

University of Arizona Respiratory Protection Program

For Compliance With 29 CFR 1910.134

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1.0 Purpose

The University of Arizona's (UA) Respiratory Protection Program (RPP) supports the protection of employees and students from exposure to respiratory hazards to maintain compliance with occupational health and safety standards. The RPP's function is to establish requirements and procedures to meet or exceed those outlined in OSHA's Respiratory Protection standard (29 CFR 1910.134). This includes, but is not limited to, the proper selection and use of respiratory equipment when engineering and administrative controls are not feasible or do not prevent exposure in compliance with occupational health and safety standards. When respirators are used as specified, they can prevent injury and illnesses from both acute and chronic exposures to hazardous substances.

2.0 Scope

The UA RPP applies to all University-affiliated activities where faculty, students, and staff (including Designated Campus Colleagues, or DCCs) are required to use respiratory protection due to the nature of their work or where they may utilize specific types of respiratory protection (See section 5.4) voluntarily. This includes locations that serve as assigned workplaces and educational or research settings:

- University of Arizona Tucson
- College of Medicine and Nursing Tucson and Phoenix Campuses
- College of Veterinary Medicine (CVM)
- Arizona Experimental Station (AES) locations
- Other University-owned property, University leased space, temporary field locations, and field trips that are under the control of UA operations and staff.

This RPP does not apply to UA vendors; vendors operating on UA property should be informed of areas requiring respiratory protection, but all respiratory protection use and program functions shall be administered by the vendor.

3.0 Definitions

RPA: Respiratory Protection Program Administrator

OH: Occupational Health

EHS: Environmental Health and Safety

RPP: Respiratory Protection Program

Air-Purifying Respirator (APR): A type of respirator with an air-purifying filter, cartridge, or canister, that removes specific air contaminants by passing ambient air through the air-purifying element.

Air-line Respirators: A type of supplied air respirators that have an air hose that is connected to a fresh air supply from a central source. This source may be an ambient air pump situated indoors or outdoors, or an air compressor that provides at least Grade D breathing air.

Atmosphere-Supplying Respirator (ASR): A respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere and includes supplied air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

Assigned Protection Factor (APF): Value that determines how well a respirator and filter combination will protect an individual from contaminant(s) of concern. The higher the APF, the more protective the respiratory protection.

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. These have limited use time and the changeout schedule must be carefully regarded.

Exposure: Exposure to a concentration of an airborne contaminant that would occur if the individual were not using respiratory protection.

Employee: A UA faculty, staff, student, or other affiliate requiring respiratory protection. In this program, the term “employee” will refer to all groups, even those who may not be an official paid employee, for simplicity.

Filter: A component used in respirators to remove solid or liquid aerosols from the inspired air.

Filtering facepiece respirators (FFR): Disposable, negative-pressure, air-purifying respirators where an integral part of the facepiece or the entire facepiece is made of filtering material.

- These respirators are designed to be used once and then thrown away.
- There are three filtration levels, all indicative of their respective ability to filter particles: 95, 99, and 100 (95 being the least efficient and 100 most).
- There are also three levels of oil resistance: N for non-resistant, R for moderate resistance (one 8-hour shift), and P for oil resistant.

FFRs will be found in a combination of the letter indicating oil-resistance level followed by filtration level (e.g., N95, P100, etc.).

Fit Test: A protocol to quantitatively evaluate the fit of a tight-fitting respirator on an individual and provide the adequate fit factor, as specified by the type of protection, to ensure adequate fit.

Grade D Breathing Air: Compressed air with the specific and detailed (below) attributes, as described by ANSI/Compressed Gas Association G-7.1-1989. All cylinders must have a certificate of analysis from the supplier and be maintained by the employee and supervisor, including tagging and regular checks of tank changes.

- Oxygen Content 19.5%-23.5%
- Hydrocarbon (condensed) $\leq 5 \text{ mg/m}^3$
- Carbon Monoxide (CO) $\leq 10 \text{ ppm}$
- Carbon Dioxide (CO₂) $\leq 1000 \text{ ppm}$
- Lack of noticeable odor

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. A low oxygen atmosphere is considered to be an IDLH condition.

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 perform, or be delegated the responsibility to perform, the activities described by the OSHA Respiratory Protection regulation.

Loose-Fitting Facepiece: A respiratory inlet covering that is designed to form a partial seal with the face, such as a shrouded PAPR headpiece.

Maximum Use Concentrations (MUC): The upper limit of acceptable concentration that a particular respirator and filter combination can provide to protect workers. This is calculated by multiplying the Assigned Protection Factor (APF) by the Occupational or Permissible Exposure Limit (OEL or PEL) of the contaminant(s) of concern.

NIOSH approval: The approval of a respirator for worker protection by the National Institute for Occupational Safety and Health (NIOSH). “TC” on a respirator typically indicates temporary or emergency approval but should be carefully monitored and removed from service if full approval is not granted by the National Institute of Occupational Safety and Health (NIOSH).

