

434ARWI91-303

BY ORDER OF THE COMMANDER AIR REFUELING WING

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Safety

RESPIRATORY PROTECTION PROGRAM

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This instruction implements AFPD 91-3, *Occupational Safety and Health*, AFOSHSTD 48-137, *Respiratory Protection Program*, and 29 CFR 1910.134, *Respiratory Protection*. This regulation is required to be maintained by all organizations in which personnel wear respirators for protection against inhalation of harmful atmospheres, for emergency escape/rescue and for comfort use. This instruction establishes policy and procedures for sections where respiratory protection is required, defines what type of respiratory protection is adequate for the given task. It applies to all Air Force Reserve personnel.

### ***SUMMARY OF REVISIONS***

This revision is a total rewrite of the 434 Air Refueling Wing (ARWI) 91-303. It updates, clarifies, and streamlines previous guidance. A (I) indicates revisions from the previous edition.

#### **1. References:**

- 1.1. AFOSH STD 48-137, *Respiratory Protection Program*
- 1.2. AFOSH STD 161-17, *Standardized Occupational Health Program*.
- 1.3. OSHA STD 29 CFR 1910.134, *Respiratory Protection*.
- 1.4. OSHA STD 29 CFR 1910.1001, *Asbestos*.
- 1.5. ANSI 88.2-1992, *American National Standard for Respiratory Protection*.
- 1.6. NIOSH, *Certified Equipment List*.

#### **2. Definitions:**

2.1. Airline Respirator: An atmosphere-supplying respirator in which the respirable gas is not designed to be carried by the wearer (formerly called supplied air respirator).

2.2. Assigned Protection Factor (APF): The expected workplace level of respiratory protection that would be provided by a properly functioning respirator or a class of respirators to properly fitted and trained users.

2.3. Canister/Cartridge: A container with a filter, sorbent, catalysts, or combination of these items, which removes specific contaminant from the air passed through the container.

2.4. Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded during any part of the day.

2.5. Contaminant: A harmful, irritating, or nuisance airborne material.

2.6. Continuous flow respirator: An atmosphere-supplying respirator that provides a continuous flow of respirable gas to the respiratory inlet covering.

2.7. Demand respirator: An atmosphere supplying respirator that admits respirable gas to the face piece only when a negative pressure is created inside the face piece by inhalation.

2.8. Disposable respirator: A respirator for which maintenance is not intended and that is designed to be discarded after excessive resistance, sorbent exhaustion, physical damage, or end-of-service-life renders it unsuitable for use. Disposable respirators are not authorized for use on Grissom ARB.

2.9. Dust: An aerosol consisting of mechanically produced solid particles derived from the breaking up of larger particles. Dust generally has a larger particle size when compared to fumes.

2.10. Dust Mask: See filtering face piece device.

2.11. End-of-service-life indicator: A system that warns the user of the approach of the end of adequate respiratory protection.

2.12. Exposure limit: The maximum allowable concentration of a contaminant in the air to which an individual may be exposed. These may be time-weighted averages, short-term limits, or ceiling limits.

2.13. Filter: A component used in respirators to remove solid or liquid aerosols from the inspired air.

- 2.14. Filtering face piece device: A respirator which has a face piece made entirely of filtering or absorbing material. These respirators do not have changeable filters or cartridges. Also known as a dust mask.
- 2.15. Fit check: A test conducted by the wearer to determine if the respirator to a particular individual.
- 2.16. Fit factor: A quantitative measure of the fit of a particular respirator to a particular individual.
- 2.17. Fit test: The method of evaluating the fit of a respirator on an individual.
- 2.18. Fume: Solid aerosols formed by condensation of a gas or vapor. Fumes generally have a smaller particle size when compared to dust.
- 2.19. Gas: A fluid that has neither independent shape nor volume and tends to expand indefinitely.
- 2.20. Hazardous atmosphere: An atmosphere that contains contaminant(s) in excess of the exposure limit or that is oxygen deficient.
- 2.21. Helmet: A hood that offers head protection against impact and penetration.
- 2.22. High-efficiency Particulate air (HEPA) filter: A filter that removes from the air 99.97% or more of the aerosols having a diameter of 0.3 micrometers (um). The equivalent AFOOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.
- 2.23. Hood: A respiratory inlet covering that completely covers the head and neck and may cover portions of the shoulders. Filtered air is supplied via a power unit. This is a type of powered air purifying-respirator (PAPR).
- 2.24. Loose-fitting face piece: A respiratory inlet covering that is designed to form a partial seal with the face, does not cover the neck and shoulders, and may or may not offer head protection against impact and penetration.
- 2.25. Mist: An aerosol composed of liquid particles.
- 2.26. Negative-pressure respirator: A respirator in which the air pressure inside the respirator inlet covering is negative during inhalation with respect to the ambient air pressure.
- 2.27. PEL (Permissible Exposure Limit): OSHA set limits (law) for atmospheric contaminants above which personnel will NOT be exposed.
- 2.28. Poor warning properties: A substance whose odor, taste, irritation effects are not detectable or not persistent at concentrations at or below the exposure limit.

2.29. Positive-pressure respirator: A respirator in which the pressure inside the respirator inlet covering is normally positive with respect to the ambient air pressure.

2.30. Powered air-purifying respirator (PAPR): An air-purifying respirator that uses a blower to force ambient atmosphere through air-purifying elements to the inlet covering. Can be a half face, full face or hood type respirator.

2.31. Pressure-demand respirator: A positive pressure atmosphere-supplying respirator that admits respirable gas to the face piece when the positive pressure is reduced inside the face piece by inhalation.

2.32. Quantitative fit test: A pass/fail test that relies on the subject's sensory response to detect the challenge agent.

2.33. Quantitative fit test: A fit test that uses an instrument to measure the challenge agent inside and outside the respirator or to determine the presence of leaks on the face to face piece seal.

2.34. Respirator: A personal protective device designed to protect the wearer from the inhalation of atmospheric contaminants.

2.35. Sanitation: The removal of contaminants and the inhibiting of the action of the agents that cause infection or disease.

2.36. Self-Contained Breathing Apparatus (SCBA): An atmosphere-supplying respirator in which the respirable gas source is designed to be carried by the wearer.

2.37. Service life: The period of time that a respirator provides adequate protection to the wearer.

2.38. Sorbent: A material that is contained in a cartridge or canister and removes specific gases and vapors from the inhaled air.

