are supplied air respirators and self-contained breathing apparatus (SCBA's).

Respiratory protection provided by the University for its employees are either full/half face air purifying respirators or powered air purified respirators (PAPR). NO SCBA's are to be worn by University employees for any reason.

Selection of Respiratory Equipment

When respirator use is required, respirators, training and medical evaluations must be provided at no cost to the employee. The employing department or unit is responsible for purchasing respiratory protective equipment. Training will be arranged through consultation with EH&S and will be conducted by EH&S staff or another appropriate group. A Licensed Health care provider will perform this test for you. Other arrangements can be made as necessary.

All respirators used by employees of CSU must be National Institute for Occupational Safety and Health (NIOSH) certified models. All use of selected respirators must be in compliance with the conditions of their NIOSH certification.

Prior to the selection and use of respirators, EH&S will identify and evaluate the respiratory hazard(s) in each work site for each job task through a job hazard analysis (JHA); and document the findings on the Respiratory Hazard Evaluation Form (Appendix A). This evaluation will include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Where the employee exposure cannot be identified or reasonably estimated, EH&S will consider the atmosphere to be Immediately Dangerous to Life or Health (IDLH)
References such as product labels, safety data sheets (SDS), reference texts and communication with product manufacturers will be used to determine the chemical and physical form of air contaminants. Monitoring equipment and/or personal dose exposure cassettes/badges will be used to quantify the level of employee exposure to air contaminants, where feasible. Where monitoring is not feasible, reference to accepted, published research and consensus standards will be used to estimate exposures. Contaminant identity and exposure levels will be compared to OSHA exposure limits and/or accepted consensus standards to determine the degree of respiratory protection required for each task.

In addition to employee exposures, workplace and user factors affecting respirator performance and reliability will be considered. Such workplace and user factors include:
Other personal protective equipment necessary for the job task that may affect the fit of the respirator or the stress experienced by the user.
The duration and frequency of respirator use and whether it is routine, periodic or emergency use.
Worksite factors such as temperature, humidity and expected physical work effort.
Any physical limitations of the employee or their tolerance to job site stressors that may limit the use of a respirator. These will be assessed during the Medical Evaluation.

The selection of respirators will be made from a sufficient number of respirator models and sizes so the respirator is acceptable to and correctly fits the user.

For protection against gases and vapors, the respirator selected shall be:

- 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; or

- If there is no ESLI appropriate for the work site conditions, a change-out schedule to be implemented for canisters and cartridges based on objective information or data that will ensure canisters and cartridges are changed before the end of their service life. This information shall be documented in a department-specific respiratory protection program.

For protection against particulates, the respirator selected shall be:

- A filtering facepiece (dust mask) with a filter rating of at least 95% to 99.97% rating, in removing monodisperse particles of 0.3 micrometers and larger in diameter, with a P (oil Proof), N (Not resistant to oil) or R (Resistant to oil) prefix depending upon application; or,
- An atmosphere-supplying respirator; or,
- An air-purifying respirator equipped with a filter certified by NIOSH as a high efficiency particulate air (HEPA) filter, or,
- An air-purifying respirator equipped with a filter certified for particulates by NIOSH; or,
- For contaminants consisting primarily of particles with diameters of at least 2 micrometers and larger, an air- purifying respirator equipped with any filter certified for particulates by NIOSH.

A Respiratory Hazard Assessment Form (Appendix A) shall be completed for each work site and task prior to a final respirator selection. This form will document the workplace conditions, airborne contaminants, physical factors and other protective equipment needed for the job site. This form will serve as a guide for the evaluator to ensure all necessary elements are considered in the selection of respirators.

Medical Surveillance

Due to the nature of respirator use placing a potential physiological burden on the user, a medical evaluation is required for all respiratory protection users to determine their fitness for respirator use. The department hiring an employee (that is required to wear a respirator due to an occupational exposure) is required to arrange a medical evaluation through St'Vs. this section specified requirements for medical evaluation used to determine the employee's ability to use a respirator.

