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1.0 PURPOSE AND SCOPE

(7.1.1, 7.1.2, 7.1.3, 7.1.4)

This document supplements Washington River Protection Solutions, LCC (WRPS) implementation of DOE-0352, “Hanford Site Respiratory Protection Program (HSRPP)” and associated 10 CFR 851 elements for work performed by the Tank Operations Contractor (TOC) under contract to the U.S. Department of Energy, Office of River Protection (DOE-ORP).

U.S. Department of Energy (DOE) approval for revision of the WRPS HSRPP is not required if the scope of change is to meet changes and resolutions in DOE-0352 requirements. DOE-0352 is a document governed by the HSRPP Committee, the interpretive authority for the Hanford Site, and is subject to updates, which are published as resolutions. Resolutions not captured in DOE-0352 are posted on the DOE HSRPP web page, until they are incorporated into updates of DOE-0352.

Where DOE-0352 refers to radiological engineer, such tasks will be performed by a WRPS radiological planner.

2.0 IMPLEMENTATION

This procedure is effective on the date shown in the header.

3.0 RESPONSIBILITIES

3.1 Industrial Hygiene Program Manager

(7.1.2)

- Serves as the functional area manager and technical authority for the respiratory protection program.
- Provides oversight of this procedure.
- Formally designates a qualified respiratory protection program administrator within the Industrial Hygiene Program department to administer the respiratory protection program, and serves as the focal point for respiratory protection problem resolution.

3.2 Respiratory Protection Program Administrator

The Respiratory Protection Program Administrator (RPPA) is responsible for the following:

- Administer and coordinate the Respiratory Protection Program
- Serve as the interpretive authority for respiratory protection issues
- Track respiratory protection issues or concerns, evaluate proposed resolutions, and ensure issues are submitted to the contractor’s corrective action system as appropriate.
- Ensure the quality of compressed gas cylinder or compressor supplied breathing air meets the air quality standards as listed in Section 12.0, *Breathing-air Quality and Use*
- Evaluate new types of RPE

- Approve procurement and use of RPE
- Maintain knowledge of RPE being used on the Hanford Site
- Keep abreast of current issues, advances, and regulations through interacting with other RPPAs, manufacturers, DOE RPPA Forum, etc.
- Serve as primary HSRPP Committee point of contact for contractor level issue resolution
- Participate in the HSRPP Committee or designate an alternate
- Report any issues or concerns, with wider application requiring further action for resolution, to the HSRPP Committee
- Evaluate applicable lessons learned and other sources of information and communicate the information to the HSRPP Committee and others, as appropriate.

3.3 Industrial Hygienists and Radiological Planner

- Ensure that proper respiratory protection equipment is issued as prescribed.
- Provide respiratory technical support for each area of expertise: Rad Planner will identify and evaluate radiological airborne hazards and Industrial Hygienists will identify and evaluate non-radiological airborne hazards.
- Ensure the Respiratory Protection Form (RPF) is signed off by both IH and Rad Planner for concurrence.

3.4 Respiratory Protection Core Team

A Respiratory Protection Core Team shall be formed to:

- Evaluate the effectiveness of the respiratory protection program
- Identify and recommend solutions to respiratory protection program issues
- Identify and recommend improvements to the respiratory protection program
- Review and discuss new models, types, configurations, or applications of respiratory protection equipment and make recommendations prior to being approved for purchase or use.

The Respiratory Protection Core Team includes:

- Management representative
- Line Organization Industrial Hygienist
- IH Technician
- Line Organization Respirator Issuer
- HAMTC Safety Representative.

The Respiratory Protection Core Team meets as often as necessary, but no less than quarterly per DOE-0352.

4.0 PROCEDURE

4.1 Purchase, Control, and Storage of Respiratory Protection Equipment

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| Line Manager | <ol style="list-style-type: none"> 1. Obtain respiratory protection program administrator (RPPA) approval for all respiratory protection equipment purchases, in accordance with DOE-0352. 2. Establish a controlled distribution point using the Respiratory Protection Equipment Issuance Station Identification Form and the approval of the RPPA for the proper storage, issue, and return of respirators and associated respiratory protection equipment 3. Designate a qualified respirator issuer to control the custody and integrity of respirators for each Issue Station in Operations. 4. Ensure the respirator issuer is informed of the types and quantities of respiratory protection equipment required for the project. |
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NOTE: Emergency respirators may not be used in lieu of other respirators (i.e., air purifying respirators, powered-air purifying respirators); they may only be used when required by procedure or when prescribed by Industrial Hygiene and Radiological Control.

