

National Institutes of Health

# Respiratory Protection Program

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**The National Institutes of Health  
Office of Research Services  
Division of Occupational Health and Safety**

**RESPIRATORY PROTECTION PROGRAM**

## **1.0 INTRODUCTION**

### **1.1 Purpose**

The National Institutes of Health (NIH) Respiratory Protection Program (RPP) establishes uniform procedures, in accordance with the [Occupational Safety and Health Administration \(OSHA\) Standards, 29 CFR Part 1910.134, Respiratory Protection](#), for the appropriate selection, use, and care of respiratory protective equipment for NIH employees.

### **1.2 Scope and Applicability**

The Office of Research Services (ORS), [Division of Occupational Health and Safety](#) (DOHS), Technical Assistance Branch (TAB), provides administrative management for the NIH RPP. The NIH RPP applies to all Federal Employees at the NIH. Several employee groups provide additional, site-specific RPP training and administrative management, including the NIH [Division of Fire and Rescue Services](#) (DFRS), the NIH [Division of Police](#) (DP), the NIH [Clinical Center](#) (CC), and any NIH Biosafety Level 4 (BSL-4) facilities. Most NIH contractors are **not** covered under the NIH RPP. Exceptions to this policy may exist, and will be determined on a case-by-case basis. In general these exceptions will only be made where hazards unique to the government workplace exist, and where community-based resources are not available to provide adequate occupational safety support to the contractors. All contractors, regardless of enrollment status in the NIH RPP, shall develop appropriate, adequate measures that ensure that their workers have adequate respiratory protection; are trained in its selection, use, and limitations; understand when they must use it; and document/maintain records accordingly.

DFRS and DP employees are fully covered under the NIH RPP for operations requiring the use of negative pressure, tight-fitting respirators, and N-95. The DOHS, TAB provides support by providing respirator fit testing services to employees of the DFRS and DP. The DFRS and DP provide all other training and administrative management components for their own respective RPP.

CC employees are fully covered under the NIH RPP for operations requiring the use of negative pressure, tight-fitting respirators. The CC Safety Office provides administrative management support for the NIH RPP within the CC, including: providing administrative management for patients on acid fast bacilli (tuberculosis) and special respiratory isolation precautions for employees who perform higher risk procedures (e.g. work in the mycobacteriological laboratory) associated with patient care; determining the type and model of respirators to be used in the CC.

If a CC employee is expected to use a Powered Air Purifying Respirator (PAPR), the employee should select "PAPR" so that the HealthRx system automatically forwards initial and annual training through the HealthRx Respirator Fit module. Hands-on training, record-keeping, and documentation for the PAPR

will be provided by the employee's respective department. Determination of who should be in the RPP is the responsibility of the employee's direct supervisor and OMS.

The use of Positive Pressure Airline Suit (PPAS) is required in NIH BSL-4 facilities. These facilities establish their own specific requirements, separate from those described in the NIH RPP. Employees working in BSL-4 facilities receive respiratory support and training through the BSL-4 training program(s). Contact the Biosurety Manager for more details. See Appendix F-4, IRF-Frederick Supplied Air Respirator Program.

Voluntary use of a [National Institute of Occupational Safety and Health](#) (NIOSH) approved negative pressure respirator (e.g. half-face respirator) requires partial participation in the program. If the supervisor determines that voluntary use will not in itself create a hazard, the supervisor provides the employee with the written information provided in [29 CFR Part 1910.134, Appendix D, Information for Employees Using Respirators When Not Required Under Standard](#). The employee must receive training on proper respirator maintenance procedures from their respective supervisors or work groups. The DOHS, OMS must determine that voluntary use will not in itself create a health hazard and the employee must be provided with the information in [Appendix D](#) and must fill out and turn in the [NIH RPP Voluntary Use Form](#). Face coverings that don't hinder breathing do not require participation in the NIH RPP. The voluntary use of a cartridge half-face or full-face respirator requires an additional step that the employee be medically cleared by NIH Occupational Medical Service (OMS).

### **1.3 Policy Statement**

It is the policy of the NIH to provide, at no cost to the employee, respiratory protection when: the best available engineering controls fail to adequately reduce employee exposure to respiratory hazards; substitution of respiratory hazards with less hazardous elements is not feasible; modifications in hazardous operations fail to reduce exposures to below regulated or acceptable levels; or, national guidelines for minimizing health care associated infections recommend respirator use. Respiratory protection shall be provided during interim periods when engineering controls are being implemented and no other means of worker protection is available. The Respiratory Protection provided by NIH shall be equivalent to or more protective than protection described in OSHA standards 29 CFR 1910.134. Industry best practices should be applied when possible and practical, to reduce employee exposures. Practices must maintain employee exposures within regulatory compliance limits.

## **2.0 ACRONYMS AND DEFINITIONS**

### **Air-Purifying Respirator**

A respirator with an air-purifying filter, cartridge, or canister capable of removing specific air contaminants by passing ambient air through the air-purifying element.