2.39. Time-Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.

2.40. Vapor: The gaseous phase of matter that normally exists in a liquid or solid state at room temperature.

### **3. Responsibilities:**

3.1. Bioenvironmental Engineering Services (BES) shall:

3.1.1. Be the office of primary responsibility for the Base Respiratory Protection Program.

- 3.1.2. Be the authority for determining if respiratory protection is needed.
- 3.1.3. Authorize, on a case-by-case basis, the use of filtering face pieces (dust masks) during processes which do **not** expose personnel to hazardous levels of atmospheric contaminants.
- 3.1.4. Authorize, on a case-by-case basis, the use of hood type PAPRs for protection from atmospheric contaminants above the PEL.
- 3.1.5. Identify occupational situations which require respiratory protection.
- 3.1.6. Be the base level authority on the selection, use, fit test, limitations, and maintenance of respirators used for protection against inhalation of harmful atmospheres.
- 3.1.7. Appoint a program administrator for the respiratory protection program.
- 3.2. The Program Administrator shall:
  - 3.2.1. Develop and maintain a Base Directive for respiratory protection.
  - 3.2.2. With assistance from the BES, determine the selection, use, fit-testing, limitations, and maintenance of respirators used for protection against inhalation of harmful atmospheres.
  - 3.2.3. Give guidance to shop supervisors as necessary, in preparation of the shop respiratory protection operating instruction.
  - 3.2.4. Fit test respirator wearers according to provisions in AFOSH STD 48-1, *Respiratory Protection Program*, OSHA STD 29 CFR 1910.124, and ANSI Z88.2.1992.
  - 3.2.5. Educate and train workplace supervisors and workers during the initial and annual respirator fit test protocol.
  - 3.2.6. Assist shop supervisors as necessary, in the preparation of the shop respiratory protection program, operating instruction, and annual training program.
  - 3.2.7. Medical evaluations will be scheduled by the Medical Squadron.
- 3.3. The Aeromedical Council shall:
  - 3.3.1. Establish a medical evaluation protocol for respirator users. OSHA standards make physicians responsible for determining the fitness of the worker to wear in respirator.

3.3.2. Review the medical clearance worksheet and approve individual workers for respirator usage.

3.3.3. Determine the medical requirements for each person on the respirator protection program.

3.4. The Supervisor shall:

3.4.1. Maintain all applicable standards for the respiratory protection program.

3.4.2. Develop an operating instruction for the respiratory protection program. This OI must address the processes during which a respirator is to be worn as explained in **Attachment 6**. If workers desire to wear a filtering face piece for comfort, each process must be addressed in the operating instruction. Also describe the process used for issuing filtering face pieces. A copy of the operating instruction shall be provided to the program administrator for approval.

3.4.3. Contact BES when workplace operations change to ensure that appropriate evaluations are made when new chemicals are introduced, processed, procedures are changed, or engineering controls are modified or added.

3.4.4. Document initial and annual training for respiratory protection on AF Form 55, **Employee Safety and Health Record**.

3.4.5. Provide training, with the assistance of BES, to individuals using filtering face pieces for comfort use, to include the limitations of filtering face pieces. (This is accomplished after BES has determined that there is no exposure over the PEL for the given process).

3.4.6. Provide for quality control of respirator breathing air (if required) according to T.O. 42B-1-22, *Quality Control of Compressed and Liquid Breathing Air*, and furnish sampling results to BES.

3.4.7. Appoint an individual to be responsible for the use, maintenance, inspection, and care of common use, emergency, or escape respirators, as appropriate.

3.4.8. Maintain a list of respirator users in their sections, which includes type of BES approved respirators used, dates of training and date of fit testing.

3.4.9. Stock and issue approved replacement filters or cartridges for air purifying respirators.

3.4.10. Advise employees of approved filtering face pieces for approved processes.

3.4.11. Ensure personnel on the respiratory protection program wear the correct respirator(s) for which they have been fit-tested and trained prior to utilization.

3.4.12. Advise all respirator wearers that they must leave the area at any time for relief from respirator use in the event of equipment malfunction, physical or psychological distress, procedural or communication failure, significant deterioration of operating conditions, or any other condition that might require such relief.

3.4.13. Assure all respirator users are certified and trained by BES and only BES approved respirators are utilized by employees.

3.4.14. Assure that employees maintain respirators in a clean, sanitary condition. See paragraph 10 for instructions.

3.4.15. Be responsible for notifying BES of requirements for initial and annual fit testing of workers.

3.5. The employee shall be responsible for:

3.5.1. Complying with OSHA, Air Force and 434 Air Refueling Wing directives in Respiratory Protection.

3.5.2. Wearing approved respirators as required for performing assigned tasks.

3.5.3. Informing their supervisors of any health conditions that may be aggravated by the use of a respirator.

3.5.4. Storing and maintaining respirators in a clean, sanitary condition.

3.5.5. Reporting to their supervisors any maintenance needs of their respirator.

3.5.6. Cleaning and sanitizing respirators after each use and returning them to their storage location properly bagged and sealed.

3.5.7. Performing self administered fit checks prior to the use of respirators.

3.5.8. Using only clean, assigned respirators, which are in good condition.

3.5.9. Using filtering face pieces ONLY during processes approved by BES.

3.6. The Chief, Fire Department shall:

3.6.1. Provide training on the use and maintenance of Self Contained Breathing Apparatuses (SCBA).

3.6.2. Ensure required maintenance for regulating or admission valves, regulators, and alarms for SCBA's is performed by the respirator manufacturer or appointed individual(s) trained and certified by the manufacturer to conduct such maintenance.

3.7. The Chief, Ground Safety shall: Refer any suspected problems on respirator usage discovered during their inspections to BES.

3.8. Base Supply shall: Control the issue of respirators as described in section 8 of this instruction.

#### **4. Selection, Use and Limitations.**

4.1. Respirator selection.

4.1.1. Respirators must be selected on the basis of the hazards to which the employees are exposed. Considerations include the type and concentration of contaminant.

4.1.2. BES will determine what type of respiratory protection each shop will be wearing for the types of operations they are performing.

4.1.3. Respirator selection involves professional judgment and review of each operation to determine what hazards may be present and to select the type of class of respirators which offers adequate protection. The AF Form 2773, **Respirator Selection Worksheet** shall be used by BES to assist in the selection of appropriate respiratory protection. The completed AF Form 2773 will be filed in the appropriate BES case file.

4.1.4. BES will on a case by case basis, approve the use of filtering face pieces for use during processes which do NOT generate hazardous levels of air contaminants.

4.1.5. Hood type PAPRs may be used by individuals with facial hair or those who have a facial contour which prohibits the proper fitting of a tight fitting respirator. These will be issued on a case basis by BES following evaluation of the process generating the hazardous atmosphere. PAPRs will NOT be used in an ACM or possible ACM atmosphere.