Permissible Exposure Limit (PEL): OSHA provided legal limitations for employee exposure to a chemical or physical agent. These are assigned based on the level of exposure that a typical worker may be exposed to without experiencing adverse health effects.

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.

Occupational Exposure Limit (OEL): Limitation for exposure to a chemical or physical agent. These are assigned based on the level of exposure that a typical worker may be exposed to without experiencing adverse health effects. OELs may or may not be tied to a regulatory requirement. This is a more generalized term than PEL, which indicates a regulatory threshold.

Respiratory Inlet Covering: That portion of a respirator that forms the protective barrier between the user’s respiratory tract and an air-purifying device or breathing air source, or both.

Self-Contained Breathing Apparatus (SCBA): An atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

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

Tight-fitting Facepiece: A respiratory inlet covering that forms a complete seal with the face.

4.0 Roles and Responsibilities

4.1 Respiratory Protection Program Administrator (RPA)

The EHS Industrial Hygiene Officer will serve as the official UA Respiratory Protection Program Administrator (RPA).

The RPA and support staff will:

- Conduct:
 - Workplace hazard assessments and select the appropriate level of respiratory protection for each task or job title with potential exposure and record this information.
 - The review of completed hazard assessment forms that serve as the respiratory hazard evaluation and are updated as necessary.
 - Consultations with respirator users, supervisors, and organizational respirator coordinators on issues related to the RPP.
 - An annual evaluation of the Program and implementation of Program improvements.
- Coordinate:
 - The implementation of the medical surveillance program requirements for respirator use in conjunction with OH or other qualified PLCHPs.
 - Annual respirator training and fit testing.
 - Communications of product recalls, changes in respiratory protection equipment specifications, and changes in regulations.
- Maintain:

- A copy of this written RPP and program evaluations and ensure that they are readily accessible to anyone in the program.
- Records of respirator training and fit testing as required by 29 CFR 1910.134 and 29 CFR 1910.1020.
- Support supervisors and users in:
 - Determining if respirator use is required or voluntary based on a hazard assessment and selecting appropriate respirators.
 - Monitoring respirator use to ensure that respirators are used in accordance with their certifications.
 - Monitoring compliance of respirator users.
 - The purchase, maintenance, repair, and replacement of respirators.
 - Determining and documenting respirator cartridge change-out schedules and reviewing with workers during training.

4.2 Occupational Health (OH)

- Overseeing and providing medical clearance, or coordinating a qualified vendor to provide medical clearance, for respirator use based upon the review of the information provided in the OSHA Medical Questionnaire, and as determined by the licensed healthcare professional, a physical exam and other tests or consultations.
- Maintain records of medical clearance as required by 29 CFR 1910.134 and 29 CFR 1910.1020.
- Support fit testing, training, and program improvements as determined by program reviews.

4.3 Supervisors

- Participate in the hazard assessment by evaluating all potential exposures to respiratory hazards and communicating this information to the RPA and support staff.
- Identify employees and tasks for which respirators may be required and communicating this information to the RPA and support staff.
- Be responsible for ensuring that those in their units follow the procedures outlined in the RPP.
- Ensure employees are following requirements for medical evaluations, training, and fit testing and ensure that they are allowed to attend any

appointments for these during normal working hours and without impact to their normal pay.

- Ensuring that the responsible party (“employer”) purchases and provides appropriate respiratory protection for workers with a need demonstrated to and evaluated by the RPA and/or support staff.
- Prohibit employees from performing tasks for which respiratory protection has been determined necessary unless respiratory protection is actively and appropriately utilized, including medical clearance, fit testing, and training.

4.4 Employees

- Complete the required questionnaire for medical clearance and participate in a medical examination if necessary.
- Participate in training sessions, tests for competency validation and fit tests.
- Complying with department- or site-specific policies on respirator use.
- Adhere to policies on facial hair and respirator seal protection or seek accommodations via appropriate channels in the event of religious or other exemptions.
- Complete annual training and respirator fit testing while enrolled in the program.
- Use, maintain, store, and dispose of respirators and any filters or cartridges properly.
- Inspect respirators and any filters or cartridges before each use and clean and store properly after each use.
- Report any problems, questions, or concerns to their supervisors.
- Notify their supervisor and/or OH of any changes in medical condition or work practice that could impact their medical clearance or respirator fit.
- **Respirator Selection**

The RPA and support staff will select the types of respirators to be used by staff based on the hazards to which employees may be exposed and per OSHA regulations and Centers for Disease Control and Prevention (CDC) and other public health guidelines. With input from the respirator user, the RPA, support staff, and supervisor will conduct a

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hazard assessment (from quantitative to qualitative or even best practices) for each task, procedure, or work area with the potential for airborne contaminants.