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| Respiratory Protection Program Administrator | <ol style="list-style-type: none"> 5. Ensure emergency respirator self-contained breathing apparatus (SCBAs) are staged and stored properly. <ul style="list-style-type: none"> • Emergency respirators must be kept accessible to the work area and stored in compartments or in covers that are clearly marked as containing emergency respirators. • Emergency respirators will not be considered staged for emergency use until they are fully assembled, properly inspected, and available within the appropriate storage container. |
| Respirator Issuer | <ol style="list-style-type: none"> 6. Specify respirators to be purchased. 7. Review and approve purchase orders for any new models, types, configurations, or applications of respiratory protection equipment. 8. Maintain control of respirators: <ol style="list-style-type: none"> a. Keep them secure to prevent unauthorized use. b. Track respirator receipt, issuance, and return. |

NOTE 1: Users are responsible for the proper storage of respirators and equipment during the period that the respirator is assigned to them. The approved storage location for SCBAs when workers are taking a break is in the change trailer with an attendant, or designated storage (e.g., attended location, locked office).

NOTE 2: Never make additions, adjustments, or modifications to any respiratory equipment that will effect that equipment's National Institute for Occupational Safety and Health (NIOSH) approval for form, fit, or function (e.g., altering the low pressure alarm on Self-Contained Breathing Apparatus (SCBA) units).

- Respirator Issuer/User 9. Store respirators and associated respiratory equipment properly.
- a. Store respirators in a manner to prevent deformation of the facepiece and exhalation valve.

RPE shall be stored in a clean and sanitary manner that shall protect against loss or damage from vibrations, shocks, sunlight, excessive moisture, contamination, damaging chemicals, dust, or pests. Respirators shall be stored in a secure location and handled in a manner that minimizes distortion of face pieces and elastomeric parts.

10. Periodically verify inventory and integrity of stored respirators and maintain appropriate levels of stock in the distribution area.

4.2 Cleaning and Maintenance of Respiratory Protection Equipment (7.1.2)

- Line Manager 1. Ensure cleaning, disinfecting, and maintenance of respirators is performed by an approved vendor and maintenance and testing of 3M® Breathe Easy and OptimAir TL Powered Air Purifying Respirators is performed by industrial hygiene/respiratory protection technicians in accordance with DOE-0352.
- Operations 2. Ensure chemically contaminated respiratory (such as those used in an asbestos regulated area) protection devices are properly cleaned and labeled after each use, as required, prior to returning devices to the mask issuing station.
- Respirator Issuer 3. Coordinate the cleaning and maintenance of used respiratory protection equipment after each use to ensure clean, sanitary, and properly operating respiratory protection equipment is available for respirator users.
- Respirator User 4. If a respirator requires maintenance other than normal cleaning, return it and inform the issuer about the maintenance required.

4.3 Medical Evaluations

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| Industrial Hygiene Department/ Supervisors/Managers | 1. Communicate the following information to the medical evaluator so an accurate assessment of employees' ability to perform duties can be made: <ul style="list-style-type: none">• The type and weight of the respiratory equipment• The duration and frequency of the respirator use• The expected physical work effort• Additional protective clothing and equipment• Temperature and humidity extremes that may be encountered. |
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NOTE: Medical surveillance is not required for employees who will only wear filtering facepiece respirators (e.g., dust masks). They are voluntarily used in conditions where the OSHA permissible exposure limit (PEL) or American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV) for nuisance dusts gases, or vapors are not exceeded. A medical evaluation is required when filtering facepiece respirators are being required for use. Industrial Hygiene determines acceptable use conditions.

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| Supervisors/Managers | 2. Ensure employees receive initial medical evaluations and written notification of their clearance from the medical provider before the employee is fit tested, trained, or required to use RPE in the workplace. Enrollment into medical surveillance is documented as required by the employee job task analysis (TFC-ESHQ-S_IH-C-17). |
| | 3. Ensure employees have respirator mask glasses, as needed. |
| | 4. Ensure respirator wearers receive an annual medical examination to maintain their qualifications to wear a respirator. |

NOTE: An employee may be provided a powered air purifying respirator (PAPR) in lieu of a negative pressure respirator where the medical provider establishes medical restriction to the use of negative pressure APR and provides medical clearance for the use of a PAPR.

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| 5. Ensure additional medical evaluations are provided if: |
| <ul style="list-style-type: none">• The employee reports medical signs or symptoms related to the ability to use a respirator, or• A change occurs in work place conditions (such as physical work effort, protective clothing, and temperature) that may result in substantial physiological burden. |

4.4 Training

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| Supervisors/Managers | 1. Ensure respirator wearers receive appropriate respirator training in accordance with DOE 0352. |
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2. Ensure respiratory issuers receive training and are qualified per DOE 0352.
3. Ensure respirator issuers and supervisors of respirator wearers understand their responsibilities as described in this procedure. Individuals that provide direct supervision of RPE users shall be trained and qualified annually to the same level as the workers they are supervising (e.g., APR, PAPR, SAR).
4. Ensure employees receive appropriate respirator refresher training.
5. Schedule respirator wearers for applicable training for their job responsibilities.

