RESPIRATORY PROTECTION	Identifier: PRD-2109 Revision: 3 Page: 1 of 11

Subcontractors	Program Requirements Document	For Additional Info: http://EDMS	Effective Date: 06/02/03

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1. PURPOSE

This document provides requirements for the implementation of the respiratory protection program to ensure worker safety. This document highlights requirements referenced in the "Source Requirements" section, as well as BBWI requirements. Any applicable regulatory or BBWI requirements must be followed, with the most stringent requirement being met.

2. APPLICABILITY

This document applies to all subcontractors working at the INEEL as specified in their contract with BBWI1. Stricter requirements may be imposed by subcontractors upon their employees or subtier contractors. The requirements of this document must be followed by subcontractors; however, the means of implementation may vary as determined by the subcontractor.

3. REQUIREMENTS

3.1 Program Administration

3.1.1 Each subcontractor shall have a written Respiratory Protection Program that complies with all requirements of 29 CFR 1926.103.

NOTE: *The requirements for a minimal acceptable program can be found in 29 CFR 1926.103*

3.1.2 Airborne monitoring programs shall be periodically evaluated to determine the effectiveness and appropriateness of the respiratory protection being used and if periodic monitoring is being performed during respirator use.

3.1.3 The effectiveness of the Respiratory Protection Program shall be periodically appraised, and action to correct any deficiencies shall be taken.

3.2 Selection

3.2.1 Respiratory equipment shall be selected for use by using the NIOSH Decision Logic Sequence shown in Appendix A and manufacturer=s instructions or selection guides.

3.2.2 Only respirators that have been approved by the National Institute of Occupational Safety and Health (NIOSH) shall be selected for use.

NOTE: *Any change/modification to respiratory equipment beyond the manufacturer's instructions will void respirator approval.*

3.2.3 A determination shall be made of the appropriateness of using dust masks.

3.2.3.1 Dust masks shall not be considered to meet the ANSI Z88.2 definition of a respirator, and shall not be treated as such.

3.2.3.2 Dust masks do not provide protection from anything other than large particles, and shall only be allowed for use as a comfort device.

3.2.3.3 The use of dust masks shall be controlled.

3.2.3.4 The use of dust masks shall be allowed only when the use or work process has been thoroughly evaluated.

3.2.4 Respiratory protection shall be selected conservatively to protect the health of employees in cases where initial monitoring cannot be conducted before the start of the job and representative sampling data does not exist.

3.2.5 Respirators shall be selected by;

A. Evaluating respiratory hazards in the work place
B. Identifying relevant workplace and user factors

3.2.6 Respirators used for Immediately Dangerous to Life and Health (IDLH) shall be;

A. Full Face piece pressure demand SCBA NIOSH Certified for a minimum service life of 30 minutes, or
B. Combination full face piece pressure demand Supplied Air Respirator (SAR) with auxiliary self-contained air supply
C. NIOSH certified for escape from the atmosphere in which they are used

3.2.7 Respirator selection for protection from gases and vapors in a non-IDLH atmosphere shall be:

A. Atmosphere-supplying respirator, or
B. Air-purifying respirator with either an end of service life indicator (ESLI) or canister/cartridge change out schedule

3.2.8 Respirator selection for protection from particulate in a non-IDLH atmosphere shall be:

A. Atmosphere-supplying respirator
B. Air purifying respirator equipped with;

1. Filter certified by NIOSH under 30 CFR Part 11 as a HEPA filter or,
2. Filter certified for particulate by NIOSH under 42 CFR 84
3. Any filter certified by NIOSH for particulate with a mass median aerodynamic diameter (MMAD) of at least 2 um.

3.3 Issuance

3.3.1 The issuance of respirators shall be controlled by having identified points of issuance and suitably controlled respirator storage areas.

3.3.2 Only persons who are qualified (medically fit, trained, and fit tested) for the respirator to be worn shall be allowed to use respiratory protection equipment that is specified on a work control document or in a procedure covering the activity.

3.3.3 Only those respiratory devices, cartridges, canisters, or other equipment that are specifically identified on the work control document or in the work procedure shall be issued.

