



POLICIES

Effective Date: January 1, 2017

Retired:

Revised:

Reviewed Date: January 23, 2018

Approved by: James E.K. Hildreth, Sr., PhD, MD
Chief Executive Officer

Subject: Respiratory Protection Policy

PURPOSE:

This policy will establish a comprehensive Respiratory Protection Program to prevent adverse employee health effects from the inhalation of hazardous airborne contaminants.

POLICY STATEMENT:

The primary means to control potential health hazards caused by breathing air contaminated with harmful levels of physical, chemical, or biological agents 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). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to this policy.

The Respiratory Protection program applies to all employees, students, and contractors who are required or elect, to wear respiratory protection as part of their employment. Only respirators, which are applicable and suitable for the purpose intended, shall be used. Individuals who voluntarily wear filtering face pieces (dust masks) are covered by this policy only as addressed in the Voluntary Use section.

RESPONSIBILITY:

Environmental Health & Safety (EH&S)

EH&S is responsible for the administration of the respiratory protection program, which includes determining the need for respiratory protection, respirator selection, training and fit testing. EH&S also maintains all non-medical records pertaining to the program. EH&S will ensure that a Program Administrator is on staff who is qualified by appropriate training or experience that is commensurate with the complexity of this program to administer or oversee

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the respiratory protection program and conduct the required evaluations of program effectiveness. EH&S conducts Quantitative Fit Testing (QNFT), as needed.

Employee and Student Health

The Employee and Student Health department provides medical evaluations and maintains medical records associated with the respiratory protection program, which includes but is not limited to fit testing records, exposure monitoring results, and the PLHCP written recommendation regarding the respirator user's ability to wear a respirator. Employee and Student Health also performs Qualitative Fit Testing (QLFT) for N-95 respirators, commonly called filtering facepieces.

Departments

Departments are responsible for assisting EH&S in identifying employees required to wear a respirator by keeping EH&S apprised of new and existing potential hazards in the work area. Completing personal protective equipment (PPE) assessments of work processes and tasks described in the EH&S policy on Personal Protective Equipment.

Principle Investigators (PIs) and Supervisors

PIs and Supervisors shall ensure that all their employees enrolled in this program have been approved through a medical evaluation, training, and fit testing on a yearly basis.

Employees and Students

All individuals who are required to wear a respirator are responsible for obtaining a medical clearance, be fit tested, and receive training prior to respirator use. Individuals wearing respirators shall always use the respirator when required by the specified work activity and ensure that the respirator is cleaned, stored, and maintained according to the provisions of the program.

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PROCEDURE:

Respirator Selection

Respirators will be worn when the following conditions apply:

- Environmental Health and Safety (EH&S) Division, with assistance from the employee's supervisor, has identified and evaluated respiratory hazards and determined the need for respiratory protection based on quantitative exposure assessments or a reasonable estimate of the employee's exposure to respiratory hazard(s) given the contaminant's chemical state and physical form.
- Employees are working in areas where contaminant levels may become unsafe without warning, such as in emergency response situations to an unknown spill of hazardous material. In these situations where exposures cannot be identified or reasonably estimated, the work area shall be considered immediately dangerous to life or health (IDLH). These IDLH atmospheres require air-supplied respirators along with specialized training.
- The Safety Data Sheet (SDS) or chemical label specifically requires the use of a respirator for the task being performed.
- Significant levels of infectious biological contaminants may become aerosolized. The EH&S Biosafety Officer will determine the appropriate level of respiratory protection that may be required.
- Medical personnel, including employees, residents, and students performing high hazard procedures on patients or in a laboratory that may generate an infectious aerosol are required to wear at least an N95 respirator and to comply with the appropriate sections of this policy.

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- Employees are engaged in activities that are addressed in other EH&S policies such as asbestos, certain other chemical, biological, or radiological hazards, or for confined space entry, which require the use of respiratory protection.

General Requirements

Only respirators approved by the National Institute for Occupational Safety and Health (NIOSH), under the provisions of 30 CFR Part 11 and 42 CFR Part 84, shall be used. Since respirators are approved as a unit, parts from different manufacturers or models shall not be interchanged, and no modification of a respirator is permitted.