#### **5. Supplied Air Respirators.**

5.1. Breathing air tanks will be refilled after each use by authorized personnel.

5.2. Supplied air used in respirators shall minimally meet grade D specification for breathing air (ANSI/Compressed Gas Association Commodity Specification G-7.1-1989).

5.3. Compressed Oxygen will not be used in supplied air respirators designed for using compressed air.

5.4. Periodic cleaning, changing, and maintenance of filters for breathing air compressors shall be conducted by authorized maintenance personnel to assure that they are functioning properly.

5.5. Compressors supplying breathing air shall be designed, constructed and located to prohibit entry of contaminated air into the system.

5.6. Airline couplings shall be incompatible with other gas or compressed air systems to prevent accidental hookup to non-irrespirable gas or oxygen.

5.7. SCBA and airline respirators shall be inspected monthly using AF Form 1071, **Inspection/Maintenance Record**. Instructions for completion of AF Form 1071 are in AFOSHSTD 48-1, *Respiratory Protection Program*, **Attachment 17**.

## **6. Medical Surveillance:**

6.1. Medical Determination to wear respirators:

6.1.1. Prior to respirator certification, the employee shall receive an annual medical evaluation.

6.1.1.1. The INITIAL medical evaluation questionnaire at **Attachment 2** is to be completed by the worker and forwarded to BES. BES will forward the questionnaire to the evaluating physicians for their evaluation and signature and return to BES. The aeromedical council will review all completed medical questionnaires.

6.1.1.2. If all responses are “no”, then the physician will indicate on the questionnaire that the worker is medically cleared for fit-testing and sign the form. The form will then be sent to BES.

6.1.1.3. If any questions are answered “yes” (excluding items 14 or 15 which are for the program manager when fit-testing), fit-testing will not be accomplished until the worker has been evaluated by a physician.

6.2. Workers found to be medically at increased health risk or unable to adequately fit and/or use a respirator will be disqualified from the respiratory use program. Notice of disqualification determination will be sent to the supervisor, Personnel (civilian), and the worker along with an explanation of the disqualification. A copy of the determination will be placed in the workers medical record and BES case file.

6.3. Personnel who prefer and are authorized to use hood type PAPRs must also undergo medical surveillance.

6.4. Medical surveillance is not required for personnel whose sole use of respiratory protection is the utilization of filtering face pieces. Personnel requesting authorization for use of any tight-fitting respirator for comfort use (exposure is not above the PEL) must undergo medical surveillance.

6.5. An abbreviated (1-page) medical evaluation questionnaire is to be completed by the employee annually following the initial evaluation and fit test. The purpose of this evaluation is to ensure that personnel remain medically fit for continued respirator use. The questionnaire will be reviewed by the evaluating physician prior to the annual fit test.

## **7. Fit Testing.**

7.1. Respirators are generally uncomfortable to wear. There are differences among approved respirators and one type may be more acceptable to the worker than another. Different sizes of several respirators will be made available to the worker.

7.2. The worker will don the respirator and perform a negative pressure and positive pressure check.

7.2.1. Negative pressure fit check:

7.2.1.2. Close off air inlet openings by covering them with the palms of the hands or by temporarily sealing them with a stiff piece of thin cardboard. A thin flexible plastic film, like plastic wrap, may also be used.

7.2.1.3. Inhale so the face piece collapses inward slightly (indicating there is a negative pressure in the face piece). Hold breath for ten (10) seconds.

7.2.1.4. The fit check is considered satisfactory if the face piece remains in a slightly collapsed condition for the duration of the test and no inward leakage of air is detected.

7.2.1.5. If leakage was detected or if a negative pressure was not maintained for the full ten (10) seconds, readjust head harness and face piece and repeat the test. Head harness should be comfortable. Over-tightening may cause distortion and leakage.

7.2.1.6. Remove hands, tape, or other temporary covering from air inlets.

7.2.1.7. Never use a mask that fails a fit check.

7.2.2. Positive Pressure Fit Check:

7.2.2.1. The respirator is placed on the face and the head straps securely tightened.

7.2.2.2. Close off the outlet openings to the exhalation valve by temporarily covering them with the hands or by sealing them with tape or with a thin plastic film, like plastic wrap.

7.2.2.3. Exhale so that the face piece is slightly distended (enlarged) and hold the breath for ten (10) seconds. The longer the respirator remains expanded the better the face fit.

7.2.2.4. The fit check is considered satisfactory if the face piece remains in its slightly distended condition for the duration of the test and no outward leakage of air is detected.

7.2.2.5. If leakage was detected, readjust head harness and face piece and repeat the test. Head harness should be comfortable. Over-tightening may cause distortion and leakage.

7.2.2.6. Remove hands or other temporary covering from air inlets.

7.2.2.7. Never use a mask that fails the fit check.

7.2.3. Remember, not all leaks may be detected by positive or negative pressure fit checks. Fit checks are subjective measures that detect gross leakage only. They should not be used as a substitute for fit testing.

7.2.4. Fit checks and fit tests are not performed on filtering face pieces.

7.2.5. Hood type PAPRs are not tight fitting respirators, and therefore fit checks and fit tests are not required.

### 7.3. Quantitative Respirator Fit Test:

7.3.1. The test subject shall be allowed to choose the most comfortable respirator from a selection, including respirators of various sizes and from different manufacturers.

7.3.2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to get strap tension, and how to determine a comfortable fit. This instruction constitutes the subject's formal training on respirator use. The supervisor should document this training on test subject's AF Form 55.

7.3.3. The test subject shall be informed that they are being asked to select the respirator which provides the most comfortable fit. Each respirator represents a different size and shape, and if fitted and used properly will provide adequate protection.

7.3.4. The test subject shall be instructed to hold the face piece up to the face and eliminate those which obviously do not give comfortable fit.

7.3.5. The more comfortable face piece is noted. Assistance in assessing comfort can be given by discussing the points in item 7.3.6. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

7.3.6. Assessment of comfort shall include reviewing the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

7.3.6.1. Position of the mask on the nose.

7.3.6.2. Room for eye protection.

7.3.6.3. Room to talk.

7.3.6.4. Position of mask on face and cheeks.

7.3.7. The following criteria shall be used to help determine the adequacy of the respirator fit:

7.3.7.1. Chin properly placed.

7.3.7.2. Adequate strap tension, not overly tightened.

7.3.7.3. Fit across nose bridge.

7.3.7.4. Respirator of proper size to span the distance from nose to chin.

7.3.7.5. Tendency of respirator to slip.

7.3.7.6. Self-observation in mirror to evaluate fit and respirator position.

7.3.8. Quantitative Fit Test Protocols.

7.3.8.1. Turn on Quantitative fit test instrument and allow to warm up.

7.3.8.2. After worker has selected the most comfortable respirator, the tester will remove the filters and insert the proper test adapters.