Training Coordinators

4.5 Fit Testing

Respiratory Protection Program Administrator

1. Review fit test protocols used by DOE-0352 to ensure the protocols are OSHA accepted.

NOTE 1: A mask fit is not required for employees when filtering facepiece respirators (e.g., dust masks) are voluntarily used in conditions where the OSHA PEL or ACGIH TLV for nuisance dusts, gases, or vapors are not exceeded. A mask fit is required when filtering facepiece respirators are being required for use. Industrial Hygiene is responsible for determining acceptable use conditions.

NOTE 2: Additional fit tests may be requested by the company or medical contractor.

Supervisors/Managers

2. Ensure employees have been properly fit tested for the respirator(s) they will be using:
 - Prior to the initial use of a respirator
 - Whenever a different respirator facepiece (size, style, model, or make) is used
 - At least annually thereafter.
3. Arrange for additional fit testing through the fit test station prior to using a respirator for which an employee has not been fit tested for.

Respirator User

4. Perform negative and positive pressure fit checks, as appropriate, of all tight fitting facepiece respirators, regardless of whether they are in the positive or negative pressure mode of operation, prior to using the respirator.
5. Ensure that facial hair does not interfere with respirator fit.

NOTE: Jewelry such as earrings, may become snagged during the respirator doffing process, potentially resulting in injury. Jewelry that may become snagged should be removed prior to donning a respirator.

6. Notify the supervisor/manager when physical changes occur that would warrant another fit test, such as the following:
 - A weight change of 20 pounds or more, or more than 10% of total body weight
 - Significant facial scarring in the area of the facepiece seal
 - Significant dental changes such as multiple extractions without prosthesis or acquiring dentures and braces
 - Reconstructive or cosmetic surgery
 - Body piercings that may interfere with the sealing area of a respirator
 - Any other condition that may interfere with facepiece sealing or donning/doffing of respiratory equipment.
 7. Inform the supervisor/manager of any improperly fitting respirators or problems with the respiratory protection equipment that may affect the fit or operation of the respirator.
- Supervisors/Managers
8. If the employee has notified the supervisor/manager that the fit of the respirator is unacceptable, then provide the employee an opportunity to select a different respirator facepiece and be retested.

4.6 Exposure Assessments and Selection of Respirators

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| Industrial Hygienists/ Health Physicists | <ol style="list-style-type: none"> 1. Perform an evaluation of the respiratory hazards in the workplace to identify the potential airborne contaminants and determine potential employee exposure levels. 2. Provide an identification of the contaminant(s), including chemical state and physical form and document the contaminant(s) on the Radiological Work Permit (RWP) and/or Job Hazard Analysis (JHA). 3. Provide a reasonable estimate of employee exposures to the respiratory hazards. As appropriate, qualitatively estimate or quantitatively measure exposure during the planning, initial implementation, and conduct of jobs and tasks. 4. If the contaminant(s) cannot be identified, and/or a reasonable estimate of the employee exposure to the respiratory hazard cannot be provided, document the atmospheric condition as Immediately Dangerous to Life or Health (IDLH). |
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NOTE 1: Hooded supplied-air respirators (bubble suits) are not acceptable for IDLH or oxygen deficient atmospheres.

NOTE 2: Only respirators certified by the National Institute for Occupational Safety and Health (NIOSH) should be selected. Specific guidance for respirator selection is available from NIOSH and OSHA

5. Where the hazard evaluation indicates a potential for exposure above the permissible exposure limit/threshold limit value, and engineering or administrative controls are not feasible or may not be successful in lowering exposure to below applicable limit, select appropriate respiratory protection based on the factors listed below:
 - Characteristics of the hazardous agent.
 - Anticipated level of exposure relative to the permissible exposure limit/threshold limit value.
 - Relative stability of the exposure.
 - Possibility of a sudden release of the agent or engulfment.
 - Potential for an IDLH atmosphere.
 - Potential for an oxygen deficient or depleted atmosphere.
 - Warning properties of the agent.
 - Availability of monitoring to detect the agent in a timely fashion and take appropriate mitigating action.
 - Assigned protection factor of the respirator
 - Other work place, user, and safety factors, such as confined space entry, visibility, elevated work, physical stress, individual comfort, and protection of the employee's skin and eyes.