Employees who have facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function must not wear tight-fitting facepiece respirators. Respirators that do not rely on a tight face seal, such as hoods or helmets, may be used by bearded individuals when appropriate to the hazard presented.

Each department is responsible for providing respirators, replacement parts, and cartridge/filters as necessary to employees who have been identified as needing respirators. If possible, tight fitting respirators manufactured by North, Wilson, MSA, 3M, or Scott should be used.

For a more detailed explanation of the respirator selection process, review Respirator Selection Guidelines, or call the EH&S Respiratory Protection Program Administrator, at 615.327.6642.

Voluntary Use of Respirators

If EH&S has determined that no respirator is required after evaluating the hazard, the employee may still be allowed to use a self-provided respirator (including filtering facepiece) as a personal preference. However, prior to approval for voluntary use of respirators, the respirator user must:



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- Be medically approved to ensure the selected respirator does not present an additional hazard. Employee and Student Health will document the type of respirator(s) the user is medically approved for.
- Be provided with the information contained in Appendix D of the OSHA Respiratory standard and required to confirm his/her understanding prior to voluntary respiratory use. This documentation must be provided to and maintained by the EH&S Respiratory Protection Program Administrator.
- Be provided with appropriate training on the proper use of the respirator which includes how the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user. EH&S will provide this training and maintain the training records for at least 3 years.

Medical Evaluations

The use of a respirator places unusual stress on the wearer to the extent that employees entering this program must be evaluated by a physician or other licensed health care professional (PLHCP). The purpose of the evaluation is to screen employees for pre-existing conditions not conducive to respirator use, confirm that the individual can handle the additional stress caused by the respirator and re-evaluate the wearer periodically for changes in health and abilities.

To streamline the respirator approval process, the respirator user must bring documentation of successful completion of the training requirements to Employee and Student Health when requesting medical approval. The respirator user must also bring the Respirator Request Form, which has been completed by his/her supervisor. Exception: the Respirator Request Form is not necessary if the respirator user is only seeking approval for N95 respirator use. For all other respirator use, the Respirator Request Form has been designed to provide at least the following information to the PLHCP to assist in the medical approval process:

- The type and weight of the respirator to be used by the employee;

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- The duration and frequency of respirator use (including use for rescue and escape);
- The expected physical work effort;
- Additional protective clothing and equipment to be worn; and
- Temperature and humidity extremes that may be encountered.

The PLHCP must provide a written recommendation regarding the employee's ability to use the respirator. 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. This record will be stored in the person's Medical file.

Fit Testing

Respirator users must be medically approved to wear a respirator, prior to fit testing.

All wearers of respirators that rely on a mask-to-face seal must be fit tested before initial use and annually thereafter. Fit testing is also required when a change in the facial structure of a wearer occurs or a different make/model of respirator is issued.

Qualitative (QLFT) or quantitative fit tests (QNFT) are used to determine if the respirator mask provides an acceptable fit to the wearer. QLFT procedures rely on a subjective sensation (taste, irritation, smell) of the respirator wearer to a particular test agent. QLFT is performed by Employee and Student Health immediately after being medically approved. A QLFT can only be used for tight fitting half mask respirators and filtering facepieces.

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QNFT uses instruments to measure face-seal leakage. If a respirator user requires a QNFT, contact EH&S after successfully completing the medical evaluation to set up a fit test appointment at 615.327.6642. A record of the fit test shall be kept by EH&S and a copy will also be maintained in the person's medical record. The fit test record will be retained at least until the next fit test is administered.

Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators (PAPR's) shall be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode.

Loose fitting, hood-style Powered Air Purifying Respirators (PAPRs) do not require fit testing. Tight-fitting elastomeric full-face piece respirator users are not allowed to wear eye glasses having a protruding earpiece extending beyond the face piece seal. Individuals requiring corrective lenses are requested to wear contact lenses or have the sponsoring department purchase an adapter set of prescription lenses to mount on the front of the respirator.

