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Title RESPIRATORY PROTECTION	Effective Date Draft

1. Purpose

University of Alaska Anchorage (UAA) will make a concerted effort to eliminate potential inhalation exposures to hazardous materials whenever possible. In cases where the elimination of an inhalation hazard is not possible, appropriate engineering controls shall be used when available. Respirators shall be used as the principal means of control only in situations where neither hazard elimination, nor engineering controls are feasible. The purpose of this program is to prevent adverse health effects from the inhalation of hazardous airborne contaminants through the administration of a comprehensive Respiratory Protection Program (RPP).

2. Objective

UAA, in its continuing effort to provide applicable personnel with safe, healthful working conditions, and to comply with the Occupational Safety and Health Act, is implementing the following program for respiratory protection to protect people working at the University, by helping employees, student workers, faculty, staff, and outside contractors better understand the requirements of the respiratory protection program

3. Scope

The requirements of the Respiratory Protection Program (RPP) apply to all UAA personnel required to wear a respirator. A respirator is required when:

- A hazard assessment indicates that there exists an inhalation hazard that requires respiratory protection.
- A job description or a standard or emergency operating procedure requires a respirator to be worn.

Any UAA personnel who wishes to wear a respirator and the use is not required by UAA may wear a respirator under the voluntary use guidelines covered in this program.

The RRP also covers the emergency use of respirators.

4. Definitions

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

Canister or Cartridge - a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

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.

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

End-of-Service-Life Indicator (ESLI) - a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Filter or Air Purifying Element - a component used in respirators to remove solid or liquid aerosols from the inspired air.

Filtering Facepiece (Dust Mask) - a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

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.)

Helmet - a rigid respiratory inlet covering that also provides head protection against impact and penetration.

High Efficiency Particulate Air (HEPA) Filter - a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

Hood - a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

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.

Local Exhaust Ventilation (LEV) - an engineering control system designed to reduce exposures to airborne contaminants such as dust, mist, fume, vapor or gas in the workplace by removing the contaminant from the source before it enters an employee's breathing zone.

Loose-Fitting Facepiece - a respiratory inlet covering that is designed to form a partial seal with the face.

N95 Respirator - a respiratory protective device designed to achieve a very close facial fit and very efficient filtration of airborne particles. The 'N95' designation means that when subjected to careful testing, the respirator blocks at least 95 percent of very small (0.3 micron) test particles.

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.

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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.

Positive Pressure Respirator - a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Powered Air-Purifying Respirator (PAPR) - an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

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.

Safety Data Sheet (SDS) - a document that contains information on the potential health effects of exposure to chemicals, or other potentially dangerous substances, and on safe working procedures when handling chemical products.

Self-Contained Breathing Apparatus (SCBA) - a type of atmosphere supplying respirator. SCBA's have a tight-fitting, elastomeric facepiece that covers the user's face. The air is supplied from a cylinder of compressed breathing air that is designed to be carried by the respirator user.

Supplied-Air Respirator (SAR) - an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

Tight-Fitting Respirator - a respiratory inlet covering that forms a complete seal with the face.

User Seal Check - an action conducted by the respirator user to determine if the respirator is properly seated to the face.

5. Authority and Responsibilities

In addition to the roles and responsibilities outlined in the UAA Training Program, the following apply to the Respiratory Protection Program.

EHS/RM

- Assist departments to determine proper selection of respiratory protection for use in their department

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- Assist departments with tracking inspections and training on respiratory protection where applicable with this standard
- Approve PLHCP to provide medical evaluations when required per this program
- Assist with training on respiratory protection when needed
- Assist with respirator fit testing when required per this program

Supervisor

- Assess job tasks and identifies when respiratory protection may be required
- Ensure those persons requiring respirator use receive medical clearance, training and fit testing as required by this program

Department Safety Coordinator

- Assist in the determination of respiratory protection requirements in the department
- Assist in the determination of engineering, administrative solutions that may alleviate the requirement for respiratory protection in their department
- Ensure employees receive training as required by this program

Employees/Student Workers

- Follow the procedures and work practices required to ensure proper respirator use
- Alert department supervisor when there is a potential respiratory hazard for review
- Take part in all medical clearance, training and fit testing as required by this program
- Alert supervisor and follows guidelines in this standard if they voluntarily choose to wear a respirator

Outside Contractors

- Perform all work in compliance with the contractor's respiratory protection program, which will be reviewed and approved by the EHS/RM department
- If the company does not have a program, they must comply with this program

6. Hazards Associated with Inhalation of Hazardous Airborne Contaminants

Any time a UAA employee is in an atmosphere where they are exposed to dangerous gases, vapors, dust, mists, fumes, sprays or other airborne materials that can be inhaled, they are at risk for exposure. If not protected from these hazards the exposure could result in sickness and in the worst circumstance death.

