

<b>Northern Kentucky University</b>	<b>Policy Link:</b> Occupational Safety Policy
<b>Issue Date:</b> 11/02/2018 <b>Revised Date:</b>	<b>Title:</b> RESPIRATORY PROTECTION PROGRAM

## **OBJECTIVE AND PURPOSE**

This program provides the requirements for the use of respirators in order to prevent occupational exposure to harmful dusts, fogs, fumes, mists, gases, smokes, sprays, and/or vapors. When feasible, engineering control measures shall be used to control hazardous atmospheres. When it is not feasible, appropriate respirators shall be worn. This program is administered under the authority of University Occupational Safety Policy.

**This program does not cover the use of respirators to enter atmospheres that are considered Immediately Dangerous to Life and Health (IDLH).**

## **DEFINITIONS**

**Emergency situation** - 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.

**Employee exposure** - exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

**Fit test** - 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.)

**Immediately dangerous to life or health (IDLH)** - 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.

**Negative pressure respirator (tight fitting)** - a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

**Oxygen deficient atmosphere** - an atmosphere with an oxygen content below 19.5% by volume.

**Physician or other licensed health care professional (PLHCP)** - an individual whose legally permitted scope of practice (i.e., 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.

**Qualitative fit test (QLFT)** - 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)** - an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

**Tight-fitting facepiece** - a respiratory inlet covering that forms a complete seal with the face.

## **RULES AND PROCEDURES**

### **Respirator Selection**

For any employee that is required to wear a respirator in order to safely conduct their assigned duties, Operations and Maintenance shall select and provide a NIOSH-certified respirator based on the respiratory hazard(s) to which the employee is exposed, and workplace and user factors that affect respirator performance and reliability.

The employee's supervisor may contact Safety and Emergency Management to assist with the selection of the appropriate respirator.

### **Medical Evaluations of Employee**

Once it is determined that an employee will be required to wear a respirator, a copy of the OSHA Respirator Medical Evaluation Questionnaire Form (along with instructions) and procedures for scheduling a medical evaluation will be given to the employee's supervisor. The medical questionnaire and examinations shall be administered confidentially during the employee's normal working hours, or at a time and place convenient to the employee. The medical questionnaire shall be administered in a manner that ensures that the employee understands its content. The employee shall be given an opportunity to discuss the questionnaire and examination results with a Physician or other Licensed Health Care Professional (PLHCP).

The following information must be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee's ability to use a respirator:

- The type and weight of the respirator to be used by the employee;
- The duration and frequency of respirator use;
- The expected physical work effort;
- Additional protective clothing and equipment to be worn; and
- Temperature and humidity extremes that may be encountered.

A written recommendation regarding the employee's ability to use a respirator shall be provided by the PLHCP and sent to the employee's supervisor and Safety and Emergency Management. The recommendation shall provide only the following information:

- Any limitations on respirator use related to the 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 PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, Operations and Maintenance shall provide a Powered Air-Purifying Respirator (PAPR) if the PLHCP's medical evaluation finds that the employee can use such a respirator; if a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then the employer is no longer required to provide a PAPR.

### **Follow-up Medical Examination**

The PLHCP shall ensure that a follow-up medical examination is provided for an employee who gives a positive response to any question among questions 1 through 8 in Section 2, Part A of the OSHA

Respirator Medical Evaluation Questionnaire Form or whose initial medical examination demonstrates the need for a follow-up medical examination.

The follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

#### **Additional Medical Evaluation**

At a minimum, Operations and Maintenance shall provide additional medical evaluations that comply with the requirements of this section if:

- An employee reports medical signs or symptoms that are related to the ability to use a respirator;
- A PLHCP, supervisor, or the respirator program administrator informs Operations and Maintenance that an employee needs to be reevaluated;
- Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation; or
- A change occurs in workplace conditions (e.g., physical work effort, protective clothing, and temperature) that may result in a substantial increase in the physiological burden placed on an employee.

Operations and Maintenance shall provide a copy of the written respiratory policy and the OSHA Respirator Medical Evaluation Questionnaire Form to each PLHCP performing medical evaluations under this program.

#### **Fit Testing Procedures**

Operations and Maintenance shall ensure that employees using a tight-fitting face-piece respirator pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT) 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 employee must be fit tested with the same make, model, style, and size of respirator that will be used.

Operations and Maintenance shall conduct an additional fit test whenever the employee reports, or the PLHCP, 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 Safety and Emergency Management, their supervisor, or the PLHCP 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 retested.

#### **Voluntary Respirator Use**

Operations and Maintenance will provide respirators at the request of employees or permit employees to use their own respirators, once the Director of Safety and Emergency Management has determined that such respirator use will not in itself create a hazard. If the Director of Safety and Emergency Management determines that voluntary respirator use is permissible, the employee shall be provided with OSHA's "Information for Employees Using Respirators When Not Required Under the Standard" handout and shall be fully covered under this program.