### **Aerosol-Removing Respirators**

A respirator that provides respiratory protection against airborne particulate matter, including dust, mists, and fumes, but they do not protect against gases, vapors, or oxygen deficiency. It is a subset of an air-purifying respirator.

### **Assigned Protection Factor (APF)**

The minimum expected workplace level of respiratory protection provided by a properly functioning respirator.

### **Respirator Cartridge**

A container with a filter, sorbent medium, or combination of these items that removes specific contaminants (particulates, gases, and/or vapors) from air passed through the container.

### **Employee Exposure**

Exposure to a concentration of an airborne contaminant that would occur if the employee were not using a respirator.

### **End-Of-Service-Life Indicator (ESLI)**

A system that warns a respirator user of the approach of the end of adequate respiratory protection (i.e., a sorbent media is approaching saturation).

### **Face Covering**

In the event that NIH senior leadership authorizes or requires the use of face coverings, face coverings will be required for the wearer to be allowed to be inside NIH facilities. Specific directions on use will vary depending on the severity of the situation. Face coverings must cover the nose and mouth of the individual and the individual must keep the covering on for it to be effective. The face covering must not have an exhaust valve, as such valves do not protect surrounding personnel. Face coverings are not necessarily surgical masks or respirators. They are not appropriate substitutes for respirators (N95, half-face, full-face, or SCBA) or medical facemasks (such as surgical masks), and should not be substituted into workplaces where work-related PPE is required because they are generally not as protective. If uncertain, please contact DOHS TAB via [NIHRespirator@mail.nih.gov](mailto:NIHRespirator@mail.nih.gov).

### **Filter**

A respirator component used to remove particulates from the inspired air.

### **Fit Factor**

A quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

### **Fit Test**

A qualitative or quantitative evaluation of the air seal between the respirator and an individual's face.

### **Full-Face Respirator**

A facepiece that covers from roughly the hairline to below the chin. On average they provide the greatest protection, usually seal most reliably, and provide some eye protection.

### **Gas/Vapor-Removing Respirators**

Air purifying respirators that protect against certain gases and vapors by using various chemical cartridges (usually activated charcoal) to purify inhaled air. They are a subset of air-purifying respirators.

### **Half-Face Respirator**

A facepiece that fits over the nose and under the chin and does not protect the eyes.

**Immediately Dangerous to Life or Health (IDLH)**

Any atmosphere that poses an immediate hazard to life or poses immediate irreversible debilitating effects on health.

**Negative Pressure Respirator**

A respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

**NIOSH Approved**

A respirator that has been tested by the National Institute for Occupational Health and Safety and assigned a NIOSH approval number.

**Positive Pressure Airline Suits (PPASs)**

A biological/chemical protective suite where the air pressure inside the suit maintains positive at all times. Breathing air is supplied through a supply hose via a compressor or compressed air cylinders.

**Powered Air-Purifying Respirator (PAPR)**

An air-purifying respirator that uses a blower to force ambient air through an air-purifying cartridge or filter and into the facepiece.

**Qualitative Fit Test (QLFT)**

A pass/fail evaluation of the seal between the respirator and the individual's face that relies on the individual's ability for sensory response to detect a challenge agent (e.g., sweet taste).

**Quantitative Fit Test (QNFT)**

A pass/fail evaluation of the seal between the respirator and the individual's face that used an instrument to measure the differential between a level of a challenge agent.

**Respirator**

For the purposes of this document, a respirator is a required piece or pieces of equipment used to provide respiratory protection for a job. A respirator is PPE that is certified by NIOSH or some other reputable, nationally recognized accrediting organization or institution, which protects its user from airborne hazards. The certification must include predictable filtration capabilities. There are disposable respirators as well as reusable respirators.

**Self-Contained Breathing Apparatus (SCBA)**

A respirator that provides breathing gas from a source independent of the surrounding atmosphere instead of purifying the atmosphere. The user carries the gas tank on his/her back.

**Service Life**

The period of time a cartridge or filter provides adequate protection to the wearer.

**Single Use Respirator (SUR)**

A NIOSH approved disposable negative pressure respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium (e.g. N-95). SURs require full participation in the NIH RPP when use is required by the employer.

**Tight-Fitting Facepiece**

A respiratory facepiece that forms a complete seal with the face. It could be a half-face respirator or full-face respirator.

**User Seal Check**

A self-test conducted by a respirator user to determine if a respirator is properly seated to the face prior to its use in the workplace.

**Voluntary Use**

Use of respiratory protection by employees for comfort or other personal reasons, exclusive of occupational exposure concerns. Refer to OSHA's description on the [Voluntary Use Program](#).