3.3.4 Respirator equipment shall meet the following requirements:

A. all equipment shall be compatible with the respirator system and manufacturer being used, and
B. airline hoses shall be as specified by the respiratory protection equipment manufacturer.

3.3.5 The issuance of respiratory equipment shall be documented.

3.4 Use

3.4.1 Respiratory protection equipment shall be used in accordance with the training received and all applicable work control documents, requirements and procedures.

3.4.2 Workers shall inspect respirators before use and shall report any problems, including defective or damaged respirators. Respirator inspections by the employees shall include inspecting for;

A. Tightness of connections
B. Conditions of face-piece, headbands, valves, connecting tubes, and cartridges, canisters, or filters

C. Pliability and signs of deterioration of rubber/elastomeric parts

3.4.3 Damaged, dirty, or defective respirators shall not be used.

3.4.4 The wearer shall not have facial hair, glasses/goggles, or other PPE , that obstructs or interferes with the sealing surface of the face-piece.

NOTE: *The face fit is considered satisfactory if a slight positive pressure can be built inside the face piece without any evidence of outward leakage of air at the seal.*

3.4.5 Both a positive and a negative leak check shall be performed after donning respirator and before entering the work zone.

3.4.6 If spectacles or safety glasses are to be worn with the respirator, they shall be compatible with the respirator type and manufacture.

3.4.7 If a respirator-related problem occurs in a hazardous area, the wearer shall immediately evacuate to a safe area.

3.4.8 The worker shall guard against damage to the respirator.

3.4.9 Powered air purifying respirators (PAPR) shall be available to employees, when practicable, to alleviate fatigue and increase comfort in radiologically controlled areas.

3.4.10 Before use and/or every 3 months, breathing air compressors shall be tested by a *qualified person* (see def.) to ensure that they supply air that meets the in-service breathing-air specifications found in Appendix B.

3.4.11 Before initial use, breathing air cylinders shall be tested by a qualified person to ensure that the air meets grade D air requirements. Purchased breathing air cylinders must have Grade D certificates of analysis from the supplier.

3.4.12 The employer (supervisor) is responsible to ensure that employees required to wear tight fitting respirators are fit tested;

A. Prior to initial use

B. Whenever a different respirator face piece is used

C. At least annually

3.5 Cleaning and Maintenance

3.5.1 Respirators used for radiological activities shall be returned to the issuing facility after each day's use.

3.5.2 Respirators used for non-radiological applications shall be inspected, cleaned, and maintained as per the manufacturer's requirements.

3.5.2.1 Respirators used in areas that could grossly contaminate the device shall be decontaminated before leaving the work area and before cleaning and disinfection to remove gross contaminants such as asbestos, lead, and other hazardous substances

3.5.2.2 Stations for inspecting, cleaning, disinfecting, and overnight air drying shall be approved.

NOTE: *Only factory trained personnel may repair respirators.*

3.5.3 Subcontractors shall ensure that repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations.

3.5.4 Malfunctions of any respiratory protective device shall be investigated to determine the cause, and appropriate corrective measures shall be taken.

3.5.5 Suspected manufacturing defects shall be reported to the manufacturer.

3.5.6 SCBAs shall be returned to a qualified test facility or the manufacturer for maintenance and testing on the following schedule:

A. regulator maintenance every 15 years
B. bottle hydrostatic test in accordance with Appendix B
C. regulator flow test every 2 years.

3.6 Storage

NOTE: *Additional storage requirements are identified in ANSI Z88.2, Respiratory Protection.*

3.6.1 Respirators shall be stored in a manner that will protect them against:

A. physical and chemical agents such as sunlight, heat, extreme cold, excessive moisture, or damaging chemicals
B. distortion of the face-piece or elastomeric parts.

3.6.2 Used respirators shall be placed in an appropriate receptacle after each use.

NOTE: *Most manufacturers suggest that respirators be stored at temperatures between -25EF and 130EF. Emergency use respirators may be stored inside vehicles if the vehicle is stored inside a heated facility.*

3.6.3 Respirators shall not be left lying on shelves, table tops, inside vehicles, or hanging on protrusions from equipment or walls.