NOTE: Single-use dust masks are only for nuisance dusts below the applicable occupational exposure limit. Single-use dust masks will not be used to protect against:

- Dusts, fibers, mists, vapors or gases above the exposure limit.
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 - As a substitute for the use of acceptable respiratory protection.
6. When respiratory protection for both radiological and non-radiological hazards is required, collaborate on selecting the appropriate respiratory protection to ensure protection against the combined hazards.

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| Industrial Hygienist/ Radiological Engineer or Radiological Work Planner | <ol style="list-style-type: none"> 7. Document the potential chemical hazards on the job hazard analysis checklist (TFC-ESHQ-S_SAF-C-02). 8. Identify required respirator types, cartridges, cartridge or canister change-out schedules, voluntary upgrade options (if applicable) and document on the Respiratory Protection Form (A-6005-593). 9. Complete and sign the Respiratory Protection Form (A-6005-593) |
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4.7 Issuance, Use, and Return of Respiratory Protection Equipment

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| Supervisors/Managers | <ol style="list-style-type: none"> 1. Ensure that the Respiratory Protection Form (RPF) (A-6005-593) clearly identifies the types of respiratory protection equipment to be used for work sites and activities, and that respirator issuers have full and convenient access to the RPF being used to prescribe respiratory equipment. |
| Field Work Supervisor | <ol style="list-style-type: none"> 2. Ensure RPF is signed by both the Industrial Hygienist and Radiological Engineer/Radiological Work Planner for concurrence. 3. Ensure the RPF is reviewed with respiratory equipment users at Pre-Job Briefings, and that the Respirator Issue Station receives the Respiratory Protection Form (RPF) (A-6005-593) for the job or activity that identifies prescribed respiratory protection selected for use and its purpose (TFC-OPS-MAINT-C-02). |
| | NOTE: Voluntary use of respiratory protection is implemented through the General Hazard Analysis (GHA) RPF for issuance. |
| Respirator User | <ol style="list-style-type: none"> 4. Be knowledgeable of the respiratory protection to be used for the work to be performed and know why the respiratory protection is required. |
| Respirator Issuer | <ol style="list-style-type: none"> 5. Prior to issuing respirators, request the specific RPF for the particular task. <ol style="list-style-type: none"> a. If one has not been already provided, review RPF to ensure respiratory requirements are clearly communicated and understood. b. If unclear, call the IH/Rad planner or engineer listed on the RPF form for clarification. |

NOTE 1: When the ambient temperature is 32 degrees Fahrenheit or below a full-face piece respirator is required to be equipped with a nose cup to prevent fogging and in accordance with manufacturer user instructions.

NOTE 2: Manufacturer's recommendations shall be followed when using PAPRs in low temperatures. Low temperatures cause decreased battery life.

Respirator User/
Respiratory Issuer

6. Verify upon receipt of the respiratory protection equipment issued that it meets the requirements of the RPF for that job.

NOTE: To reduce fogging of the face piece, it may be treated with commercial products designed to inhibit fogging and/or by using a respirator equipped with a nose cup. Keeping the respirator in a warm environment until use will also help reduce fogging.

Respirator User

7. If fogging cannot be alleviated or personnel safety is at risk for any reason that is aggravated by wearing a mask, remove the mask and immediately proceed to the nearest tank farm exit.

8. Maintain current authorization to wear a respirator:

- a. Maintain up-to-date training, fit testing, and medical clearance.
- b. Maintain facial hair and jewelry/piercings in a manner that does not interfere with the respirator facepiece sealing surface.

9. If requested, present the respirator fit test card to the respirator issuer.

NOTE: Bulk respiratory equipment may be checked out and issued to a group in the field if the person checking out the equipment is a qualified issuer, fit test cards and respirator training are verified for each user, and a copy of the sign out sheet is completed and returned to the issuing station.

Respirator Issuer

10. Issue respirators:

- After a work control document (RPF, Abnormal Operating Procedure (AOP), Tank Vapor Information Sheet (TVIS) has been received and reviewed for the work that the respiratory equipment is being requested.
- Only to authorized wearers (employees with appropriate medical clearance, training, and fit testing).
- Only when facial hair or body piercing devices do not interfere with the seal on a respirator facepiece.

Field Work
Supervisor/Respirator
User

11. Ensure correct protection for the job has been received in accordance with RPF for specific scope of work.

Respirator User

12. Complete the Respiratory Equipment Sign Out/Sign In Log (A-6006-491) for respiratory equipment and ensure the correct respiratory protection was received per work control document or RPF.

NOTE: An N/A shall be indicated in the appropriate spaces on the log for disposable respiratory protection equipment.