**3.0 RESPONSIBILITIES****3.1 Respiratory Protection Program Manager (RPPM)**

The RPPM develops the NIH RPP's written operating procedures; remains abreast of changing regulations and recommendations concerning respirator use; and advises supervisors and workers in the selection, use, and maintenance of respirators upon request. The Chemical Exposures Program Manager is responsible for keeping the RPPM updated on employees or situations that may require RPP, based upon the CEPM's assessments (upon supervisor or employee request) in the area of chemical hazards. The supervisor for the employee in question, is responsible for the selection of appropriate respiratory protection. The RPPM shall periodically review and evaluate the effectiveness of the NIH RPP. The RPPM periodically updates the RPP FAQ on the DOHS website. The RPPM periodically holds a web conference, webcast, conference call, or similar meeting with NIH satellite sites twice a year or upon request, to ensure collaboration and support services from the RPPM are adequate.

**3.2 Safety Specialist**

Institute or Center (IC) Safety Specialists shall periodically conduct walk-through surveys in their areas of responsibility. Safety Specialists shall notify the RPPM of any potential respiratory hazard noted during a survey and shall assist the RPPM in conducting a comprehensive respiratory hazard assessment for the determination of respirator use requirements.

**3.3 Supervisor**

The supervisor shall have a comprehensive knowledge of the potential respiratory hazards and respiratory protection requirements for their areas of responsibility. Supervisors are ultimately responsible for the full disclosure of known respiratory hazards in the workplace to their employees and the RPPM. The RPPM, representatives for RPP, or RPP staff provide appropriate respiratory protection options, and the supervisor selects PPE from within those guidance options. This ensures the PPE selected provides protection as intended. Supervisors shall ensure that employees complete their interval medical clearance, attend annual fit testing, complete their training in a timely manner, and that their employees have adequate access to correctly fitting PPE.



### **3.4 Employee**

Employees shall remain informed of potential respiratory health hazards and the respiratory protection requirements for their work areas. Employees shall complete a mandatory initial medical clearance and will complete annual training and fit testing. Employees shall perform a positive/negative fit check with their respirator before each use and follow manufacturer, supervisory, and manufacturer guidelines for use, maintenance, and disposal of their respirator and its components. In the event of medical changes or facial structure change (weight gain/loss, dental procedures, etc.) that may impact the respirator seal or the ability to use an N95, the employee shall notify TAB RPP ([NIHRespirator@mail.nih.gov](mailto:NIHRespirator@mail.nih.gov)) to schedule a re-fit test.

### **3.5 Occupational Health Registered Nurse (OHRN)**

Under the direction of the Medical Director, OMS, the OHRN shall provide medical clearance for NIH RPP enrollment through the administration of an initial medical questionnaire. Only employees free of respiratory or cardiac risk factors, as determined by the questionnaire, shall be cleared for respirator use by the OHRN.

### **3.6 Occupational Medical Service Physician/Physician Assistant (OMS-P/PA)**

The OMS-P/PA establishes medical evaluations to determine an individual's health status relative to their ability to tolerate the use of a respirator as to avoid an adverse medical event. The assessments are completed on those employees who are not initially cleared by the OHRN.

### **3.7 Contractors**

NIH contractors shall have a fully implemented RPP, in accordance with or better than (RPPM and TAB Director signature concurrence needed for acceptance of alternative program; documentation) the requirements of the OSHA Respiratory Protection Standard, in place before performing work on behalf of the NIH that requires the use of respiratory protection. Contractors are to ensure that they meet *all* applicable RPP requirements (e.g. obtaining a medical clearance, fit testing, and training) through their employer. "Applicability" is determined by the DOHS Contractor Safety Program Officer and the TAB Division Director, in cases where there is disagreement or lack of clarity.

The DOHS Contractor Safety Program Officer may elect to verify the implementation of contractor Respiratory Protection Programs. However, the contractor is ultimately responsible for its adequacy, consistency, implementation, and maintenance in accordance with NIH RPP, regulatory, and contractual compliance drivers.

## **4.0 RESPIRATORY HAZARD ASSESSMENT, RESPIRATOR SELECTION, AND MEDICAL EVALUATION**

### **4.1 General**

Respiratory Protection is not the default method of control for inhalation hazards. Whenever feasible, alternative control methods shall be used to eliminate or reduce hazardous exposures. NIH guidelines for

assessing the degree of risk associated with a respiratory hazard, the potential for exposure in the workplace, and the process of selecting an appropriate respirator once a respiratory hazard assessment has been completed is described in the following sections. Supervisors and employees shall notify the RPPM of any significant changes in workplace conditions that may affect respirator use, or if engineering control methods can be used to eliminate the need for a respirator.

## **4.2 Respiratory Hazard Assessment**

The employee's supervisor or employee's workgroup (with supervisory final approval) shall conduct a comprehensive respiratory hazard assessment for any potential aerosol or airborne hazards (i.e. chemical, biological, radiological, or physical). The assessment must take into account any hazardous properties of the potential respiratory hazard, as well as the work area characteristics and job description. Oxygen deficient atmospheres, physical and chemical properties of the hazard, adverse physiological interactions and health effects, actual airborne concentrations of the contaminant generated during work activities, and relevant occupational exposure limits (OEL) shall be considered. The location, operation or process characteristics, materials used or produced during the process, the employee's duties and actions, and any abnormal situations or characteristics which may affect respirator selection shall also be considered.