The hazard assessment will include the following as needed:

- Identification of potential exposures (e.g. hazardous gases, vapors, pathogens, etc.) and other potential work site/task hazards that may impact the use of respiratory protection (e.g., temperature, maneuverability, communication needs, etc.).
- A review of work processes to determine the intensity, frequency, and duration of potential exposure for all tasks and locations.
- Quantification or objective determination of potential exposure levels, where possible, to assign an exposure level and compare to an OEL.

4.5 NIOSH-Certified Equipment

All respiratory protective equipment shall be approved by the National Institute for Occupational Safety and Health (NIOSH) for the configuration and environment in which it is going to be used. The NIOSH Certified Equipment List is located on the [NIOSH website](#). Respiratory protection not certified by NIOSH is not valid or permitted for use; this includes temporary approvals that have since been revoked by NIOSH or voluntarily rescinded by the manufacturer.

4.6 Assignment of Respirators by Task and Location

The RPA and support staff will use the hazard assessment to assign appropriate types of respirators for use in specific work tasks and/or locations.

4.7 Types of Respirators

There are two main categories of respiratory protection: **Air-Purifying Respirators (APRs)** and **Supplied Air Respirators (SARs)**.

APRs work by removing the contaminant from the air via filtration. These include face-filtering respirators like N95s, half- and full-face elastomeric respirators, and Powered-Air Purifying Respirators (PAPRs). APRs protect the wearer by filtering or adsorbing specific airborne contaminants (harmful dust, biological agents (pathogens and allergens), radionuclides, chemicals, vapors, gases). Disposable particulate respirators (such as N95, R95, and P100) and half-mask air purifying

cartridge respirators are most commonly used on campus. APRs should never be used for: oxygen-deficient environments, in IDLH environments, for abrasive blasting operations and/or firefighting, when not approved by the RPA and support staff for the contaminant of concern, and with facial hair or other characteristics that may cause an imperfect respirator seal (tight-fitting APRs only).

SARs provide clean breathing air to the wearer during work such as abrasive blasting, work or egress from oxygen-deficient atmospheres, and more. These utilize a clean source of breathing air from a cylinder or compressor instead of filtering the contaminant from the wearer's environment.

	Respirator Type	Filtration Type(s)	Air Supply	Common Uses	Assigned Protection Factor (APF)
Air-Purifying Respirator (APR)					
	Face-filtering respirator (FFR)	N95/99/100, R95/99/100, P95/99/100	N/A	Particulate matter	10
	Half-face elastomeric	Hazard assessment determines filtration type(s)	N/A	Particulate matter, gases, vapors, fumes	10
	Full-face elastomeric	Hazard assessment determines filtration type(s)	N/A	Particulate matter, gases, vapors, fumes Emergency Escape	50
	Powered air-purifying respirator (PAPR)	Hazard assessment determines filtration type(s)	N/A	Particulate matter, gases, vapors, fumes	25-1,000
Supplied-Air Respirator (SAR)					
	Air-line	N/A	Grade D	Abrasive Blasting, Emergency Escape	1,000

	SCBA	N/A	Grade D	IDLH, Oxygen deficiency, Emergency Escape	10,000 (in proper configuration/mode)
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4.7.1 Face-Filtering Respirators (FFR)

Also known as “filtering facepiece” respirators, this type of air-purifying respirator covers the nose and mouth, is tight-fitting (seals to the face), and protects by filtering particles and aerosols out of the air the user is breathing. FFRs may or may not have an exhalation valve and may or may not be able to mitigate nuisance odors (non-harmful but potentially irritating to the user). FFRs require a fit test before use because they are tight-fitting. FFRs are not intended to be used more than one time (e.g., disposable).

There are seven classes of filters for NIOSH-approved filtering facepiece respirators available for use based on the level of filtration and resistance to oil. Respirators span 95%, 99%, and 100% efficiency at filtering particulate matter and can be oil-resistant (P), somewhat oil-resistant (R), and non-oil resistant (N); surgical type FFRs also exist, which have additional moisture resistance. The most used type of FFR at the University of Arizona is the N95 respirator. Respirators used in the workplace should be quantitatively fit tested; qualitative fit tests are acceptable but not preferred. This is the only type of respirator that may be used voluntarily (see Voluntary Use Policy for more information and requirements).



Figure 1. Face-filtering (N95) respirators. Sources: Moldex and Kimberly Clark.

4.7.2 Elastomeric Air Purifying Respirators

Tight-fitting, air-purifying respirators come in half-face and full-face varieties and require the use of replaceable filters (for particulates and aerosols) and/or cartridges or canisters (for gases and vapors) to protect the user. Half-face respirators cover the nose and mouth, while full-face cover the nose, mouth, eyes, and face. The full-face respirator provides a higher level of protection for the user, mainly when irritating vapors/gases and/or splashes are of concern. These respirators are comprised of a silicone facepiece that seals to the user's face; this type of respirator needs to be quantitatively fit tested and can be used instead of a filtering facepiece respirator. Tight-fitting elastomeric respirators can be cleaned, decontaminated, and reused. They can be used for particulates, but they can also be used for many gases and vapors if equipped with the proper cartridges.