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7. Engineering Controls

Engineering controls are design plans or changes to the working environment to prevent or reduce employee exposure to hazards. When a respiratory hazard is present in the workplace every effort should be made to install engineering controls to eliminate the hazard and protect UAA workers. Some examples of engineering controls may include the following:

- Local exhaust ventilation (LEV) systems
- Designed area ventilation
- Fume hoods
- Tight fitting seals on chemical tanks or containers
- Use of misters or other device to wet areas and reduce dust and other airborne materials

8. Administrative Controls

Administrative controls are safe work practices and procedures designed to reduce the risks. These controls that alter the way the work is done to protect UAA employees may include:

- Reduction of time employees work in an area
- Limiting storage of certain materials to specific cabinets
- Immediate clean-up of spills
- Establish preventative maintenance programs for equipment to prevent leaks and spills

9. Procedures

The following procedures apply when using respiratory protection.

Respirator Selection

Respirators will be worn when the following conditions apply:

EHS/RM, with assistance from Supervisors and Department Safety Coordinators, will access suspect areas to determine the need for respiratory protection. In many cases the atmosphere may be tested in the workplace, or while performing specific tasks to determine exposure levels and the need for respiratory protection.

UAA employees who are designated to respond to take part in emergency response to chemical spills where exposures cannot be 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

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task being performed, and the work cannot be performed in a properly ventilated area or hood.

Significant levels of infectious biological contaminants may become aerosolized. EHS/RM will determine the appropriate level of respiratory protection that may be required.

Medical personnel performing high hazard procedures on patients, cadavers 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.

Other EHS/RM programs such as asbestos, lead, or confined space entry, may require the use of respiratory protection.

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. EHS/RM with input from UAA employee in the affected department should assist with the proper respiratory selection for the task or area.

UAA employees who are required to wear a tight-fitting respirator may not have facial hair that comes between the sealing surface of the facepiece and the face, or that interferes with valve function. EHS/RM may approve the use of respirators that do not rely on a tight face seal, such as PAPR hoods or welding helmets, may be used by bearded individuals when appropriate for the specific respiratory hazard.

Once the appropriate respiratory protection is determined, each UAA department is responsible for providing respirators, replacement parts, and cartridge/filters as necessary to employees who have been identified as needing respirators. EHS/RM can assist with sourcing equipment if needed.

Request for Respirator Use

A review must be completed by EHS/RM for any individual wanting to wear a respirator.

EHS/RM must determine if respirator use is warranted by either performing and exposure assessment or completing exposure monitoring.

Following this review, the employee and supervisor will be notified and will work with the EHS/RM group to ensure the correct controls and/or PPE is used to provide adequate protection for the employees.

Voluntary Use of Respirators

Filtering Facepieces (Dust Masks):

If EHS/RM has determined that no respiratory hazard exists, but the employee wants to use a filtering face piece or N95 respirator for comfort, no medical clearance is necessary, however the following must occur:

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- EHS/RM must determine that the masks themselves do not pose a hazard to workers
- A copy of Appendix D to 1910.134 of OSHA's Respiratory Protection Standard (Attachment A) covering voluntary respirator use will also be provided to the employee.

Tight Fitting Respirators:

For voluntary use of tight-fitting respirators other than dust masks:

EHS/RM must:

- Determine that the respirator use will not in itself create a hazard,
- A copy of Appendix D to 1910.134 of OSHA's Respiratory Protection Standard (Attachment A) covering voluntary respirator use will also be provided to the employee.
- Ensure that the respirator users are medically qualified to wear respirators, and
- Ensure that employees understand that respirators need to be properly cleaned, stored, and maintained.

Medical Evaluations

- Employees who wear a respirator must receive a medical evaluation designed to identify general medical conditions that could place a worker at risk of serious medical consequences if a respirator is used prior to using a respirator.
- The medical evaluation must be performed by a physician or other licensed health care professional designated by the EHS/RM.
- Employees must be re-evaluated if an employee shows signs or symptoms that are related to their ability to wear a respirator, but at least every two years.
- After being medically cleared, the respirator wearer will then complete fit testing. Specific instructions and forms for medical evaluations are available by contacting the EHS/RM.

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 purchased.

Qualitative or quantitative fit tests are used to determine if the respirator mask provides an acceptable fit to the wearer. The Qualitative Respiratory Fit Test Form (Attachment B) will be utilized, unless a 3rd party performing the fit provides an equivalent form. Qualitative fit test procedures rely on a subjective sensation (taste, irritation, smell) of the respirator wearer to a test

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agent while a quantitative fit test uses measuring instruments to measure face-seal leakage.

All fit testing is provided through EHS/RM, or a 3rd party designated or approved by ESH/RM. A record of the fit test shall be kept by EHS/RM and retained 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 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 their department purchase an adapter set of prescription lenses to mount on the front of the respirator.

