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Aerospace Medicine

RESPIRATORY PROTECTION PROGRAM

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFPD 48-1, *Aerospace Medical Program*, and is used in conjunction with Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.134, and AFOSH Standard (AFOSHSTD) 48-137, *Respiratory Protection Program*, at Elmendorf AFB, AK. The purpose of this program is to control occupational exposures by ensuring all respirator users are medically qualified, trained, and fitted with the correct respirator to protect them from workplace-specific inhalation hazards. This instruction applies to all military and civilian personnel employed in areas where respiratory protection is used. It must be maintained in all workcenters where respirators are available. This program does not apply to contract personnel. This publication does not apply to the US Air Force Reserve or Air National Guard units or members.

1. Responsibilities:

- 1.1. The 3rd Wing Commander (3 WG/CC) will establish an Elmendorf AFB respiratory protection program consistent with 29 CFR 1910.134, and AFOSHSTD 48-137.
- 1.2. Unit commanders, directors, and supervisors will.
 - 1.2.1. Ensure a respiratory protection program (RP) meeting the requirements of this instruction and applicable OSHA/Air Force standards is properly established within all organizations where respirators are used.
 - 1.2.2. Ensure supervisors schedule personnel for medical qualification and respirator fit-testing and training through Bioenvironmental Engineering (BE), prior to allowing or requiring them to perform tasks requiring the use of respirators.
 - 1.2.3. Provide appropriate respirators to personnel, without cost to workers, if BE has approved the requirement.

1.2.4. Ensure supervisors of work areas that use respirators develop and maintain a current section operating instruction (OI) on respiratory protection. This OI must be approved by BE and updated annually.

1.3. BE will:

1.3.1. Administer the Elmendorf AFB respiratory protection program.

1.3.2. Be the sole authority for determining if RP is required and for identifying limitations of RP.

1.3.3. Evaluate workplace hazards and determine the need for respiratory protection based on expected worker exposures and air sampling results.

1.3.4. Ensure the proper respirators are used for the hazards associated with the designated tasks and operations.

1.3.5. Recommend timeline for proper filter change out based on operations performed, contaminants present and frequency and duration of tasks performed.

1.3.6. Conduct initial and annual respirator fit-testing and training in accordance with AFOSH-STD 48-137.

1.3.7. Periodically visit work areas using respirators and evaluate the effectiveness of the section's respiratory protection program.

1.3.8. Issue AF Forms 2772, *Certificate of Competency*, to all qualified respirator users.

1.3.9. Provide an annual review of the RP program to the 3 WG Combined Safety Council meeting and the Aerospace Medical Council.

1.4. Workplace supervisors are directly responsible for ensuring their workers are adequately protected. In addition to the duties outlined in AFOSHSTD 48-137, supervisors will:

1.4.1. Identify all processes or operations that may result in workplace inhalation hazards to BE so the need for respiratory protection can be evaluated.

1.4.2. Ensure copies of AFOSHSTD 48-137 and this wing instruction (WI) are readily available in the work center.

1.4.3. Develop and maintain a current section OI on respiratory protection. An OI template can be obtained from BE upon request. Each OI will be dated and kept current.

1.4.4. Ensure workers performing tasks requiring respirators are medically qualified, fit-tested, and trained on respirator use prior to performing these tasks.

1.4.5. Schedule initial and annual respirator medical exams, fit-testing, and training with BE. Respiratory protection training requirements should be included in existing computerized training databases or workplace specific tracking mechanisms should be developed. Ultimately, it is the supervisor's responsibility to ensure training is completed before the annual certification expires or the mission can be adversely affected.

1.4.6. Include respiratory protection information in the job safety training outline required by AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Prevention and Health (AFOSH) Program* and document initial and annual training on the AF Form 55, *Employee Safety and Health Record*.

1.4.7. Notify BE, in writing, if they have workers that desire to use filtering face piece devices strictly for comfort purposes (reference paragraphs 4 - 4.3, this instruction). Provide and document initial and annual training to all personnel in their workplace using filtering face piece devices. This training must include the limitations on the use of these devices and the potential hazards from their improper use.