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| ESHQ | Document | TFC-ESHQ-S_IH-C-05, REV G-10 |
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| RESPIRATORY PROTECTION | Issue Date | December 12, 2016 |

- Respirator Issuer
13. Complete applicable portions on the Respiratory Equipment Sign Out/Sign In Log (A-6006-491).
- If issuing powered air purifying respirators, ensure completion of a Powered Air Purifying Respirator Sign-In/Sign-Out Log (A-6006-490).
 - For breathing air cart issuance and control, ensure completion of a Breathing Air Cart Sign-In/Sign-Out Log (A-6006-492); see Section 4.14.1.
 - If issuing bulk respiratory equipment, complete a Bulk Issue/Equipment Repair/Calibration Log (A-6006-490) in addition to the Respiratory Equipment Sign-In/Sign-Out Log. A Bulk Issue/Equipment Repair/Calibration Log shall also be completed for respiratory equipment found in need of calibration and/or repair and sent to the Hanford Fire Department.

- Respirator Issuer
14. Issue respirator.
- NOTE 1: Respirators may be used for a maximum duration of up to two consecutive shifts on the same work control document/RPF. Respirators awaiting chemical contamination release data (such as those used in an asbestos regulated area) may be kept in a sealed plastic bag per applicable procedure prior to return to the respirator issuing station. The respirator issue station shall be notified of affected respirators that are awaiting release.
- NOTE 2: Radiological release procedures apply only to respirators used for protection in contamination, high contamination, or airborne radioactivity areas.
- NOTE 3: New respirators or cartridges may have to be obtained if radiological release cannot be obtained, especially on back shifts.
- NOTE 4: If daily return, after use, is impractical, contact the Respiratory Protection Program Administrator or Industrial Hygiene Management to establish alternate return cycles.

- Respirator User
15. Inspect each respirator prior to use to ensure that it is the proper model and size and is in proper working condition.
16. Don respirators as trained or use respiratory job aids in accordance with DOE-0352.
17. Conduct a positive and negative pressure fit check each time a tight-fitting facepiece is donned or adjusted.
18. Strictly follow the cartridge or canister change-out schedule developed for the activities being performed, as applicable.

19. Watch co-worker(s) for signs of heat stress and fatigue during respirator use. Assist claustrophobic co-workers when exiting respirator use areas.

NOTE: Any gas or vapor breakthrough must be immediately reported to the supervisor and Industrial Hygiene personnel.

20. Leave the respirator use area immediately if breakthrough of vapor or gas is detected, changes in breathing resistance, or leakage of facepiece.

21. Doff respirators in accordance with DOE-0352.

NOTE: In an effort to prevent future failures, the following actions will be taken to gather data on the failures and confirm the failed equipment is evaluated to determine the failure mechanism(s).

Field Work
Supervisor

22. If a failure or abnormal operations occurs:

- a. Notify on call Safety Rep, on-duty Shift Manager and RPPA of the nature of the equipment failure and the decision for the employee to resume work.

Respirator User

- b. Complete all sections of an Issues and Concerns form and return with failed equipment to issuance station.

Issuers

23. Assist in completion and review of issues and concerns form when needed.
24. Contact the Project Industrial Hygienist to assist in the completion of an Issues and Concerns Form (A-6006-205).
25. Submit the completed A-6006-205 form to the RPPA for further analysis and resolution.
26. Attach completed Issues and Concerns Form to failed equipment.
27. Deliver failed equipment to the HFD for evaluation.

Radiological Controls

28. Perform radiological contamination surveys of respiratory protection devices removed from contamination, high contamination, or airborne radioactivity areas.

Operations

29. If respiratory protection devices are found to be radiologically contaminated, attempt minor decontamination at the exit point.
30. If respiratory protection devices are contaminated with chemical particles (such as asbestos), they should be wiped and place it in a sealed plastic bag (unless used under a Negative Exposure Assessment).

31. Package/label/release the bagged respiratory equipment in accordance with applicable procedural requirements.

32. Handle respiratory devices that cannot be decontaminated according to applicable waste handling and packaging procedures (TO-100-052).

NOTE 1: Respirators used in asbestos regulated areas that cannot be fully decontaminated, or where used in activities where exposures were not maintained below the PEL/EL, shall be returned to the respirator issuing station and labeled "DANGER, Asbestos" with a note stating the respirator was wet-wiped before being placed in the bag.

NOTE 2: Released respiratory protection devices shall be returned to the respirator issuing station by the respirator user, or designated attendant.

Respirator User

33. Return respirator equipment to the mask station from where it was issued or contact the mask issuing station if the respirator units cannot be returned by the end of the shift.

