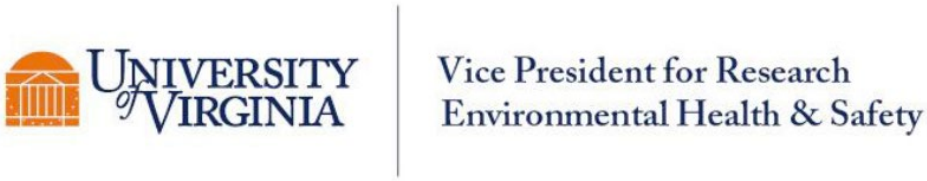

Respiratory Protection Program

TABLE OF CONTENTS

1. Record of Changes

Version	Section and/or Page Number	Description of Change	Date of Change	Updated By
0.1	ALL	Initial Draft	09/2020	John Wright, Marianne Yencken
0.2	ALL	Internal Review	03/2021	Marianne Yencken, Kristy Davis, John Wright, Thomas Leonard
1.0	ALL	Implemented		
1.1	ALL	Internal Review	08/2024	Matthew Macdowell, Kristy Davis, Thomas Leonard

This document will be reviewed at least annually and updated with changes as needed. Updated versions of this document will be made available upon request.

ACRONYMS

APR	Air Purifying Respirator
EHS	University of Virginia Office of Environmental Health and Safety
FFP	Filtering Facepiece
HEPA	High-Efficiency Particulate Air
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PAPR	Powered Air-Purifying Respirator
PEL	Permissible Exposure Limit
SOP	Standard Operating Procedure
STAR	Safety, Training & Record-keeping

2. Summary

2.1 Purpose

The purpose of this program is to comply with provisions set forth in OSHA's *29 CFR 1910.134 Respiratory Protection* to provide respiratory protection to prevent exposure to hazardous airborne contaminants while performing work, research, or other assignments at the University of Virginia (UVA).

2.2 Scope

This Respiratory Protection Program (RPP) covers all UVA divisions and departments except units whose leadership adopts RPP specific to their operations (e.g., Facilities Management, UVA Health System). The RPP covers UVA employees who wear respiratory protection during their assigned duties on or off Grounds. Examples include employees involved in research, the arts, makerspaces, parking and transportation shops, the libraries and support of the Athletics Department. Students not employed by the University should have their advisor or faculty instructor contact EHS for guidance.

2.2.1 Vendor and Consultant Use of Respiratory Protection

Vendors and consultants may be hired to complete tasks or duties in work areas or on equipment where respiratory protection is needed. Vendors and consultants are responsible for complying with all aspects of 29 CFR 1910.134. PIs, Supervisors, Lab Managers, vendors, or consultants shall communicate the presence of respiratory hazards and safety requirements when working in proximity to UVA employees and students.

3. Federal Regulation & UVA Policy

3.1 Occupational Safety & Health Administration

This Respiratory Protection Program complies with the Occupational Safety &Health Administration (OSHA) Standard *29 CFR 1910.134 Respiratory Protection.*

3.2 University of Virginia

This Respiratory Protection Program complies with UVA policy SEC-021: Controlling Hazardous Air Contaminants and Respiratory Protection.

4. Roles and Responsibilities

4.1 Vice President for Research

Programmatic responsibilities for research at the University are organizationally delegated to the Vice President for Research, including those for safety in UVA laboratories and other research-related locations. Departments involved in guiding, regulating, or otherwise supporting basic and applied research at the University report to the Vice President for Research, including Environmental Health and Safety (EHS) and the Center for Comparative Medicine. The Vice President for Research is responsible for ensuring adequate staffing, resources, and funding for EHS, and assisting in the enforcement of safety rules and correction of unsafe conditions.

4.2 Deans and Chairpersons

Academic Deans and Chairpersons are responsible for safety in their Schools and Academic Departments. Their responsibilities include developing familiarity with hazards and University safety rules and ensuring that faculty and instructors are also aware of these issues and incorporate them into their research and teaching. Deans and Chairpersons are encouraged to make safety a part of job descriptions. Deans and Chairpersons may also be called upon for assistance in the enforcement of safety rules and correction of unsafe conditions.

4.3 Environmental Health and Safety

The Respiratory Protection Program Administrator (RPPA) resides in the UVA Office of Environmental Health and Safety (EHS). Specific responsibilities of the RPPA include:

- Record and document the necessary respiratory hazard assessments for each area considering respiratory protection. See Appendix G: Non-Mandatory *Research Project Specific Procedures for Use of Respiratory Protection.*
- Evaluate requests for voluntary use of respirators.
- Provide recommendations on suitable respiratory protection based on respiratory hazard assessments.
- Ensure respirator training and fit testing are completed annually
- Provide training to voluntary users upon request as required by 29 CFR 1910.134 Appendix D, (Mandatory) *Information for Employees Using Respirators When Not Required Under Standard.* See Appendix F

- Assist in the coordination of required medical evaluations for employees required to wear respiratory protection. Scheduling of medical evaluations may also be coordinated by employee supervisors.
- In cooperation with the physician, ensure employees required to undergo medical evaluations have been provided with a copy of the *Respirator Medical Evaluation Questionnaire.* See Appendix C.
- Assist supervisors and/or employees in completing the *Respirator Use Information* form for all employees requesting to wear respiratory protection. See Appendix D.
- Provide physician with copies of standards, programs and forms related to the RPP (see section 5.5) as needed.
- Provide copies of *Respiratory Fit Test and Training* form to employees and/or supervisors upon request. See Appendix E
- Clean, inspect, maintain, and store respiratory protection and/or equipment used for fit testing and training after each use according to 29 CFR 1910.134.
- Maintain respirator fit testing and respirator training records for duration of employment.
- Maintain training materials, program evaluation records, a current copy of the written Respiratory Protection Program, and copies of *Research Project Specific Procedures for Use of Respiratory Protection.*
- Annually evaluate and update the Respiratory Protection Program as needed

4.4 Principal Investigators, Instructors, Laboratory Managers, and Supervisors

Supervisors are primarily responsible for ensuring that the respiratory protection program is implemented and adhered to in their area. Specific responsibilities of supervisors related to the RPP are outlined below:

- Hazard Identification:
    - Identify work areas, processes, or tasks with respiratory hazards and oversee elimination or control of respiratory hazard. Contact EHS for assistance.
- Supervision
    - Be a knowledgeable authority for all area specific respiratory program requirements.
    - Ensure employees understand and follow all program requirements.
    - Issue respiratory protection to employees that are 1) medically able to wear respiratory protection (physician medical clearance required), 2) have completed annual training, and 3) have been successfully fit tested by either EHS or WorkMed or other qualified personnel with the make, model, and size used.
- Program Development
    - A written procedure specific to the assigned respiratory protection is required and shall be reviewed and approved by EHS or the RPP administrator. A non-mandatory form *Research Project Specific*

Procedures for Use of Respiratory Protection is available to document the procedures. This form can also be used to inform all employees assigned respirators about the process. The form is for use in conjunction with the RPP and shall be updated when significant changes in the research project have occurred. See Appendix G.