7.3.8.3. Instruct worker on the ten test protocols to be used: Normal breathing, deep breathing, face left, face right, head up, head down, talking, grimace, standing up and bending at the waste, and normal breathing.

7.3.8.4. Have worker don the respirator and make appropriate adjustments and do a positive and negative fit test.

7.3.8.5. Start fit test and do all six protocols.

7.3.8.6. Save test results in computer and print out results. Inform worker of results.

7.4. Certification. The Dynatech Nevada Fit Tester 300 Quantitative Respirator Fit Test Report will be used to document the quantitative fit test. See **Attachment 5**.

7.5. Fit tests are not performed on filtering face pieces or hood type PAPRs.

## 8. Purchasing.

8.1. All respirators used in military workplaces shall be purchased by the government. Respirators supplied by workers shall not be used.

8.2. Respirator purchasing shall be controlled by BES and the program administrator.

8.3. The purchase of filtering face pieces is the responsibility of the work center. BES will provide guidance on the requirements regarding filtering face pieces.

8.4. Half face and full face respirators will be purchased by and maintained in BES to be issued to the wearer during fit-testing.

8.5. Hood-type powered air-purifying respirators (PAPRs) will be made available through BES.

8.6. IAW OSHA requirements, a selection of respirators will be available for workers to be fitted.

### 8.7. Inventory Control for New Respirator and Spare Parts.

8.7.1. Inventory control is a shared responsibility between BES, Base Supply, and the supervisor who controls respirator use on the job.

8.7.2. All respirators and respirator spare parts will be assigned a local Issue Exception Code (IEX) code of Y. This will assist BES in tracking issuance of respirators.

8.7.3. Inventory control not only prevents untrained personnel from receiving respirators, but will also ensure that there are enough respirators for trained personnel. Spare respirators are not authorized for shop bench stock.

8.8. There should be an ample supply of spare parts on hand so that a designated person can perform proper replacement or repair. Spare parts have their own NSN so the exact ones can be ordered.

8.9. Spare parts for respirators will be installed according to manufacturer's instructions so as not to invalidate the NIOSH certification. The manufacturer of the given respirator and spare part shall be the same.

## 9. Respirator Inspection.

### 9.1. Inspection of Air Purifying Respirators:

#### 9.1.1. Face piece.

##### 9.1.1.1. Excessive dirt.

- 9.1.1.2. Cracks, tears, holes, or physical distortion.
- 9.1.1.3. Lack of pliability and signs of distortion.
- 9.1.1.4. Incorrect face piece mounting or missing clips.
- 9.1.1.5. Cracked or broken air purifying element holder or bad (stripped) threads.
- 9.1.1.6. Damaged/missing inhalation valves.
- 9.1.2. Head Straps/Head Harnesses:
  - 9.1.2.1. Breaks.
    - 9.1.2.1. Loss of elasticity.
  - 9.1.2.3. Broken or malfunctioning buckles or attachments.
  - 9.1.2.4. Worn serration's which might permit slippage.
- 9.1.3. Exhalation Valve:
  - 9.1.3.1. Foreign material under valve seat.
  - 9.1.3.2. Cracks, tears, or distortion of the valve.
  - 9.1.3.3. Missing or defective valve cover.
  - 9.1.3.4. Improper installation of valve in valve body.
  - 9.1.3.5. Improper insertion of valve body into face piece.
- 9.1.4. Air Purifying Elements:
  - 9.1.4.1. Incorrect cartridge or filter for hazard. (Identify these in writing to supervisor).
  - 9.1.4.2. Incorrect installation, missing, or worn gasket on holder.
  - 9.1.4.3. Damaged or stripped threads on cartridge or filter.
  - 9.1.4.4. Expired end of service life indicator.
  - 9.1.4.5. Expired (past) recommended shelf or service life.
  - 9.1.4.6. Cracks or dents in outside casing.

9.1.4.7. Evidence of other damage.

## 10. Respirator Cleaning.

10.1. Each individual issued a respirator is responsible for its primary maintenance and care.

10.2. All respirators shall be inspected for the following items before and after each use:

10.2.1. The condition of the face piece, headbands, valves, connecting tube, and canister.

10.2.2. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage.

10.3. Routinely used respirators shall be cleaned and disinfected as frequently as necessary to insure that proper protection is provided for the wearer using the following procedures:

10.3.2. Wash components in 50 degree C (122 degree F) with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.

10.3.3. When the cleaner does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:

10.3.3.1. Hypo chlorite solution (50 ppm of chlorine) made by adding approximately one tablespoon of laundry bleach to one gallon of water at 50 degrees C.

10.3.3.2. Other commercially available cleaners of equivalent disinfectant quality when used as directed, unless their use is not recommended by the respirator manufacturer.

10.4. Insert new filters, cartridges, or canisters periodically as specified by the manufacturer; make sure seal is tight.

10.5. Place in a plastic bag or other closed container for storage.

## 11. Storage Maintenance and Inspection:

11.1. All respirators will be stored in a storage box in a clean and approved sanitary location convenient to the area requiring their use.

11.2. Supplied air respirators shall be maintained and inspected in accordance with the manufactures recommendations. Use the AF Form 1071, **Inspection/Maintenance**

**Record** to document the inspection/maintenance. Instructions for completion of AF Form 1071 in AFOSH Standard 48-1, **Attachment 17**.

11.3. Boxes of filtering face pieces will be stored closed and in a clean, secure location.

CHRISTOPHER M. JONIEC, Colonel, USAFR  
Commander

## ATTACHMENT 1

### OSHA Respirator Medical Evaluation Questionnaire

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

To the employee: Can you read?                      Yes                      No

Your employer must allow you to answer this questionnaire during normal working hours, or at the time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers. Bioenvironmental Engineering will distribute this questionnaire and provide an envelope (which will be addressed to Bioenvironmental Engineering) for each worker to return the questionnaire.

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

1. Today's date: \_\_\_\_\_
2. Your name (*Last, First, MI*): \_\_\_\_\_
3. Your age (to the nearest year) \_\_\_\_\_      4. Sex (*circle one*): Male      Female
5. Your height: \_\_\_\_\_ ft. \_\_\_\_\_ in.      6. Your weight \_\_\_\_\_.
7. Your Job title: \_\_\_\_\_.
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (including the Area Code): [\_\_\_\_\_] - \_\_\_\_\_.
9. The best time to phone you at this number. \_\_\_\_\_.