34. Promptly report any skin irritation, which may be caused by respirator use, to the supervisor.

35. Notify the on-duty respirator issuer if the respirator cannot be returned due to radiological or chemical loss.

Respirator User/
Respirator Issuer

36. Notify Field Work Supervisor and the on-duty respirator issuer of any blood or vomit that may be present on the respiratory equipment. Handle and dispose of per appropriate procedure, Blood Borne Pathogens and TO-020-028.

NOTE: Do not place the respiratory equipment in the general return bin.

a. Have the issuer hold open a biohazard bag and place the mask/racks into the bag.

b. Tape the bag closed.

c. Separate biohazard bagged equipment from regular returned equipment.

d. Contact Industrial Hygiene for assistance.

Respiratory User/
Issuer

37. Complete the applicable portions of the respiratory equipment sign out/ sign in log. Note if respiratory protection devices could not be returned due to disposal or loss.

4.8 Review Respiratory Equipment Sign Out/Sign In Log

Respirator Issuer

1. Review the Respiratory Equipment Sign-In/Sign-Out Log (A-6006-491) at the end of each shift or at the end of each job.

2. Notify the user or his/her Operations manager of any incomplete entries unless the user has notified the Issue Station they will work the following shift.

4.9 Package and Return Used Respiratory Protection Devices

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| Respirator Issuer | <ol style="list-style-type: none">1. Package used respiratory protection devices for return to the contracted vendor for cleaning.2. Ensure chemically contaminated respiratory protection devices are properly packaged and labeled with identification of contaminants found on the respirators, such as radioactive materials, asbestos, lead, or mercury. |
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NOTE: The return of SCBA/supplied air respiratory protection devices is covered in the following section.

3. Dispose of air-fed hoods in accordance with applicable waste handling procedures.

4.10 Emergency/Immediately Dangerous to Life and Health Conditions (Excluding Fire Fighting)

NOTE: Emergency planning is provided in TFC-ESHQ-EP-C-01.

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| Supervisors/Managers | <ol style="list-style-type: none">1. Ensure that emergency planning for work activities in areas which have the potential for becoming IDLH atmospheres is performed and complies with the requirements of 29 CFR 1910.134(g)(3).2. Ensure that emergency use respirators are quickly accessible when work is performed in areas that have the potential for becoming IDLH atmospheres. |
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NOTE: The highest level of protection is required in an emergency since it will be assumed that the environment is IDLH until the situation can be further evaluated.

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| Industrial Hygienists/ Health Physicists | <ol style="list-style-type: none">3. Determine the appropriate respiratory protection to be used for emergency use and/or IDLH locations.4. Ensure that a pressure demand or other positive pressure SCBA, or a pressure demand or other positive pressure supplied-air respirator with auxiliary self-contained air supply, is prescribed and provided. |
| Respirator Users | <ol style="list-style-type: none">5. Ensure you are qualified and know how to use the respiratory protection equipment supplied before conducting activities in an area that may require use of emergency respiratory protection.6. Know where the emergency respiratory protection equipment is located. |

4.11 Breathing-Air Distribution Systems

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| Supervisors/Managers | <ol style="list-style-type: none"> 1. Ensure Industrial Hygiene evaluates the use of breathing air compressors and atmosphere-supplying respirator setups prior to their use. 2. Assign only qualified employees to perform work requiring the use of atmosphere-supplying respirators and/or operating a breathing air compressor or compressed air bottle cart. |
| Industrial Hygienists/ Health Physicists | <ol style="list-style-type: none"> 3. Evaluate the use of breathing air compressors and atmosphere-supplying respirators to ensure they are used in compliance with the requirements of 29 CFR 1910.134(I). 4. Ensure certified lab results meet Grade D breathing air requirements. 5. Inform management of any problems or deficiencies pertaining to the use of the atmosphere-supplying respiratory equipment. |

4.11.1 Breathing Air Cart Issuance and Control

Employees shall be qualified and trained on Breathing Air Cart operation through Hammer training and are to tend the breathing air cart at all times while the system is in use.

NOTE: The Industrial Hygienist can provide a safety overview of the set up and use of all breathing air systems.