- Notification
    - Inform EHS of suspected respiratory hazards prior to beginning work in accordance with OSHA 29 CFR § 1910.1200 Hazard Communications.
    - Inform EHS if voluntary use of respiratory protection is desired by employees. EHS in partnership with the area supervisor will complete an exposure assessment to validate respiratory protection is not required. Depending on the work environment, validation may be achieved through discussion and/or an in-person area survey.
    - Ensure employees who wish to voluntarily wear a filtering facepiece (FFP) have signed and understood 29 CFR 1910.134 Appendix D, (Mandatory) *Information for Employees Using Respirators When Not Required Under Standard.* Copies of the signed forms are maintained by the employee's supervisor for the length of employment.
    - Provide EHS and/or WorkMed with a completed copy of the *Respirator Use Information* form for each enrollee that uses a respirator, including voluntary use of respirators. See Appendix D.
    - Provide employees with appropriate respiratory protection. Refer to EHS recommendations.
- Contact EHS if revisions are needed due to:
    - Changes in work processes that may result in significant changes in respiratory requirements.
    - changes in workplace conditions (workload, protective clothing, or temperature) that may result in substantial increase in physiological burden placed on an employee.
    - changes in employee's physical condition that could affect respirator fit (e.g., facial scarring, dental changes, cosmetic surgery, or change in body weight)
- Respirators
    - Ensure an adequate supply of respiratory protective equipment including parts, cleaning supplies, and filters in good, clean, working condition.
    - In cases where FFP, ex: N95 is the required respirator, provide an adequate supply of FFP in good, clean condition in a range of sizes to ensure a proper fit can be achieved.
    - If an employee wears corrective glasses, goggles, or other personal protective equipment, the supervisor shall ensure that such equipment is worn in a manner that does not interfere with the seal of the facepiece. Prescription inserts are available for purchase in this case.

4.5 Physician or Other Licensed Healthcare Provider (PLHCP)

A physician or other licensed healthcare professional is an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows the physician to independently provide, or be delegated the responsibility to provide, some or all the health care services required by paragraph 29 CFR 1910.134, (e).

Physician-specific RPP responsibilities:

- Discuss the OSHA *Respirator Medical Evaluation Questionnaire* with employees upon request.
- Provide the respirator medical clearance to the employee and a copy to EHS or employee supervisor within 15 days of evaluation.
- Provide follow-up medical examinations or a referral to an appropriate PLHCP.
- Keep records of medical clearance and any other written opinions per *1910.1020(d)(1)(i).*

4.6 Employees Assigned Respiratory Protection

Specific responsibilities of UVA employees who are assigned respiratory protection related to the RPP are to:

- Participate in required medical evaluations.
- Provide the physician with a completed copy of the *Respirator Medical Evaluation Questionnaire*
- Schedule and attend applicable follow-up medical examinations.
- Attend annual respirator fit testing, if applicable
  Complete respiratory protection training upon entry into the RPP and annually thereafter in Safety, Training & Record-keeping (STAR).
- Wear the assigned respiratory protection under the working conditions outlined in your work area's *Research Project Specific Procedures for Use of Respiratory Protection* or equivalent.
- Only use respiratory protection for which you have obtained a satisfactory fit.
- Only use respiratory protection for the airborne contaminant for which it is designed. Contact EHS for assistance.
- Notify supervisor if prescription glasses inserts are required for use with full-face respiratory protection. As a best practice, employees should not wear contact lenses when wearing a respirator.
- Inspect respirators prior to each use.
- Be clean shaven during respirator use and fit testing.
  Conduct user seal checks before using a respirator each time.
- Use respirators in a manner that complies with instruction and training.
- Clean, disinfect, inspect, and properly store respirators. (See Appendix G)
- Report respirator malfunctions to your supervisor.
- Report physiological changes (e.g., facial scarring, dental changes, cosmetic surgery, or change in body weight) that could affect the respirator fit or ability to safely wear a respirator to EHS or WorkMed.

- Provide feedback for annual program evaluation as requested by EHS.

5 Respiratory Protection Program (RPP)

The RPP program includes six key elements which are:

- Identification of potential airborne hazard(s) in the workplace and Respiratory Hazard Assessment
- Respiratory Protection Selection
- Medical evaluation and clearance to use the assigned respirator by an authorized physician.
- Respirator fit testing and training.
- Respiratory protection cleaning, inspection, storage, and maintenance
- Program review

EHS, with the supervisor, will identify the appropriate respiratory protection for the research project or work area and determine if respiratory protection is required or voluntary. See Appendix B for a summary table of requirements within the RPP for mandatory versus voluntary respirator use. Respiratory protection shall only be selected after EHS completes a respiratory hazard assessment. If feasible engineering or administrative controls are not sufficient to reduce air concentrations of hazardous substances below applicable exposure limits, EHS will provide recommendations regarding the appropriate respiratory protection.

5.1 Identification of potential airborne hazard(s) in the workplace and Respiratory Hazard Assessment

EHS is available to assist supervisors in determining the identity and concentrations of hazardous substances present in the environment, conducting an exposure assessment by:

- Identifying hazardous substances in the workspace of concern in consultation with the research group or area supervisor.
- Reviewing the work process to determine where potential exposure to respiratory hazards occurs. This may include a workspace survey, SOP/process review, SDS review, and interviews.
- Conducting air sampling to quantify concentrations of hazardous substances present in the environment when exposure cannot be determined by other means. Concentrations measured will be compared to the allowable exposure limit.
- Identifying and coordinating engineering or administrative controls to reduce the concentrations of hazardous substances in the work environment when possible. If concentrations can be reduced below the exposure limit, respiratory protection is not required. If controls do not reduce exposure to acceptable levels, EHS will help determine appropriate respiratory protection or other administrative controls.
- When purchase of commercial sampling media and/or independent analytical services are necessary to complete an environmental assessment, the requesting department must plan to cover those costs prior to the project's initiation.

- Though highly unlikely, if employees' exposures have not been or cannot be evaluated, the condition may be considered immediately dangerous to life and health (IDLH) and appropriate protections will be implemented. An example would be an environment with highly toxic airborne chemicals when air monitoring to assess concentration levels cannot be performed.

While EHS provides assessments at no cost, costs for environmental and air samples collected and subsequently analyzed by an accredited commercial laboratory are the responsibility of the department/laboratory from which the samples are taken.

5.2 Respiratory Protection Selection

When engineering controls are not feasible and/or administrative controls are not sufficient to reduce air concentrations of hazardous substances below applicable exposure limits, the EHS RPPA, in conjunction with supervisors and employees, will select the appropriate respiratory protection. All respiratory protection used at UVA is certified by the National Institute of Safety and Health (NIOSH) and must be used in compliance with the conditions of certification.

Respirators selected must provide adequate protection given the airborne concentration of the contaminant, the chemical's exposure limit and the assigned protection factor (APF) of the respirator. See Table 1. Selection also considers the task (ex: a full-face respirator for a process involving spraying or potential splattering) and any available historical air sampling data. In some cases, an OSHA standard or consensus guideline will define the type of respiratory protection required.

