DRAFT RECLAMATION SAFETY AND HEALTH STANDARDS RELEASE
Comments on this draft release must be submitted to ssummerhays@usbr.gov by 1/20/2020.

Background and Purpose of the Following Draft Reclamation Safety and Health Standards (RSHS)

The RSHS are being updated by the Bureau of Reclamation Safety and Occupational Health Office to reflect new guidance from Reclamation, the Department of the Interior, and the Occupational Safety and Health Administration. This public release is intended to provide the public an opportunity to comment on each updated section in draft form. This process will enhance transparency and eliminate potential confusion about Reclamation’s safety standards.

The RSHS are incorporated into the Reclamation Manual through SAF 01-01, Occupational Safety and Health Directive – General. The Reclamation Manual is used to clarify program responsibility and authority and to document Reclamation-wide methods of doing business. All requirements in the Reclamation Manual are mandatory for Reclamation employees.

See the following pages for the draft RSHS.
Section 32

Respiratory Protection Program

32.1 Scope

This section establishes minimum requirements for a Reclamation respiratory protection program (RPP) to ensure respiratory safety and occupational health hazards are appropriately addressed. The RPP applies to all employees and contractors working at or visiting facilities that are exposed to airborne contaminants that are anticipated to meet or exceed 50 percent of the Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL) or American Conference of Government Industrial Hygienists (ACGIH) threshold limit value (TLV).

32.2 General Requirements

32.2.1 Control Methods

When a suspected respiratory hazard is reported to safety professionals or supervisors, any feasible engineering and/or administrative controls to reduce the airborne hazard must be employed first to reduce employee exposure. If these control methods are not feasible, then respiratory protection must be used.

32.2.2 Job Hazard Analysis (JHA)

A JHA must be completed for all tasks that require the use of respiratory protection and must address at a minimum the perceived respiratory hazard, what type of respirator is required, and appropriate engineering controls.

32.2.3 Unknown Contamination Levels

Atmospheres in which the air contaminants have not been measured or estimated on the basis of supporting studies shall be considered immediately dangerous to life or health (IDLH).

32.2.4 Written Program

Respiratory protective equipment shall not be used until a written program that meets the requirements of OSHA 29 CFR 1910.134 has been developed and implemented as outlined in paragraph 32.6.1.

32.3 Responsibilities

32.3.1 Area Office Manager

32.3.1.1 Shall ensure all affected employees and outside contractors are trained on and comply with this program.
32.3.1.2 Shall select a Program Coordinator (PC) to implement the RPP.

32.3.2 **Regional/Area Office Program Coordinator**

32.3.2.1 Shall develop and maintain a written RPP for their site(s).

32.3.2.2 Shall work in coordination with the Regional Industrial Hygienist (IH) to identify and evaluate the respiratory hazards for their site(s), including identifying the contaminants’ chemical state and form and potential exposure.

32.3.2.3 In coordination with the appropriate supervisor(s), shall ensure that training and fit testing is conducted annually for all participants in the RPP.

32.3.2.4 Shall select appropriate respirators for affected participants’ use according to the respiratory hazards, environmental factors, and user activities that affect respiratory performance and reliability.

32.3.2.5 In coordination with the appropriate supervisor(s), shall ensure that only National Institute for Occupational Safety and Health (NIOSH)–certified respirators are selected and provided to affected participants and that they are used in compliance with the conditions of the respirator’s certification.

32.3.2.6 Shall inspect or designate an individual to inspect all respirators maintained for use in emergency situations at least monthly and in accordance with the manufacturer’s recommendations. Emergency escape-only respirators must be checked before each use when they are being carried into the work environment.

32.3.2.7 In coordination with the appropriate supervisor(s), shall schedule employee respirator medical evaluations and provide the Respirator Medical Evaluation Questionnaire to the employee with directions on how to deliver or send it to the health care professional that will review it for their medical evaluation (see OSHA 29 CFR 1910.134, Appendix C).

32.3.2.8 In coordination with the appropriate supervisor(s), shall arrange a follow-up medical examination for any employee whose initial medical examination shows the need for one. Note that a follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the health care professional deems necessary to make a final determination.