1.4.8. Ensure monthly respirator inspections are performed and documented on the AF Form 1071, *Inspection/Maintenance Record*, and assure any identified discrepancies are corrected expeditiously.

1.5. Respirator Users will:

1.5.1. Use the respiratory protection provided according to the instructions and training received. Wear only those respirators for which they have received fit-testing and training, and only for the tasks specified in the workplace specific OI.

1.5.2. Inspect, clean, and maintain any respirator issued to them for individual use. Document respirator inspections on the AF Form 1071 and identify problems or deficiencies to their supervisor.

1.5.3. Guard against damage to the respirator, and maintain the integrity of the National Institute of Occupational Safety and Health (NIOSH) certification by not mixing parts from different manufacturers or performing unauthorized maintenance.

1.5.4. Know and follow the procedures in the section specific operating instruction.

1.5.5. Immediately identify respirator problems or requirements to their supervisor and BE, as appropriate.

1.5.6. Not have facial hair that interferes with the facepiece to face seal while wearing a respirator. Spectacles with straps or temple bars that pass through the sealing surface of either negative or positive pressure, tight-fitting, full-face respirators shall not be used. Gas permeable and soft contact lenses may be worn with respirators.

1.6. Unit Safety representatives will evaluate work place respiratory programs for compliance with this WI during routine inspections. Advise unit commanders, BE, and Ground Safety of respiratory protection program compliance problems, as appropriate.

1.7. Ground Safety will evaluate workplace respiratory programs for compliance with this WI during routine inspections and advise unit safety representatives, commanders, and BE of respiratory protection program compliance problems, as appropriate.

1.8. Base Supply will control the issue of respirators using the assigned issue exception (IEX) codes and ensure BE has approved the respirator requests prior to issuing the respirators. Ensure "suitable substitutes" are not issued from respirators or respirator parts. Respirators will not be obtained through local purchase channels without BE approval.

2. Procedures:

2.1. Properly Evaluated. The following procedures will be used at Elmendorf AFB; to ensure the need for respirators is properly evaluated and the correct respirators are available and used to control workplace specific inhalation hazards, and protect Elmendorf AFB workers.

2.2. Hazard Evaluations. Periodic industrial hygiene surveys are performed in all industrial work centers; BE routinely evaluates workplace hazards and determines the need for respiratory protection based on expected worker exposures and air sampling results in these areas. However, workers and supervisors should identify to BE additional processes or operations that may result in inhalation hazards and request special hazard evaluations.

2.3. Use Determination. Based on the results of these hazard evaluations, BE will determine if RP use should be required or recommended following the guidance in AFOSHSTD 48-137. There is no elective use of respirators on Elmendorf AFB in accordance with AFOSHSTD 48-137. Once BE has determined use of respirators is required or recommended, supervisors will receive a memorandum explaining the scheduling procedures as well as a current medical questionnaire to be filled out by every member on the RP program. Workers will only be allowed to use the specific make, model, and size respirator that they were fit-tested and trained to wear. For personnel who wear air purifying respirators, a cartridge change out schedule will be recommended by BE. The recommendation will be based on operations performed, contaminants present and frequency and duration of tasks performed.

2.4. Respirator Selection. Respirator selection involves the evaluation of each operation to determine what specific hazards are present and to select the type or class of respirators that provide adequate worker protection. BE personnel select the correct respirator to protect the workers from the specific hazard associated with the tasks. The decision logic for selecting the type of respirator is documented on an AF Form 2773, *Respirator Selection Worksheet*. The specific make, model, size, national stock number, and TC Number with which the individual worker has been fitted and trained to use is documented on the AF Form 2772, *Certificate of Respirator Fit-Testing*. A copy of the AF Form 2772 is provided to the worker after fit-testing and training and a copy should be attached to the individual's AF Form. 55. Since each brand of respirator is unique, the specific respirator identified on the AF Form 2772 is the only respirator the individual is allowed to use for that particular task. There is no such thing as a "suitable substitute" for a respirator and using a different make, model, or size respirator may endanger the worker's health and voids the fit testing.