Table 1 Respirator Assigned Protection Factors (APF)

Type of Respirator	Quarter Mask	Tight Fitting Half Mask	Tight Fitting Full Facepiece	Helmet/Hood	Loose-Fitting Facepiece
Air-Purifying (APR)	5	10	50	-	-
Powered Air Purifying (PAPR)	-	50	1,000	25/1,000	25
Supplied Air (SAR) or Airline	*Demand Mode*	10	50	-	-
	Continuous Flow mode	50	1,000	25/1,000	25
	Pressure demand or other positive-pressure mode	50	1,000	-	-

Source: Visit Layout 1 (osha.gov) *Assigned Protection Factors for the Revised Respiratory Protection Standard* OSHA 3352-02 for full detail. **Maximum use concentration** (MUC) Refers to the **maximum concentration** of atmospheric pollutants which an employee will be protected when using a specific class of respirator. In order to calculate the MUC, the assigned protection factor for the mask or respirator is multiplied by the permissible OSHA exposure limit. Ex: ammonia exposure limit = 50 ppm, ½ mask APR APF = 10, MUC = 500ppm.

Respirator Specification Requirements

EHS will help determine which individuals require respiratory protection and the respirator(s) to be used and will notify supervisors in writing of these determinations. This memo will include tasks for which respiratory protection is required, the type of respiratory protection and filtering media used, and the filtering media change out schedule[1]. This information is used by the supervisor to complete portions of the *Respirator Use Information Form* and the *Research Project Specific Procedures for Use of Respiratory Protection* or equivalent document that notes lab specific procedures for use of respiratory protection. Determining whether the use of respiratory protection is mandatory, or voluntary is also part of this process.

Voluntary Use of Any Type of Respiratory Protection

Supervisors should confer with EHS if voluntary use of respiratory protection is desired. Filtering facepieces (FFP) approved by NIOSH (e.g., N-95 respirators) do not require medical clearance or a fit test when used voluntarily. An exposure assessment by EHS is required, however, to show workplace exposure limits are not exceeded and therefore the FFP is not required.

All other respirator types used voluntarily, also require an exposure assessment that states respiratory protection is not required. Medical clearance is required to ensure the employee is medically fit to wear the respirator. See Section 5.5. A fit test is not required. See Appendix B *Summary Table RPP Requirements Mandatory vs. Voluntary*

Supervisors must provide voluntary respirator users with a copy of Appendix F, the Voluntary Use of Respiratory Protection Agreement form, which includes 29 CFR 1910.134 Appendix D, Information for Employees Using Respirators When Not Required Under the Standard. Supervisors are not required to purchase respirators that an employee wants to use voluntarily.

Filtering face pieces FFP (e.g., N95)

Filtering face pieces may be assigned as *required* respiratory protection to employees or selected for *voluntar*y use. When FFP is determined to be required all aspects of the RPP are followed as they would be for other types of respirators, ex: negative pressure APR, PAPR. For voluntary use, EHS in partnership with the research group or area supervisor will complete an exposure assessment to ensure and document that under normal operations exposure limits are not exceeded and therefore respiratory protection is not required. An example of voluntary use is to control exposure to the level of nuisance dust which would not be considered a hazardous exposure.

---

[1] 1910.134(d)(3)(iii)(B)(2)
If there is no End of Service Life Indicator (ESLI) appropriate for conditions in the employer's workplace, the employer implements a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. The employer shall describe in the respirator program the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data.

Supervisors ensure employees who wish to voluntarily wear a FFP have signed and understood 29 CFR 1910.134 Appendix D, (Mandatory) *Information for Employees Using Respirators When Not Required Under Standard.* Copies of the signed forms are maintained by the employee's supervisor for the length of employment.

Supervisors are to provide an adequate supply of FFP in good, clean condition when the FFP is the required respiratory protection. For voluntary use, the supervisor/department is not required to supply or purchase the FFP.

Non-Routine Respirator Use Plan

For a non-routine work task that requires respiratory protection and does not have an established procedure, a Non-Routine Respirator Use Plan shall be used. Supervisors and EHS will jointly fill out the *Non-Routine Respirator Use Plan* form, and have it reviewed by affected employees. The plan will include participation in all aspects of the RPP. See Appendix I

Examples of Non-Routine Work Tasks Which May Require Respiratory Protection

Supervisors should contact EHS when the need for respiratory protection is suspected. Examples of some tasks for which respiratory protection may be required include:

- Venting hazardous chemicals to atmosphere
- Application of aerosolized cleaners, solvents, or other chemicals
- Bench use of chemicals with high vapor pressure
- Tasks that generate large amounts of dust
- Painting with epoxy or organic solvent coatings
- Using solvents, thinners, or degreasers
- Cleaning reaction vessels containing toxic materials.

PI/Supervisors/Lab Managers shall purchase and issue to employees the recommended respiratory protection. EHS is available to help identify NIOSH certified respirators and reputable respirator suppliers.

5.3 Medical Evaluations

Employees required to wear respiratory protection must be medically evaluated annually by a physician to determine the user's medical fitness to wear the type of respirator required under the anticipated job and workplace conditions. The medical evaluation must be conducted prior to the respirator fit test and issuance of respiratory protection. Additional medical evaluations are required when:

1. Individual reports medical signs or symptoms related to the ability to use a respirator
2. The physician or supervisor recommends an employee for re-evaluation.
3. Information obtained during program evaluation or fit testing indicates a need for re-evaluation.

4. There are changes in workplace conditions (physical work effort, PPE, and temperature) that may result in a substantial increase in physiological burden placed on employees.

Administration of Medical Evaluation

Responsible individuals in the administration of medical evaluations include the physician, the employee, the employee's supervisor and /or EHS.

1. For employees required to complete a medical evaluation, WorkMed will provide the employee with the *Respirator Medical Evaluation Questionnaire* at the time of the appointment. Employees must be permitted to complete the medical evaluation and questionnaire during normal work hours.
2. EHS will provide the employee's supervisor with the *Respirator Use Information* form, to be completed for every employee assigned to the work area and required to wear respiratory protection. The form should be returned to EHS, and a copy should be provided to the employee prior to scheduling a medical evaluation with the physician. The form contains specific information related to the tasks the user is assigned to complete while wearing respiratory protection.
3. The employee will coordinate with their supervisor to schedule their medical evaluations administered by the physician. Once the appointment is scheduled the employee will tell the RPPA.
4. Employees will receive two (2) forms from EHS prior to their medical evaluation, the *Respirator Medical Evaluation Questionnaire* and the *Respirator Use Information Form*. The physician should discuss the form and questionnaire with employees upon request.
5. At the physician's discretion, annual re-evaluations may be conducted by the physician without a clinic visit by the employee.