Qualitative fit testing is required for employees who are required to wear N-95 filtering face pieces, or dust masks initially and yearly thereafter.

User Seal Checks

Each time an employee puts on (dons) a respirator, the wearer must perform a negative and positive pressure seal check to ensure a proper fit by following the steps below.

Negative pressure check procedure:

1. Cover the respirator inlet(s) with the palms of the hand
2. Inhales
3. A vacuum and partial inward collapse of the mask should result
4. If a vacuum cannot be maintained, readjust the facepiece and try again

Positive pressure check procedure:

1. Close off the exhalation valve and breathe out gently
2. An outward expansion of the respirator should result
3. Air may escape through gaps in the seal
4. If this should happen, readjust the facepiece and try again

Inspection and Maintenance

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.

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If any defects are noted, the wearer shall notify the supervisor and take steps to get the respirator repaired or replaced.

Replacement parts must be for the make and model of 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 the repair can be made.

Cleaning and Sanitizing

All 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

It is important for respirators to be stored properly to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals. When not in use, respirators shall be placed in individual sealable containers to protect them from contamination. Storage shall be in storage areas in such a manner that the respirator will not be distorted or damaged.

Never leave your respirator hanging on a machine, laying on your workbench, or tossed into your toolbox or a drawer.

Avoid carrying a cup-shaped filtering facepiece respirator in a pocket or toolbox. This could change the shape of the facepiece and prevent the respirator from sealing tightly to your face and properly protecting you.

Emergency Use

All respirators maintained for use in emergency situations, with the exception of SCBA's, 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. These inspections shall be logged. Employees who may need to use emergency respirators should refer to specific programs that address these emergencies. 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 no recommendations or data exists for the timely replacement of chemical cartridge respirators, respirators cartridges will be disposed after 8-hours of use, or for filtering cartridges when the air resistance becomes noticeable. For further assistance in making cartridge changeout determinations please contact EHS/RM.

10. Training

Training is required for all respirator wearers prior to initial use, and annually thereafter, covering

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the following elements:

- Determination of why respiratory protection is required
- 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 the respirator prior to each use
- put on and remove, 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.
- Fit Testing
- Respiratory hazards encountered at the worksite

Retraining may be required more than annually if workplace conditions change, new types of respirators are used, or if the EHS/RM or supervisor determines there are inadequacies in the employee's knowledge or use.

Training for the use of respirators for emergency response will require additional training. Emergency response training will be provided per the emergency response plan by the EHS/RM for those employees designated to take part in these actions.

EHS/RM or a competent person designated by EHS/RM will conduct the training and or fit testing. A record of the training shall be kept by EHS/RM and the Department.

11. Program Evaluation

The Respiratory Protection Program shall be evaluated on an annual basis utilizing the protocols set forth by EHS/RM. The evaluation team will consist of a department safety coordinator and a designee from EHS/RM. EHS/RM will define the scope of the evaluation. The final report will be developed by the EHS/RM utilizing the information received during the evaluation. The deficiencies determined in the report will be documented and corrective action plans will be developed.

12. References

The following refence was used in the development of this Program:

- OSHA 29 CFR 1910.134

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13. Revision History

Revision Number	Date Revised	Description of Change	Revised By	Approved By
0		Initial Issue		
1				
2				
3				

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Attachment A:

**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 respirators 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.
[63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]

Please complete the section below:

Name (print): _____ Job Classification _____

Department: _____ Supervisor: _____ Location of use: _____

Reason for using dust mask (describe nature of work, specific location, and type of dust):

I have read and understood the information provided above:

Employee Signature and Date: _____

Supervisor Signature and Date: _____

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Attachment B:

Qualitative Respirator Fit Test Form



Qualitative Respiratory Fit Test

Name:

SS#/ID#:

Location:

Date:

Respirator Type	Manufacturer	Model / Size	Approval Number

- ☐ Review Test Protocol
- ☐ Smell weak concentration of irritant fumes(response)
- ☐ Wear at least five minutes prior to start
- ☐ Positive/Negative pressure fit test
- ☐ Breathe normally
- ☐ Breathe deeply
- ☐ Turn head side to side and up and down
- ☐ Speak The Rainbow Passage
- ☐ Jogging in place
- ☐ Re-assess Comfort

“The Rainbow Passage”

“When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond his reach, his friends say he is looking for the pot of gold at the end of the rainbow.”

This document certifies that the above person has been given a Qualitative Fit Test for the respirators listed above as specified in the OSHA Construction Standard, 29 CFR 1926.1101, Appendix C, Irritant Fume Protocol and the revised 29 CFR 1910.134 OSHA Respiratory Protection Standard.

Test Administrator Signature/Date:

Test Subjects Signature/Date: