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**Aerospace Medicine**

**RESPIRATORY PROTECTION PROGRAM**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implement AFRD 48-1, *Aerospace Medical Program*. It establishes local procedures and guide line and will be used in conjunction with 29 CFR 1910.134/139, *Respiratory Protection*, and AFOSH Standard 48-137, *Respiratory Protection Program*. All organization in which personnel wear respirators of filtering face piece devices are required to maintain this instruction.

**1. Responsibilities.** Responsibilities are defined in AFOSH Std 48-137. Additional responsibilities are:

1.1. The Base Program Administrator shall be the Bioenvironmental Engineering (BEE) (911 SPTG/SGPB), or a trained individual from the BEE designated by the Wing Commander.

1.2. Supervisors:

1.2.1. Contact Bioenvironmental Engineering (BEE) for information and guidance regarding the respiratory protection program.

1.2.2. Contact BEE to schedule initial and annual respiratory protection training and fit-testing for personnel under their supervision who wear respirators.

1.2.3. Contact BEE to schedule initial Supervisor Respiratory Protection Training for all supervisors who have the responsibility of overseeing work activities of one or more persons who must wear respirators.

1.2.4. Maintain this instruction and AFOSH Std 48-137 in work areas where respiratory protection is used. These documents are part of your work area written program. Maintain a work area Respiratory Protection Program Operating Instruction for you specific work area covering the following items for all areas where respiratory protection is either required or recommended. The operating instruction and any modifications must be approved by BEE. BEE can provide an OI template and most of the technical information required below.

- 1.2.4.1. Describe the situations or operations in which respiratory protection is required or recommended.
  - 1.2.4.2. Include specific information regarding respiratory selection. Include a reasonable estimate of employee exposure. The name, chemical state and physical form of the contaminant must be specified.
  - 1.2.4.3. Specify respirators approved by BEE for use in each situation/operation.
  - 1.2.4.4. Describe specific procedures for the proper use of respirators. Include mandatory user seal check procedures.
  - 1.2.4.5. Specify procedures and schedules for respirator inspecting, cleaning, disinfecting, storing, repairing, discarding, and otherwise maintaining respirators. Include criteria workers are to use to determine when filters, cassettes, or cartridges must be changed. Ensure respirators are cleaned and disinfected using procedures in Appendix B-2 of 29 CFR 1910.134/139 or procedures recommended by the manufacturer if equivalent in effectiveness. Ensure all filters, cartridges, and canisters used in the workplace are labeled and color-coded with the NIOSH approval labeling.
  - 1.2.4.6. Where atmosphere-supplying respirators (airline or SCBA) are used, specify procedures to ensure adequate quality, quantity and flow of breathing air.
  - 1.2.4.7. Include training requirements in the respiratory hazards to which personnel are potentially exposed during routine and emergency situations. A copy of the lesson plan must be attached unless the OI is used as the lesson plan and covers all required items.
  - 1.2.4.8. Include training requirements in the proper use of respirators, including putting on the removing them, any limitations on their use, and their maintenance. A copy of the lesson plan must be attached unless the OI is used as the lesson plan and covers all required items.
  - 1.2.4.9. Procedures for regularly evaluating the effectiveness of the program.
  - 1.2.4.10. Requirements and procedures for medical clearance and fit testing.
  - 1.2.5. Contact BEE to request an evaluation of potentially hazardous airborne substances due to personnel experiencing irritation or other symptoms from chemical use, changes in work practices, inoperative engineering controls, substance substitution, or newly acquired chemicals.
  - 1.2.6. Provide initial and annual training IAW the lesson plan at [Attachment 1](#) for individuals who elect to wear filtering face piece devices.
- 1.3. Base Supply:
- 1.3.1. Ensure BEE has approved all respiratory protection requests before issuing respirators or parts.
  - 1.3.2. Ensure a "suitable substitute" for a particular respirator or respirator part is not issued or allowed.
  - 1.3.3. Ensure all respirators and respirator parts are IEX coded "9".
- 1.4. Any agency conducting breathing air sampling must send BEE a copy of the sampling results no later than two weeks after results are received.

## 2. Base Program Elements:

2.1. Procedures for Selecting Respirators. Respiratory protection will be selected and approved by the BEE prior to purchase. Respirators will be selected to protect against the specific inhalation hazard/s present in the work area. NIOSH-certified respirators will be selected and used in compliance with their certification conditions. Specific selection procedures will be maintained in a written instruction in the BEE.

### 2.2. Medical Evaluations of Employees:

2.2.1. A medical evaluation to determine each employee's ability to use a respirator is required prior to fit testing or use of respiratory protection.

2.2.2. Part A of the questionnaire from Appendix C of 29 CFR 1910.134/139 will be completed by each employee who will wear respiratory protection (obtain from the Physical Exams Section, 7-3067). Note that personnel who were fit tested between April 1997 and March 1998 will not need to reaccomplish medical screening until their annual fit tests are due. Questionnaires should be turned in to the Physical Exams Section (PES) at the Clinic. Questionnaires will be kept confidential.

