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POLICY: III:08 Respiratory Protection

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Procedure Review: Annually

APPROVED: Executive Director of Facilities and Construction:



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## I. PURPOSE

Facilities Management (FM) will ensure respiratory hazards within JMU facilities are evaluated, and information concerning these hazards is conveyed to employees. This procedure is intended to address the following issues; evaluating the potential respiratory hazards, communicating information concerning these hazards, and establishing appropriate engineering, work practice, or respiratory protective measures for employees. In addition, this procedure addresses the selection, use, care, inspection, storage, testing of respiratory equipment and the training of employees who use this equipment. Refer to: OSHA - 29 CFR 1910.134.

## II. DEFINITIONS

- A. Air-Purifying Respirator - A respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.
- B. Canister or Cartridge Respirators - A container with a filter, sorbent, catalyst, or combination of these items, which removes specific contaminants from the air passed through the container. These types of respirators do not provide oxygen and cannot be used in areas where there is an oxygen deficient atmosphere. These respirators must not be used when the chemical in the atmosphere to be protected against does not have warning properties such as odor, taste, or irritation. These respirators are not to be used as protection in atmospheres that are immediately dangerous to life or health except for escape.
- C. Filtering facepiece (disposable dust mask) - A negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece composed of the filtering medium.
- D. Dusts - Solid particles produced by processes such as grinding, crushing, and mixing. Example: asbestos, ceramics, clay, etc.
- E. Fit test- The use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.
- F. Fumes - Tiny particles given off when metals are heated in processes such as welding, soldering, casting, and galvanizing. Example: Zinc fumes.
- G. Gases and Vapors - Substances which are neither liquid nor solids. Substances such as chlorine and carbon dioxide exist under normal conditions in gaseous states. They become liquid under

pressure. Vapors are like gases except they are formed by the evaporation of substances such as water which occur ordinarily as liquids.

- H. Immediately Dangerous to Life or Health (IDLH) - Any condition that poses an immediate or delayed threat to life or that would cause irreversible health effects or would interfere with an individual's ability to escape unaided from a given area.
- I. Mists - Tiny liquid droplets given off when liquids are sprayed, mixed or agitated in processes such as dipping, painting, and machining. Example: spray paint.
- J. Oxygen Deficient Atmosphere - An atmosphere containing less than 19.5 percent oxygen by volume. Oxygen-deficient atmospheres occur when the oxygen in the air has been used up by processes such as rusting, fire, or when another gas pushes oxygen out. Oxygen- deficiencies occur most often in confined spaces such as tanks, boilers, tunnels, sewers, or deep excavations.
- K. Self-Contained Breathing Apparatus (SCBA) - Protect the wearer against almost all hazards and supply clean air to the user. SCBA's supply clean air from a tank worn on the user's back. The air supply is limited to the amount of air the cylinder can hold. These devices may be used to enter IDLH (immediate danger to life and health) atmosphere. No FM employee is to don a SCBA as part of their duties as an employee of the University.

### **III. RESPONSIBILITIES**

- A. Executive Director of Facilities and Construction - Responsible for the overall implementation of this procedure.
- B. Managers and Supervisors - Responsible for establishing and maintaining this respiratory program when respirators are used, ensure employees are knowledgeable of the respiratory protection requirements for the areas in which they work, and that employees designated for these duties comply with the respiratory program, including respirator inspection, maintenance, fit testing, and training.
- C. Respirator Users - Responsible for inspecting, cleaning, and maintaining respiratory protection according to manufacturer's instructions and notifying supervisor immediately of any concerns. Employee shall complete annual training and fit testing as required.
- D. Contractors may be hired to complete tasks or work in areas where respiratory protection is needed. Contractors are responsible for supplying their own equipment as well as complying with all aspects of 29 CFR 1910.134.
- E. Risk Management will be responsible for annual fit tests with the University's third-party administrator.

### **IV. PROCEDURE**

- A. Appropriate respirators shall be used when there is potential exposure to airborne contaminants in excess of established exposure limits and effective engineering controls are not feasible.