## **4.3 Respirator Selection**

Appendix B, [Respirator Decision Logic](#), shows the NIH Respirator Selection Chart; Appendix C-1, Assigned Protection Factors and includes the NIOSH Assigned Protection Factors (APFs) for air purifying and powered air purifying respirators. Typically, only NIOSH approved respirators are authorized for mandatory use at the NIH. However, circumstance may arise where Emergency Use Authorizations (EUAs) are issued for other types of respirators. DOHS will determine if alternative respirators are appropriate.

If available, gas/vapor-removing respirators shall have cartridges equipped with a NIOSH approved end-of-service-life indicator (ESLI). If an ESLI is not available, the supervisor of the affected employee shall implement a cartridge change schedule based on the manufacturer's supplied data, estimated breakthrough periods (provide calculations and reasons for parameters or manufacturer suggestions), workplace-specific conditions, concentrations of contaminants in the workplace air, patterns of respirator use (i.e., whether use is intermittent or continuous throughout the workday), and environmental factors. The method utilized for determining the cartridge change schedule must be scientific in nature, quantifiable, rational, and shall be documented clearly, easily accessible, and available for review by internal and external auditors upon request. Potentially variable (even if only minutely) warning properties, such as odor, absolutely shall not be relied upon as the sole determining factor for cartridge replacement. ESLIs and cartridge change schedules will be reviewed periodically and updated as appropriate.

Aerosol-removing respirators shall be approved by NIOSH as defined under [42 CFR Part 84, Approval of Respiratory Protective Services](#). When particle size and composition are unknown, NIH employees shall only use High Efficiency Particulate Air (HEPA) filters as defined by 42 CFR Part 84.

## **4.4 Medical Evaluation**

The NIH OMS must medically clear NIH employees for mandatory respirator use *prior to* adding

individuals to the software system. The software to conduct medical evaluations, ensure staff competencies, and abide by applicable regulations for occupational medical information, is under the direction of the Medical Director, OMS. Medical clearance evaluations shall be administered confidentially and during normal working hours. Medical records are stored in a secured location with access restricted to authorized personnel only.

The OMS OHRN is responsible for determining fitness for duty for employees who require the use of a respirator. The OHRN shall administer the OSHA Medical Evaluation Questionnaire for Respirator Use, Initial Clearance (See Appendix C-2). Medical evaluation questionnaires shall be administered in a manner that ensures that employees understand the contents and have an opportunity to discuss the questionnaire and results with the OHRN. If an employee successfully meets the medical clearance requirements, the OHRN shall fill out an OMS Medical Evaluation of Functional Activities (MEFA) form. Any limitations for respirator use must be noted by the OHRN on the MEFA form.

If the OHRN fails to clear an employee, he or she shall arrange for the employee to be medically evaluated by an OMS Physician/Physician Assistant (OMS-P/PA). The medical evaluation shall include any medical tests, consultations, or diagnostic procedures that the OMS-P/PA deems necessary to make a final medical clearance determination. If the employee successfully meets the medical clearance requirements, the OMS-P/PA shall fill out the MEFA form. Any limitations for respirator use must be noted by the OMS-P/PA on the MEFA form.

If the OMS-P/PA identifies medical limitations for an employee that restrict the use of a negative pressure respirator, a PAPR shall be provided to that employee by his/her IC. Several PAPR types will be recommended by the RPPM; however, it is the IC's responsibility to purchase, maintain, and train their employees in the appropriate use of the PAPR. If the OMS-P/PA subsequently determines that the employee is fit to wear a negative pressure respirator, the IC is no longer obligated to provide a PAPR to that employee. Certain ICs may have additional protocols and options for use of the PAPR

OMS is responsible for notifying the RPPM when an employee is medically cleared. Upon notification, the RPPM shall schedule the employee for respirator training and fit testing.

OMS shall provide a medical re-evaluation for respirator users whenever:

- A. An employee reports symptoms that are relevant to his/her ability to wear a respirator.
- B. Information from the RPPM, including observations made during fit testing or program evaluation, indicates a need for an employee reevaluation.
- C. A change occurs in workplace conditions (physical work effort, protective clothing, temperature, etc.) that may result in an increase in the physiological burden placed on the employee.

## **5.0 RESPIRATOR TRAINING AND FIT TESTING**

### **5.1 Training Objectives**

Upon completion of training, employees shall be able to demonstrate a working knowledge of the potential respiratory hazards and respirator requirements for their work areas. Employees shall

demonstrate proficiency in the proper use, inspection, maintenance, and storage of a respirator. Employees shall understand the respirator's limitations and capabilities, as well as any physical or medical conditions that may limit or prevent the effective use of a respirator. Training or refresher training is an annual requirement for continued use of a respirator.