32.3.2.9 Shall conduct or arrange for the Regional IH to conduct respirator fit tests and respiratory protection training.

32.3.2.10 Shall coordinate exposure monitoring as required by a workplace assessment and/or Federal/State OSHA regulatory requirements.
32.3.2.11 In coordination with the appropriate supervisor(s), shall evaluate the workplace annually to ensure the effective implementation of the RPP.

32.3.3 First-Line Supervisors

32.3.3.1 In coordination with the Program Coordinator (PC), shall ensure their affected employees attend scheduled medical evaluations, fit testing, and training.

32.3.3.2 Shall notify the PC when a respiratory hazard is discovered or if normal atmospheric levels increase and create a respiratory hazard in their responsible work area(s).

32.3.3.3 Shall ensure, within their area(s) of responsibility, that all respiratory hazard engineering controls are working properly and that malfunctioning controls are either reported and repaired immediately or replaced by other controls that offer the same protection.

32.3.3.4 Shall ensure all JHAs in their area(s) of responsibility identify potential respiratory hazards and the appropriate controls for those hazards.

32.3.3.5 Shall ensure that the PC is included in the review for all JHAs involving respiratory hazards in their area(s) of responsibility.

32.3.3.6 Shall ensure employees within their area(s) of responsibility participate in workplace exposure/task assessments that may include wearing exposure monitoring equipment.

32.3.4 People Doing the Work

32.3.4.1 Shall notify their supervisor or team lead whenever a respiratory hazard is discovered or increases above normal atmospheric levels.

32.3.4.2 Shall attend scheduled medical evaluations and examinations, initial and annual fit testing, and training.

32.3.4.3 Shall maintain and store their respirator in a clean and sanitary manner and report any damage/defects to the supervisor for replacement.

32.3.4.4 Shall report any health concerns or any suggestions regarding the RPP to their supervisor and/or PC.

32.3.4.5 Shall not enter atmospheres containing contaminants that their respirator and/or cartridge is not designed to protect them against.

32.3.4.6 Shall store their respirator in a container or other device that will protect it from adverse conditions or air contaminants that would compromise its integrity.

32.3.4.7 Shall be clean-shaven before they put on their respirator so that facial hair does not interfere with the seal of the respirator’s facepiece.
32.3.5 Regional Safety Manager
32.3.5.1 Shall appoint a Regional Program Coordinator (RPC) as deemed necessary for their region.

32.3.5.2 Shall assist in developing and establishing the RPP when necessary and shall perform periodic spot checks to ensure compliance with this section.

32.3.6 Project Manager/Acquisitions
32.3.6.1 In coordination with the RPC/PC, shall ensure only NIOSH-certified respirators are purchased.

32.3.7 Regional Industrial Hygienist
32.3.7.1 Shall review and evaluate the RPP of each area office in their region to determine the program’s effectiveness at least biennially.

32.3.7.2 Shall provide technical assistance that includes but is not limited to workplace evaluations, exposure monitoring, respirator selection, respirator fit testing, and training.

32.3.8 Human Resources
32.3.8.1 Shall ensure that pre-employment physicals include a medical evaluation when required by specific physical job requirements according to paragraph 32.6.3.

32.3.8.2 Shall maintain all respirator medical evaluation results in the employee’s medical folder for 30 years, or for at least 20 years after termination of employment, whichever is longer.

32.4 Training Requirements
32.4.1 Initial Training
Employees that are required to wear respiratory protection shall be medically qualified per paragraph 32.6.3, properly trained, and fit tested per paragraph 32.6.4 before wearing any protective respiratory equipment. At a minimum, training shall include the following topics:

- Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator
- The limitations and capabilities of the respirator
- How to use the respirator effectively in emergency situations, including situations where the respirator malfunctions
- How to inspect, put on and remove, use, and check the seals of the respirator
- The procedures for maintenance and storage of the respirator
- How to recognize medical signs and symptoms that may limit or prevent the effective use of the respirator
- The requirements outlined in this RSHS section
32.4.2 Refresher Training  
Annual refresher training and fit testing is required for all employees identified in the respirator program. Additional training is required when there are changes in the workplace or in the type of respiratory protection.