- B. Respirators, including filtering facepiece dust masks, shall be provided to each affected FM employee when such equipment is necessary to protect the health of the employee or if the employee voluntarily chooses to wear a disposable dust mask.
- C. Employees will not be assigned to tasks requiring use of respirators unless they have been medically approved to do so. A physician shall determine what health and physical conditions are pertinent.
- D. The respirator user's medical status will be reviewed if the employee reports signs or symptoms related to the ability to wear a respirator; the Physician or other Licensed Healthcare Provider (PLHCP), administrator or supervisor determine it is necessary; information from the respiratory protection program indicates a need for reevaluation; or a change in workplace conditions substantially increases the physiological burden placed on the employee.
- E. Respirators shall be selected on the basis of hazards to which the worker is exposed.
- F. When respiratory protection is required, the user shall be instructed and trained in the proper use of respirators and their limitations. Documentation of the training shall be kept and submitted to the RM Safety & Training Coordinator.
- G. Respirators shall be regularly cleaned and disinfected BY THE USER at the end of each work shift when they have been used in accordance with CFR 1910.134.
- H. Respirators shall be stored in a convenient, clean, dry, and sanitary location out of direct heat and sunlight. Respirators used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced.
- I. Appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained.
- J. NIOSH approved or accepted respirators shall be used. The respirator(s) furnished shall provide adequate respiratory protection against the type and concentration of respiratory hazards present.

#### **V. RESPIRATORY SELECTION PROCEDURE**

- A. Selection of respirators shall be made according to the type and magnitude of hazard(s) involved and will be selected in accordance with the manufacturer's instructions or other related requirements (OSHA, ANSI, or NIOSH standards, etc.)
- B. Respirator users will be given the opportunity to try different styles and sizes so they may find one that is both comfortable and functional.
- C. No supplied air or SCBA respirators shall be used by an employee. Tasks or conditions that require a supplied air respirator will be contracted to a third party.

#### **VI. CONDITIONS FOR USE OF RESPIRATORS**

- A. Supervisors, in conjunction with Risk Management, will identify tasks and conditions where a respirator is required based on potential exposure to respiratory hazards and ensure employees are trained and informed. The correct respirator shall be specified for each job.

- B. Employees shall not enter or work in dangerous atmospheres. Written procedures/checklists for specific routine tasks/jobs shall cover the safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies. Employees shall be made familiar with these procedures and the available respirators. (i.e., FM Confined Space Procedure IV:07).
- C. At least one additional person shall be present in areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere. Communications (visual, voice, or signal line) shall be maintained between all individuals present. Planning shall be such that one individual will be unaffected by any likely incident and have the proper rescue equipment to be able to assist the other(s) in case of emergency.

## **VII. INTERNAL CONTROLS**

- A. Effective implementation of this program requires support from all levels of management. This written program shall be communicated by the respective supervisors to all employees affected. It encompasses the total workplace, regardless of number of workers employed or the number of work shifts. It is designed to establish clear goals, and objectives.
- B. Engineering controls are required to control and/or minimize the threat of occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors. The primary objective of this program shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials).

## **VIII. TRAINING**

- A. Training shall be provided annually by a qualified instructor and shall provide employees the opportunity to handle the respirator, have it fitted properly, test its face-piece seal and to wear it in a test atmosphere.
- B. Every respirator wearer shall receive fitting instructions including demonstrations and practice in how the respirator should be worn, adjusted, and how to determine if it fits properly. Respirators shall not be worn when conditions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skull cap that projects under the face-piece, or temple pieces on glasses. The absence of one or both dentures can affect the fit of a face piece.
- C. Periodic checks of employees while wearing respirators will be accomplished by the supervisor to ensure proper protection. This will be done in accordance with the manufacturer's face-piece fitting instructions.
- D. If hair growth or apparel interfere with a satisfactory fit of a respirator, then it should be altered or removed to eliminate interference and allow a satisfactory fit.
- E. Full-face respirators having provisions for optical inserts will be reviewed for use. These inserts will be used according to the manufacturer's specification. When employees must wear optical inserts as part of the face-piece, the face-piece and lenses shall be fitted by qualified individuals to ensure good vision, comfort, and a gas-tight seal. JMU will provide corrective lenses for respirators based on optometry recommendations from an optometrist.