*Figure 2. Half-face (top left) and full-face (bottom right) tight-fitting respirators.
Source: Global Industrial.*

4.7.3 Powered Air-Purifying Respirators (PAPRs)

Powered air-purifying respirators, or PAPRs, are comprised of a loose or tight-fitting face piece combined with a blower that pulls air through attached filters. The blower then pushes the filtered air into the facepiece, which covers the entire face. Loose-fitting PAPRs do not require fit tests since they do not need to seal to the face (can be used with facial hair). Tight-fitting full facepiece PAPR uses an elastomeric facepiece made of rubber or silicone that seals to the user's face and does require a quantitative fit test. Similar to elastomeric respirators, these can protect from particulates, vapors, and gases, depending on the cartridge utilized.



Figure 3. Powered-air Purifying Respirator (PAPR) and loose-fitting hood. Source: 3M.

4.7.4 Emergency Escape Respirators

Emergency escape breathing apparatus provides breathable oxygen for 5 or 10 minutes or provides enough protection to rapidly leave an IDLH situation, depending on the unit. These are used for emergencies in which a worker must escape from environments immediately dangerous to life and health, in accordance with OSHA requirements. These shall not be used to perform any standard work. If the RPA and support staff assess a workplace and determine the need for emergency escape respirators, only NIOSH-certified Emergency Escape Respirators shall be used.

4.7.5 Air-line Respirators

Air-line respirators supply clean breathing air to either a hood or a facepiece through a long hose, from a source of clean air such as a cylinder or compressor and require fit testing if the facepiece is tight-fitting.

- **Portable Pump:** Employees will make sure that the placement of the air pump or extension hose is in an area free of vehicular traffic and other air contaminants that may be drawn into the pump. The breathing air of the worker must meet Grade D air requirements as outlined in ANSI G-7.1-1989.
- **Hoses and Connections:** Hose lengths must be reviewed in accordance with the task and manufacturer specs; these shall be followed. **Connections between lines must never be swapped out.**

- Air Compressor: If the airline taps into an air compressor or compressed air system, the air compressor will be located in an area or designed to prevent contaminated air from being drawn in. In-line sorbent beds and filters will be provided to ensure Grade D breathing air. These sorbent beds and filters will be inspected regularly according to manufacturer instructions by facility staff members and the compressor will be tagged with information dating the last inspection and filter change by the facility manager. The compressor located must be lubricated, and if deemed necessary by the RPA and support staff, shall be monitored for carbon monoxide levels (oil lubrication).

If employees are using a tight-fitting face piece with their air-line respirator, they will be fit tested by in the negative pressure mode prior to use to ensure a proper fit using



Figure 4. Airline respirator. Source: MSA.

4.7.6 Self-Contained Breathing Apparatus (SCBAs)

SCBA's are not common at UA and use is not permitted without the written approval of the RPA. All oxygen used in compressed cylinders will meet U.S. Pharmacopoeia requirements for Grade D breathing oxygen (please see "Definitions" section of this document for the Grade D air specifications). The RPA and support staff will coordinate deliveries of compressed air with the company's vendor and will ensure that the cylinders are marked in accordance with NIOSH 42 CFR Part 84 and that the cylinders have a certificate of analysis saying that the air in the cylinders meets the specifications

of Grade D breathing air. Cylinders are to be inspected and maintained according to manufacturer instructions. Prior to each use, they are to be checked to ensure that they are fully charged and tested and to ensure that the regulator and warning devices are operating properly. It is the responsibility of the SCBA user to inspect and maintain the cylinders.



Figure 5. SCBA respirator. Source: Scott Safety.

4.7.7 Entry into IDLH Atmospheres

Entry into Immediately Dangerous to Life and Health (IDLH) atmospheres requires an assessment, training, and evaluation by the RPA. Unauthorized entries are not permitted under any circumstances by UA employees.

4.8 Updating the Hazard Assessment

The RPA and support staff will revise and update the hazard assessment any time an employee or supervisor identifies or anticipates a new exposure or changes to existing exposures. Any employee who believes that respiratory protection is needed during a particular activity must contact his or her supervisor and the RPA/support staff. The supervisor must contact the RPA and support staff whenever respiratory protection is requested or the question of the need for respiratory protection is raised. The RPA and support staff will assess the potential hazard with the employee and supervisor. If it is

determined that respiratory protection is needed, all elements of this program will be in effect for those tasks and the program will be updated accordingly.

4.9 Voluntary Use of Respirators (29 CFR 1910.134 Appendix D)

The voluntary use of respirators applies only to face-filtering respirators (such as N95s) when it has been determined that:

- Such respirator use will not in itself create a hazard.
- Airborne occupational exposures to hazardous chemicals do not exceed the established occupational exposure limit (OEL) set by the RPA or support staff.
- No specification standards require the mandatory use of respirators.