2.5. Medical Qualification and Evaluation. Potential respirator wearers will not be fit-tested for a respirator until they have been medically cleared for fit-testing by an AF physician. All Elmendorf AFB respirator users will receive baseline and annual medical evaluations. Each potential respirator user will complete a medical screening questionnaire that has been specifically designed so any positive response will be reviewed by a physician. The physician will determine if further medical evaluation is warranted. Under no circumstances should a worker be required to wear a respirator prior to being medically qualified, trained, and fitted with the respirator.

2.6. Fit-Testing. BE performs initial and annual respirator fit-testing after the respirator user has been medically certified and properly trained. Since there are differences among approved respirators and one type may be more acceptable to a worker than another, BE maintains a selection of different respirator brands, models, and sizes. Once a worker has been satisfactorily fitted with a particular respirator, the brand, model, and size are documented on an AF Form 2772 and this is the only respirator that the individual is allowed to use for that particular task.

2.7. Supervisor Training. BE provides initial training of supervisors who are responsible for overseeing work activities for one or more persons who must wear respirators. This training will be repeated when a supervisor has a permanent change of station or becomes the supervisor of a different workplace. As a minimum, this training will cover the topics listed in AFOSHSTD 48-137, Chapter 7, *Training*.

2.8. Initial and Annual Respirator Wearer Training. BE provides initial and annual training for all respirator users on Elmendorf AFB. As minimum, this training will cover the 11 elements in AFOSHSTD 48-137, Chapter 7.

2.9. Respirator Limitations. Respirator use may affect a worker's ability to see and communicate effectively. Similarly, wearing respirators in high or low temperature environments may adversely effect respirator performance and place additional physiological stress on the respirator wearer. Supervisors should consider these and other respirator limitations such as eye irritation, sealing problems, and facial hair when developing respiratory protection program operating instructions.

3. Care, Inspection, and Maintenance of Respirators. Each individual issued a respirator is responsible for its primary maintenance and care. Where respirators are used collectively or kept ready for emergencies by a shop or operating activity, the supervisor of the activity is responsible for establishing a respirator maintenance and cleaning program as specified in 29 CFR 1910.134(f)(1-5). This program will include care inspection and maintenance of respirators. An example handout describing supervisor and worker responsibilities for the cleaning, maintenance, and storage of respirators is available from BE and additional information is available in AFOSHSTD 48-137, Chapter 8, *Care, Inspection, and Maintenance of Respirators*.

4. Filtering Face Piece Devices:

4.1. Definition. A filtering face piece device, more commonly known as a disposable dust mask, is a device that has a face piece made entirely of filtering or adsorbing material.

4.2. Air Force Policy. The Air Force does not consider filtering face pieces to be respirators. However, these devices may be used, at employee discretion, strictly for comfort purposes. Workers who choose to wear filtering face devices must receive initial and annual update training and this training will be documented on the AF Form 55. Supervisors will clearly train workers on the limitations of the devices.

4.3. Elmendorf AFB Requirements. Supervisors of workers who desire to use filtering face pieces devices for comfort purposes will notify BE, in writing, they have workers desiring to use these devices. Supervisors must also train these workers on the limitations of filtering face piece devices; this information must be included in the Job Safety Training Outline required by AFI 91-301, *Air Force Occupational and Environmental Safety*. Assistance in developing training on the limitations of filtering face piece devices is available from BE upon request.

5. Isocyanate Policy. The isocyanate components of polyurethane paints and foam-in-place products can be very hazardous. Requirements for respiratory protection during the use of isocyanate-containing products will be determined by BE based on process evaluation, air sampling data, and respirator assigned protection factors. The minimal level of protection BE will allow is an air purifying respirator with organic vapor cartridge and N-95 particulate prefilter, with an established cartridge change-out schedule. In the absence of sampling data, or if exposures have not been characterized, guidelines established in AFOSH Std 48-137, paragraph 4.2.2.12, will be applied.