Physician medical clearance

Following the medical evaluation, the physician shall provide a medical clearance for respirator use within 15 days of the evaluation of the employee with a copy to EHS and the employee's supervisor containing the following information:

1. Whether the physician considers the individual medically able to wear respiratory protection under the conditions described in the *Respirator Use Information* form
2. Any limitations on respirator use related to medical conditions, including a medical recommendation for the individual to use a PAPR instead of an air purifying respirator (APR).
3. The need, if any, for follow-up evaluation.
4. Summary of re-evaluation

After the initial medical evaluation, medical evaluations are repeated annually or bi-annually depending upon the air contaminant, associated OSHA standards (ex: asbestos annually, non-carcinogenic solvents bi-annually) and the approved *Research Project*

Specific Procedures for Use of Respiratory Protection form.

Information Provided to the Physician

The following information must be provided to the physician by the EHS RPPA, if not already on file:

1. Copy of 29 CFR 1910.134
2. Copy of Respiratory Protection Program
3. Copy of *Respirator Medical Evaluation Questionnaire form*
4. Copy of *Respirator Use Information*
5. Previous records related to the use of respiratory protection maintained by EHS for individuals being evaluated.

*NOTE: For employees exposed to silica, benzene, vinyl chloride, inorganic arsenic, lead, hexavalent chromium, cadmium, lead, beryllium, 1,2-dibromo-3-chloropropane, acrylonitrile, ethylene oxide, formaldehyde, methylenedianiline, 1,3-butadiene, and methylene chloride the physician shall meet all medical evaluation requirements set forth in:29 CFR 1910.1053 Silica

- 29 CFR 1910.1017 Vinyl Chloride
- 29 CFR 1910.1018 Inorganic Arsenic
- 29 CFR 1910.1024 Beryllium
- 29 CFR 1910.1025 Lead
- 29 CFR 1910.1026 Chromium (VI)
- 29 CFR 1910.1027 Cadmium
- 29 CFR 1910.1028 Benzene
- 29 CFR 1910.1044 1,2-dibromo-3-chloropropane
- 29 CFR 1910.1045 Acrylonitrile
- 29 CFR 1910.1047 Ethylene oxide
- 29 CFR 1910.1048 Formaldehyde
- 29 CFR 1910.1050 Methylenedianiline
- 29 CFR 1910.1051 1,3-Butadiene
- 29 CFR 1910.1052 Methylene Chloride

All costs associated with medical evaluations and examinations related to employee use of respiratory protection in the workplace are paid for by the employer.

5.4 Training

Employees must successfully complete Respiratory Protection Training prior to initial assignment of tasks requiring respirators and annually thereafter. At the completion of training, each attendee must demonstrate comprehension in:

1. How improper fit, usage, or maintenance can compromise the protective effect of the respirator.
2. Limitations and capabilities of the respirator
3. How to assemble and operate the respirator

4. How to don and doff the respirator
5. User face-to-facepiece seal check
6. Procedures for maintenance and storage of the respirator
7. Knowledge of the medical signs and symptoms that may limit or prevent the effective use of respirators.
8. The necessity of respiratory protection

5.5 Fit Testing

A fit test is conducted to determine the ability of each respirator user to obtain a satisfactory fit with a tight-fitting respirator. All individuals required to use tight-fitting respiratory protection must successfully pass a fit test using the same make, model, style, and size of respirator that has been approved for use in their work environment. Fit testing must be completed annually thereafter until use of the respirator is discontinued.

Fit testing will only be provided to employees deemed 1) medically able to wear respiratory protection by the physician, 2) have completed annual Respiratory Protection Training, and 3) are clean shaven.

Facial Hair Requirements

If facial hair comes between the sealing surface of the facepiece and the face, the user cannot use tight-fitting respiratory protection, including filtering facepieces, when respiratory protection is required. Employees are required to be clean shaven when wearing and being fit tested for a tight-fitting respirator.

For detail on fit testing procedures see Appendix H.

5.6 Respiratory Protection Cleaning, Inspection, Storage, and Maintenance

Supervisors must ensure an adequate supply of respiratory protection that is in good, working condition. Re- usable respiratory protection must be cared for and maintained to ensure their continued performance.

Cleaning, inspection, and storage of respirators following each use is the responsibility of:

- The employee issued a respirator(s)
- Supervisors when respirators are assigned to multiple users.
- EHS and WorkMed for respirators used for fit testing or training.

Cleaning and Inspection of Respirators

Respirators must be clean and kept in good working condition and ready to use. Cleaning procedures may be different for different types of respirators. In general, cleaning inside and outside of respirators with non-alcohol/alcohol wipes is required after using them.

In the case of working in a much-polluted condition, employees shall follow 29 CFR 1910.134 Appendix B-2, *Respiratory Cleaning Procedures (Mandatory*) and manufacture instruction. See Appendix I at the end of this document for a summary of OSHA Appendix

B-2 and cleaning procedures for loose fitting respirators, e.g., PAPRs.

In general, FFP are disposable and should not be cleaned or reused. Exceptions arise when shortages of FFP occur, and sterilization and re-assignment programs are put in place and managed by UVA. Ex: COVID-19 response.

Inspection

The inspection of respiratory protection includes:

- Check tightness of connections.
- Inspect the condition of facepiece, head straps, valves, connecting tube, and cartridges, canisters, or filter.
- Filters, cartridges, and canisters shall be labeled with the appropriate NIOSH certification label. The label must not be removed or defaced while the respirator is in use.
- Check elastomeric parts for pliability and signs of deterioration.
- For powered air-purifying respirators (PAPR), the inspection also includes:
    1. Charging batteries, Confirm battery charge.
    2. Checking sufficient airflow
    3. Verify PAPR pressure is adequate and not excessive, indicating overloaded HEPA filter. Employees must report respirator malfunctions identified during the inspection to their supervisor.

Respirator Storage

Supervisors must allocate adequate storage and storage supplies for respiratory protection to protect respirators from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals.

- Half-mask and full-face air-purifying respirators shall be placed in sealable plastic bags. Respirators may be stored in such places as lockers or desks only if they are first placed in carrying cases or cartons.
- After cleaning and inspecting respirators to determine that they are in good condition, the user must store the respirator in a designated storage area.
- Respirators shall be packed or stored so that the facepiece and exhalation valves will rest in a normal position and not be crushed or deformed. Do not hang respirators by their straps, as this may ruin the integrity of the straps and cause the respirator to lose its seal.

Respirator Maintenance

Respirator maintenance is the responsibility of:

- Respirator users
- Supervisors
- EHS and WorkMed, for respirators used for training or fit testing.

Respirators found to be defective may not be repaired and must be discarded. Only the following parts may be replaced if found to be worn or deteriorated:

- Inhalation valves, exhalation valves,
- inhalation gaskets, speaking diaphragm,
- headgear, breathing tube,
- blower motor battery, filter cover,

No attempt will be made to modify or any respirator. Any repair to reducing or admission valves, regulators, or alarms will be conducted by the manufacturer or a qualified trained technician.

6. Review and Recordkeeping

6.1 Program Review

The RPP will be reviewed and updated at least annually and whenever necessary for continued program effectiveness and compliance with applicable regulations and /or industry standards. Program review will be conducted internally, analyzing program compliance with fit test due dates, inclusion of exposed employees, and capture of inactive program participants.