When the use of a respirator is not required by a substance-specific OSHA standard, the OSH Act or University policies, and the RPA has determined that its use is not necessary to protect the health of the employee, an employee may still request to use a respirator voluntarily. Voluntary use does not require the employing unit to pay for respiratory protection equipment, unlike other uses of respiratory protection. Employees who voluntarily use a disposable filtering facepiece respirator (i.e., dust-mask style respirator) are excluded from medical clearance, training and fit testing requirements. The information in Appendix D, Important Information about Voluntary Use of Respirators, must be provided to all voluntary users of respirators for their review. Further, all employees utilizing respiratory protection voluntarily must complete a Voluntary Use Form and return it to the RPA or support staff so they may have it on file.

Any employee who experiences any difficulties while wearing the filtering facepiece respirator must immediately inform their supervisor. If an employee requests to wear a respirator other than a filtering facepiece respirator, they must contact their supervisor.

The University of Arizona only permits the voluntary use of N95 respirators and filtering facepiece respirators; users will not be provided any medical clearance and are required to clean, store, and maintain the respirator as per the requirements of this RPP. Users must also sign and provide a copy of the UA Voluntary Respirator Use Form to EHS, to be maintained digitally for the duration of their respirator use.

If employees voluntarily using respirators are aware of a change that warrants review of medical clearance or repeat fit testing, such as a determined need for respiratory protection within their workplace as opposed to voluntary use, they should bring that to the attention of their supervisor.

5.0 Medical Evaluation

Employees whose work activities require the use of respiratory protective equipment shall receive medical clearance prior to the first use, and periodically thereafter, of a respirator and prior to being fit tested for a respirator.

Medical evaluations will be performed by a physician or other licensed healthcare professional (PLHCP) by referral from the RPA and/or support staff. At UA, a PLHCP from Occupational Health will typically perform medical evaluations for student and employee enrollment into the RPP. Off-site employees (not at the Tucson campus) will be referred by OH to the closest Concentra location to their workplace, if a medical clearance appointment is needed. Documentation of the medical evaluation must be furnished to the RPA and support staff if conducted by an entity other than OH or Concentra.

The PLHCP will:

- Be provided with a copy of the RPP, information from the RPA and support staff about the type of respiratory protection to be used by employees, duration and frequency of respirator use, expected physical effort, other protective equipment worn, and any expected extremes of temperature or humidity.
- Review completed questionnaires and make a medical determination as to whether the employee can wear a respirator safely. The PLHCP may make this determination based on the questionnaire alone but may also require a physical examination of the employee and any tests, consultations, medical records reviews, or procedures the PLHCP deems are necessary.
- Provide a written recommendation to the employer, excluding any medical information, which may clear the employee for all respirator use, or may specify restrictions or limitations on use, such as the type of respirator that may be worn, the duration that it may be worn, and the acceptable level of exertion while wearing the respirator. A copy of this written determination will also be provided by the PLHCP to the employee via their electronic medical record (Point n Click, or PnC).

An additional medical evaluation is required when:

- The employee reports medical signs or symptoms that are related to their ability to use a respirator.
- A PLHCP, supervisor, or the RPA and support staff requests a reevaluation.
- Observations made during fit testing or program evaluation indicate a need for reevaluation (e.g., the employee experiences claustrophobia or difficulty breathing during the fit test).
- A change occurs in workplace conditions (e.g., physical work effort, protective clothing, or temperature) that may result in a substantial increase in the physiological burden placed on an employee wearing a respirator or that requires a different type of respirator (e.g. N95 to SCBA).

6.0 Fit Testing

Before an employee is required to use any respirator with a tight-fitting facepiece (anything except a PAPR with a loose-fitting facepiece, hood, or helmet that does not rely upon a tight-fitting facepiece-to-face seal), they shall be fit tested. There is no requirement for certification of fit testers, but the person doing the fit testing must understand and follow the fit test protocol and understand how to train the wearer to don the respirator properly and do a user seal check. Users will be provided with in-person training and educational materials at their annual fit test.

Employees will be offered a selection of several models and sizes of respirators. Employees use the respirator(s) they are fit tested to in their workplace/operations, with no exceptions. Employees who use tight-fitting respirators are not permitted to have facial hair that interferes with the facepiece seal or valve function during the fit test and during normal use. If facial hair or other similar features are necessary due to religious or other reasons, please contact the RPA to discuss alternative options and accommodations.

All employees who must wear respiratory protection shall receive medical clearance before fit testing is performed or the respirator is worn. Fit tests will be provided at the time of initial assignment and annually thereafter. Additional fit tests will be provided whenever the employee experiences significant physical changes OR the supervisor or RPA and support staff observes physical changes that could affect respirator fit. These

changes include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

Employees who will be using only a PAPR with a loose-fitting facepiece, hood, or helmet do not need to be fit tested. Any employee who cannot be successfully fit tested with a tight-fitting respirator may be assigned a PAPR with a loose-fitting facepiece, hood, or helmet for all tasks requiring a respirator. Employees must be clean-shaven where the respirator seals to the face, or they will need to be issued a PAPR.