6. Compressed and Supplied Air Systems Inspections:

6.1. Requirements:

6.1.1. Work place OIs should contain the following information on their compressors: manufacturer, serial number, identification as to whether it is oil lubricated or not, delivery air pressure, breathing air class, hose length, type of alarms (that is, high temperature, carbon monoxide), and the location of the air intake.

6.1.2. Compressors will be located in a position to avoid drawing contaminated air into the system. If necessary, suitable in-line air-purifying sorbent beds and filters will be installed to ensure breathing air quality. If such filters are used, a changeout schedule should be developed in accordance with manufacturer's recommendations. If there are no manufacturer recommendations, consult BE.

6.1.3. Alarms will be visible and audible to the respirator wearer. BE will ensure all alarm testing required by TO 42B-1-22 is accomplished.

6.1.4. According to TO 42B-1-22 the breathing air must be sampled every 90 days. The results of this sampling must be forwarded to BE.

6.1.5. Air-line couplings will be incompatible with outlets for other gas systems to prevent inadvertent servicing of supplied-air respirators with other gases or oxygen.

6.1.6. An inspection of the airline, compressor and respirator shall be conducted to ensure the NIOSH or MSHA certification is valid (that is, parts from various manufacturers are not mixed and matched). The inspection shall include ensuring all three components match the air pressure and other requirements specified in the manufacturer's literature.

7. Tuberculosis (TB) Filtering Face Pieces. The only use of filtering face piece devices authorized by this AFOSH Std 48-137 for required or recommended respiratory protection is for protection of workers against TB.

7.1. Requirements. A respiratory protection program, as described in this standard, will be implemented at the 3rd Medical Group to the extent required by OSHA. Respiratory protection is required in the following situations:

7.1.1. When workers enter rooms housing individuals with suspected or confirmed infectious TB.

7.1.2. When workers are present during the performance of high hazard procedures (for example, bronchoscopy, sputum induction) on individuals who have suspected or confirmed infectious TB.

7.1.3. When emergency response or other personnel transport, in a closed vehicle, an individual with suspected or confirmed infectious TB.

7.1.4. For aeromedical evacuation (AE) operations, some specific and unique guidelines have been established because of the confined nature of aircraft and recirculation of air in the aircraft. These procedures are outlined in AFOSHSTD 48-137.

7.2. Respirator Selection. Respiratory protection selected for this purpose must meet Centers for Disease Control and Prevention (CDC) criteria for protection against TB.

7.2.1. The respirator of choice is the N95 filtering face piece, which provides 95 percent removal efficiency of TB.

7.2.2. Medical qualification will be determined by a flight surgeon using the OSHA medical questionnaire

7.2.3. Quantitative fit testing will be performed initially using an approved method. Fit testing will be reaccomplished if the user changes model or size of respiratory protection, has experienced significant weight loss or gain (+ or – 10%), or has a change in facial structure from accident, injury or surgery.

7.2.4. Upon donning, respirator and filtering face piece device users will perform a fit check in accordance with the manufacturer's instructions.

7.2.5. All filtering face piece devices will be considered to be contaminated and not reusable after one usage.

8. Program Evaluation. BE will periodically conduct workplace respiratory protection program evaluations to ensure the written respiratory protection program is being properly implemented. These evaluations will be conducted in accordance with the guidelines in 29 CFR 1910.134.

9. References:

9.1. 29 CFR 1910.134, Respiratory Protection.

9.2. AFOSH Standard 48-137, Respiratory Protection Program.

9.3. AFI 91-301, AF Occupational and Environmental Safety, Fire Prevention, and Health (AFOSH) Program.

9.4. The latest BE industrial hygiene survey report for the specific work place.

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