Licensed Health Care Provider can provide a medical evaluation to determine an employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace. CSU will discontinue an employee's medical evaluations when the employee is no longer required to use a respirator.

CSU Health and Wellness Clinic or other physician or licensed health care professional (PLHCP) will perform medical evaluations using a medical questionnaire and/or an initial medical examination that obtains the information required by OSHA's medical questionnaire as follows. This service will be provided at no cost to the employee.

Where medical evaluation is required for voluntary respirator use (tight-fitting respirators), PLHCP medical evaluation is acceptable provided the appropriate paperwork accompanies the user during respirator use and is provided to the plan administrator.

A follow-up medical examination will be provided for any employee who gives a positive response to any question among questions 1 through 8 in Section 2, Part A of OSHA's Medical Questionnaire or whose initial medical examination demonstrates the need for a follow-up medical examination. The follow-up medical examination will include any medical tests, consultations or diagnostic procedures that necessary to make a final determination as to the employee's fitness for respirator use.

Information provided on the medical questionnaire shall remain confidential and will be provided to the employee during normal working hours. The medical questionnaire will be administered in a manner to ensure the employee understands its content. PLHCP can provide the employee with an opportunity to discuss the questionnaire and examination results.

Medical Determination:

When the PLHCP clears an employee to use a respirator, EH&S will obtain a Medical Clearance Form for Respirator Use outlining the employee's ability to use the prescribed respirator. The recommendation will provide the following information

- Limitations, if applicable, on respirator use related to a medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator;
- The need, if any, for follow-up medical evaluations; and,
- A statement that the employee has been provided a copy of the Medical Clearance Form.

If the assigned respirator is a negative pressure respirator and the medical evaluation reveals a medical condition that may place the employee's health at increased risk if the respirator is used, CSU will provide a powered air-purifying respirator (PAPR), provided the medical evaluation finds the employee can use such a respirator. If a subsequent medical evaluation determines the employee is medically able to use a negative pressure respirator, then the PAPR can be replaced with a negative pressure respirator.

Respirator Fit Testing

Fit testing of respirators will be conducted for all tight-fitting face piece types. PLHCP will provide fit testing to employees required to use any respirator with a negative or positive pressure tight-fitting face piece. The employee will be fit tested with the same make, model, style and size of respirator that will be used. This section specifies the fit testing procedures and interpretation of results. PLHCP will ensure that employees using a tight-fitting face piece respirator pass an appropriate quantitative fit test (QNFT) as outlined in this section
The respirator user shall be fit tested prior to initial use of the respirator, and at least annually thereafter.
CSU Supervisor shall contact respirator users for initial and annual fit test scheduling Respirator users shall receive training prior to, and during fit testing. Upon completion of a fit test, users shall receive written certification of successful fit test.
Additional testing:
CSU will conduct additional fit testing whenever the employee reports, supervisor or program administrator makes visual observations of changes in the employee's physical condition, which 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 fit test, the employee subsequently notifies CSU EH&S, Employee Health Services, PLHCP, the program administrator, or their supervisor the fit of the respirator is unacceptable; the employee will be given a reasonable opportunity to select a different respirator and be re-tested.
Fit tests shall be administered by a service provider using an OSHA-accepted QLFT or QNFT protocol as outlined in 29 CFR 1910.134 Appendix A-Fit Testing Procedures

St. Vincent Charity Hospital's Occupational Medical Center
2322 East 22nd Street
Cleveland, Ohio 44115

Respirator Hazard assessment form

1. Identify the airborne contaminant(s):

An important source of information on airborne contaminants is the Safety Data Sheet (SDS) for each product. The SDS identifies the ingredients in each product that have been determined to be a health hazard and the physical and chemical characteristics of the product such as vapor pressure and flash point.

The physical form of the hazard will also help determine the type of respiratory protection needed.