32.4.3 Proficiency  
Respirator users must know what type of respirator cartridge is acceptable for the airborne contaminants they could potentially be exposed to, what type of respirator is required for the job task, and what types of controls need to be implemented to reduce the airborne contaminant level for their job tasks.

32.4.4 Lack of Proficiency  
Retraining is necessary when the respirator user demonstrates a lack of knowledge of correct respirator use, improper cartridge selection, or the program elements in this section.

32.4.5 Recordkeeping  
All training records shall be kept in the agency tracking system.

32.5 Hazard Identification, Assessment, and Safety Measures  

32.5.1 Hazard Identification and Assessment  
Work areas and activities must be assessed as outlined in paragraph 32.3.2.2 to determine if real or potential respiratory hazards exists and to provide the appropriate controls to reduce employee exposure.

32.5.2 Safety Measures  
Respirator users shall be aware of and abide by the following safety measures:

- Never use a filtering facepiece or an APR in an oxygen-deficient atmosphere.
- Never enter IDLH atmospheres without the proper equipment or training.
- Use an APR only when the hazardous airborne contaminants have detectable sensory warning properties, such as smell, irritation, or taste.
- Ensure the cartridge/cannister is appropriate for the airborne contaminant.
- Maintain and clean all respiratory equipment according to the manufacturer’s instructions.
- Notify the PC and supervisor of any changes in the workplace or your physical condition that would make the current respiratory protection inadequate.
- Attend annual training, complete annual fit testing, and complete all medical evaluations required by the RPP and the PLHCP.
- Always perform a fit check when putting on the respirator.
32.6 Safe Practices

32.6.1 Written Program

A written program must be implemented whenever respirators are required by the employer and must be updated as needed when changes in workplace conditions affect respirator use. The written program shall include the following elements:

- Procedures for selecting respirators
- Requirements that employees who use respirators receive medical evaluations
- Procedures for fit testing to ensure tight-fitting respirators
- Procedures for cleaning, storing, and maintaining respirators
- Procedures for proper routine and emergency use of respirators
- Procedures to ensure breathing air for atmosphere-supplying respirators is of adequate quality, quantity, and flow
- User training
- Procedures to evaluate the effectiveness of the respiratory program

32.6.2 RPP Evaluation

Evaluations shall be conducted annually to review the implementation of the elements of the RPP. At a minimum, workplace observations, document review, and consultation with workers shall be used to evaluate the RPP. Any findings must be entered into the Inspection Abatement System (IAS) for tracking corrective actions.

32.6.3 Medical Evaluation

Before using a respirator, employees must be medically evaluated by a physician or other licensed health care professional (PLHCP) using the questionnaire in Appendix C of OSHA 29 CFR 1910.134 to determine the employee’s ability to wear a respirator. The following information shall be provided to the PLHCP before the evaluation:

- Type and weight of respirators to be used
- Duration and frequency of use
- Expected physical effort during use
- Expected use of additional personal protective equipment
- Expected temperature and humidity to be encountered
- Anticipated workplace hazards and potential exposures

32.6.3.1 PLHCP-Provided Information. The PLHCP must provide the following information about the employee’s ability to use a respirator:

- Whether the worker is medically able to use a respirator
- Any limitations related to an employee’s medical condition or the workplace where the respirator will be used
- Whether there is a need for a follow-up medical evaluation
- Any recommendations that the PLHCP has provided to the employee
32.6.3.2 Additional PLHCP Determination of Respirator Use. If the PLHCP finds a medical condition that may place the employee's health at increased risk if a negative pressure respirator is used, then the employer shall provide a powered air purifying respirator (PAPR) if the medical evaluation finds that the employee can use one. If a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then the employer is no longer required to provide a PAPR.