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| Bottle Cart Issuer | <ol style="list-style-type: none"> 1. Ensure a Breathing Air Cart Sign In/Out Log (A-6006-492) is available for each cart in the Issue station inventory and that information specific to each cart is documented completely. 2. Ensure a POC is documented legibly in the Name Print/Sign block on the Breathing Air Cart Sign In/Out Log. 3. Ensure information pertaining to the cart issuance and return is completed documented on the Breathing Air Cart Sign In/Out Log. 4. Ensure the carts are returned to Fire Maintenance annually for required preventive maintenance. 5. Ensure carts are properly stored when not in use. |
| User/Point of Contact | <ol style="list-style-type: none"> 6. Maintain accountability for the location of all carts issued. 7. Notify the Issue station when the cart location documented on the Breathing Air Cart Sign In/Out Log changes. 8. Keep the cart inside a structure or covered to minimize dirt and debris effects whenever the breathing cart is positioned at the work location but not in use. 9. Return breathing carts to the Issue station whenever a job has been completed or suspended for an extended period. |

4.12 Self-Contained Breathing Apparatus (SCBA)

4.12.1 Monthly Inspections of Self-Contained Breathing Apparatus

Monthly inspections to ensure proper function are required for all Scott 4.5 SCBAs staged for immediate emergency use. Using a test cylinder to perform the air supply system inspection is the preferred method; however, the actual emergency cylinder may be used provided it remains in the full specification.

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| Line Manager | 1. Assign facility/SCBA qualified personnel to complete and document monthly SCBA inspections as described in DOE 0352. |
| SCBA Inspector | 2. Use TF-COMS-001 to perform monthly SCBA inspections. |

Employees shall be qualified and trained on breathing air cart operation through Hammer training and are to tend the breathing air cart at all times while the system is in use.

NOTE: The Industrial Hygienist can provide a safety overview of the set up and use of all breathing air systems.

4.12.2 Cold Weather Considerations and Controls

When performing work that requires supplied air respiratory equipment in cold temperature environments (< 40 degrees F), the bottle, regulator, and user will be required to be in a warm area for no less than 15 minutes to ensure the regulator, replacement bottles (as needed) and the user have enough time to warm prior to proceeding with work. For temperatures (< 32 degrees F) use nose cups to prevent fogging. When performing bottle change-out, perform an inspection on the regulator.

To remove moisture, perform the following:

NOTE: Purge valves are for emergency use only.

- Wipe out regulator with absorbent towel to remove excess moisture.
- Position regulator, face down, over plastic lined receptacle.
- Depress and hold the Don/Doff switch, turn the regulator upside down and shake it, then turn it over and repeat the process. If the respirator cannot be cleared, replace the unit.

4.13 Voluntary Use

Employees may voluntarily wear respirators when respiratory protection is not required if they are currently medically qualified, fit tested (as applicable), and trained to use the respiratory protection equipment being requested.

Nuisance dust/odor filter masks are not subject to the controls in this section.

Voluntary respirator use is appropriate for most work activities if the use does not introduce additional safety hazards. A safety evaluation and approval is needed before issuance, when a job task or work assignment includes items such as the following:

- Scaffolding
- Hoisting and rigging
- Ladders
- Use of personal fall protection equipment
- Arc flash protection equipment
- Limited work space
- Other situations that may pose additional hazards.

Dissenting opinions on permissible voluntary respirator use will be resolved by the Industrial Hygiene Program Manager.

NOTE: All respirators must be checked out from an established mask issue station. Voluntary use of respirators is performed in accordance with the following steps.

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| Respirator User | 1. Request voluntary use of respiratory protection as provided through the General Hazards Analysis (GHA) RPF in pre-job, prior to issuance of respiratory protection. |
| | 2. Provide approved RPF for voluntary respirator use/respiratory upgrade at a respirator issue station. |
| Respirator Issuers | 3. Validate respirator user has a current mask fit, medical qualification and training for the respiratory protection being requested for the respirator requested. |
| | 4. Validate respirator user completes Respirator Equipment Sign In/Out Log. |

4.14 Management Directed Use

When directed by management, specific RPE requirements may be mandated as defense-in-depth controls independent of previously identified requirements or evaluations (e.g., TVIS, Job Specific RPF, etc.). These requirements are implemented through specified tasks on the Management Directed Use RPF. Management Directed RPF requires Level 1 signature.

When both a job specific RPF and the Management Directed RPF may apply to an activity, the RPF with the highest level of protection shall be used.

Where management directed use of RPE introduces a greater safety hazard than the potential exposure, a safety evaluation and Alternative Respiratory Protection Authorization (ARPA) is required to be completed to document the evaluation and alternate controls that will be implemented to allow for reduced RPE protection.

4.15 Alternative Respiratory Protection Authorization

ARPA is required for work activities where the use of respiratory equipment introduces a greater safety hazard than the potential exposure to chemical vapors (e.g. supplied air work within an arc flash boundary, elevated work on ladders).

NOTE 1: All other alternative feasible means to perform work using the prescribed respiratory equipment should be evaluated prior to proceeding with Safety and Health Evaluation of the ARPA.

NOTE 2: ARPA applies to specific work activities which minimizes the number of employees at greater risk not all employees associated with the work activity will be eligible for alternative respiratory protection.