## **5.2 Scheduling**

It is the employee's responsibility to schedule a fit test with NIH after OMS has medically cleared them and they have completed the Respiratory Fit Test Training. Fit testing slots are available on a first-come-first-serve basis; confirmation reserves a position. Failure to confirm an appointment may result in the slot becoming available to others. Respirator fit testing (e.g. N-95 respirator) and training (e.g. N-95 respirators, PAPR) shall occur upon initial enrollment in the RPP and every twelve (12) months thereafter. HealthRx will provide a notification to personnel when they are due for the 12-month fit test and/or training. If personnel fail to respond to a notification after one month, they may be removed from the NIH RPP and their supervisor will be notified. This is to keep the database accurate.

More frequent training and/or fit testing will be performed, if needed, through a supervisor's request (for example, observing improper use of respiratory protection, etc.)

If an employee fails to attend a scheduled training and fit testing session, he or she may be removed from the NIH RPP enrollment listing and his or her supervisor shall be notified of the employee's deactivation. The employee will only be reactivated in the NIH RPP when he or she re-schedules and completes training and fit-testing. If an employee does not exhibit sufficient understanding and skill as described above in the use of a respirator, the employee will need to review the training materials and study until they pass the exam. All questions on the exam will be derived from information covered within the provided training materials. If the employee does not understand the questions or the material, they may consult their supervisor, the RPPM, the manufacturer's website (for specific resp. protection equipment), etc. for additional information or clarification, but not during an ongoing exam.

## **5.3 Training Syllabus**

Respirator users will be trained in basic respirator practices using audiovisual materials and by personal instruction as outlined in Appendix D-1, Half & Full Face Respirator Training Outline; Appendix D-2, Single Use Respirator Training Outline; or Appendix D-3, Powered Air-Purifying Respirator Training Outline. Examinations shall be administered at the end of each training session.

## **5.4 Respirator Fit Testing**

If an employee is late by more than 10 minutes, they forfeit their scheduled time slot.

If the employee doesn't fit the make, model, style, and size of respirator available at their workplace, the RPPM may recommend another respirator if it passes the Respirator Fit Test. If no Respirator can be found, a PAPR may be recommended instead.

With the exception of emergencies and supply shortages, respirator fit testing shall be performed for an employee who is using a respirator for the first time and annually thereafter. The fit test shall be administered using the OSHA-accepted [Quantitative Fit Test](#) (QNFT) or [Qualitative Fit Test](#) (QLFT)

protocols as determined appropriate by the RPPM.

The DOHS, TAB shall conduct a fit test whenever the employee, supervisor, or the OMS reports a change in the employee's physical condition that could affect respirator fit.

### **5.5 Quantitative Fit Testing Procedure**

This procedure is considered the gold standard and is the primary method for evaluating the seal between the individual's face and the respirators at the NIH. The QNFT measures the amount of leakage into the respirator by using an aerosol as a test agent (See Appendix E-1, Quantitative Fit Testing Protocol). The TSI PortaCount™ measures respirator fit by comparing the aerosol concentration outside a respirator to the aerosol concentration inside the respirator. The ratio of the outside aerosol concentration to that of the concentration inside the respirator determines the respirator fit factor. Half-face respirators must achieve a minimum fit factor of 100, and a minimum fit factor of 500 is required for full-face respirators. The fit factor must exceed the assigned protection factor (APF) by at least ten times in order for the fit to be deemed adequate.

### **5.6 Qualitative Fit Testing Procedure**

The RPPM may determine that a Qualitative Fit Test is necessary due to a variety of factors such as PPE availability, testing supply availability, number of personnel to be tested, concerns on pathogenic spread, etc. The QLFT is an acceptable OSHA standard method of verifying respirator fit that does not destroy the respirator being tested. The Qualitative Fit Test requires the introduction of an aerosol test agent into the area surrounding the head of negative pressure air-purifying respirator users. If the respirator user detects the presence of the test agent (i.e., odor, taste, or irritation), the respirator fit is deemed inadequate. If the user detects no odor, taste, or irritation, the respirator fit is acceptable. Saccharin and Bitrex protocols are described in Appendix E-2, Qualitative Fit Test Protocols. The NIH RPP does not utilize irritant smoke as a test agent, due to health concerns.

## **6.0 RESPIRATOR USE**

### **6.1 Facepiece Seal Leakage**

It is NIH policy to require that employees wearing mandatory respiratory protection have no hair interfering with the respirator's seal. Hair/Facial hair must not interfere with the seal of a respirator in any way during employee use of the respirator (not merely during the fit test, but also on the job). If corrective glasses, goggles, or other personal protective equipment are required, the employee will receive specific instruction by the RPPM to ensure that interference with the seal of the facepiece does not occur.

Employees shall perform a negative/positive pressure seal check prior to each use following the procedure shown in Appendix E-3, User Seal Check Procedure, Part I, Facepiece Positive and/or Negative Pressure Checks, or as recommended by the respirator manufacturer (Appendix E-3 Part II).