6.2 Program Records

EHS and the physician maintain RPP records, including *Research Project Specific Procedures for Use of Respiratory Protection* forms if used or equivalent documentation, records for medical evaluations, fit testing, and training.

Medical Evaluation Records

Medical evaluation records must be maintained for 30 years after termination of employment. Medical evaluation records include:

a. Name and Computing ID# of employee
b. Completed copies of all *Respirator Medical Evaluation Questionnaires* and the *Respirator Use Information* form (maintained by physician)
c. Physician medical clearance. (Maintained by EHS & physician)
d. Other medical exams conducted to determine an employee's fitness to use respiratory protection (maintained by physician)

Respirator Fit Test and Training Records

Fit testing and training records are maintained for the duration of the employee's employment. Fit testing records include:

a. Date of test
b. Name of employee
c. Type of fit test performed.
d. Fit test substance used (if qualitative fit testing is conducted)
e. Specific make, model, size of respirator
f. Results of fit test (Pass/Fail for qualitative, fit factor for quantitative)

APPENDIX-A
Definitions

- ***Air-purifying Respirator (APR)*** means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.
- ***Atmosphere-Supplying Respirator*** means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere.
- ***Canister or Cartridge*** means a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.
- *Filter* means a component used in respirators to remove solid or liquid aerosols from the inspired air.
- ***Filtering Facepiece (dust mask)*** means 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*** means the use of a protocol to evaluate the fit of a respirator qualitatively or quantitatively on an individual. (See also Qualitative fit test QLFT and Quantitative fit test QNFT.)
- ***High Efficiency Particulate Air (HEPA) Filter*** means 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.
- ***Permissible Exposure Limit (PEL)*** means the legal amount of a chemical substance or physical agent an employee may be exposed to a, established by the Occupational Safety and Health Administration (OSHA).
- ***Physician or Other Licensed Health Care Professional (Physician)*** means 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.
- ***Powered Air-Purifying Respirator (PAPR)*** means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.
- ***Quantitative Fit Test (QNFT)*** means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.
- ***Tight-Fitting Facepiece*** means a respiratory inlet covering that forms a complete seal with the face.
- ***Loose-Fitting Facepiece*** means a respiratory inlet covering that does not depend on a seal with the face to provide protection.
- ***User Seal Check*** means an action conducted by the respirator user to determine if the respirator is properly seated to the face.

APPENDIX-B:
Summary Table RPP Requirements
Mandatory vs. Voluntary Respirator Use

Respirator Type	**Respirator Sub-Type**	**Hazard Assessment Required**		**Medical Clearance Required**		**Annual Fit Test & Training Required**	
		Mandatory Use	***Voluntary Use***	***Mandatory Use***	***Voluntary Use***	***Mandatory Use***	***Voluntary Use***
APR (Air purifying) Half-Face	N95, R100, R95	Y	N*	Y	N	Y	N*
	Elastomeric Facepiece	Y	Y	Y	Y	Y	Y*
APR Full Facepiece	Elastomeric Facepiece	Y	Y	Y	Y	Y	Y*
PAPR (Powered air purifying)	Loose Fitting Helmet or Full Hood	Y	Y	Y	Y	N/A	N/A
SAR (Supplied Air) Full Facepiece	Elastomeric Facepiece or Airline Bullard Hood	Y	Y	Y	Y	Y	Y

*Per OSHA this is not required. In some circumstances, UVA RPPA may require this based upon the air contaminant and/or process.

APPENDIX-C
OSHA Respirator Medical Evaluation Questionnaire

UNIVERSITY of VIRGINIA
Vice President for Research
Environmental Health and Safety

Issue Date: 11.19.2020

OSHA Respirator Medical Evaluation Questionnaire

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee: Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator. (Please print)

1. Today's date:_____
2. Name:_____
3. Age:_____
4. Sex: (circle one): Male Female
5. Height:_____ ft. _____ in.
6. Weight:_____ lbs.
7. Your job title:_____
8. A phone number where you can be reached by the health care professional who reviews this questionnaire:

   (Include Area Code)_____
9. The best time to phone you at this number:_____
10. Has your employer told you how to contact the health care professional who will review this questionnaire? Circle one:

    Yes No
11. Check the type of respirator you will use (you can check more than one category):

    a. _____ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
    b. _____ other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).
12. Have you worn a respirator? Circle one:

    Yes No

    If "YES" what type(s):_____

Part A. Section 2. (Mandatory) Questions 1-9 below must be answered by every employee who has been selected to use any type of respirator (please check "Yes" or "No").

	YES	NO
1. Do you currently smoke tobacco, or have you smoked in the last month?	☐	☐
2. Have you ever had any of the following conditions?		
a. Seizures (fits):	☐	☐
b. Diabetes (sugar disease):	☐	☐
c. Allergic reactions that interfere with your breathing:	☐	☐
d. Claustrophobia (fear of closed-in places):	☐	☐
e. Trouble smelling odors:	☐	☐
3. Have you ever had any of the following pulmonary or lung problems?	☐	☐
a. Asbestosis:	☐	☐
b. Asthma:	☐	☐
c. Chronic bronchitis:	☐	☐
d. Emphysema:	☐	☐
e. Pneumonia:	☐	☐
f. Tuberculosis:	☐	☐
g. Silicosis:	☐	☐
h. Pneumothorax (collapsed lung):	☐	☐
i. Lung cancer:	☐	☐
j. Broken ribs:	☐	☐
k. Any chest injuries or surgeries:	☐	☐
l. Any other lung problem you have been told about:	☐	☐
4. Do you currently have any of the following symptoms of pulmonary or lung illness?	☐	☐
a. Shortness of breath:	☐	☐
b. Shortness of breath when walking fast on level ground or walking up a slight hill:	☐	☐
c. Shortness of breath when walking with other people at an ordinary pace on level ground:	☐	☐
d. Have to stop for breath when walking at your own pace on level ground:	☐	☐
e. Shortness of breath when washing or dressing yourself:	☐	☐
f. Shortness of breath that interferes with your job:	☐	☐
g. Coughing that produces phlegm (thick sputum):	☐	☐
h. Coughing that wakes you early in the morning:	☐	☐
i. Coughing that occurs mostly when you are lying down:	☐	☐
j. Coughing up blood in the last month:	☐	☐
k. Wheezing:	☐	☐
l. Wheezing that interferes with your job:	☐	☐
m. Chest pain when you breathe deeply:	☐	☐
n. Any other symptoms that you think may be related to lung problems:	☐	☐