The quantitative fit test method should be prioritized. Quantitative fit-testing is performed using an ambient aerosol condensation nuclei counter (CNC) or Controlled Negative Pressure (CNP) fit testing protocol in accordance with the protocol from [Appendix A of the OSHA standard](#) and in Appendix A of this RPP. Qualitative fit tests will be accepted as well, in the case that a quantitative fit test is not feasible. The qualitative test must follow the protocol for saccharine or Bitrex® solutions found in [Appendix A of the OSHA Respiratory Protection standard \(29 CFR 1910.134\)](#) and in Appendix A of this RPP.

7.0 Training

Annual respirator training will be provided for all employees covered by this program. The training will include the following:

- The general requirements of the OSHA Respiratory Protection standard.
- The specific circumstances under which respirators are to be used.
- Respiratory hazards to which employees are potentially exposed during routine and emergency situations.
- Why the respirator is necessary and how proper fit, usage, and maintenance can ensure the protective effect of the respirator as well as how improper fit, usage or maintenance can compromise the protective effect of the respirator.
- The limitations and capabilities of the respirators that will be used.
- How to effectively use the respirators, including emergency situations and situations in which the respirator malfunctions.
- When medical clearance will be needed and what that entails for users.
- How to inspect, put on, remove, use, and check the seals of the respirator (for tightfitting respirators such as N95 filtering facepiece respirators).
- The procedures outlined in this program for maintenance, storage, and cleaning or disposal of respirators.

- Employees who are issued PAPRs shall be instructed in procedures for charging and maintaining the batteries, and for checking the air flow rate.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- How and when to decontaminate (or safely dispose of) a respirator that has been contaminated with chemicals or hazardous/infectious biological materials.

Training will be provided at the annual fit test by the fit tester, in the form of hands-on demonstration and explanation, in which the employee must demonstrate knowledge of the items listed in the Fit Testing Training Checklist (Appendix E). This training will be supplemented by educational handouts that are specific to the respirator type (Appendix E). Training will be documented by the fit tester in the CHESTER fit testing record.

Employees will be given the opportunity to provide feedback on the effectiveness of the program and suggestions for its improvement via a post-fit testing survey.

8.0 Respirator Use

Employees will follow procedures for the proper use of their respirators under conditions specified by this program and in accordance with the training they receive on the use of each particular model or type of respirator. The appropriate types of respirators to be used are chosen after an exposure or hazard assessment of the work environment. An appropriate type of respirator and filtration will be determined and recommended to workers by the RPA and support staff.

Respirators relying on a tight facepiece-to-face seal must not be worn when conditions prevent a good seal. Such conditions may be a beard, long mustache, sideburns, or even razor stubble (“5 o’clock shadow”) as well as scars, other facial abnormalities, piercings, and temple pieces on glasses. In addition, the absence of one or both dentures can seriously affect the fit of a facepiece.

Employees and supervisors must be diligent in observing practices pertaining to ensuring the safe use of respirators. To ensure proper protection, the wearer will always perform a user seal check, in accordance with the manufacturer’s instructions and the training provided at the time of fit testing, **each time** they put on a tight-fitting respirator. Employees who wear corrective glasses or other personal protective equipment should

wear these during their fit testing to ensure that it does not interfere with the facepiece seal.

When respirators with cartridges are used, the RPA and support staff will help recommend a cartridge type and can assist in creating a change schedule in accordance with the manufacturer's recommendations and industry best practices. In addition to these, the [OSHA Respirator e-Tool](#) can aid in the development of a change schedule for cartridges. When filtering facepiece respirators are used, respirators should be discarded after each use or sooner if breathing becomes difficult or if the respirator is damaged, soiled, or contaminated. **Odor or taste may not be used as the primary basis for determining the useful life of a cartridge for gases or vapors.**

Employees must leave the respirator use area:

- To adjust their respirator if the respirator is not fitting correctly or impeding their ability to work.
- To wash their face if the respirator is causing discomfort or rash.
- To change the respirator, filters, cartridges, or canister elements.
- To inspect the respirator if it stops functioning as intended, such as detection of vapor or gas breakthrough, changes in breathing resistance or leakage of the facepiece (e.g., fogging of eyeglasses).

9.0 Storage, Reuse, Maintenance, and Care of Respirators

9.1 Storage and Reuse

Reusable respirators will be stored in a manner to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals. Half and full-face respirators and other tightly-fitting, reusable respirators should be cleaned and stored after each use. Loose-fitting PAPRs will be provided for use by individuals who are unable to wear a respirator with a tight-fitting facepiece. PAPRs must be stored at room temperature in a dry area that is protected from exposure to hazardous contaminants as per the manufacturer's instructions.

Disposable filtering facepiece respirators (FFRs) should be discarded after each use and if they become soiled or compromised while in use.