#### **Use of Respirators**

Employees that use respirators shall take all necessary precautions to assure a tight seal. Employees shall not use respirators with tight-fitting face-pieces if they have facial hair that comes between the sealing surface of the face-piece and the face or that interferes with valve function; or any condition that interferes with the face-to-face-piece seal or valve function.

If an employee wears corrective glasses or goggles or other personal protective equipment, the University shall ensure that such equipment is worn in a manner that does not interfere with the seal of the face-piece to the face of the user.

For all tight-fitting respirators, the employee shall perform a user seal check each time they put on the respirator using the subsequent procedures or procedures recommended by the respirator manufacturer that the employer demonstrates are as effective as those in the following section of the program.

When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, the Director of Safety and Emergency Management shall reevaluate the continued effectiveness of the respirator.

If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece, the employee may not return to the work area until the respirator is replaced or repaired.

The employee shall leave the respirator use area to wash their face and respirator as necessary to prevent eye or skin irritation associated with respirator use, if they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece, or to replace the respirator or the filter, cartridge, or canister elements.

Atmospheres that are Immediately Dangerous to Live or Health (IDLH) shall not be entered by any employee.

### **User Seal Check Procedures**

#### **Positive pressure check.**

Close off the exhalation valve and exhale gently into the face piece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the face piece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

#### **Negative pressure check**

Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the face piece collapses slightly, and hold the breath for ten seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

### **Care and Maintenance**

#### **Cleaning and Disinfecting**

The employee's department shall provide cleaning and disinfecting supplies and a storage area for respirators. The employee shall clean and disinfect respirators using the procedures recommended by the respirator manufacturer.

Respirators shall be cleaned and disinfected as often as necessary to be maintained in a sanitary condition. Respirators used in fit testing and training shall be cleaned and disinfected after each use.

### **Storage**

All respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals; and they shall be packed or stored to prevent deformation of the face piece and exhalation valve.

### **Inspection**

Supervisors shall ensure that all respirators are inspected before each use and during cleaning. During inspections the employee shall check the respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the face piece, head straps, valves, connecting tube, and cartridges, canisters or filters; and check the elastomeric parts for pliability and signs of deterioration.

### **Repairs**

Respirators that fail an inspection or are otherwise found to be defective shall be removed from service, discarded, repaired or adjusted. Repairs and adjustments shall only be performed by persons appropriately trained to perform such operations and only the respirator manufacturer's NIOSH-approved parts designed for the respirator shall be used. Repairs shall be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed; and reducing and admission valves, regulators, and alarms shall be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

## **RESPONSIBILITIES**

### **Safety and Emergency Management**

Safety and Emergency Management is responsible for program development, review, and compliance with all applicable federal and state regulations. Safety and Emergency Management will coordinate training as needed. Safety and Emergency Management staff are authorized to halt any unsafe work practice that is not in accordance with this or any other NKU safety policy or procedure.

### **Chair/Director Responsibilities**

It is the responsibility of the chair/director to comply with applicable environmental, health and safety laws and regulations, University policies and procedures, and accepted safe work practices. Chairs/directors shall ensure that their employees receive required training prior to beginning work and annual/refresher training as needed. The chair/director is also responsible for maintaining their employee training records.

Chairs and Directors may delegate the details of program implementation to appropriate personnel within their authority. The ultimate responsibility, however, for ensuring implementation of these programs at the academic department/administrative unit level remains with the chairs/directors.

### **Supervisor Responsibilities**

The supervisors shall conduct evaluations of the workplace to ensure that the written respiratory protection program is being properly implemented. Safety and Emergency Management will consult employees required to use respirators to assess the employees' views on program effectiveness and to identify any problems. Any problems that are identified during this assessment shall be corrected

#### **TRAINING**

Departments shall ensure adequate training for each employee prior to performing work related to this procedure. Documentation shall be maintained for each employee. Additional information on training and documentation requirements can be found in corresponding regulations. For additional assistance contact Safety and Emergency Management.