	YES	NO
5. Have you ever had any of the following cardiovascular or heart problems?	☐	☐
a. Heart attack:	☐	☐
b. Stroke:	☐	☐
c. Angina:	☐	☐
d. Heart failure:	☐	☐
e. Swelling in your legs or feet (not caused by walking):	☐	☐
f. Heart arrhythmia (heart beating irregularly):	☐	☐
g. High blood pressure:	☐	☐
h. Any other heart problem that you've been told about:	☐	☐
6. Have you ever had any of the following cardiovascular or heart symptoms?	☐	☐
a. Frequent pain or tightness in your chest:	☐	☐
b. Pain or tightness in your chest during physical activity:	☐	☐
c. Pain or tightness in your chest that interferes with your job:	☐	☐
d. In the past two years, have you noticed your heart skipping or missing a beat:	☐	☐
e. Heartburn or indigestion that is not related to eating:	☐	☐
f. Any other symptoms that you think may be related to heart or circulation problems:	☐	☐
7. Do you currently take medication for any of the following problems?	☐	☐
a. Breathing or lung problems:	☐	☐
b. Heart trouble:	☐	☐
c. Blood pressure:	☐	☐
d. Seizures:	☐	☐
8. If you've used a respirator, have you ever had any of the following problems? (If you've never used a respirator, check the following space and go to question 9)		
Have never used a respirator_____		
a. Eye irritation:	☐	☐
b. Skin allergies or rashes:	☐	☐
c. Anxiety:	☐	☐
d. General weakness or fatigue:	☐	☐
e. Any other problem that interferes with your use of a respirator:	☐	☐
9. Would you like to talk to the health care professional who will review this questionnaire about your answers?	☐	☐

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-face piece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

	YES	NO
10. Have you ever lost vision in either eye (temporarily or permanently)?	☐	☐
11. Do you currently have any of the following vision problems?	☐	☐
a. Wear contact lenses:	☐	☐
b. Wear glasses:	☐	☐
c. Color blind:	☐	☐
d. Any other eye or vision problem:	☐	☐
12. Have you ever had an injury to your ears, including a broken ear drum?	☐	☐
13. Do you currently have any of the following hearing problems?	☐	☐
a. Difficulty hearing:	☐	☐
b. Wear a hearing aid:	☐	☐
c. Any other hearing or ear problem:	☐	☐
14. Have you ever had a back injury?	☐	☐
15. Do you currently have any of the following musculoskeletal problems?	☐	☐
a. Weakness in any of your arms, hands, legs, or feet:	☐	☐
b. Back pain:	☐	☐
c. Difficulty fully moving your head up or down:	☐	☐
d. Pain or stiffness when you lean forward or backward at the waist:	☐	☐
e. Difficulty fully moving your arms or legs:	☐	☐
f. Difficulty bending at your knees:	☐	☐
g. Difficulty squatting to the ground:	☐	☐
h. Climbing a flight of stairs or a ladder carrying more than 25 lbs.:	☐	☐
i. Any other muscle or skeletal problem that interferes with using a respirator:	☐	☐

Employee Name (Print) Employee Signature Date

APPENDIX-D

Respirator Use Information Form

UNIVERSITY of VIRGINIA
Vice President for Research
Environmental Health and Safety

Issue Date: 11.19.2020

Respirator Use Information

The following information concerning employee respirator use must be provided so that the Physician can make a recommendation concerning an employee's ability to use specific respirators. **One form should be filled out for each type of respirator that the worker is expected to use**. Check all boxes that apply. Return completed form to EHS for recordkeeping. If applicable, provide EHS with Safety Data Sheets for any respiratory hazards.

A. Respirator Type

Negative pressure:	Positive pressure:
☐ ½-face APR (elastomeric air purifying respirator)	☐ tight-fitting PAPR (powered air purifying respirator)
☐ full-face APR	☐ loose-fitting PAPR
☐ N-95 filtering facepiece	

B. Expected Use

Frequency of Use:	Average duration per use:
☐ Infrequently (<4 times a year)	☐ 0-1 hour
☐ Occasionally (1 time/month)	☐ 1-2 hours
☐ Routinely (Several Times/month)	☐ 2-4 hours
	☐ 4-8 hours

C. Hazards

☐ Particulates: *Sanding/Grinding, Fiberglass, Demolition*	☐ Chemical (Organic Vapor)
☐ Biological: Mold	☐ Chemical (Formaldehyde)
☐ Nuisance Level Dust/Odors (N-95)	☐ Chemical (Acid Gas)
☐ Chemical (Ammonia)	☐ Chemical (Chlorine)

List other chemical:

D. Expected Work Effort

☐ Light activity: (breathing is easy)	☐ Moderate Activity: (can still hold conversation)	☐ Hard Activity: (out of breath; can speak small phrases)

E. Additional Clothing and Equipment

List all clothing and equipment used by employee: (shorts/pants, long/short sleeve, FRC, hood, harness, hardhat, etc.)

F. Temperature and Humidity Extremes

Temp °F:		Humidity %:		
☐ ≤ 32°	☐ 32° - 80°	☐Low	☐Medium	☐High
☐ 80° - 100°	☐ ≥ 100°	(< 30%)	(30% - 60%)	(> 60%)

G. Additional Comments

Worker Name (Print) | Worker Signature | Date

Supervisor Name (Print) | Supervisor Signature | Date

Page 1 of 1

APPENDIX-E
Respirator Training & Fit Test Form

UNIVERSITY of VIRGINIA

Vice President for Research
Environmental Health and Safety

Respirator Fit Test & Training Form

Name (First, Last)	Computing ID#	Department/Division/Unit
Work to be Performed With Respirator		Contact Phone #

To be completed before Fit Testing is conducted:

Date Trained	Date of Medical Qualification	Comments:

Respirator Type: ☐ **Full-Face** ☐ **Half-Face** ☐ **Filtering Facepiece – type: _____**

Respirator Manufacturer	Model:	Size: N95: ◘R ◘ L ◘ Universal ◘ N/A Half or Full Face: ◘ S ◘M ◘L ◘ N/A

Fit Checks Completed:	Positive Pressure: ◘ Yes	◘ No	Negative Pressure: ◘ Yes	◘ No
Fit Test Performed:	◘ Quantitative	◘ Qualitative – Agent: ◘ Bitrex	◘ Irritant Smoke	◘ Saccharine

Quantitative – enter fit factor numbers for each exercise.
Qualitative – mark Y (yes) or N (no) for each exercise. Circle the Taste Threshold Pumps: ☐10 ☐20 ☐30 ☐>30 – cannot taste

Normal Breathing	
Deep Breathing	
Head Side to Side	
Head Up and Down	
Overall Fit Factor	

Talking	
Grimace	*Excluded*
Bending	
Normal Breathing	
Pass?	◘ Yes ◘ No

Respirator Type: ☐ **Full-Face** ☐ **Half-Face** ☐ **Filtering Facepiece – type: _____**

Respirator Manufacturer	Model:	Size: N95: ◘ R ◘ L ◘ Universal ◘ N/A Half or Full Face: ◘ S ◘M ◘L ◘ N/A

Fit Checks Completed:	Positive Pressure: ◘ Yes	◘ No	Negative Pressure: ◘ Yes	◘ No
Fit Test Performed:	◘ Quantitative	◘ Qualitative – Agent: ◘ Bitrex	◘ Irritant Smoke	◘ Saccharine

Quantitative – enter fit factor numbers for each exercise.
Qualitative – mark Y (yes) or N (no) for each exercise. Circle the Taste Threshold Pumps: ☐10 ☐20 ☐30 ☐>30 – cannot taste

Normal Breathing	
Deep Breathing	
Head Side to Side	
Head Up and Down	
Overall Fit Factor	

Talking	
Grimace	*Excluded*
Bending	
Normal Breathing	
Pass?	◘ Yes ◘ No

Comments

_____

_____

_____

Certification

This employee has been fit tested to wear the respirator(s) listed above.