### **6.2 Continuing Respirator Effectiveness**

The supervisor shall periodically monitor the work area conditions, employees, employee behavior, procedural/process changes, and other relevant factors to ensure the continued effectiveness of a selected

respirator. Supervisors shall ensure that employees leave the respirator use area whenever:

- A. Employees wash their face and respirator facepiece as necessary to prevent eye or skin irritation associated with respirator use, if applicable.
- B. Employees detect vapor or gas, changes in breathing resistance, or leakage of the facepiece.
- C. Employees replace a respirator filter or cartridge element that is not functioning properly.
- D. Employee's facial hair seems likely to interfere with the seal of the facepiece.
- E. There is some other factor that seems likely to cause respirator failure/malfunction.

### **6.3 Issuance of Respirators**

Respirators shall be assigned to individual employees for their exclusive use and shall only be issued to NIH employees who have received the appropriate respirator training, fit testing, and respiratory medical clearance. Except for PAPRs, respirators shall not be shared with other employees. Employees shall not be issued respirators without receiving training and/or fit testing. On the job training, on its own, is insufficient; there are online training and an exam for determining proficiency with the information.

### **6.4 Identification of Filters and Cartridges**

NIH shall only provide NIOSH approved filters and cartridges. The RPPM, supervisors, and employees shall ensure that the labels are not removed, obscured, or defaced. The DOHS maintains a limited supply of respirators and cartridges/filters for initial issuance and emergency use only. It is the responsibility of each IC to supply appropriate replacement cartridges/filters to their employees.

### **6.5 Glasses**

Glasses may be worn with half face respirators, only if the glasses do not interfere with the face-to-facepiece seal of the respirator. If an employee must wear a full-face respirator and also requires corrective lenses, the employee may need eyepiece inserts for the full-face respirator. The DOHS will provide guidance on obtaining eyepiece inserts. Corrective glasses with temple bars are not allowed with full facepiece respirators.

Contact lenses are permitted with respirators.

## **7.0 RESPIRATORY MAINTENANCE AND CARE**

### **7.1 Respirator Cleaning and Disinfection**

The NIH provides employees with new respirators. Employees shall clean and disinfect their respirators using procedures described in Appendix F-1, Respirator Cleaning Procedures, or by similar means of equivalent effectiveness. Respirators shall be cleaned and disinfected:

- A. As often as necessary to be maintained in a sanitary condition for respirators that have been issued for the exclusive use of an employee.
- B. After each use for respirators intended for emergency use.
- C. After each use for respirators intended for fit testing and training use.

## **7.2 Respirator Storage**

Respirators must be in suitable containers and placed in locations that protect them from contaminants, direct sunlight, extreme temperatures, excessive moisture, or damaging substances. They must be stored in such a way that the facepiece and other respirator parts are not distorted. Respirators shall not be stored in areas, such as tool boxes or in lockers, without being placed in a secondary container to prevent facepiece distortion. Store respirators per the manufacturer's directions and email/contact the manufacturer if uncertain. At a minimum, keep a copy of the contact and the manufacturer's response (the date, a point of contact on both sides, an exact question from your group and exact response/quote from the manufacturer). If possible, keep the original response document sent by the manufacturer, especially if the storage method recommended deviates significantly from common practice or is unusual. If the manufacturer has no opinion on the matter or is unwilling to put their comments into writing, ask DOHS for the RPPM recommendation and implement the more protective/conservative option.

## **7.3 Elastomeric, Half Face, or Full Face Reusable Respirator Inspection**

Employees shall inspect respirators prior to each use and during cleaning. If the respirator it is found to be defective during an inspection, it shall be discarded and replaced at no cost to the employee. Respirator inspection items should include but are not limited to:

- A. Tightness of connections and contact points.
- B. Condition of facepiece, straps, and all other parts and filter and cartridge elements.
- C. Condition of the exhalation and inhalation valves. (If the sides of the exhalation valve do not seal, even slightly, it must be replaced with a new valve).
- D. Pliability and flexibility of rubber parts. Deteriorated rubber parts must be replaced. Unused rubber parts should be worked, stretched and manipulated with a massaging action, according to manufacturer's specifications.
- E. If using a full-face respirator, the condition of lens should be checked. The lens must be tight in the facepiece. A scratched or damaged lens must be replaced.

The supervisor should conduct routine inspections to assure that respirators are properly selected, fitted, used, cleaned, maintained, and stored. For a detailed respirator checklist, refer to Appendix F-2, Respirator Inspection Checklist.

## **7.4 Respirator Repair**

Employees shall promptly remove damaged or defective respirators, and discard them or have them repaired. Defective respirators not yet discarded must be clearly marked as defective immediately after discovery of the defect, and should still be discarded as soon as feasible to prevent accidental use.

Repairs shall only be made according to the manufacturers' recommendations and specifications, and only with NIOSH approved components, by qualified individuals. Repaired respirators must pass testing before being put back into service. Documentation of repaired respirators and also of the testing of such respirators must be maintained by the IC providing the respirator. Also, a copy of the repairs done to a respirator must follow the respirator itself. Respirators on loan to another IC, for example, should come with a record of repairs from the IC that purchased and maintains them.