***For additional information, forms, training, and other resources visit [nku.edu/safety](http://nku.edu/safety).***

**CONFINED SPACE LIST**

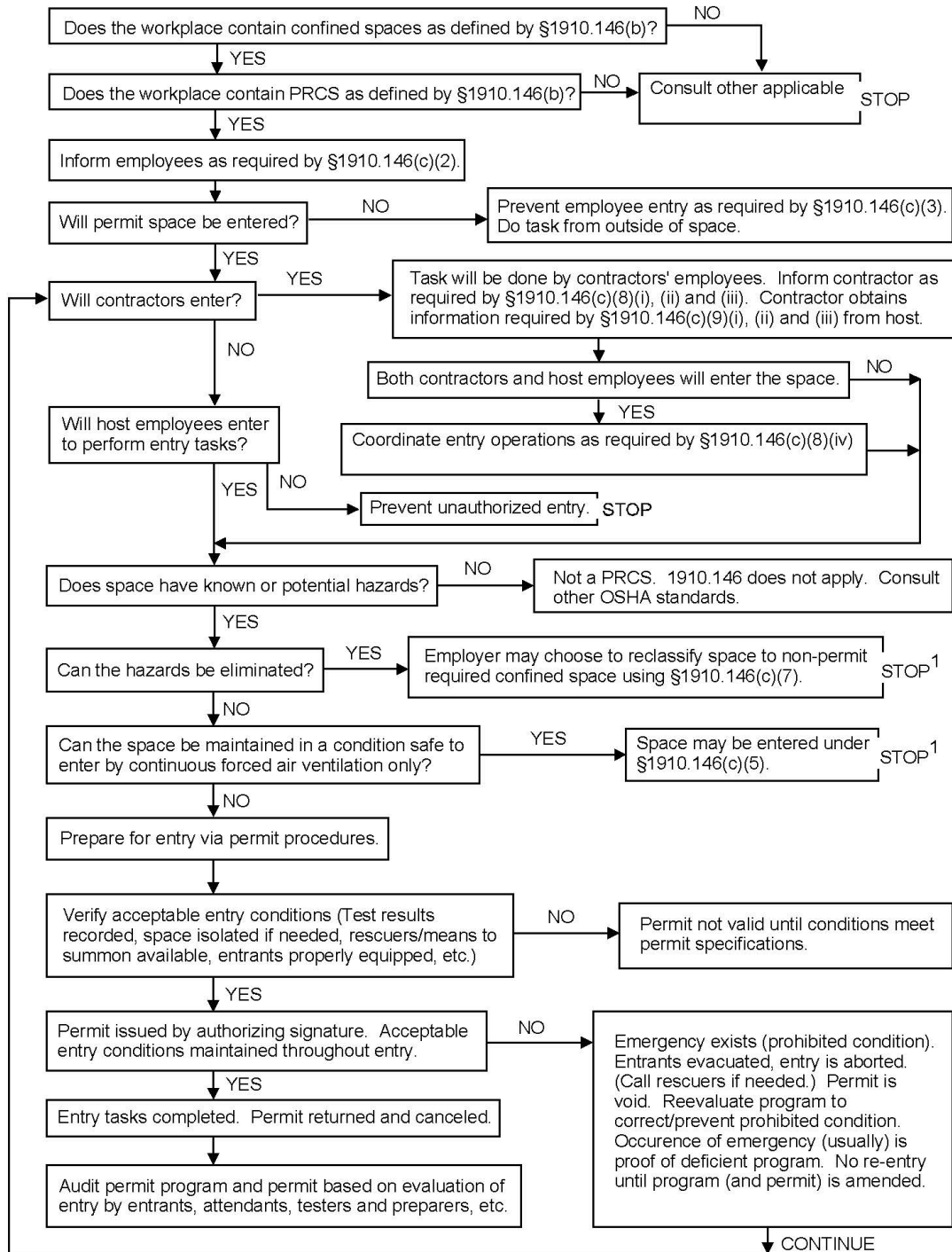
CONFINED SPACE IDENTIFICATION MATRIX								
Space Type & Location	Location	Oxygen Deficiency	Combustible	Toxic Atmosphere	Electrical Hazard	Mechanical Hazard	Classification	Alternate Entry?
		YES or NO	YES or NO	What Toxics?				
		Documented or Potential						
Sanitary Manholes	Campus Wide	Yes, Potential	No	Yes, Potential, H2S	No	No	Permit Required	With Air Monitoring
Stormwater Pits	Campus Wide	Yes, Potential	No	No	No	No	Permit Required	With Air Monitoring
Water Pits	Campus Wide	Yes, Potential	No	No	No	No	Permit Required	With Air Monitoring
Tel/Com Manholes	Campus Wide	Yes, Potential	No	No	Yes	No	Permit Required	With Air Monitoring
Electrical Manholes	Campus Wide	Yes, Potential	No	No	Yes	No	Permit Required	With Air Monitoring
University Owned House Attics	Campus Wide	No	No	No	No	No	Non-Permit Required	N/A
Crawlspace	Landrum Academic Center	Yes, Potential	No	No	No	No	Permit Required	N/A
Fume Hood Exhaust Plumes	Science Center	Yes, Potential	Yes, Potential	Yes, Potential, Varied Hazards	No	Yes	Permit Required	No

Air Handler with exception of Fan/Motor Bays	Campus Wide	No	No	No	No	No	Non-Permit Required	N/A
Air Handler Fan/Motor Bays	Campus Wide	No	No	No	Yes	Yes	Permit Required	With Lockout of Unit



# CONFINED SPACE DECISION FLOW CHART

## Appendix A. Permit - Required Confined Space Decision Flow Chart



<sup>1</sup> Spaces may have to be evacuated and re-evaluated if hazards arise during entry.