9.2 Inspection, Maintenance and Repairs

All respirators shall be inspected and seal checked by the user prior to each use. Inspections should include a check of the condition of the various parts including, but not limited to:

- Facepiece, head straps, valves, and cartridges, canisters, or filters.
- All rubber or plastic parts, for pliability and signs of deterioration.
- PAPR or SCBA connecting tubes or hoses, air flow, and batteries.

Any defective respirators shall be removed from service immediately. Defective disposable respirators will be discarded and replaced. Defective reusable respirators will be turned into the manufacturer or supervisor for repair, adjustment, or disposal. Consult with the RPA and/or supporting staff regarding questions about defective respirators. The user is responsible for charging and maintaining PAPR pumps, filters, and batteries when they are stored or not in use.

Filters or cartridges on reusable respirators shall be changed regularly and in accordance with the conditions of use. Please consult with the [OSHA Respiratory Protection eTool](#) and EHS to assess the appropriate schedule for your filter change out prior to use. **Difficulty breathing, ability to smell chemicals, and other breakthrough indicators should not be used for determining the appropriate filter change out schedule.**

For respirators maintained for emergency use, the user must:

- Keep respirators accessible to the work area. Store respirators in such a manner as to be clearly marked for emergency use.
- Store respirators in accordance with any applicable manufacturer instructions.
- Inspect respirators at least monthly and in accordance with the manufacturer's recommendations.
- Check for proper function before and after each use.
- Certify the respirator with documentation of date of inspection, inspector name/signature, findings, remedial action taken if necessary, and serial number.
- Provide certification information on a tag or label kept with the respirator or included in inspection reports stored as paper or electronic files.

9.3 Cleaning and Disinfection

Reusable respirators will be cleaned with mild soap and warm water or a respirator wipe (**never with alcohol-based sanitizers**) and air dried before storing in a for reuse, as described in Appendix F of this RPP (which is mandatory Appendix B-2 of the Respiratory Protection standard).

Reusable respirators issued for the exclusive use of an employee will be cleaned and disinfected by the user as often as necessary to maintain a sanitary condition; it is highly recommended that users clean after every use before properly storing the respirator.

Reusable respirators used in fit testing and training must be cleaned and disinfected after each use. Disinfection and cleaning should be done according to the manufacturer's specifications and OSHA requirements detailed in Appendix B-2 of the respiratory protection standard:

“These procedures are provided for employer use when cleaning respirators. They are general in nature, and the employer as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators used by their employees, provided such procedures are as effective as those listed here in Appendix B- 2. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth in Appendix B-2, i.e., must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

I. Procedures for Cleaning Respirators

- A. Remove filters, cartridges, or canisters. Disassemble facepieces by removing speaking diaphragms, demand and pressure- demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
- B. Wash components in warm (43 deg. C [110 deg. F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
- C. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain.

- D. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
1. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43 deg. C (110 deg. F); or,
 2. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43 deg. C (110 deg. F); or,
 3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
- E. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- F. Components should be hand-dried with a clean lint-free cloth or air-dried.
- G. Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.
- H. Test the respirator to ensure that all components work properly.”

10.0 Program Evaluation

The RPA and support staff will conduct an annual evaluation of the RPP to ensure that all aspects of the program meet the requirements of the OSHA Respiratory Protection standard and that the RPP is being implemented effectively to protect employees from respiratory hazards.

Program evaluation will be performed by the RPA or support staff and will include, but is not limited to:

- A review of the written program.
- A review of feedback obtained from employees (including respirator fit, selection, use, and maintenance issues) that will be collected during the annual training session.

The RPP will be revised as necessary and records of revisions will be kept on file with the written program. Any procedural changes that are implemented as a result of program evaluation should be communicated to the employees and reinforced by their supervisors.

11.0 Recordkeeping

The RPA and support staff will ensure that the following records are maintained:

- Personnel medical records such as a completed OSHA Medical Questionnaire and any other medical clearance records related to wearing a respirator shall be retained by OH or CHS as part of a confidential medical record. These records will be maintained in a secure environment, in accordance with the University of Arizona [Data Protection Standard](#).
- Medical clearance records must be made available in accordance with the OSHA Access to Employee Exposure and Medical Records standard (29 CFR 1910.1020) and maintained for a minimum of thirty (30) years after an employee's separation from UA.
- Documentation of training and fit testing will be kept by the RPA and support staff in CHESTER, available for users to view on the User Dashboard.
- A copy of this RPP and records of program evaluations and revisions shall be kept by RPA and support staff and made available to all affected employees, their representatives, and representatives of OSHA upon request.