10. Has your employer told you how to contact the health care professional who will review this questionnaire?      Yes              No

11. Check the type of respirator you will use (you can check more than one category):

SCBA \_\_\_\_\_      Air-Purifying (non-powered) \_\_\_\_\_

Air-Purifying (Powered) \_\_\_\_\_      Supplied-air respirator (air line) \_\_\_\_\_

Combination air-line and SCBA \_\_\_\_\_

Brand of Respirator used: \_\_\_\_\_.

12. Have you ever worn a respirator before?      Yes              No

If "yes," what type(s): \_\_\_\_\_

\_\_\_\_\_.

Part A. Section 2: Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please "yes" or "no").

1. Do you currently smoke tobacco, or have you smoked in the last month?      Yes      No

2. Have you ever had any of the following conditions?      Yes      No

a. Seizures (fits):      Yes      No

b. Diabetes (sugar disease):      Yes      No

c. Allergic reactions that interfere with your breathing:      Yes      No

d. Claustrophobia (fear of closed-in places):      Yes      No

e. Trouble smelling odors:      Yes      No

3. Have you ever had any of the following pulmonary or lung problems?

a. Asbestosis:      Yes      No

b. Asthma:      Yes      No

c. Chronic bronchitis:      Yes      No

d. Emphysema:      Yes      No

e. Pneumonia:      Yes      No

- |   |     |    |
|---|-----|----|
| f. Tuberculosis:                                | Yes | No |
| g. Silicosis:                                   | Yes | No |
| h. Pneumothorax (collapsed lung):               | Yes | No |
| i. Lung Cancer:                                 | Yes | No |
| j. Broken ribs:                                 | Yes | No |
| k. Any chest injuries or surgeries:             | Yes | No |
| l. Any other lung problems not mentioned above? | Yes | No |
4. Do you currently have any of the following symptoms of pulmonary or lung illness?
- |   |     |    |
|---|-----|----|
| a. Shortness of breath:   | Yes | No |
| b. Shortness of breath when walking fast on level ground or an ordinary pace on level ground: | Yes | No |
| c. Shortness of breath when walking with other people at an ordinary pace on level ground:    | Yes | No |
| d. Have to stop for breath when walking at your own pace on level ground:                     | Yes | No |
| e. Shortness of breath when washing or dressing yourself:                                     | Yes | No |
| f. Shortness of breath that interferes with your job:   | Yes | No |
| g. Coughing that produces phlegm (thick sputum)   | Yes | No |
| h. Coughing that occurs mostly when you are lying down:                                       | Yes | No |
| j. Coughing up blood in the last month:   | Yes | No |
| k. Wheezing:  | Yes | No |
| l. Wheezing that interferes with your job:  | Yes | No |
| m. Chest pain when you breath deep:   | Yes | No |
| n. Any other symptoms that you think may be related to lung problems:                         | Yes | No |

5. Have you ever had any of the following cardiovascular or heart problems?
- a. Heart attack: Yes No
  - b. Stroke: Yes No
  - c. Angina: Yes No
  - d. Heart failure: Yes No
  - e. Swelling in your legs or feet (not caused by walking): Yes No
  - f. Heart arrhythmia (heart beating irregularly): Yes No
  - g. Any other heart problems that you've been told about: Yes No
6. Have you ever had any of the following cardiovascular or heart symptoms?
- a. Frequent pain or tightness in our chest: Yes No
  - b. Pain or tightness in your chest during physical activity: Yes No
  - c. Pain or tightness in your chest that interferes with your job: Yes No
  - d. In the past two years, have you noticed your heart skipping or missing a beat: Yes No
  - e. Heartburn or indigestion that is not related to eating: Yes No
  - f. Any other symptoms that you think may be related to heart or circulation problems: Yes No
7. Do you currently take medication for any of the following problems?
- a. Breathing or lung problems: Yes No
  - b. Heart trouble: Yes No
  - c. Blood pressure: Yes No
  - d. Seizures (fits): Yes No
8. If you've used a respirator, have you ever had any of the problems? (If you've never used a respirator, check the following space and go to question 9):
- a. Eye irritation: Yes No

- b. Skin allergies or rashes: Yes No
  - c. Anxiety: Yes No
  - d. General weakness or fatigue: Yes No
  - e. Any other problem that interferes with your use of a respirator: Yes No
9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire? Yes No

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

10. Have you ever lost vision in either eye (temporarily or permanently)? Yes No
11. Do you currently have any of the following vision problems? Yes No
- a. Wear contact lenses: Yes No
  - b. Wear glasses: Yes No
  - c. Color blind: Yes No
  - d. Any other eye or vision problem: Yes No
12. Have you ever had a injury to your ears, including a broken ear drum? Yes No
13. Do you currently have any of the following hearing problems? Yes No
- a. Difficulty hearing: Yes No
  - b. Wear a hearing aid: Yes No
  - c. Any other hearing or ear problem: Yes No
14. Have you ever had a back injury? Yes No
15. Do you currently have any of the following musculoskeletal problems? Yes No
- a. Weakness in any of your arms, legs, or feet: Yes No
  - b. Back pain: Yes No

- |  |     |    |
|--|-----|----|
| c. Difficulty fully moving your arms and legs:                                   | Yes | No |
| d. Pain or stiffness when you lean forward or backward at the waist:             | Yes | No |
| e. Difficulty fully moving your head up or down:                                 | Yes | No |
| f. Difficulty fully moving your head side to side:                               | Yes | No |
| g. Difficulty bending at your knee:  | Yes | No |
| h. Difficulty squatting to the ground:   | Yes | No |
| i. Climbing a flight of stairs or a ladder carrying more than 25 lbs:            | Yes | No |
| j. Any other muscle or skeletal problem that interferes with using a respirator: | Yes | No |

Part B of the OSHA Respiratory Protection Questionnaire:

- |   |     |    |
|---|-----|----|
| 1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen? | Yes | No |
|---|-----|----|

If "yes", do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you are working under these conditions:

Yes No

- |  |     |    |
|--|-----|----|
| 2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dusts), or have you come into skin contact with hazardous chemicals? | Yes | No |
|--|-----|----|

- |  |  |  |
|--|--|--|
| 3. Have you ever worked with any of the materials, or under any of the following conditions? |  |  |
|--|--|--|

- |   |     |    |
|---|-----|----|
| a. Asbestos:  | Yes | No |
| b. Silica (e.g., in sandblasting):                            | Yes | No |
| c. Tungsten/cobalt (e.g., grinding or welding this material): | Yes | No |
| d. Beryllium:   | Yes | No |
| e. Aluminum:  | Yes | No |
| f. Coal (for example, mining):                                | Yes | No |

g. Iron: Yes No

h. Tin: Yes No

i. Any other hazardous exposures: Yes No

If "yes," describe these exposures:\_\_\_\_\_

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4. List any second jobs or side business you have:\_\_\_\_\_