## **8.0 PROGRAM EVALUATION**

The RPPM shall annually review and evaluate the effectiveness of the NIH RPP. The RPPM shall regularly consult with NIH respirator users to assess employees' views on program effectiveness.

## **9.0 RECORD KEEPING**

Records are maintained as described:

### **9.1 Medical Evaluation**

OMS maintains the NIH employee medical records for a period of thirty (30) years. Currently, this is done electronically. These records are available upon request by the employee, in accordance with [29 CFR Part 1910.1020](#), "[Access to employee exposure and medical records](#)".

### **9.2 Fit Testing**

DOHS maintains "passed" fit testing records. Failed tests result in the employee's status being incomplete, and reminder emails are auto-generated until the employee completes their fit testing. Records are kept for one year, as new records are saved annually.

### **9.3 Respiratory Protection Program**

A written copy of the current NIH RPP shall be maintained by the DOHS, TAB.

## **10.0 EMERGENCIES**

In the event of an emergency, discuss the appropriate use of respirators with your supervisor. Your supervisor will provide further guidance as information becomes available.

## **11.0 INTERNAL REVIEW**

The internal review is to serve as a check-list of things that the Program Manager should consider, when updating this program document and its associated program. The Program Manager can add or remove items from the list as deemed appropriate, but the reasoning to remove an item must be documented.

1. Are all the sections in a coherent, easy-to-follow format?
2. Is the document flow acceptable?
3. Are there terms or definitions that need to be added or further clarified?
4. Is the OEL up to date with current regulatory or industry-best-practices?
5. Have all of the comments gathered throughout the year been addressed in the comment resolution matrix?
6. Have all of the TAB director's comments been thoroughly addressed to the satisfaction of both parties?
7. Has at least one CIH not directly responsible for the program document reviewed this document for technical strength, and have those comments been resolved or added?



8. Have comments from clients, questions, etc. been addressed by this document?
9. If there is a template for TAB programs, does this follow it fairly closely?



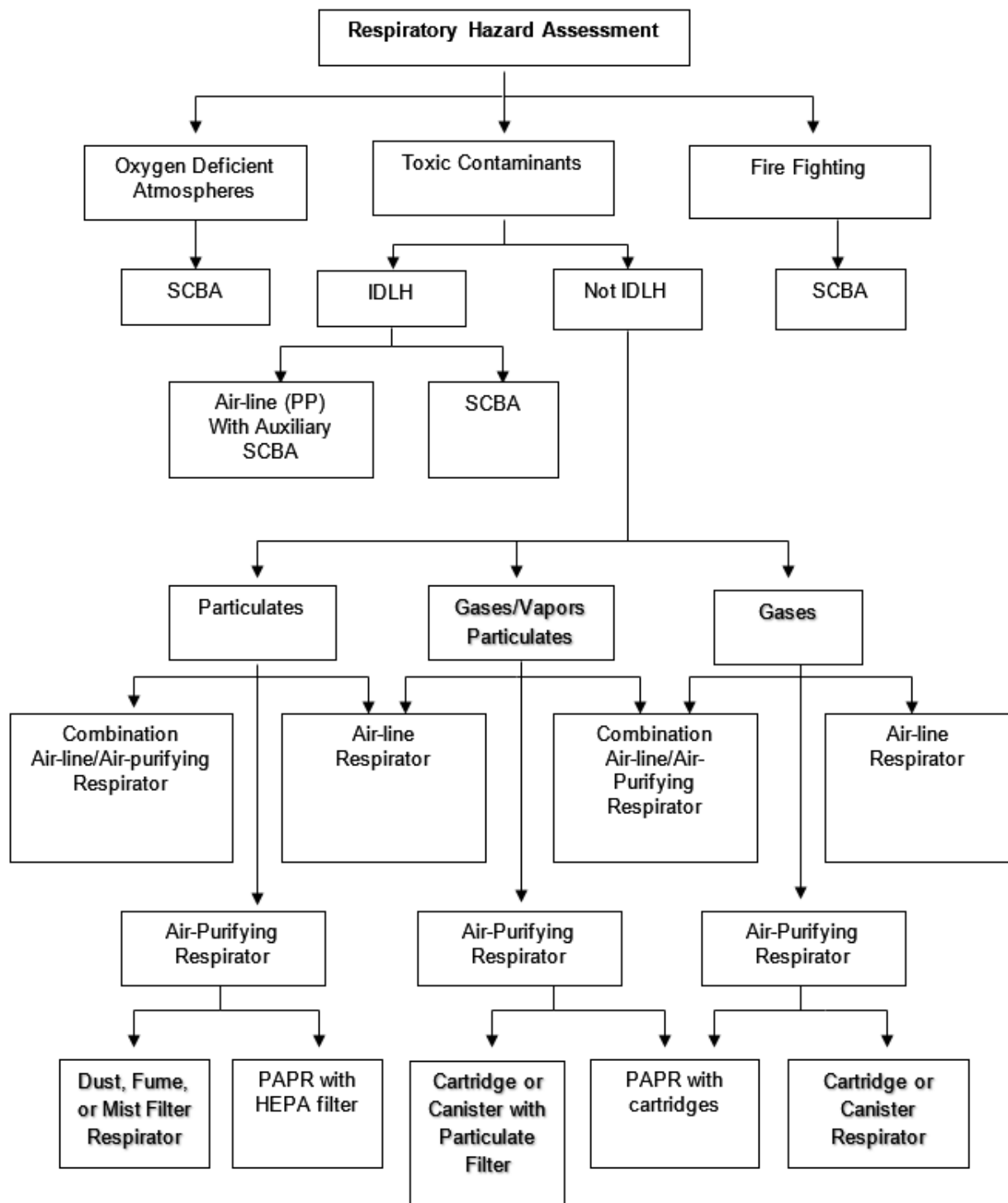
## APPENDIX A: VOLUNTARY RESPIRATOR USE PROGRAM