3.6.4 Emergency-use respirators shall be accessible at all times and stored in either:

A. a cabinet or container clearly marked "Respirators – For Emergency Use Only"
B. or in emergency vehicles that are kept in a heated environment (such as a fire station).

3.7 Training

3.7.1 Employees required to use respirators shall receive annual training, medical testing, and fit testing. Fit testing shall be repeated when the wearer experiences:

A. An obvious change in body weight
B. significant facial scarring in the area of the face-piece seal
C. significant dental changes, such as multiple extraction without prosthesis
D. dentures
E. reconstructive or cosmetic surgery
F. condition that may interfere with face-piece sealing.

3.8 Monitoring

3.8.1 Air monitoring shall be conducted for tasks involving potential chemical or radiological exposure issues.

3.8.2 Engineering controls shall be used whenever possible to control exposures to airborne contaminants before directing the use of respiratory protection devices. When this is not possible, air sampling programs shall be conducted to identify and quantify non-radiological airborne contaminants to determine the level of respiratory protection needed.

3.9 Medical Program

3.9.1 Subcontractors shall provide for medical evaluation of employees to determine whether they should be allowed to use respirators.

3.9.2 The medical evaluator shall be given information on the type(s) of respirators, duration, and frequency of use, as well as data on the physical workload, environmental conditions, and the hazard(s) requiring respiratory protection (including both chemical and radiological hazards).

3.9.3 The Subcontractor shall receive from the examining physician a letter approving the employee's use of a respirator and notification if the employee's medical condition requires more frequent examination.

3.9.4 When employees are working in radiologically controlled areas the BBWI Radiological Control Department may perform periodic medical surveillance, including bioassay as necessary, to determine if respirator users are adequately protected.

3.9.5 Users shall report to their management any change in medical status that may impact the employee's ability to wear a respirator safely.

4. DEFINITIONS

See the Glossary (LST-27) for definitions of the following terms:

Qualified person

5. REFERENCES

5.1 Source Documents

29 CFR 1910.134, Respiratory Protection

42 CFR 84, Respirator Certification Requirements

DOE Order 440.1A, Contractor Industrial Hygiene Program

ANSI Z88.2, Respiratory Protection

ANSI Z88.6, Respiratory Protection: Respirator Use B Physical Qualifications for Personnel.

CGA G7.1, Commodity Specification

5.2 Related Requirements

The following documents may also contain requirements that apply to this activity:

None

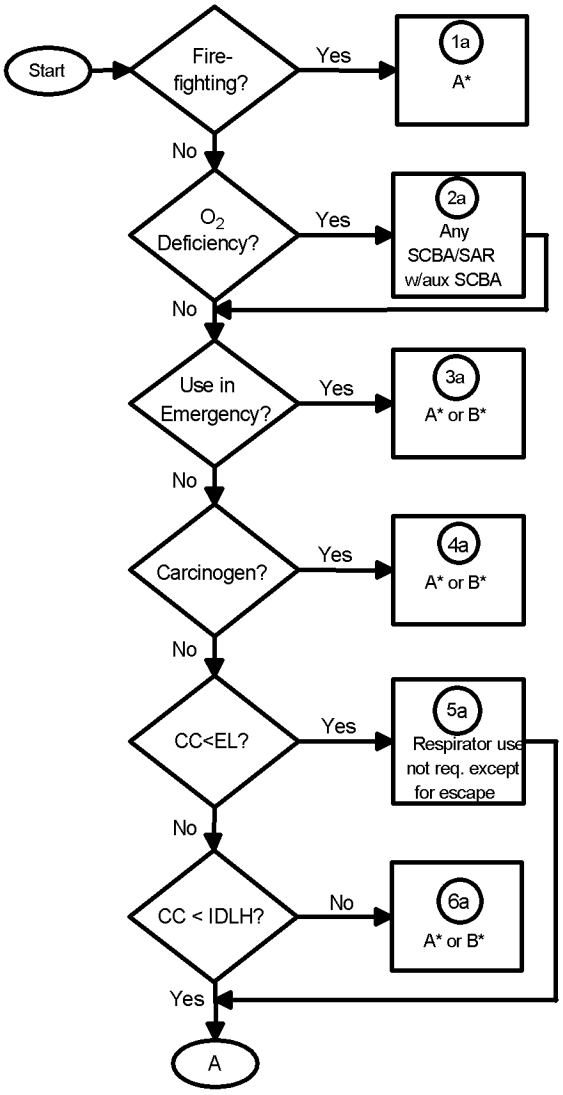
6. APPENDICES

Appendix A, NIOSH Decision Logic Sequence
Appendix B, Evaluation of Breathing Air Systems

APPENDIX A

NIOSH Decision Logic Sequence

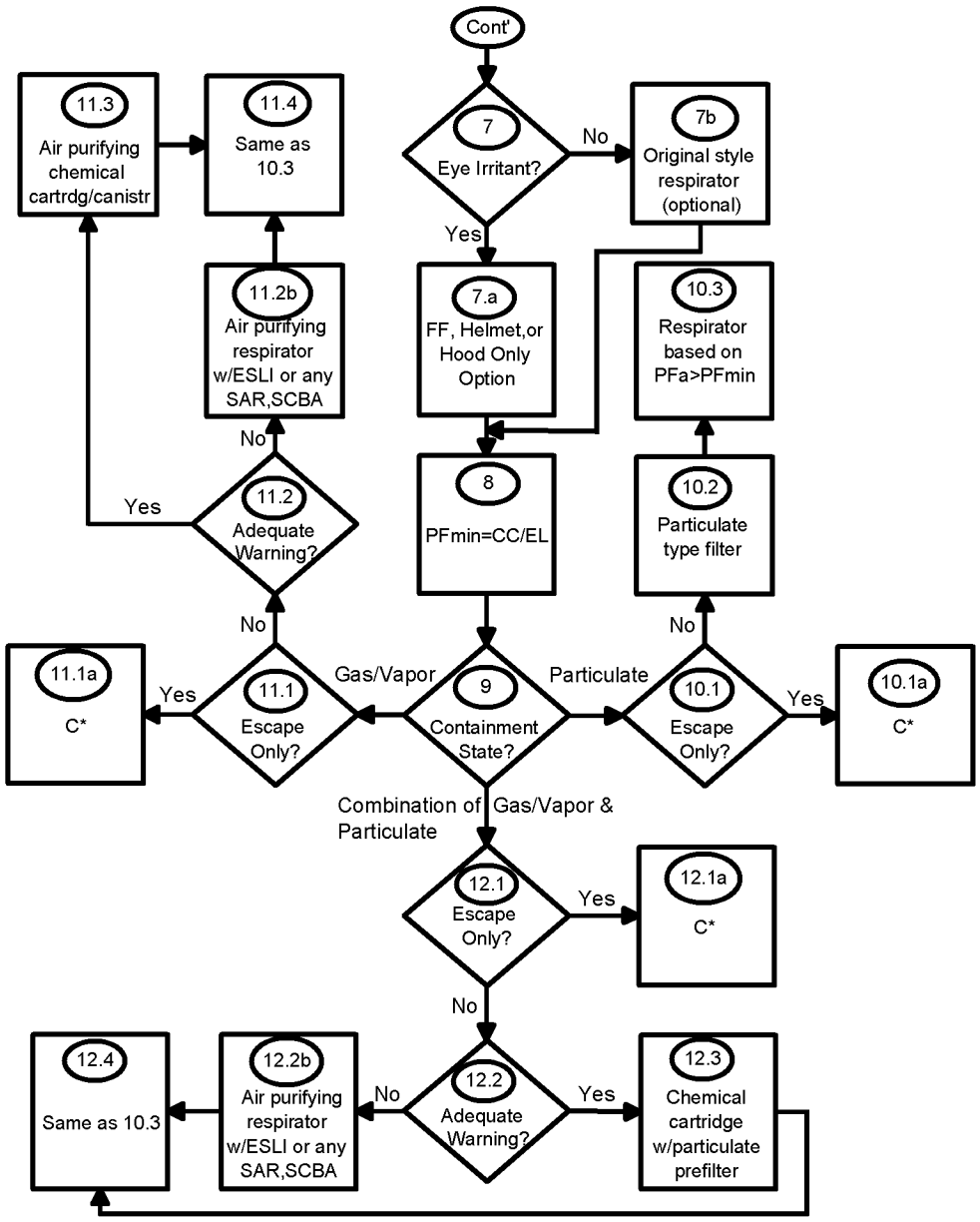
The respirator decision logic sequence is presented as a flowchart. This flowchart can be used to identify suitable classes of respirators for adequate protection aganist specific environmental conditions. Refer to the corresponding narrative section for additional information pertaining to a specific part of the flow chart.