2.2.3. Each employee has the right to discuss the results of the medical questionnaire and exam with the provider. Contact PES to schedule an appointment if desired.

2.2.4. The medical provider will provide a written recommendation for each employee medically screened for the respiratory protection program. This will state any limitations on respirator use, and a copy will be provided to the employee.

2.2.5. Additional medical evaluations will be required if:

2.2.5.1. The employee has signs or symptoms related to their ability to use a respirator.

2.2.5.2. A health care provider, supervisor or respiratory program manager determines another evaluation is necessary.

2.2.5.3. Information from the respiratory protection program, including observations during fit testing and program evaluation, indicate a need for re-evaluation, or

2.2.5.4. A change occurs in workplace conditions (e.g. physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

2.2.6. An abbreviated medical questionnaire may be required for annual medical surveillance. This will be determined on a case by case basis by the Occupational Health Working Group.

### 2.3. Fit Testing Procedures:

2.3.1. Fit test procedures in Appendix A to 29 CFR 1910.134/136 will be followed. A copy will be maintained in the BEE office.

2.3.2. Fit tests will be done with the same make, model, size, and style of respirator to be worn. Personnel must consult with BEE to determine if they must bring their respirator face piece to the BEE for fit testing. Each individual must bring any glasses or other corrective lenses that will be worn with the respirator for the fit test.

2.3.3. Fit tests will be accomplished at the BEE prior to requiring any employee to wear any tight-fitting face piece respirator and at least annually thereafter. Additional fit tests are required if there are changes in physical condition (such as facial scarring, dental changes, cosmetic surgery, or obvious change in body weight) which could affect the fit.

2.3.4. BEE will not fit test any individual without proof of medical clearance within the preceding 12-month period. If BEE does not have a clearance letter from the Flight Surgeons' Office (SFO), personnel need to bring their medical records showing this clearance to their fit test appointment. If any adequate fit test cannot be achieved, BEE will notify the Physical Exam Section.

2.3.5. Fit tests will be documented on AF Form 2772, **Certificate of Respirator Fit Test**. The original will be given to the employee and must be maintained with AF Form 55, **Employee Safety and Health Record** or equivalent until the next fit test is administered. A copy of each AF Form 2772 will also be maintained in the case files at BEE with copy of available recordings of quantitative fit tests. BEE case file documentation is kept for the duration of employment.

2.3.6. No one will be fit-tested without medical clearance, and personnel who do not have a current fit-test will NOT wear respirators.

#### 2.4. Procedures for Proper Use of Respirators in Routine and Emergency Situations:

2.4.1. Tight-fitting face piece respirators will not be worn by personnel who have facial hair that comes between the sealing surface of the face piece and the face, or that interferes with valve function.

2.4.2. Tight fitting face pieces will not be worn by employees who have any condition that interferes with the seal of the face piece to the face.

2.4.3. Corrective glasses, goggles or other personal protective equipment must be worn so that it does not interfere with the seal of the face piece to the face.

2.4.4. A user seal check is required each time a tight-fitting face piece is put on.

2.4.5. BEE will evaluate the respiratory protection program in each work area using respirators annually to determine whether exposure levels have changed significantly or other conditions affecting respirator effectiveness have changed.

2.4.6. Employees will leave the respirator use area to wash their faces and face pieces as necessary, when vapor or gas breakthrough is detected (i.e., they smell chemicals), when breathing resistance changes (i.e., it becomes difficult or much easier to breathe), when there is leakage around the face piece, or when filtering elements are replaced. Required repairs/maintenance must be accomplished before returning to the work area.

2.4.7. No 911 AW employee should enter an Immediately Dangerous to Life or Health (IDLH) atmosphere.

#### 2.5. Procedures and Schedules for Cleaning, Disinfecting, Storing, Inspecting, Repairing, Discarding, and Otherwise Maintaining Respirators:

2.5.1. Routinely used respirators will be issued to individuals for use by one worker only. Exclusive use respirators will be cleaned and disinfected as often as necessary to be maintained in a sanitary condition.

