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### APPENDICES

A-0: OSHA 29 CFR 1910.134 Respiratory Protection Standard  
A: OSHA 29 CFR 1910.134 Appendix A (Fit Testing Procedures)  
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Respiratory Protection Plan

1910.134 Appendix D and signs a Voluntary Use form prior to use (see Appendix D for a sample form) The Voluntary Use form will be kept on file at EHS.

- o A filtering facepiece is defined by OSHA to be a negative pressure particulate respirator in which the filter is an integral part of the facepiece, or with the entire facepiece composed of the filtering medium (29 CFR 1910.134(b))

Program Administrator (29 CFR 1910.134(c))

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In accordance with 29 CFR 1910.134(c)(3) RWU has designated the following individual to serve as the RPP Administrator:

Director of Environmental Health and Safety  
1 Old Ferry Road  
Bristol, RI 02809  
Phone: (401) 254 – 3494

Program Evaluation (29 CFR 1910.134(l))

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RWU EHS shall conduct an annual review of the RPP. This review should encompass all aspects of the plan, including but not limited to:

- x An inspection of all the university issued respirators on campus
- x An inspection of the respirator storage locker and storage conditions
- x An inventory of replacement parts, to include stocking supplies that are low
- x A review of all training records for currently trained personnel
- x A review with individual departments (Facilities, etc) to ensure that all personnel that need to be enrolled in the RPP are currently enrolled
- x A survey of personnel enrolled in the RPP to ensure their understanding of primary program components, including: proper respirator fit and selection, proper use of the respirator, and proper maintenance of the respirator
- x A review of the written plan, making changes and amendments as necessary

Annual reviews shall be documented in Appendix (RPP Amendments) for tracking purposes, even if no changes are made to the written plan.

Additionally, EHS shall conduct an immediate after action review and analysis any time that an injury or accident occurs while the affected individual was wearing a respirator, or was in a situation where respirator use may have been warranted but was not employed.



## REQUIREMENTS TO BE MET PRIOR TO RESPIRATOR USE

### Medical Evaluation (29 CFR 1910.134(e))

Each employee must pass a medical evaluation to determine his or her ability to wear a respirator prior to engaging in work tasks requiring a respirator.

The medical evaluation shall be conducted confidentially and during the employee's normal work hours, or at such a time as is convenient for the employee, at a location that is convenient for the employee.

All medical evaluations shall be administered by a medical examiner that is a physician or licensed health care professional (LHCP).

The employee's supervisor shall ensure the employee has adequate time to complete the questionnaire prior to the examination and discuss any questions or exam results with the PLHCP after the examination takes place.

RWU EHS shall provide the following information to the PLHCP or to the PLHCP making recommendations regarding respiratory:

- x The type and weight of the respirators to be worn
- x Duration and frequency of respirator use
- x Expected physical work effort while wearing the respirator
- x Any additional PPE that will be worn simultaneously
- x Any possible temperature/humidity extremes that may be encountered

RWU shall also provide a copy of this RPP and 29 CFR 1910.134 (included in Appendix A of this RPP) to the PLHCP.

RWU shall receive a written approval from the PLHCP stating that the employee is cleared to wear a respirator while on duty. This written approval shall not divulge confidential employee information – rather, it will simply list any limitations on usage, whether or not there is a need for a follow-up exam, and a signed statement stating that the PLHCP provided this written recommendation to RWU.

Aside from the annual exam, additional evaluations may be required under these circumstances or others:

- x If the employee reports signs or symptoms affecting his or her ability to use the respirator
- x If the PLHCP, supervisor, or program administrator requires it
- x If the RPP requires it
- x If there is a change in workplace conditions affecting the RPP and/or respirator usage

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RWU has chosen to use the following medical group for conducting medical evaluations and has provided them a written copy of this plan:

3M Health and Safety Services eTools  
Respiratory Medical Evaluations (On-Line)  
[www.respexam.com](http://www.respexam.com)

All medical evaluations shall be arranged through RWU EHS and/or the employee's manager/supervisor. Employees who need evaluations should not apply to E.J 0 T()2(e)4(p)4(p8/(3()6/(3()6



## RESPIRATOR USE AND MAINTENANCE

Respirator Selection(29 CFR 1910.134(d))

RWU issues 3M 6000 Series Half Facepiece respirators to employees. These respirators are NIOSH approved (see Appendix L

The OSHA PEL's can be found in 29 CFR 1910.1000 Tables Z-1, Z-2, and Z3 (see Appendix E).

As stated in 29 CFR 1910.134(b), should no OSHA EL exist for a specific chemical, the MUC shall be determined "on the basis of relevant available information and informed professional judgment."

Should the measured atmospheric substance concentrations exceed the MUC during the course of normal work operations, work may not be performed by RWU employees until engineering controls have been put in place to lower the substance concentration to acceptable levels and a thorough course of atmospheric testing has been completed.

Should the calculated MUC exceed the IDLH limit for a substance or the performance capabilities of the PPE available, the maximum MUC shall be set to the lower limit, per 29 CFR 1910.134(d)(3)(i)(B)(3).

#### Filter, Cartridge, and Canister Identification (29 CFR 1910.134(j))

For approved routine work involving organic vapors, particulates, RWU issues the 3M 60926 Multi Gas/Vapor Cartridge/P100 Filter combos. These cartridges are kept sealed in their original packaging which is clearly labeled with the cartridge type and part number, as well as the NIOSH cartridge color coding system. These are the only cartridges kept in the storage locker.