Appendix A: Fit Testing Procedures

(29 CFR 1910. 134 Appendix A)

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134AppA>

Appendix B: User Seal Checks & Respirator Cleaning Procedures

(29 CFR 1910. 134 Appendix B-1)

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134AppB1>

(29 CFR 1910. 134 Appendix B-2)

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134AppB2>

Appendix C: Medical Clearance Questionnaires

(29 CFR 1910. 134 Appendix C)

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134AppC>

Appendix D: Information for Voluntary Users

(29 CFR 1910. 134 Appendix D)

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134AppD>

[University of Arizona Voluntary Respirator Use](#)

Appendix E: Training Documents

[Fit Testing Training Checklist](#)

[N95 Respirator Training Handout](#)

[Elastomeric Respirator Training Handout](#)

Appendix F: RPP Evaluation Checklist

**RESPIRATORY PROTECTION PROGRAM EVALUATION
CHECKLIST** *(adapted from [NIOSH](#))*

Inspector(s): Click or tap here to enter text.

Site(s): Click or tap here to enter text.

Date of Evaluation: Click or tap to enter a date.

TRAINING AND EVALUATION

Action	YES	NO	N/A	Corrective Measure(s)
Has training been conducted at least annually?				
Was the success of the training program evaluated?				
Is the content revised periodically?				
Are users trained in proper respirator use, cleaning, and inspection?				
Are employees trained in the health effects of the respiratory hazard present?				
Are users evaluated, using competency-based evaluation, before and after their training?				
Are employees instructed in inspection methods?				

SUPERVISOR AND LEADERSHIP INVOLVEMENT

Action	YES	NO	N/A	Corrective Measure(s)
Have supervisors been provided with the knowledge required to supervise the use and care of hearing protectors by subordinates?				
Are respirators stored so as to protect them from dust, sunlight, heat, and chemicals?				
Are respirators inspected before and after each use and after cleanup?				

Are respirators cleaned and sanitized after each use (when different people use the same device) or as frequently as necessary (for devices issues to individual employees)?				
Is storage in a locker, toolbox or work area permitted only if the respirator is in a carton, carrying case or other approved closed container?				
Are cartridges and filters changed in accordance with their assessment?				
Are employees keeping their respirators on at all times while in the work area?				
Are employees prohibited from entering impacted work areas when they have facial hair or other characteristics that prohibit the use of tight-fitting respirators?				
Are employees prohibited from entering impacted work areas when they are not up to date on their medical clearance, fit testing, an/or training?				

MEDICAL CLEARANCE

Action	YES	NO	N/A	Corrective Measure(s)
Has a medical evaluation of the prospective employee been made to determine the physical and psychological fitness to wear the selected respirator?				
Has a medical evaluation of the prospective employee been documented and maintained?				

FIT TESTING & RECORDKEEPING

Action	YES	NO	N/A	Corrective Measure(s)
Has the fit testing technician been adequately trained, certified, and recertified as necessary?				

Are employees allowed to try on several respirators to determine the one with the best fit?				
Is the fit tested before the employee begins using the respirator in the work area, both on initial assignment, and on a daily basis (positive and negative pressure tests)?				
Are employees prohibited from fit testing when they have facial hair or other characteristics that prohibit the use of tight-fitting respirators?				
Are employees who wear glasses or safety eyewear (goggles, glasses, etc.) properly fitted?				
Are fit testing records maintained properly, including the respirator make/model, use of any eyewear, method of testing, and overall fit factor for the respirator?				

RESPIRATOR SELECTION

Action	YES	NO	N/A	Corrective Measure(s)
Have work area conditions and worker exposures been properly evaluated?				
Are respirators selected based on the basis of hazards to which employees are exposed? Are these selection criteria documented?				
Are selections made by persons knowledgeable of proper selection procedures?				
Are only NIOSH-approved respirators purchased and used?				
Do the respirators provide adequate protection for the specific hazard in the concentrations found?				
Do the respirators selected not create any additional safety hazards for the users?				
Are cartridge change-out schedules provided in the assessment?				

ADMINISTRATIVE

Action	YES	NO	N/A	Corrective Measure(s)
Have there been any changes in federal or state regulations? Have the program's policies been modified to reflect these changes?				
Are copies of company policies and guidelines available to all employees in a centralized location? Are employees aware of these programs?				
Is there a written policy that assigns the Respiratory Protection Program (the Program) responsibility (administrator), accountability, and authority?				
Is the overall Program responsibility given to one (1) person who is knowledgeable and can coordinate all aspects of the Program?				
<p>Are there written procedures for the following requirements of the Plan?</p> <ul style="list-style-type: none"> • Designation of authority & responsibility • Fitting • Maintenance, storage & repair • Training • Respirator selection • Purchase & issuance of approved equipment • Issuance of equipment • Medical aspects of respirator usage • Inspection • Cartridge/filter change-out schedule • Required Use 				
Is there a procedure for respirator use in atmospheres immediately dangerous to life and health?				

Effective Date	Version #	Authors	Description
2021	000	RLSS, RMS, OH	New document
6/2/2023	001	RLSS, RMS	Annual review
6/11/2024	002	Maggie Murphy, Celia Ritter, RMS	Annual review – typo corrections, added program evaluation checklist, clarified training requirements (annual)