32.6.3.3 Additional Medical Evaluations Not Specified by the PLHCP. An additional employee medical evaluation or consultation must be provided in the following circumstances:

- An employee using a respirator requires an explanation or consultation regarding the evaluation results
- An employee using a respirator reports medical signs or symptoms related to their ability to use a respirator
- A supervisor or program coordinator determines a need for an additional evaluation
- Workplace conditions or expectations change and substantially increase the worker’s physiological burden

32.6.4 Fit Testing

Before first use and annually thereafter, employees that use a respirator shall be fit tested with the type, size, and model of the respirator that they will use for their job tasks. Fit testing shall be conducted using an OSHA-accepted qualitative fit test (QLFT) or quantitative fit test (QNFT) protocol according to the requirements in the following paragraphs. The OSHA-accepted QLFT and QNFT protocols and procedures are contained in Appendix A of OSHA 29 CFR 1910.134.

32.6.4.1 Qualitative Fit Testing. QLFT may be used to fit test negative pressure air-purifying respirators if they will be used only in atmospheres less than ten times the PEL. QLFT protocols are listed in 29 CFR 1910.134, Appendix A to identify respirators that achieve a fit factor of 100.

32.6.4.2 Quantitative Fit Testing. QNFT shall be used to fit test all respirators that will be used in atmospheres equal to or greater than ten times the PEL. When QNFT is used, all full-facepiece respirators shall meet or exceed a fit factor of 500, and half-mask respirators shall meet or exceed a fit factor of 100.

32.6.4.3 Tight-Fitting Positive Pressure Atmosphere-Supplying Respirators and Powered Air Purifying Respirators. Fit testing for these types of respirators can be done using either a qualitative or quantitative protocol in the negative pressure mode regardless of whether the respirator is used in the negative or positive pressure mode.

32.6.4.4 Retesting. Fit testing is required annually or whenever the following occurs:
32.6.5 Respirator Selection, Use, and Maintenance

32.6.5.1 Selection. Respirators shall be selected and provided according to the worksite-specific respiratory hazard(s) that an employee is potentially exposed to and any user or environmental factors that affect respirator performance and reliability. Respirator selection must be based on assigned protection factors (APFs) that meet or exceed the required level of protection.

32.6.5.2 Air Purifying Respirator (APR). An APR with an End of Service Life Indicator (ESLI) cartridge/cannister will be selected, if possible. Respirators not using ESLI cartridges/cannisters must develop an objective change-out schedule and/or follow the manufacturer’s recommendations. The following are examples of filters/cartridges that may be used with APRs:

- Particulate filters. These filters capture dusts, mists, and fumes, but they do not protect against gases and vapors. Particulate filters must be certified according to 42 CFR 84, Respiratory Protective Devices.
- Gas and vapor cartridges. These cartridges are typically used when only hazardous gases and vapors are present in the air, because they do not protect against particulates.
- Combination cartridges. These cartridges are normally used in atmospheres that contain hazards of particulates, gases, and vapors.

32.6.5.2.1 Change-Out Guidance for a Vapor Cartridge/Cannister. One tool that can be used to estimate organic vapor cartridge life is the Rule of Thumb from the AIHA publication The Occupational Environment — Its Evaluation, Control and Management. This method is only a guide and not meant to be the only method for determining service life. The Rule of Thumb states the following:

- If the concentration of the chemical is less than 200 parts per million (ppm) and the chemical's boiling point is greater than 70°C, you can expect a service life of eight hours at a normal work rate.
- Service life is inversely proportional to work rate.
- Reducing concentrations by a factor of 10 will increase the service life by a factor of 5.
- Humidity above 85 percent will reduce service life by 50 percent.

32.6.5.3 Change-Out Requirements for a Filtering Facepiece and a Cartridge/Cannister. For filtering facepieces and cartridges/cannisters, use the following change-out requirements and/or the manufacturer’s recommendations:

- Change when the breathing resistance noticeably increases, causing discomfort to the user.
• Change when the filter is damaged and is no longer protective.
• Change when the filter becomes soiled and is no longer clean or sanitary.

32.6.5.4 Atmospheric Supplied Air Respirator (SAR). The following types of SARs are typically used:
• Air-Supplied (Airline). This type of SAR delivers clean, breathable air from an uncontaminated source for long periods of time and is normally used for extended work times in non-IDLH atmospheres.
• Combination. This type of SAR has an auxiliary self-contained air supply that can be used if the primary supply fails.
• Self-Contained Breathing Apparatus (SCBA). This type of SAR consists of a wearable clean air supply pack and is normally used when there is a short time to enter and escape from a space with atmospheres that are or may be IDLH.