The purpose of the NIH Voluntary Respirator Use Program is to guide users through this process.

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. In order to use a respirator, you will need to click on the following link: [NIH Voluntary Respirator Use Form](#), follow the directions, and fill out the form. You will need a PIV card for the system to record your progress correctly.

Please note that your supervisor is responsible for conducting and documenting a risk assessment of your work to ensure that wearing a respirator does not create additional risks or hazards. Your supervisor can contact the **NIH Respiratory Protection Program Manager at (301) 496-2960** or your [IC Safety Specialist](#) for assistance. Please see our [website](#) for more information.

**APPENDIX B: RESPIRATOR DECISION LOGIC**



## APPENDIX C: ASSIGNED PROTECTION FACTORS

Table 1. -- Assigned Protection Factors <sup>5</sup>

Type of respirator <sup>1, 2</sup>	Quarter mask	Half mask	Full facepiece	Helmet/hood	Loose-fitting facepiece
1. Air-Purifying Respirator	5	<sup>3</sup> 10	50	.....	.....
2. Powered Air-Purifying Respirator (PAPR)	.....	50	1,000	<sup>4</sup> 25/1,000	25
3. Supplied-Air Respirator (SAR) or Airline Respirator					
• Demand mode	.....	10	50	.....	.....
• Continuous flow mode	.....	50	1,000	<sup>4</sup> 25/1,000	25
• Pressure-demand or other positive-pressure mode	.....	50	1,000	.....	.....
4. Self-Contained Breathing Apparatus (SCBA)					
• Demand mode	.....	10	50	50	.....
• Pressure-demand or other positive-pressure mode (e.g., open/closed circuit)	.....	.....	10,000	10,000	.....

### Notes:

- <sup>1</sup> Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required respirator use is independent of concentration.
- <sup>2</sup> The assigned protection factors in Table 1 are only effective when the employer implements a continuing, effective respirator program as required by [29 CFR Part 1910.134](#), including training, fit testing, maintenance, and use requirements.
- <sup>3</sup> This APF category includes filtering facepieces, and half masks with elastomeric facepieces.
- <sup>4</sup> The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.
- <sup>5</sup> These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(ii).

## **APPENDIX D: USER SEAL CHECK PROCEDURE**

### **PART I: FACEPIECE POSITIVE AND/OR NEGATIVE PRESSURE CHECKS**

All employees using a tight-fitting respirator shall perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. User seal checks are not substitutes for qualitative or quantitative fit test.

#### **A. Positive Pressure Seal Check**

- (1) Close off the exhalation valve.
- (2) Exhale gently into the Facepiece.
- (3) If a slight positive pressure is built up with no apparent outward leakage around the seal, the facepiece-to-face seal is satisfactory.

#### **B. Negative Pressure Seal Check**

- (1) Close off the inlet opening of the cartridge by covering with the palm of the hand(s) replacing the filter seal(s).
- (2) Inhale gently so that the facepiece collapses slightly and hold breath for 10 seconds.
- (3) If the facepiece remains slightly collapsed and no inward leakage occurs, the facepiece-to-face seal is satisfactory.

### **PART II: MANUFACTURER'S RECOMMENDED USER SEAL CHECK PROCEDURES**

The manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure check procedures if the manufacturer's procedures are equally effective.

## **APPENDIX E: MEDICAL EVALUATION**

### OSHA Medical Evaluation: Occupational Medical Services

Dear Employee, please complete the following:

- Read & acknowledge the Privacy Act notice.
- Establish an account in the patient portal using your personal cell phone and email account.
- Sign up to get tested.

Phone: (301) 496-4411

Website:

[https://www.ors.od.nih.gov/sr/dohs/HealthAndWellness/OccupationalMedical/Pages/oms\\_main.aspx](https://www.ors.od.nih.gov/sr/dohs/HealthAndWellness/OccupationalMedical/Pages/oms_main.aspx)

**APPENDIX F: FLOWCHART OF RPP PROCESS**