As stated in the cartridges guide (see Appendix M) these cartridges provide protection against the following gases and vapors:

- x OV (Organic vapor)
- x SD (Sulfur Dioxide)
- x HC (Hydrogen Chloride)
- x CL (Chlorine)
- x CD (Chlorine Dioxide)
- x HF (Hydrogen Fluoride)
- x HS esc (Hydrogen Sulfide -escape only)
- x AM (Ammonia)
- x MA (Methylamine)
- x FM (Formaldehyde)
- x P100 (Particulate Filter, 99.7% filter efficiency level, effective against all particulate aerosols)

The following limitations apply to these cartridges (see Appendix M)

- x Not for use in atmospheres with less than 19.5% Oxygen (oxygen deficient)
- x Not for use in atmospheres immediately dangerous to life and health (IDLH)

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- x Not to exceed maximum use concentrations (MUCs) established by regulatory standards
- x Follow established cartridge and canister change schedules or observe ESLI to ensure

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In accordance with the manufacturer's specification that all cartridges be discarded within 30 days of opening the packaging, EHS will discard any open cartridges found during monthly inspections.

All spent Mercury Vapor/Chlorine/P100 Particulate cartridges are to be considered mercury contaminated materials, and as such, must be disposed of as hazardous waste. Spent cartridges will be collected by EHS and sent out as mercury contaminated debris (UN 2809, WASTE Mercury, 8, PGD009).

Mercury Vapor/Chlorine/P100 Particulate cartridges shall be stored in an approved personal storage location when not in use. These cartridges may not be stored in the respirator storage locker. Cartridges that are able to be used (in accordance with the ESLI and continued ability to function properly) shall be stored so that no contaminants may filter in or out of the cartridge while in storage. Storage requirements shall be: one piece of duct tape completely covering the front cartridge grate, one piece of duct tape completely covering the rear cartridge attachment port, and all taped cartridges stored in a sealed Ziploc bag.

#### Training (29 CFR 1910.134(k))

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Initial training of employees on proper respirator use and maintenance shall be completed at the time of the initial fit testing, after the employee has been medically cleared to wear a respirator, and prior to the employee performing any work in which a respirator is required.

Training shall be conducted by EHS

Training shall recur at least annually, or more often as required (changes in the workplace or respirator type; inadequacies in the employee's knowledge or use of the respirator indicate the necessity of retraining; other situations as necessary)

Training shall be tracked online through the University's TrainCaster system, and also through paper copies stored in the EHS Department office.

Upon completion of the training, the employee must be able to demonstrate working knowledge of these topics:

- x Why the respirator is necessary
- x How the improper fit, use and maintenance of a respirator can render it ineffective
- x The limitations and capabilities of the specific respirator
- x How to use the respirator effectively in an emergency or a malfunction scenario
- x How to inspect, don, doff, use, and perform a seal check with the respirator
- x Maintenance and storage procedures
- x Medical signs and symptoms that may limit or prevent the effectiveness of the respirator
- x The general requirements of 29 CFR 1910.134

Voluntary use of filtering facepieces requires the Respiratory Protection Administrator to provide the employee with the information outlined in 29 CFR 1910.134 Appendix D. This information is compiled on the RWU Voluntary Use Form as found in Appendix D of this document.

#### Use of Respirators (29 CFR 1910.134(g))

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Tight-fitting facepiece respirators are rendered ineffective if a seal cannot be maintained between the skin and facepiece. Employees that are required to use these respirators must adhere to the guidelines set forth below to ensure that an adequate seal can be maintained at all times.

#### Facepiece Seal

- x Employees shall not wear facial hair in a manner that prevents contact between the skin and facepiece seal, or that interferes with the facepiece valve functions.
- x Eyeglasses and safety glasses/goggles shall be in a manner that does not prevent the respirator facepiece from forming an adequate seal with the face.
- x The employee shall perform a user seal check (positive and negative) each time he or she dons the respirator for use, prior to entering the respirator use area. These user seal checks shall be performed in accordance with the procedures in 29 CFR 1910.134 Appendix B (see Appendix B of this document)
- x In the event that a proper seal cannot be achieved, the employee will not be allowed to enter the respirator use area.

#### Continuing Respirator Effectiveness

- x Should the atmospheric conditions change in the respirator use area, EHS shall reevaluate the area and determine if changes need to be made to current PPE.
- x Employees shall be instructed to leave the respirator use area when:
  - o They are cleaning or adjusting their respirators
  - o They detect gas or vapor breakthrough, or a change in breathing resistance, or leakage of the facepiece
  - o Changing filters/cartridges/canisters/respirators
- x If an employee detects breakthrough, a change in resistance, or leaking, the respirator facepiece shall be replaced or repaired by EHS prior to the employee returning to the respirator use area
- x Employees shall be aware of visible contamination of cartridges/filters/canisters due to particulate accumulation or direct chemical exposure, and recognize that as a sign of decreased filtering efficiency and/or vapor protection, and leave the respirator use area to obtain new equipment from the job supervisor or EHS.

Maintenance (29CFR 1910.134(h))

Cleaning and Disinfecting

Roger Williams University shall supply each respirator wearer with a clean and sanitary respirator that is in good working order.