32.6.5.4.1 Breathing Air Quality and Use. Compressed breathing air shall meet at least the requirements for Grade D breathing air described in American National Standards Institute (ANSI)/Compressed Gas Association (CGA) G-7.1-2018, Commodity Specification for Air:
• Oxygen content of 19.5%–23.5%
• Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less
• Carbon monoxide (CO) content of 10 ppm or less
• Carbon dioxide (CO₂) content of 1000 ppm or less
• No noticeable odor

32.6.5.4.2 Cylinders for Breathing Air. Cylinders used to supply breathing air to respirators must meet the following requirements:
• The cylinder shall be tested and maintained as prescribed in the Department of Transportation 49 CFR 180, Continuing Qualification and Maintenance of Packagings.
• The cylinder shall have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air.
• The moisture content in the cylinder must not exceed a dew point of −50°F at 1 atmosphere pressure.
• The cylinder must have been hydrostatically tested and maintained according to 49 CFR 173 and 49 CFR 178 and must have been marked according to 42 CFR 84.

32.6.5.4.3 Compressor Requirements for Supplied Breathing Air.
Compressors used to supply breathing air shall be constructed and situated to meet the following requirements:
• Ensure contaminated air cannot enter the air-supply system.
• Minimize moisture content so that the dew point at 1 atmosphere pressure is 10°F (5.56°C) below the ambient temperature.
• Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters shall be maintained and replaced or refurbished following the manufacturer’s instructions.
• Attach a tag showing the date of the most recent change and signed by the person authorized by the RPC/PC to perform the change.
• For compressors that are not oil-lubricated, ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.
• For oil-lubricated compressors, use a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If using only high-temperature alarms, monitor the air supply at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.
• Prevent the use of couplings, or make them incompatible so they cannot attach to non-respirable worksite air or other gas systems.
• Ensure that compressors, hoses, vortex heaters/coolers, connectors, filters, and valves are stored properly to prevent contamination with dusts, mists, vapors, fumes, toxic gases, heat, and intense light from welding operations.

### 32.6.6 Respirator Types and Entries into an IDLH Atmosphere

The atmosphere will be considered IDLH when any of the following conditions apply:

- A JHA has not been completed
- The contaminant concentration has not been measured or estimated with confidence
- The atmospheric contaminant exceeds an established IDLH concentration
- The atmosphere is oxygen deficient

For oxygen-deficient atmospheres, if it can be demonstrated that under all foreseeable conditions the oxygen concentration can be maintained within the ranges specified in OSHA 29 CFR 1910.134, Table II, “Assigned Protection Factors,” then any atmosphere-supplying respirator may be used.

#### 32.6.6.1 Types of Respirators for IDLH Conditions

Either a full-face pressure demand SCBA certified by NIOSH with a minimum service life of 30 minutes or a combination full-face pressure demand SAR with auxiliary self-contained air supply shall be used in IDLH situations.

#### 32.6.6.2 Requirements for Entries into an IDLH Environment

Any entries into an IDLH environment shall adhere to the following requirements:

- One or more employees shall be located outside the IDLH atmosphere and shall be trained and equipped to provide effective emergency rescue.
- Voice or visual communication shall be maintained between the employee in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere.
- The RPC and/or PC shall be notified before any trained employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue. The RPC and/or PC shall also provide any necessary assistance.
- Employees located outside the IDLH atmosphere shall be equipped with either (1) pressure demand or other positive pressure SCBAs or (2) pressure demand or other positive pressure SARs with auxiliary SCBA.
- Employees located outside the IDLH atmosphere shall also be equipped with appropriate rescue equipment that can rescue the employees who enter the IDLH atmosphere.

### 32.6.7 Respiratory Hazard Evaluation

The work site evaluation shall include, at a minimum,
• identification of the respiratory hazard;
• a reasonable estimate or measurement of employee exposures;
• the exposure limit as dictated by the OSHA PEL or ACGIH TLV;
• the hazard ratio (airborne concentration to exposure limit);
• the chemical and physical form of the hazard;
• IDLH or unknown atmospheres;
• eye irritation; and
• skin absorption.