1. Conventional eye glasses will not be used with full-face respirators. A proper seal cannot be established if the temple bars of eye glasses extend through the sealing edge of the full face-piece.
  2. Contact lenses will not be used with full-face respirators.
  3. If corrective glasses or goggles are required, they shall be worn not to affect the fit of the face-piece. Proper selection of equipment will minimize or avoid this problem.
- F. Training shall be provided to each designated employee:
1. Before the employee is assigned duties that require respiratory protection or there is a change in assigned duties.
  2. When there is a change in operations that presents a hazard which an employee has not previously been trained.
  3. When employee's supervisor or Risk Management staff has reason to believe there are deviations from established respiratory procedures required by this instruction or inadequacies in the employee's knowledge or use of these procedures.
  4. Annually thereafter.
- G. FM shall certify the training required is completed. The certification shall contain the employee's name, the signatures or initials of the trainer(s), and the dates of training. The certification shall be available for inspection by employees. The original of this signed documentation shall be forwarded to the RM Safety and Training Coordinator.
- H. Requirements for using disposable filtering face piece respirators (dust masks).
1. If the disposable respirator is required for a specific job, all aspects of the respiratory protection program, including training, fit-testing, and medical clearance must be implemented.
  2. If use of the disposable respirator is voluntary, the employee must be instructed on the basic information on respirators as provided in OSHA's Appendix D.
  3. Dust masks do not protect against temperature extremes or if there is not enough oxygen.
  4. Dust masks are only approved for use by employees to provide comfort in jobs such as sweeping ceramic or clay dust, cleaning up after a dry fire extinguisher has been discharged or working in other blowing dust/dirt.
  5. To correctly don a disposable dust mask, place the mask on your face with the strap behind your head. Pinch the metal nose clip to mold the mask to your face and ensure a snug fit. The shape of your face, facial hair, dentures, or a skin condition can all prevent a snug fit.

6. Disposable masks are designed to be thrown away after use. Dispose of the mask if it becomes clogged and makes breathing difficult.

## **IX. INSPECTION, MAINTENANCE, AND CARE OF RESPIRATORY EQUIPMENT**

- A. Equipment shall be properly maintained to retain its original state of effectiveness in accordance with CFR 1910.134. Failure to properly maintain equipment will be part of performance reviews.
- B. Respirator inspection shall include but is not limited to the following:
  1. A check of the tightness of connections.
  2. Condition of the face-piece, headbands, valves, connecting tube, and canisters.
  3. Inspection of the rubber or elastomer parts for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage.
- C. Specific procedures for disassembly, cleaning and maintenance of respirators used will be done according to the manufacturer's written instructions.
- D. Records of original and replacement equipment issued are to include: issue date, name of employee issued to, name of person who issued the equipment, and the reason for issuance.
- E. FM does not maintain respirators for emergency use.
- F. If a respirator begins to deteriorate, it will be replaced. FM employees shall not attempt to repair respiratory protection equipment.
- G. After inspection, cleaning, and necessary repair, respiratory protection equipment shall be carefully stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators should be packed or stored so that the face-piece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.
- H. The primary means of identifying a chemical cartridge is by the label. The secondary means is by a color code. Cartridges will be properly labeled and or colored coded in accordance with 29 CFR 1910.134 before they are placed in service. Labels and colors will be properly maintained at all times until disposal. The user must ensure the cartridge, canister, or filter used with the respirator is of the same brand as the respirator and that it is labeled as being protective against the contaminants of interest.

## **X. RESPIRATOR DECISION LOGIC**

- A. Where a specific OSHA standard exists, each task/job having the potential for respiratory hazards will be evaluated to determine worker protection requirements. The specific OSHA standard will be consulted to determine delineated respiratory requirements. The standards are listed in 29 CFR 1910.1000-1101.

- B. Where a specific OSHA standard does not exist, the NIOSH respirator decision logic table from the NIOSH guide to Industrial Respiratory Protection will be used.