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5. List your previous occupations:\_\_\_\_\_

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6. List your current and previous hobbies:\_\_\_\_\_

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7. Have you been in the military service? Yes No

8. Have you ever worked on a HAZMAT Team? Yes No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications)? Yes No

If "yes," name of the medications:\_\_\_\_\_

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10. Will you be using any of the following items with your respirator(s)?

a. HEPA Filter (N, R or P series): Yes No

b. Canisters (for example, gas masks): Yes No

c. Cartridges (organic vapor): Yes No

11. How often are you expected to use the respirator(s) (Mark “yes” or “no” for all answers that apply to you).

a. Escape only (no rescue): Yes No

b. Emergency rescue only: Yes No

c. Less than 5 hours per week: Yes No

d. Less than 2 hour per day: Yes No

e. 2 to 4 hours per day: Yes No

f. Over 4 hours per day: Yes No

12. During the period you are using the respirator(s), is your work effort:

a. Light (less than 200 kcal per hour): Yes No

If “yes,” how long does this period last during the average shift: \_\_\_\_\_ hrs. \_\_\_\_\_ min.

Examples of light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

b. Moderate (200 to 350 kcal per hour): Yes No

If “yes,” how long does this period last during the average shift: \_\_\_\_\_ hrs. \_\_\_\_\_ min.

Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5 degree grade about 3 mph; or pushing a wheelbarrow with a heavy load about (100 lbs.) on a level surface.

c. Heavy (about 350 kcal per hour): Yes No

If “yes,” how long does this period last during the average shift: \_\_\_\_\_ hrs. \_\_\_\_\_ min.

Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8 degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.)

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes No

If "yes," describe this protective clothing and/or equipment: \_\_\_\_\_

14. Will you be working under hot conditions (temperatures exceeding 77 degrees F)? Yes No

15. Will you be working under humid conditions? Yes No

16. Describe the work you'll be doing while your using your respirator(s): \_\_\_\_\_

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined, spaces, life-threatening gases):

18. Provide the following information, for each toxic substance that you'll be exposed to when you're using your respirator: **This information is available in the BES survey for your shop. You can look in the MSDS book for your shop or ask your supervisor for assistance.**

***Name of the first toxic substance:*** \_\_\_\_\_

Estimated maximum exposure to level per shift: \_\_\_\_\_

Duration of exposure per shift: \_\_\_\_\_

***Name of second toxic substance:*** \_\_\_\_\_

Estimated maximum exposure to level per shift: \_\_\_\_\_

Duration of exposure per shift: \_\_\_\_\_

***Name of third toxic substance:*** \_\_\_\_\_

Estimated maximum exposure to level per shift: \_\_\_\_\_

Duration of exposure per shift: \_\_\_\_\_

The names of any other toxic substances that you'll be exposed to while using your respirator:

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19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

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\_\_\_\_\_  
(Signature of Applicant)

**Physician's Evaluation**

Medical restriction on respirator use: Yes No

Some specific medical restrictions: Yes No

Respirator use permitted: Yes No

Comments: \_\_\_\_\_

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Physicians name (*Print, Last, First, Mi*): \_\_\_\_\_

\_\_\_\_\_  
(Signature of Physician)

**Bioenvironmental Engineering action**

Fit test satisfactory, qualified for respirator use: Yes No

Fit test unsatisfactory, disqualified for respirator use: Yes No

Fit Testers name (*Print, Last, First, Mi*): \_\_\_\_\_

\_\_\_\_\_  
(Signature of fit tester)

**ATTACHMENT 2**

**OSHA Annual Respirator Medical Evaluation Questionnaire**

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

1. Today's date: \_\_\_\_\_
2. Your name (*Last, First, MI*): \_\_\_\_\_
3. Your age (to the nearest year) \_\_\_\_\_
4. Sex (*circle one*): Male Female
5. Your height: \_\_\_\_\_ ft. \_\_\_\_\_ in.
6. Your weight \_\_\_\_\_.
7. Your Job title: \_\_\_\_\_.
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (including the Area Code): [\_\_\_\_\_] - \_\_\_\_\_.
9. The best time to phone you at this number. \_\_\_\_\_.



Comments: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Physicians name (*Print, Last, First Mi*): \_\_\_\_\_

\_\_\_\_\_  
(Signature of Physician)

**Bioenvironmental Engineering action**

Fit test satisfactory, qualified for respirator use: Yes No

Fit test unsatisfactory, disqualified for respirator use: Yes No

Fit Testers name (*Print, Last, First Mi*): \_\_\_\_\_

\_\_\_\_\_  
(Signature of fit tester)

**ATTACHMENT 3**  
**Certification Of Voluntary Respirator Use**  
(Reference: 29CFR 1910.134(4)(2))

**Employee Certification:**

I \_\_\_\_\_ (*printed name*), do hereby certify that  
I'm voluntarily using a respirator to reduce my exposure to \_\_\_\_\_

\_\_\_\_\_  
(give names or type of air contaminant).

I have been given a copy of 29 CFR 1910.134 Appendix D regarding proper respirator use and I have read and understand it.

Signed \_\_\_\_\_ Date \_\_\_\_\_

**Employer Certification:**

I have determined that this voluntary use of a respirator will not create a hazard in the workplace.

I have given the above-named employee a copy of 29 CFR 1910.134 Appendix D.

(Circle A or B)

A. The selected respirator is a dusk mask (filtering face piece) and no further action is required.

B. The selected respirator is \_\_\_\_\_ (type) and the following will be provided:

1. Initial medical evaluation.
2. Instruction and evaluation in the proper method of cleaning, storing, and maintaining the respirator so that its use does not present a health hazard to the user.

BES Representative: \_\_\_\_\_ Date \_\_\_\_\_  
(Print, Last, First, MI)

BES Representative Signature: \_\_\_\_\_

**ATTACHMENT 4  
OSHA Respirator Training Questionnaire**

1. I have been trained in the nature of the hazards that my respirator protects me against and what may happen if the respirator is not worn properly.
2. I understand why this particular type of respirator has been selected for my use.
3. I understand the operation and the capabilities of this respirator.
4. I have been trained in how to maintain, clean, and store my respirator.

5. I have been instructed on how to inspect, put on and clean, check the fit (positive and negative pressure test), and properly wear the respirator.
6. I know I must notify my supervisor of any problems experienced by myself or co-workers while wearing a respirator.
7. I have been given the opportunity to handle the respirator, don the respirator, wear the respirator properly, check the seals all in a safe atmosphere before working in my respirator.
8. I will be clean shaven when I wear the respirator I have been issued.
9. I will not loan my respirator to another worker or I will not borrow a respirator from another individual.