32.6.8 Respirator User and Environmental Factors Evaluation

The evaluation of user and environmental factors shall include, at a minimum,
• work activities and stress (heavy, medium, light);
• mobility requirement of the employee;
• configuration and size of the workspace;
• equipment within the workspace;
• workspace temperature;
• workspace humidity; and
• employee communication methods.

32.6.9 Respirator Use

Respirator users wearing a tight-fitting facepiece shall not wear their respirators under the following conditions:
• When facial hair comes between the sealing surface of the facepiece and the face or interferes with valve function.
• When any condition interferes with the seal of the facepiece to the face or with valve function.
• When corrective glasses or goggles or other personal protective equipment interferes with the seal of the facepiece to the face.

32.6.10 Respirator Maintenance, Care, and Inspection

32.6.10.1 Respirator Cleaning. Workers who routinely use respirators shall follow these requirements:
• Ensure that respirators are cleaned and disinfected as often as necessary to be maintained in a sanitary condition.
• Ensure that respirators for emergency use are cleaned and disinfected after each use.
• Ensure that respirators used in fit testing and training are cleaned and disinfected after each use.
• Follow the manufacturer’s instructions and the procedure outlined in OSHA 29 CFR 1910.134, Appendix B-2, “Respirator Cleaning Procedures (Mandatory),” by using alcohol wipes, or a PPE cleaner/disinfectant spray as required, to maintain a clean and sanitary respirator.

32.6.10.2 Respirator Inspection. Employees who routinely use respirators shall inspect their respirator before each use and during cleaning. The inspection shall include checks of
• filtering parts, for pliability and deterioration;
• respirator function and tightness of connections; and
• the condition of the various parts, including but not limited to the facepiece, head straps, valves, connecting tube, and cartridges, canisters, or filters.
32.6.10.3 Respirator Repairs. Respirators that fail inspection or are found to be defective shall be removed from service. These respirators shall be discarded, repaired, or adjusted in accordance with the manufacturer’s recommendations and specification for the type and extent of repairs performed. Only the respirator manufacturer’s NIOSH-approved parts shall be used in repairs.

32.6.11 Voluntary Use of Respirators

When an employee requests to voluntarily use a respirator, the following conditions must be met:

- There is not an atmospheric hazard that would require respiratory protection.
- The use of the respirator will not in itself create a hazard (i.e., the respirator is clean and sanitary and will not interfere with the worker’s ability to work safely).
- Respirator use has been determined not to be required by the PC or by a specific OSHA regulation.

32.6.11.1 Voluntary Use Requirements for a Filtering Facepiece. Employees may voluntarily use filtering facepieces (also known as dust masks) for protection from nuisance dusts, mists, fumes, smoke, pollen, and other particulates when it has been documented by the PC that no respiratory hazard exists and when the employees has been trained according to paragraph 32.6.11.1.1. Before using the filtering facepiece, the worker must submit a written voluntary use request to their supervisor and the PC along with a JHA that assesses any perceived hazard(s), considers whether it is possible to introduce hazards by wearing the filtering facepiece, and indicates that the use is voluntary.

32.6.11.1.1 TRAINING. Basic training on respirators in OSHA 29 CFR 1910.134 shall be provided to all voluntary users of a filtering facepiece and documented in the agency system of tracking training.

32.6.11.1.2 FIT TESTING AND MEDICAL EVALUATION. Filtering facepieces that meet the requirements in paragraphs 32.6.11.1 and 32.6.11.1.1 and that are used voluntarily do not require fit testing and medical evaluation.

32.6.11.2 Voluntary Use Requirements for Respirators Other Than a Filtering Facepiece. Before using the respirator, the worker must submit a written voluntary use request to their supervisor along with a JHA that assesses any perceived hazard(s), considers whether it is possible to introduce hazards by wearing the respirator, and indicates that the use is voluntary. The supervisor/PC shall then

- determine that the respirator use will not in itself create a hazard;
- provide employees with the information contained in OSHA 29 CFR 1910.134, Appendix D;
• ensure that the employee is medically qualified to wear respirators;
• ensure that the respirators are properly cleaned, stored, and maintained;
• ensure the employee receives and passes a medical evaluation as required in paragraph 32.6.3;
• ensure the employee completes and passes a fit test on the type and model of the respirator requested for voluntary use as required in paragraph 32.6.4;
• ensure the employee is trained in the program elements of the RPP and
document medical evaluations, fit testing, and training in the agency system of record.