Fit tester: _____ _____ _____

Name (print) *Signature* *Date*

I have been fit tested and trained on the use of the respirator(s) listed above. I know and understand the following:

- ☐ Why, where, and when respiratory protection is needed
- ☐ Limitations and restrictions of respirators
- ☐ How to properly use the indicated respirator(s)
- ☐ How to check for proper respirator seal
- ☐ How to inspect such respirators before and after each use
- ☐ How to properly care for and store respirators
- ☐ This authorization is valid for one year from the date of the fit test

I acknowledge that I am only authorized to use the same make, model, and size respirator(s) listed above. Use of any other respirators will require additional fit testing. To continue using a respirator, I must obtain a medical clearance and attend respiratory protection training and fit testing annually.

Employee: _____ _____ _____

Name (print) *Signature* *Date*

Authorization

The above named employee has completed all requirements to use a respirator, including medical qualification, training, and fit testing and is approved to use the respirator(s) listed above.

Respirator Program Administrator: _____ _____

Signature *Date*

APPENDIX-F

Voluntary Use of Respiratory Protection Agreement

Vice President for Research
Environmental Health and Safety

Issue Date: 04.14.2020

Voluntary Use of Respiratory Protection Agreement

All University of Virginia workers who are required to wear a respirator to limit exposure must be enrolled in the University of Virginia Respiratory Protection Program. Workers who are not required to wear respiratory protection may request permission for voluntary use from their supervisor. Supervisors should contact UVA -EHS to ensure and document that such use will not create a hazard to the employee. See Section 5.3 UVA RPP. Workers who receive permission to voluntarily use respiratory protection are responsible for maintaining the requirements of this *Voluntary Use of Respiratory Protection Agreement*.

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.

See reverse side

The following requirements should be reviewed by both the Supervisor and their Employee:

- Employees approved to voluntarily use respiratory protection are permitted to wear a NIOSH-approved filtering face piece only. A filtering face piece means a negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece composed of the filtering medium. EHS allows filtering face pieces which have an N designation and are 95-99% efficient (ex: N-95, N-99).Other respirators such as elastomeric half or full face respirators are not permitted for voluntary use.

- By agreeing to voluntarily use respiratory protection, the employee is ensuring that they are medically healthy enough to use a filtering face piece.

- The employee must inspect the filtering face piece for damage and contamination before each use. It is their responsibility to ensure the filtering face piece is clean, stored, and maintained so that its use does not present a health hazard. If the filtering face piece becomes damaged or soiled, it must be disposed of.

- If the employee experiences issues, such as difficulty breathing, while wearing a filtering face piece, they should leave the area, discontinue using the respirator, and contact their supervisor and EHS before proceeding with the task.

- When modifications to a job task involving the use of a respirator occur or if new hazards are introduced into the work area, the employee must contact their supervisor and EHS to evaluate these changes before proceeding.

By signing below, you are indicating that you have read and understand the information provided on this form, and are accepting responsibility for the requirements of this agreement for voluntary use of respiratory protection. This form must be signed by both the supervisor and their employee. Retain a completed copy of this form for both the supervisor's and worker's records, and return a copy to EHS for recordkeeping.

Worker Name (Print)	Worker Signature	Date

Supervisor Name (Print)	Supervisor Signature	Date

APPENDIX-G
Non-Mandatory
Research Project Specific Procedure for Use of Respiratory Protection

UNIVERSITY of VIRGINIA

Vice President for Research
Environmental Health and Safety

Issue Date: 08.04.2021

Research Project Specific Procedure for Use of Respiratory Protection

This form may be used in conjunction with the Respiratory Protection Program (RPP) for all routine tasks that require the use of respiratory protection. All employees using respiratory protection should be familiar with the contents of this plan and the University's RPP. Employees can request a copy of the RPP from their supervisor and it can also be found at the EHS website. Completing the form can be a collaborative effort between the lab supervisor and EHS. Once completed the form should be reviewed by all employees using respiratory protection. **Copies of the form, or an equivalent document will be retained by the supervisor and EHS for recordkeeping. When a significant change in the research project or a process within the project occurs that could potentially impact respirator selection or conditions for respirator use (e.g., cartridge change schedule), this form should be updated, and the update shared with EHS.**

A. Departmental Information	
Department:	Building & Room:
Supervisor/Lab Manager:	Principal Investigator:
B. Task Details	
Name of Task:	Location of Task:
Duration of Task:	Frequency of Task:
Reagents/Chemicals Used:	Equipment Used:
Task Description:	
C. Respiratory Hazard and Filter Type	
☐ Nanomaterials (HEPA)	☐ Chemical (Formaldehyde)
☐ Biological (HEPA)	☐ Chemical (Chlorine)
☐ Chemical (organic vapor)	☐ Other Chemical:
☐ Chemical (acid gases & peroxides)	☐ Nuisance Dust/Odors (N95/P100)
☐ Chemical (ammonia)	Filter Change-out Schedule: ☐ 3 months ☐ 6 months ☐ 1 year ☐ Each use/Other Other:
C. Respirator Requirements	
Negative pressure: ☐ ½-face APR (elastomeric air purifying respirator) ☐ full-face APR ☐ Filtering facepiece (Voluntary or Required)	Positive pressure: ☐ tight-fitting PAPR (powered air purifying respirator) ☐ loose-fitting PAPR
Respirator storage area:	
Comments:	

D. Inspection Checklist (Complete before and after each use)
Inspect respirator facepiece: • Look for cracks, tears, or holes in the facepiece or face shield • Inspect the face mask for distortion
Inspect head straps: • Check for breaks or tears in the straps • Inspect the buckles for wear
Inspect respirator valves: • Look for residue or dirt • Look for cracks or tears in the valves
Inspect respirator filters/cartridges: • For new filters and/or cartridges, label the filter and/or cartridge with the date installed • Ensure that the filter and/or cartridge has been changed out according to the change-out schedule • Check gaskets and for dents in housing
For powered air-purifying respirators (PAPR): • Make sure the battery is charged • Check flow velocity • Perform leak test on HEPA filter
If any problems are identified, tag the respirator, take it out of service, and notify your supervisor.
E. Procedures for Cleaning Respirators (after each use)
Remove filters /cartridges
Clean inside and outside of the respirator with wipes
If needed, disassemble the respirator and wash components in warm water (not exceeding 120°F) with a mild detergent or with a cleaner recommended by the manufacturer. A soft bristle brush (not wire) may be used to remove dirt.
Rinse components thoroughly in clean, warm running water
Components should be hand-dried with a clean lint-free cloth or air-dried
Reassemble facepiece, replacing filters/cartridges
Test the respirator to ensure that all components work properly
See **Appendix H** for more detail

F. Respirator Users

Name	Type of Respirator (Make, Model, Size)	Type of filter

APPENDIX-H

Respirator Fit Testing Procedures

Fit Testing Procedures

Fit testing can be performed using either a quantitative or qualitative method. Quantitative fit testing is conducted by an EHS or WorkMed employee competent in using a Porta Count electronic device. The Porta Count fit testing device determines the fit factor based on the ratio of particle concentrations outside the respirator versus inside the respirator. Tubing connected to the respirator facepiece measures the particle concentration inside the facepiece while the ambient particle concentration outside the respirator is simultaneously measured by the Porta Count.