- Dusts are tiny suspended particles resulting from a mechanical process such as grinding.
- Mists are tiny liquid droplets usually created by spraying operations.
- Fumes are small particles formed by a condensing gas or vapor such as in welding.
- Vapors are substances that evaporate from a liquid or solid.
- Gases are formless fluids that occupy the space in which they are enclosed. Examples include nitrogen and carbon monoxide.
- Smoke is a mixture of suspended particles and gases which are the result of combustion. Smoke can contain toxic contaminants.

2. Determine the concentration level of the contaminant:

Monitoring instruments will give you a precise reading of the airborne concentration level of the contaminant. If testing indicates exposure to an airborne concentration level at or above the Permissible Exposure Level (PEL) established for that substance, respiratory protection must be worn. This testing should be done by an industrial hygienist or other qualified staff.

3. Evaluate the conditions of exposure:

There are many variables that can affect your choice of respiratory protection. Always keep these factors in mind:

- The nature of the task. How long will exposure to each hazard be? Is the work strenuous (which makes breathing more difficult)?

- The characteristics of the work area. Is the work area a confined space and/or poorly ventilated? Will air temperatures be hot or cold? Could more than one contaminant be present?

- The type of work process. Does the way chemicals are combined, heated

or applied create an additional or new health hazard? An example of this could be a paint spraying or welding operation.

4. Match the hazard, concentration level and the conditions of exposure to the proper type of respirator:

A wide range of supplied-air and air-purifying respirators are available from various manufacturers. Contact EH&S for help in selecting the proper respirator for your specific work area. The following worksheet and forms can be used for documenting the respirator hazard assessment and selection process.

Respiratory Hazard Assessment worksheet

Department: _____

Worksite:_____

General Description of Job Task: _____

_____

Job Classification(s) _____

Level of physical exertion required to perform job: _____

_____

Respiratory hazard(s) present: _____

_____

_____

OSHA PEL:_____ ACGIH TLV: _____

Is monitoring data available? _____Yes _____No
If yes, attach to this form.

Contaminant concentrations present in the workplace:

Contaminant(s): _____ Concentration: _____

Contaminant(s): _____ Concentration: _____

Contaminant(s): _____ Concentration: _____

Does data indicate levels that exceed applicable limits? _____Yes _____No

Does data indicate IDLH concentrations? _____Yes _____ No

Note: Wherever hazardous exposure(s) cannot be identified or reasonably quantified, the atmosphere must be considered IDLH.

Does data indicate oxygen deficiency (less than 19.5%)? _____Yes _____No

Is the respirator for routine use or emergency use? _____

Additional factors (i.e. temperature and humidity levels, etc.): _____

_____

Communication requirements: _____

_____

Are engineering/ administrative controls feasible? _____Yes _____No

If no, describe reasons:_____

_____

Type of respirator selected: _____ air purifying _____ atmosphere supplying

Style of respirator selected: _____ tight-fitting _____ lose-fitting

Make: _____

Model#_____

Type of canister or cartridge to be used:_____

Cartridge/canister change schedule if applicable _____

_____

Evaluator: _____Date:_____

Respiratory Hazard Assessment and Certification Form

Department:
Date:
List Engineering or Administrative Controls:

Job Description	SDS Product/Trade Name	Contaminant	Concentration	ppm or mg/m^3	PEL/ TLV	Recommended Respiratory Protection	Service Life

I have performed an evaluation of the work areas indicated above, assessed the hazards and selected the appropriate respiratory protection.

Evaluator:
Date:

For more information on Standard Operation Procedures and there requirements Please use the link below.

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=12716

Medical Evaluation Questionnaire

Appendix C to Sec. 1910.134: OSHA Respirator Medical Evaluation Questionnaire (Mandatory)

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee:

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date:_____

2. Your name:_____

3. Your age (to nearest year):_____

4. Sex (circle one): Male/Female

5. Your height: _____ ft. _____ in.

6. Your weight: _____ lbs.

7. Your job title:_____

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

9. The best time to phone you at this number: _____

10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No

11. 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).

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

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

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (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: 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

d. 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: 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 every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees 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 ear drum: 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