KEY:
CC = Containment Concentration
EL = Exposure Limit
ESLI = End of Service Life Indicator
FF = Full Facepiece
IDLH = Immediately Dangerous to Life or Health
PD = Pressure Demand
PF = Protection Factor
PFa = Assigned PF
PFmin = Minimum PF
PP = Positive Pressure
SCBA = Self-Contained Breathing Apparatus
SAR = Supplied Air Respirator

A* = SCBA with FF used in PD or PF mode.
B* = Type C supplied respirator (airline) used in PD or PP mode w/aux SCBA.
C* = Escape respirator or gas mask with appropriate filter/sorbent (subparagraph5); if O_2 deficient, then SCBA.

APPENDIX A


Cont'
7
Eye Irritant?
No
7b
Original style respirator (optional)
Yes
7.a
FF, Helmet,or Hood Only Option
10.3
Respirator based on PFa>PFmin
8
PFmin=CC/EL
10.2
Particulate type filter
11.3
Air purifying chemical cartrdg/canistr
11.4
Same as 10.3
11.2b
Air purifying respirator w/ESLI or any SAR,SCBA
No
Yes
11.2
Adequate Warning?
No
No
11.1a
C*
Yes
11.1
Escape Only?
Gas/Vapor
9
Containment State?
Particulate
10.1
Escape Only?
Yes
10.1a
C*
Combination of Gas/Vapor & Particulate
12.1
Escape Only?
Yes
12.1a
C*
No
12.4
Same as 10.3
12.2b
Air purifying respirator w/ESLI or any SAR,SCBA
No
12.2
Adequate Warning?
Yes
12.3
Chemical cartridge w/particulate prefilter

APPENDIX B

Evaluation of Breathing Air Systems

1. Inspections of portable and stationary compressors/systems are conducted to verify the following:

   A. Preventive maintenance is performed on purification systems as specified by the manufacturer. The unit must be labeled to indicate the preventive maintenance frequency and due date.

   B. The purification system will be changed as specified by the manufacturer to ensure adequacy of the purifying operation. Change schedules will be placed on the preventive maintenance system.

   C. Compressor intakes are situated in locations to avoid entry of contaminants.

   D. If an oil-lubricated compressor is used, it has a functional high-temperature or carbon monoxide alarm or both.

   E. Airline couplings are Schraeder brand name quick disconnects only, so as to be incompatible with other gas-system outlets.

   F. Breathing-air cylinders, steel/aluminum, have been inspected and hydrostatically tested within the past 5 years 3 years for composite type cylinders).

   NOTE: Supplied-air devices must be operated at the pressure specified by the manufacturer.

2. Breathing-air quality is tested in compliance with Compressed Gas Association pamphlet G-7.1 for Grade D air as follows:

   - Oxygen: 19.5-23.5%

   - Water: no specified limit for compressed air,

     Purchased cylinders 63 ppm or less,

     SCBA cylinders 24 ppm or less

   * Condensed hydrocarbons: 5 mg/m^3 (maximum)* Carbon monoxide: 10 ppm (maximum)*Carbon dioxide: 1,000 ppm (maximum)Odor: no noticeable odor

   - Radioactive contamination: as specified in Chapter 3 of the *INEEL Radiological Control Manual.* (The limit for radioactive contamination is a requirement of the INEEL, not the Compressed Gas Association.)