- 2.5.2. Respirators used by different individuals will be cleaned before being worn by different individuals, except emergency use respirators, which are to be cleaned after each use.
  - 2.5.3. Routine use respirators will be inspected before each use and during cleaning
  - 2.5.4. Emergency use respirators will be inspected at least monthly, and will be checked for proper function before and after each use.
  - 2.5.5. Emergency escape respirators will be inspected before being placed in the work area.
  - 2.5.6. All inspection, maintenance, and cleaning shall be documented on AF Form 1071, **Inspection/Maintenance Record**, and initialed by person conducting the task. The AF Form 1071 shall accompany all individual respirators utilized by personnel.
- 2.6. Procedures to Ensure Adequate Air Quality, Quantity, and Flow of Breathing Air for Supplied Air Respirators. Compressed-breathing air shall meet at least the requirements for Type 1-Grade D breathing air. Other requirements of 29 CFR 1910.134/139 will be met, and will be addressed in work area RPP OIs.
- 2.7. Training of Employees in Respiratory Hazards and Proper Use of Respirators, to include donning & Doffing, Limitations & Maintenance. Training is required at least annually. BEE will administer training in conjunction with annual fit testing. Employees will be required to demonstrate knowledge of the following:
- 2.7.1. Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
  - 2.7.2. What the limitations and capabilities of the respirator are.
  - 2.7.3. How to use the respirator effectively in emergency situations, to include situations when the respirator malfunctions.
  - 2.7.4. How to inspect, put on and remove, use, and check the seals of the respirator.
  - 2.7.5. What the procedures are for maintenance and storage of the respirator.
  - 2.7.6. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
  - 2.7.7. The general requirements of the OSHA standards (29 CFR 1910.134/139).
- 2.8. Emergency and Rescue Team (Fire Department) Respirator Training. This training will be conducted by the Fire Chief or designated trainer. A lesson plan must be attached to the Fire Department RPP OL BEE will provide consultation on request:
- 2.8.1. Training of Supervisors of work areas where respiratory protection is worn: BEE will train all supervisors of areas where respiratory protection is worn. This is a one-time requirement.
- 2.9. Procedures for Regularly Evaluating the Effectiveness of the Program:
- 2.9.1. BEE will evaluate the work areas where respirators are worn annually. During these visits employees will be asked if there are any problems with the program, and checks will be made to ensure the written program is being properly implemented.

2.9.2. The Public Health Flight (PHF) will evaluate work areas during annual surveys and consult with employees to determine whether there are any problems with the respiratory protection program.

2.10. Voluntary Use of Respirators where Respiratory Protection is not Required:

2.10.1. Personnel must be medically cleared prior to use.

2.10.2. Personnel must be trained on information from Appendix D of 29 CFR 1910.134/139 (**Attachment 1**).

2.10.3. The supervisor must establish a written respiratory protection program covering medical clearance and respirator cleaning, storage and maintenance.

2.11. Voluntary Use of Filtering Face piece Devices (FFDs) (Dust Masks). Personnel will be trained on the information contained in **Attachment 2**, and FFD training will be documented on AF Form 55 or equivalent.

F. BAXTER LANE, Colonel, USAFR  
Commander

**Attachment 1****INFORMATION FORM APPENDIX D OF 29 CFR 1910.134/139 FOR EMPLOYEES USING RESPIRATORS WHEN NOT REQUIRED UNDER THE STANDARD**

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute of Occupational Safety and Health of the US department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

## Attachment 2

### LESSON PLAN FOR FILTERING FACE PIECE DEVICE USERS

1. Filtering face piece devices are not considered by the US Air Force to be respiratory protection for purpose of AFOSH Std 48-134, *Respiratory Protection Program*. These devices may be worn strictly for comfort purposes if an Air Force employee desires to wear them.
2. Filtering face piece device users must be trained by their supervisor initially and annually on the limitations of these devices.
3. Filtering Face Piece Device (FFPD) Limitations:
  - 3.1. FFPDs are approved by NIOSH for protection against dust and mists ONLY. That is, they remove some particles, but not gases and vapors.
    - 3.1.1. Some examples of things an FFPD will not remove include carbon monoxide, solvents (in paint, cleaning solutions, etc), fuel vapors, alcohol vapors, and acids.
    - 3.1.2. Some examples of things an FFPD may remove to a level that could increase your comfort include wood dust, cement dust, dirt (from sweeping or work that kicks up the soil), spray enamel mist (this pigment only), and fiberglass. This will only happen IF you are able to maintain a good face-to-face piece seal.
  - 3.2. FFPDs are NEVER to be worn during tasks for which respiratory protection is required, as specified by the Bioenvironmental Engineering Flight (BEE).
  - 3.3. FFPDs are NEVER to be used in atmospheres that could be immediately dangerous to life and health.
  - 3.4. FFPDs are NEVER to be used in atmospheres containing less than 19.5 percent oxygen.
  - 3.5. Follow the manufacturer's instruction for replacing FFPDs. In general, if you detect breathing resistance (i.e., it becomes more difficult to breathe through the FFPD), you must replace the FFPD.
  - 3.6. The FFPD should be worn and maintained IAW the manufacturer's instructions. The nose-piece and cup should be fitted to the face as closely as possible. Straps should be positioned IAW manufacturer's instructions so that the FFPD does not shift around on the face. Straps will not be worn over head coverings or hard hats.
  - 3.7. An FFPD will provide little or no protection if the wearer is not clean shaven.
  - 3.8. If you suspect you or your co-workers may be overexposed to a particular chemical (for instance, if you are experiencing physical symptoms), you must contact BEE at extension 8466 so they can air sample and measure your exposure level. Of course, if you are experiencing a suspected occupational illness, that **must** be reported to Public Health at extension 8234 and investigated.