NOTE 3: Once the Safety Evaluation of the ARPA is approved, voluntary upgrade of respiratory protection will not be granted for that specific work activity.

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| Requestor | <ol style="list-style-type: none"> 1. Initiate ARPA by completing the Requestor section of ARPA (form A-6006-751). 2. Obtain review by Level 1 Manager to ensure no other feasible means to perform work is possible. 3. Forward ARPA to Safety and Health for completion of evaluation. |
| Industrial Safety & Hygiene Representatives | <ol style="list-style-type: none"> 4. Perform Safety and Health evaluation of additional hazards from proposed work activity with those associated with the use of respiratory protection equipment. 5. Utilize the hierarchy of controls to establish requirements/controls. 6. Document evaluation and controls on ARPA (form 6006-751). |
| Requestor | <ol style="list-style-type: none"> 7. Obtain final approvals on the ARPA (form A-6006-751). |
| Planner | <ol style="list-style-type: none"> 8. Ensure the IH requirements and controls have been appropriately implemented via the work package instructions, etc. 9. Attach the approved ARPA to the work package document for records retention. |

4.16 Evaluation of Respiratory Protection Program

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| Industrial Hygiene and Respiratory Protection Program Administrator | <ol style="list-style-type: none"> 1. Conduct evaluations of the work place to ensure that the respiratory protection program is being effectively implemented and that the program continues to be effective. |
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2. Regularly consult employees required to use respirators to assess the employees' views on the program's effectiveness and to identify any problems. Areas to be assessed must include the following:
 - Respirator fit (including the ability to use the respirator without interfering with effective work place performance)
 - Appropriate respirator selection for the hazards to which the employee is exposed
 - Proper respirator use under workplace conditions the employee encounters
 - Proper respirator maintenance.
3. Assist Operations/Projects in correcting problems identified during the assessments and/or programmatic deficiencies identified.

5.0 DEFINITIONS

Terminology used in this procedure is defined in DOE-0352, 3.0, Definitions.

6.0 RECORDS

The following records are generated during the performance of this procedure:

- The Respiratory Protection Form (A-6005-593)
- Respiratory Protection Issue and Concerns Form (A-6006-205)
- Respiratory Equipment Sign In/Sign Out Log (A-6006-491)
- Breathing Air Cart Sign In/Sign Out (A-6006-492)
- Powered Air Purifying Respirator Sign-In/Sign-Out Log (A-6006-490)
- Bulk Issue/Equipment Repair/Calibration Log (A-6006-489)
- Alternative Respiratory Protection Authorization (A-6006-751).

The Respiratory Protection Form (A-6005-593) is retained as part of the Work Package Record. Respiratory Protection Issue and Concerns Forms (A-6006-205) are scanned into IDMS for record retention by Industrial Hygiene Records Management.

Issuance Logs (A-6006-491, A-6006-492, A-6006-490, and A-6006-489) are scanned into IDMS for record retention by the mask issuing station.

The Alternative Respiratory Protection Authorization (A-6006-751) will be submitted to and maintained as part of the work control document in accordance with TFC-OPS-MAINT-C-01.

The records custodian identified in the Company Level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.

7.0 SOURCES

7.1 Requirements

1. 10 CFR 851, "Worker Safety and Health Program," Section 23, "Safety and Health Standards."
2. 29 CFR 1910.134, "Respiratory Protection."
3. 29 CFR 1926.103, "Respiratory Protection."
4. TFC-PLN-55, "Industrial Hygiene Program."

7.2 References

1. ANSI/CGA, "Commodity Specification for Air G-7.1."
2. ANSI Z88.2, "American National Standard for Respiratory Protection."
3. DOE-0352, "Hanford Site Respiratory Protection Program."
4. TFC-BSM-IRM_DC-C-02, "Records Management."
5. TFC-BSM-TQ_MGT-C-04, "Training Records Administration."
6. TFC-ESHQ-Q_C-C-01, "Problem Evaluation Request."
7. TFC-ESHQ-S_IH-C-17, "Employee Job Task Analysis."
8. TFC-ESHQ-EP-C-01, "Emergency Management."
9. TFC-ESHQ-S_SAF-C-02, "Job Hazard Analysis."
10. TFC-OPS-MAINT-C-01, "Tank Operations Contractor Work Control."
11. TFC-OPS-MAINT-C-02, "Pre-Job Briefings and Post-Job Reviews."
12. TO-100-052, "Perform Waste Generation, Segregation, Accumulation, and Clean-Up."
13. AHJ Letter of Clarification 54809, Rev. 2, "Use of respirator in an Arc Flash Protection Boundary."