Qualitative fit testing determines fit by relying on the user to identify a test agent to indicate improper fit. This type of fit testing is performed by WorkMed. This method uses a gustatory (taste) test to indicate penetration or leakage of particles inside a fit testing hood. Prior to the fit test, applicants are tested for sensitivity to the non-toxic test agent to ensure valid test results. Either Saccharin or Bitrix (denatonium benzoate) are used for the test aerosol. Once users have verified sensitivity to the agent, both the respirator and fit testing hood are donned. The hood is filled with a high concentration of aerosolized test agent and a successful test is indicated if the user cannot taste the agent while wearing the respirator.

OSHA-approved quantitative and qualitative fit testing methods are described in 29 CFR 1910.134 Appendix A *Fit Testing Procedures (Mandatory)*

APPENDIX-I

Non-Routine Respirator Use Plan

UNIVERSITY of VIRGINIA

Facilities Management
Occupational Health and Safety

Issue Date: 06.14.2020

Non-Routine Respirator Use Plan

This *Non-Routine Respirator Use Plan* for Air-Purifying Respirators provides site-specific procedures for respirator use. All employees using respiratory protection equipment must be familiar with the contents of this plan and the university's Respiratory Protection Program. **The following information should be filled out by both the supervisor and FM-OHS, and reviewed by affected employees. Copies of this plan will be retained by the supervisor and FM-OHS for recordkeeping.**

A. Departmental Information	
Organization:	Shop:
Supervisor:	Manager:
B. Task Details	
Name of Task:	Location of Task:
Duration of Task:	Frequency of Task:
Equipment Used:	Tools Used:
Task Description:	
C. Respiratory Hazard and Filter Type	
☐ Particulates (HEPA)	☐ Chemical (organic vapor)
☐ Welding Fumes (HEPA)	☐ Other Chemical (acid gas, ammonia, formaldehyde, etc.)
☐ Biological (HEPA)	☐ Asbestos (HEPA)
☐ Nuisance Dust/Odors (N95/P100)	Other:
List chemical names:	Filter Change-out Schedule:
C. Respirator Requirements	
Negative pressure: ☐ ½-face APR (elastomeric air purifying respirator) ☐ full-face APR ☐ Filtering facepiece (Voluntary or Required)	Positive pressure: ☐ tight-fitting PAPR (powered air purifying respirator) ☐ loose-fitting PAPR
Respirator storage area:	
Comments:	

D. Inspection Checklist (before and after each use)
Inspect respirator facepiece: • Look for cracks, tears, or holes in the facepiece or face shield • Inspect the face mask for distortion
Inspect head straps: • Check for breaks or tears in the straps • Inspect the buckles for wear
Inspect respirator valves: • Look for residue or dirt • Look for cracks or tears in the valves
Inspect respirator filters/cartridges: • For new filters and/or cartridges, label the filter and/or cartridge with the date installed • Ensure that the filter and/or cartridge has been changed out according to the change-out schedule • Check gaskets and for dents in housing
For powered air-purifying respirators (PAPR): • Make sure the battery is charged • Check flow velocity • Perform leak test on HEPA filter
If any problems are identified, tag the respirator, take it out of service, and notify your supervisor.
E. Procedures for Cleaning Respirators (after each use)
Remove filters /cartridges
Clean inside and outside of the respirator with wipes
If needed, disassemble the respirator and wash components in warm water (not exceeding 120°F) with a mild detergent or with a cleaner recommended by the manufacturer. A soft bristle brush (not wire) may be used to remove dirt.
Rinse components thoroughly in clean, warm running water
Components should be hand-dried with a clean lint-free cloth or air-dried
Reassemble facepiece, replacing filters/cartridges
Test the respirator to ensure that all components work properly

F. Respirator Users

Name	Type of Respirator	Type of filter

APPENDIX-J

Respirator Cleaning Procedures

Respirator Cleaning Procedure- Tight Fitting Respirators

Procedures for cleaning respirators (other than filtering facepieces) are specified in 29 CFR 1910.134 Appendix B-2, *Respirator Cleaning Procedures (Mandatory*), and includes the following:

1. Remove filters, cartridges, or canisters.
2. Disassemble face piece by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer.
3. Full-Face Respirators: the center adapter, lens, and nose cup can also be removed if necessary.
4. Wash components in warm water (not exceeding 120°F) with a mild detergent or with a cleaner recommended by the manufacturer. A soft bristle brush (not wire) may be used to remove dirt.
5. After executing cleaning procedures, if needed, disinfect respirators e.g., COVID-19. Follow your department disinfecting protocol or manufacture's disinfecting instruction. In general, use Oxyvir, Virex or Sani wipes (orange or purple). Surfaces must be visibly wet with disinfectant for the full specified contact time.
6. Rinse components thoroughly in clean, warm running water
7. Components should be hand-dried with a clean lint-free cloth or air-dried.
8. Reassemble facepiece, replacing filters, cartridges, or canisters.
9. Test the respirator to ensure that all components work properly.
10. Place in a clean, dry, sealable plastic bag or other suitable container for storage after each cleaning and disinfection

Respirator Cleaning Procedure- PAPR's

Procedures for cleaning loose fitting respirators include the following:

1. Remove the filter/cartridge and breathing tube while each of those connections are facing down.
2. The outer surfaces motor/blower assembly and battery pack may be wiped with a soft cloth dampened in a solution of water and mild, pH neutral detergent.
3. Clean the connection sites on the breathing tube with the water and detergent solution. The breathing tube can be immersed in water for cleaning if required. The inside of the tube must be completely dried prior to use or storage. Air dry, or dry by connecting to the motor/blower unit and use it to force air through the tube until dry. Orient tube to prevent water from running into blower.

4. Wipe or rinse all belts thoroughly and dry completely before next use.
5. Clean headgear based on the headgear specific User Instruction and cleaning guides.
6. Reassemble head gear, breathing tube, blower/motor and replace filters /cartridges.
7. Test the respirator to make sure that all components work properly.
8. Place in a clean, dry, respirator storage location after each cleaning and disinfection
9. For loose fitting respirators with air inlet, outlet cleaning and storage plugs
10. Attach the air inlet and air outlet cleaning and storage plugs into the blower. The motor/blower can now be rinsed under running water or submersed in water. Water temperature should not exceed 122°F (50°C).
11. Remove battery and wipe down top of battery pack, if needed, with a soft dry cloth. If needed, the battery strap can be used to protect the pads during cleaning. With the strap in place, the battery can now be rinsed under running water or immersed.
12. Make sure the connectors are clean and dry prior to charging, installing on blower or for storage.