Print Name: \_\_\_\_\_  
(Last, First, MI) (Date)

Signature: \_\_\_\_\_

Signature of BES representative: \_\_\_\_\_

**ATTACHMENT 5**  
**Quantitative Respirator Fit Test Report**

**FIT TESTER 3000**

Test Date: \_\_\_\_\_

Subject Identification:

ID Number: \_\_\_\_\_ Department: \_\_\_\_\_

Last Name: \_\_\_\_\_

First Name: \_\_\_\_\_ MI: \_\_\_\_\_ Gender: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

Respirator ID:

Manufacture: \_\_\_\_\_

Model: \_\_\_\_\_

Size: \_\_\_\_\_

Test Parameters:

Modeled Work Rate: \_\_\_\_\_

Mask Type: \_\_\_\_\_

Cartridge Type: \_\_\_\_\_

Challenge Pressure: \_\_\_\_\_

Modeled Breathing Rate: \_\_\_\_\_

Minimum Passing Fit Factor: \_\_\_\_\_

Test Subject Gender: \_\_\_\_\_

Results:

<u>Exercise</u>	<u>Leak Rate</u>		<u>Fit Factor</u>
01) Normal Breathing	(cc/min)	score	(Pass or Fail)
02) Deep Breathing	(cc/min)	score	(Pass or Fail)
03) Head Left	(cc/min)	score	(Pass or Fail)
04) Head Right	(cc/min)	score	(Pass or Fail)
05) Head Up	(cc/min)	score	(Pass or Fail)
06) Head Down	(cc/min)	score	(Pass or Fail)
07) Talking	(cc/min)	score	(Pass or Fail)
08) Grimace	(cc/min)	score	(Pass or Fail)
09) Bending Over	(cc/min)	score	(Pass or Fail)
10) Normal Breathing	(cc/min)	score	(Pass or Fail)

Average Percent Leak =

Equivalent Fit Factor = Number (Pass or Fail)

Operator ID: (Name Of Operator)

Signatures:

Operator\_\_\_\_\_

Test Subject\_\_\_\_\_

## ATTACHMENT 6

### Sample Unit Operating Instructions

*(Delete all areas in this sample that do not apply to your shop)*

BY ORDER OF THE CHIEF (Your Unit) OPERATING INSTRUCTION 91-XXX  
(Your Unit spelled out) Date

Series Title

Respiratory Protection Program

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OPR: (Your unit) (OPRs Name)  
*(Won't have supersedes line this time)*

Pages:  
Distribution

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Start the purpose statement here. All AFRC, AF, and unit operating instructions (OI) must implement an antecedent policy directive. The statement describes the purpose of the publication and to whom it applies.

SUMMARY OF REVISIONS *(Won't have one this time)*

#### 1. REFERENCES:

- 1.1. AFOSH STD 48-137, *Respiratory Protection Program*.
- 1.2. AFOSH STD 161-17, *standardized Occupational Health Program*.
- 1.3. OSHA STD 29 CFR 1910.29.
- 1.4. OSHA STD 29 CFR 1926.58.
- 1.5. ANSZ882-1992.
- 1.6. NIOSH Certified Equipment List.
- 1.7. Grissom ARB WI 91-303, *Respiratory Protection Program*.

**2. PURPOSE:** Personnel in your Work center have been fit tested, trained and issued respirators by BES based on exposures outlined in your initial and Periodic Industrial Work center surveys. This Operating Instruction (OI) describes the processes for which these respirators will be used.

### **3. RESPONSIBILITIES:**

3.1. (Work center Supervisor) will:

3.1.1. Maintain all applicable standards for the Respiratory Protection Program (Wing Instruction 91-303, and AFOSH Standard 48-137).

3.1.2. Develop an operating instruction for the respiratory protection program. A copy of the OI shall be provided to the program administrator for approval.

3.1.3. Contact BES when workplace operations change to ensure that appropriate evaluations are made when new chemicals are introduced, processed, processed, procedures are changed, or engineering controls are modified or added.

3.1.4. Document initial and annual training for respiratory protection on AF Form 55, **Employee Safety and Health Record**.

3.1.5. Provide for quality control of respirator breathing air (if required) according to T.O. 42B-1-22, *Quality Control of Compressed and Liquid Breathing Air*, and furnish sampling results to BES.

3.1.6. Appoint an individual to be responsible for the use, maintenance, inspection, and care of common use, emergency, or escape respirators, as appropriate.

3.1.7. Maintain a list of respirator users in their department, which includes type of BES approved respirators used, dates of training, fit-testing, and medical evaluations/examinations.

3.1.8. Stock and issue approved replacement filters or cartridges for air purifying respirators.

3.1.9. Ensure personnel on the Respiratory Protection Program wear only the respirator(s) which was provided/approved by BES.

3.1.10. Allow the use of filtering face pieces for comfort use **ONLY** during processes which do not generate a hazardous chemical atmosphere, as described in this OI (upon BES approval).

3.1.11. Advise all respirator wearers that they must leave the area at any time for relief from respirator use in the event of equipment malfunction, physical or psychological

distress, procedural or communication failure, significant deterioration of operating conditions, or any other condition that might require such relief..

3.1.12. Assure all respirator users are certified and trained by BES and only BES approved respirators are utilized by employees.

3.1.13. Assure that employees maintain respirators in a clean, sanitary condition. See paragraph 10 434 ARWI 91-303.

3.1.14. Be responsible for notifying BES of requirements for initial and annual fit testing of workers.

3.2. The employee shall be responsible for:

3.2.1. Wearing appropriate personal protective equipment (including respirators) as required for performing assigned tasks.

3.2.2. Informing the supervisor of any conditions that may be aggravated by the use of a respirator.

3.2.3. Storing and maintaining assigned respirator(s) in a clean and sanitary condition.

3.2.4. Reporting to the supervisor any maintenance needs of their respirator(s).

3.2.5. Cleaning and sanitizing respirator(s) after each use and returning them to their storage location properly bagged and sealed.

3.2.6. Performing self administered fit checks prior to the use of respirators.

3.2.7. Using only clean, assigned respirators, which are in good condition.

3.2.8. Using filtering face pieces **ONLY** during those processes outlined in this OI (which do not generate a hazardous atmosphere), as determined and approved by BES, and then only for comfort use.

#### **4. RESPIRATOR SELECTION AND USE**

4.1. Respirator selection.

4.1.1. Respirators must be selected on the basis of the hazards to which the employees are exposed. Considerations include the type and concentration of contaminant.