Filtering facepieces, commonly called dust masks, which are required for the work activity and hazard present, are considered respirators and must be fit tested. All N-95 filtering face-piece users must be qualitatively fit tested initially and yearly thereafter.

Training

Training is required for all respirator wearers prior to initial use, and annually thereafter. A record of successful completion of training must be provided to Employee and Student Health prior to being medically evaluated and fit tested. The training should cover the following elements:

- Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.

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- The limitations and capabilities of the respirator.
- If applicable, wearers should know how to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
- How to inspect, put on (don) and remove (doff), use, and check the seals of the respirator.
- What the procedures are for maintenance and storage of the respirator.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.

Retraining may be required more than annually if workplace conditions change, new types of respirators are used, or if the EH&S Respiratory Protection Program Administrator or supervisor determines there are inadequacies in the employee's knowledge or use.

EH&S will conduct the training. A record of the training shall be kept by EH&S for at least three years.

User Seal Checks

Each time a respirator is placed in position on the face (donned), the wearer shall conduct a negative and positive pressure seal check to ensure a proper fit. This ensures the respirator is adjusted properly and sealed against the face. The advantages are that the wearer can do this alone in the field and the check can be repeated any time the seal is in question.

A negative pressure check is accomplished when the wearer closes off the respirator inlet(s) and inhales. A vacuum and partial inward collapse of the mask should result. If a vacuum cannot be maintained, readjust the facepiece and try again.



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A positive pressure check is accomplished when the wearer closes off the exhalation valve and breathes out gently. An outward expansion of the respirator should result. Air will escape through any gaps in the seal. If this should happen, readjust the facepiece and try again.

Inspection and Maintenance

Supervisory personnel shall insure respirators are used and worn correctly. If problems are observed corrective measures shall be taken immediately. If the respirator is not appropriate for the hazard, the wearer shall leave the area, cease work or take other action to eliminate further exposure.

Each person issued a respirator shall inspect the respirator prior to each use to ensure that it is in good condition. This inspection shall include a check of the tightness of the connections and the condition of the facepiece, headbands, valves, and cartridges. The mask itself shall be inspected for signs of deterioration or defects. If any defects are noted, the wearer must immediately notify his/her supervisor and make appropriate repairs or changes before conducting work in an area where respirators are required. Replacement parts shall be approved for the specific respirator being repaired. If the repair cannot be made immediately, a replacement respirator of the same model and size shall be provided until such time as the repair can be made.

Cleaning and Sanitizing

All tight fitting respirators shall be cleaned and sanitized after each use by the respirator wearer. This shall be done in accordance with the manufacturer's recommendations.

Storage

When not in use, respirators shall be placed in individual containers to protect them from contamination. Storage shall be in designated storage areas in such a manner that the respirator

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will not be distorted or damaged. Storage areas to avoid include workbenches, tool boxes, or hanging from hooks out in the open workroom.

Emergency Use

All respirators maintained for use in emergency situations shall be inspected at least monthly and in accordance with the manufacturer's recommendations, and shall be checked for proper function before and after each use.

Employees who may need to use emergency respirators should refer to specific programs that address these emergencies. Note: Emergency use of respirators requires additional response training.

Cartridge Changeout

Cartridges should be dated when opened and replaced based on the manufacturer's recommendations. If the manufacturer has made no recommendations, changeout should occur based on OSHA's methods of estimating service: Rule-of-thumb, mathematical models, or by experimental testing.

If no data exists for the timely replacement of chemical cartridge respirators, respirators will be disposed of no later than after 8-hours of use. Reliance on odor thresholds and other warning properties will not be permitted as the primary basis for determining the service life of gas and vapor cartridges and canisters. For filtering cartridges, warning properties such as flow resistance is allowed. For further assistance in making these determinations please contact the EH&S Respiratory Protection Program Administrator.

Program Evaluation

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A yearly evaluation of this program shall be done by the EH&S Respiratory Protection Program Administrator. Comments related to this policy and program can be made by contacting the EH&S Respiratory Protection Program Administrator at 615.327.6642