## **XI. MEDICAL EVALUATION**

- A. A medical evaluation is required before an employee can be required to wear or be fit tested for a respirator.
- B. The medical evaluation from a licensed physician verifies the employee is physically capable of wearing a respirator. Certain medical conditions may prevent an employee from wearing a respirator, thus preventing him or her from performing certain tasks.
- C. The university's contracted medical provider will provide the OSHA Respirator Medical Evaluation questionnaire to the employee and must be completed prior to the appointment.

## **XII. RESPIRATOR FIT TESTING**

- A. FM will notify the Risk Management Safety Training Coordinator of employees needing authorization for a quantitative or qualitative fit test. Employees to be fit tested will take multiple sizes of respirators to the appointment to ensure the respirator exhibits the least possible face-piece leakage and that the respirator is fitted properly.
- B. Employees shall not be permitted to wear a half mask or full face-piece mask if a minimum fit factor of 100 or 1,000, respectively, cannot be obtained.
- C. Fit testing shall not be conducted if there is any hair growth between the skin and the face-piece sealing surface.
- D. If an employee exhibits difficulty in breathing during the process of the fit test or fails the test, the physician or licensed healthcare professional may make a medical determination on whether they are able to safely wear a respirator, based on answers to the questionnaire. The physician or licensed healthcare professional may decide a follow-up medical examination is necessary to make a final determination. This could include medical tests, consultations, or diagnostic procedures. If a follow-up medical examination is necessary, the university is responsible for payment for any associated tests. The university must also ensure the follow-up examination and any other medical testing are provided during normal working hours, or at a time and place that's convenient for the employee. In addition, the university must provide the employee with an opportunity to discuss the questionnaire and examination results with the physician or licensed healthcare professional. After reviewing the questionnaire or conducting an initial medical examination, or conducting a follow-up medical examination, the physician or licensed healthcare professional will provide a written recommendation. This document must state three things:
1. If you are medically able to wear the respirator and if there are any medical limitations for using the respirator;
  2. The need, if any, for follow-up medical evaluations;
  3. A statement the physician or licensed healthcare professional has provided with a copy of their written recommendation.

This written recommendation *cannot* include any confidential medical information.

- E. An employee shall be given the opportunity to wear the assigned respirator for one week. If the respirator does not provide a satisfactory fit during actual use, the employee may request another fit test which shall be performed immediately with a different respirator.
- F. Filters used for qualitative or quantitative fit testing shall be replaced weekly, whenever increased breathing resistance is encountered, or when the employee has altered the integrity of the filter media. Organic vapor cartridges/canisters shall be replaced daily or sooner if there is any indication of breakthrough by the test agent.
- G. Because the sealing of the respirator may be affected, quantitative fit testing shall be repeated immediately when the employee has a:
  - 1. Weight change of 20 pounds or more.
  - 2. Significant facial scarring in the area of the face-piece seal.
  - 3. Significant dental changes; i.e., multiple extractions without prosthesis, or acquiring dentures.
  - 4. Reconstructive or cosmetic surgery
  - 5. Any condition that may interfere with face-piece sealing.
- H. A summary of test results shall be maintained for three years. The summary shall include:
  - 1. Name of employee.
  - 2. Type of fit test performed.
  - 3. Date of testing.
  - 4. Name of the test conductor.
  - 5. Fit factors obtained from every respirator tested (indicate manufacturer, model, size and approval number).
  - 6. The pass/fail results.

A copy shall be forwarded to the Risk Management Safety and Training Coordinator.

### **XIII. VOLUNTARY USE OF DISPOSABLE RESPIRATORS**

- A. When identified by FM, the Risk Management Safety Training Coordinator will assist employees who wish to establish voluntary disposable respirator use by reviewing proposed uses and providing information to those responsible for managing the use. The informed consent verbiage can be used to document communication of OSHA's Appendix D. Chemical hygiene plans and other forms of departmental training are also acceptable. There are no fit testing or training requirements for voluntary users of disposable respirators.

B. Respirators cannot be used on a voluntary basis if:

1. The respirator presents a hazard to the user.
2. Exposures are known or may exceed regulatory limits (i.e., PELs).

**Appendix D to Sec. 1910.134 (Mandatory)**  
**Information for Employees Using Respirators When Not Required Under the 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 respirator's 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.

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Employee Signature

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Date