4.1.2. BES will determine what type of respiratory protection each shop will be wearing for the types of operations they are performing.

4.1.3. Respirator selection involves professional judgment and review of each operation to determine what hazards may be present and to select the type of class of respirators which offers adequate protection.

4.2. Medical determination to wear respirators:

4.2.1. Prior to respirator certification, the employee shall receive an annual medical evaluation.

4.2.1.1. The medical evaluation questionnaire is to be completed by the worker, and forwarded to BES. BES will forward the questionnaire to the evaluating physicians for their evaluation and signature and return to BES.

4.2.1.2. If all responses are “no”, then the physician will indicate on the questionnaire that the worker is medically cleared for fit-testing and sign the form. The form will then be sent to BES.

4.2.1.3. If any questions are answered “yes” (excluding items 14 or 15 which are for the program manager when fit-testing), fit-testing will not be accomplished until the worker has been evaluated by a physician.

4.2.2. Workers found to be medically at increased health risk or unable to adequately fit and/or use a respirator will be disqualified from the respiratory use program. Notice of disqualification determination will be sent to the supervisor, Personnel (Civilian), and the worker as long with an explanation of the disqualification. A copy of the determination will be placed in the worker medical record and BES case file.

## **5. RESPIRATOR INSPECTION**

5.1. Inspection of Air Purifying Respirators:

5.1.1. Face piece.

5.1.1.2. Cracks, tears, holes, or physical distortion.

5.1.1.3. Lack of pliability and signs of distortion.

5.1.1.4. Incorrect face piece mounting or missing clips.

5.1.1.5. Cracked or broken air purifying element holder or bad (stripped) threads.

5.1.1.6. Damaged/missing inhalation valves.

5.1.2. Head Strap/Head harnesses:

5.1.2.1. Breaks

5.1.2.2. Loss of elasticity.

5.1.2.3. Broken or malfunctioning buckles or attachments.

5.1.2.4. Worn serration's which might permit slippage.

5.1.3. Exhalation Valve:

5.1.3.1. Foreign material under valve seat.

5.1.3.2. Cracks, tears or distortion of the valve.

5.1.3.3. Missing or defective valve cover.

5.1.3.4. Improper installation of valve in valve body.

5.1.3.5. Improper insertion of valve body into face piece.

5.1.4. Air Purifying Elements:

5.1.4.1. Incorrect cartridge or filter for hazard. (Identify these in writing to supervisor).

5.1.4.2. Incorrect installation, missing or worn gasket on holder.

5.1.4.3. Damaged or stripped threads on cartridge or filter.

5.1.4.4. Expired end of service life indicator.

5.1.4.5. Expired (past) recommended shelf or service life.

5.1.4.6. Cracks or dents in outside casing.

5.1.4.7. Evidence of other damage.

## **6. RESPIRATOR CLEANING PROCEDURES:**

6.1. Each individual issued a respirator is responsible for its primary maintenance and care.

6.2. All respirators shall inspected for the following items before and after each use:

6.2.1. The condition of the face piece, headbands, valves, connecting tube, and canister.

6.2.2. Rubber of elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging

action will keep them pliable and flexible and prevent them from taking a set during storage.

6.3. Routinely used respirators shall be cleaned and disinfected as frequently as necessary to insure that proper protection is provided for the wearer using the following procedures.

6.3.1. Remove any filters, cartridges, or canisters. Disassemble face pieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any other components recommended by the manufacturer. Discard or repair any defective parts.

6.3.2. Wash components in 50 degrees C (122 degrees F) with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.

6.3.3. When the cleaner does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:

6.3.3.1. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 50 degree C or, 122 degrees F.

6.3.3.2. Other commercially available cleaners of equivalent disinfectant quality when used as directed, unless their use is not recommended by the respirator manufacturer.

6.4. Insert new filters, cartridges, or canisters periodically as specified by the manufacturer; make sure seal is tight.

6.5. Place in a plastic bag or other closed container for storage.

**7. FIT TESTING/TRAINING:** Employees requiring tight fitting respirators will complete a Medical Evaluation, undergo fit testing and training, and be issued a respirator per the procedures described in 434 ARWI 91-303, *Respiratory Protection Program*.

## **8. EMERGENCY PROCEDURES:**

8.1. Appropriate respiratory protection will be utilized, by certified, and currently trained users only, upon entering contaminated atmospheres to perform rescue or maintenance operations.

8.2. When it is determined that rescue or emergency operations will be required in a process or area, suitable personal protective equipment will be provided for such purposes. Coordination prior to the operations with BES, extension 2-3572 and ground safety, extension 2-8276 is required.

8.3. Such equipment shall be easily accessible to personnel but located outside the area in question.

8.4. Whenever operations require an individual to enter an Immediately Dangerous to Life and Health (IDLH) atmosphere wearing a supplied air respirator for rescue or maintenance, standby personnel must be present wearing suitable rescue equipment. Standby personnel shall be in such a position so that they would be unaffected by any toxic or oxygen deficient atmospheres encountered.

8.5. In IDLH conditions, select a positive pressure SCBA with full-face piece or a supplied-air respirator with emergency escape SCBA.

### **9. Storage, Maintenance, and Inspection (all types):**

9.1. All respirators will be stored in a storage box in a clean and approved sanitary location convenient to the area requiring their use.

9.2. Supplied air respirators shall be maintained and inspected in accordance with the manufactures recommendations. Use the AF Form 1071, **Inspection/Maintenance Record**, to document the inspection/maintenance.

### **10. Processes During Which Filtering Face Pieces (Dust Masks) are Authorized:**

List here all processes during which dust masks may be used. Include a statement indicating that personnel are not exposed to airborne contaminants over established PELs during the described tasks. BES approval for dust mask use is required.

### **11. Respirator Filter Change-Out Frequency:**

11.1. Respirator cartridges will be changed out immediately whenever either of the following conditions manifests:

11.1.1. Whenever the end of service life indicator is triggered.

11.1.2. Per the established change-out schedule: (SEE BES FOR GUIDANCE)

### **12. Annual Training Requirements:**

12.1. BES will provide annual training to all personnel on the Respiratory Protection Program during their annual respirator fit testing.

12.2. The following areas will be covered during annual training:

12.2.1. Respirator selection.

12.2.2. Respirator inspection.

- 12.2.3. Cartridge or filter installation.
- 12.2.4. BES responsibilities.
- 12.2.5. Supervisor responsibilities.
- 12.2.6. Worker responsibilities.
- 12.2.7. Negative and positive fit checks.
- 12.2.8. Respirator cleaning procedures.
- 12.2.9. Storage, Maintenance, and Inspection.

Signature Block