### 32.7 Definitions

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

**Assigned protection factor**
The workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuous, effective respiratory protection program as established by this section.

**Atmosphere-supplying respirator**
A respirator with a source of breathing air independent of the ambient atmosphere; includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

**Cartridge/canister**
A container with a filter, sorbent, or catalyst, or combination of these items, that removes specific contaminants from the air passed through the container.

**End of service life indicator (ESLI)**
A system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

**Filtering facepiece**
A negative pressure particulate respirator with a filter that is either an integral part of or the entirety of the facepiece; commonly call a dust mask.

**Fit factor**
A measurement of the tightness of a respirator’s fit. Fit factors are determined by a quantitative respirator fit test conducted during a simulation of workplace activities.

**Fit test**
A fit check, or “user seal check” as it is referred to in Appendix B-1 of 29 CFR 1910.134, that should be performed each time a tight-fitting respirator is put on to ensure there is an adequate seal between the respirator and the user’s face.

**Immediately dangerous to life and health**
An atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual’s ability to escape from a dangerous atmosphere.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Job hazard analysis (JHA)</td>
<td>An exercise that identifies hazards before they occur by focusing on the relationship between the worker, the task, the tools, and the work environment.</td>
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<tr>
<td>Negative pressure respirator</td>
<td>A respirator in which the air pressure inside the facepiece during inhalation is lower than the ambient air pressure outside the respirator.</td>
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<tr>
<td>Permissible exposure limit (PEL)</td>
<td>The maximum concentration of a hazardous chemical that a worker can be exposed to measured as an 8-hour time-weighted average.</td>
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<td>Physician or other licensed health care professional (PLHCP)</td>
<td>An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows them to independently provide, or be delegated the responsibility to provide, some or all of the health care services required in paragraph 32.6.3.</td>
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<tr>
<td>Powered air purifying respirator (PAPR)</td>
<td>An air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.</td>
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<td>Program coordinator</td>
<td>A person that has the appropriate training and/or experience to manage, coordinate, implement, and evaluate specific program elements and/or respirator use requirements.</td>
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<tr>
<td>Qualitative fit test (QLFT)</td>
<td>A pass/fail assessment of the adequacy of respirator by testing an individual's response to the test agent.</td>
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<tr>
<td>Quantitative fit test (QNFT)</td>
<td>An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.</td>
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<td>Recommended exposure limit (REL)</td>
<td>An occupational exposure limit that has been recommended by NIOSH to OSHA for adoption as a permissible exposure limit. NIOSH believes the REL would be protective of worker safety and health over a working lifetime if used in combination with engineering and work practice controls, exposure and medical monitoring, posting and labeling of hazards, worker training, and personal protective equipment.</td>
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<tr>
<td>Respirator user</td>
<td>A worker that has been medically qualified to use a respirator, has successfully completed respiratory protection training, and has been properly fit-tested.</td>
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<tr>
<td>Self-contained breathing apparatus (SCBA)</td>
<td>An atmosphere-supplying respirator with a breathing air source designed to be carried by the user.</td>
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<tr>
<td>Service life</td>
<td>The period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.</td>
</tr>
</tbody>
</table>
Threshold limit value (TLV) The level of a chemical substance to which a worker can be exposed day after day for a working lifetime without adverse effects. TLV is a reserved term of the American Conference of Government Industrial Hygienists (ACGIH).

32.8 References


Centers for Disease Control and Prevention. 42 CFR 84, Respiratory Protective Devices.

Department of Transportation. 49 CFR 173, Shippers—General Requirements for Shipments and Packages.

Department of Transportation. 49 CFR 178, Specifications for Packagings.

Department of Transportation. 49 CFR 180, Continuing Qualification and Maintenance of Packagings.
