



Department of the Air Force  
HQ AEDC (AFMC)  
Arnold AFB, TN 37389

## Safety, Health, and Environmental Standard

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**Title:** RESPIRATORY PROTECTION

**Standard No.:** F4

**Effective Date:** 07/16/2014

**Releasability:** There are no releasability restrictions on this publication.

The provisions and requirements of this standard are mandatory for use by all personnel engaged in work tasks necessary to fulfill the AEDC mission. Please contact your safety, industrial health and/or environmental representative for clarification or questions regarding this standard.

**Approved:**

A handwritten signature in black ink, appearing to read "C. J. Blum", written over a horizontal line.

Contractor/ATA Director  
Safety, Health and Environmental

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Air Force Functional Chief

### Record of Review/Revision

(Current revisions are highlighted in yellow and marked with a vertical line in the right margin.)

<b>Date/POC</b>	<b>Description</b>
06/30/2014 S. Lowe	Scheduled review: Deleted obsolete definitions; clarified wording in 4.1.23 and 4.1.24 regarding cartridge change-out schedule and use of filtering facepieces; also clarified Base Operating Contractor training requirements (Section 5). Added reference to AFI 48-137. No change in process.
01/25/13	Added NFAC supplement; no other change.
09/08/11 S. Lowe	Scheduled review: Administrative reformatting and update to reflect current processes; removed operating contractor-specific requirements.
Feb 06 B. Bragg	Format Changes, Minor changes made for clarity.
24 Sept 04	General Revision



# Safety, Health, and Environmental Standard

## RESPIRATORY PROTECTION

### 1.0 INTRODUCTION/SCOPE/APPLICABILITY

1.0 Introduction – This standard establishes and maintains a program of respiratory protection to aid in the prevention of occupational diseases caused by breathing contaminated air. The respiratory protection program shall be implemented when effective engineering controls such as local ventilation or material substitution are not feasible.

1.1 Scope – This standard establishes guidelines, requirements, and responsibilities for the handling, storage, use, medical evaluation, training, fitting, and selection of all air-purifying and supplied-air devices used for the protection of AEDC personnel from atmospheric contaminants and oxygen-deficient atmospheres.

1.2 Applicability – This standard covers all AEDC personnel whether contractor, sub-contractor, civilian or military who use respiratory protection.

### 2.0 BASIC HAZARDS/HUMAN FACTORS

Respiratory protection is to protect employees from those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, and/or vapors when primary controls are not feasible.

### 3.0 DEFINITIONS

Approved Device(s) – Devices that have been tested and approved by the National Institute for Occupational Safety and Health (NIOSH) and further approved as satisfactory for intended use by Base Operating Contractor Safety, Health, and Environmental Industrial Hygiene.

Atmospheric Contaminants – Atmospheric contaminants include harmful dusts and particulates, fogs, fumes, mists, gases, smokes, sprays or vapors.

Base Operating Contractor – A base contractor directly accountable to the Air Force for the AEDC mission.

Demand Respirator – An atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.

Emergency Escape Breathing Apparatus (EEBA) – A loose-fitting, supplied air device that contains a five- to ten-minute cylinder of breathing air and a pullover transparent hood. *EEBA's can only be used for egress from a contaminated area.* Refer to Annex A for the AEDC Policy for Emergency Use of Respirators.

Facepiece – That portion of a respirator that creates a seal with the wearer's face is a *facepiece*. It is designed to make a gas or particle-tight fit with the contacted facial area. The facepiece includes the following: headbands, inhalation and exhalation valves, gaskets, connections for air-purifying devices (filters, cartridges or canisters) or connections for an external breathing air source.

Filtering facepiece (Dust Mask) – A negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

Full-Face Respirator – A respirator that seals with the wearer's forehead, covers the entire frontal area of the face (including the nose, mouth, and eyes) and seals under the chin.

Gaseous Contaminants – Contaminants in the physical state of a gas at normal ambient temperatures and atmospheric pressure. Argon, carbon monoxide, nitrogen, and carbon dioxide are examples of gaseous contaminants.

Half-Face Respirator – A respirator that creates a seal with the bridge of the wearer's nose covers the mouth and seals under the chin.

Hazardous Atmosphere – Any atmosphere that may be immediately dangerous to life or health or could produce acute or chronic health effects. It could be oxygen-deficient or contain a toxic or disease-producing contaminant that exceeds the legally established permissible exposure limit (PEL), or, where applicable the threshold limit value (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH).

Immediately Dangerous to Life or Health (IDLH) – Any atmosphere that presents an immediate hazard to life or poses immediate, irreversible debilitating effects on health is considered as IDLH. Two factors have been considered when establishing IDLH concentrations:

- The worker must be able to escape without losing his or her life or suffering permanent health damage within 30 minutes. This is considered by NIOSH as the maximum permissible exposure time for escape.
- The worker must be able to escape without severe eye or respiratory irritation or other reactions that could inhibit escape.

Negative Pressure Respirator – A respirator in which the air pressure inside the facepiece cavity is positive during exhalation and negative during inhalation relative to the outside atmosphere.

Odor Threshold -- The lowest concentration of a contaminant in air that can be detected by the olfactory sense.

Outside Contractor/Subcontractor – An organization employed by a contractor or the Air Force to do construction, maintenance, repair or other work at AEDC. There is no employment relationship, control or supervision of the subcontractor's employees by AEDC contractors. Also referred to as the *construction contractor*.

Oxygen Deficiency – An atmosphere that contains less than 19.5 percent oxygen by volume is considered oxygen deficient.

Particulate Contaminants – Finely dispersed solid or liquid particles in air such as dust, fog, fume, mist, smoke, or vapor. Particulate matter suspended in air is commonly known as an aerosol.

PLHCP (Physician or other Licensed Health Care Professional) – An individual who is legally permitted through license, registration, or certification to independently provide, or be delegated the responsibility to provide, services to determine the fitness of an individual to wear a respirator.

Powered Air-Purifying Respirator (PAPR) – An air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Pressure Demand Respirator – A positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

Protection Factor – In respiratory protective equipment, the ratio of ambient (outside the mask) airborne concentration of the contaminant to the concentration inside the facepiece.

Qualitative Fit-Test (QLFT) – A pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative Fit-Test (QNFT) – An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Respirator – A form of personal protective equipment that is designed to protect the wearer from the inhalation of harmful atmospheres. These devices include air-purifying and air-supplied respirators.

Self-Contained Breathing Apparatus (SCBA) – Respiratory protection in which the supply of respirable air is carried by the wearer. SCBAs at AEDC are differentiated from EEBAs in that they have a harness assembly, a positive pressure demand, tight-fitting facepiece, and a cylinder capable of providing between 15-45 minutes of breathing air for the user. *SCBAs can be used to enter a contaminated area, whereas EEBAs are for egress only.*

Service Life – The period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.

Toxic Material – Any material in any state of matter in sufficient concentration that has the potential to cause an adverse health effect upon humans.

## **4.0 REQUIREMENTS**

### **4.1 General**

- 4.1.1 Respiratory protection must be used to protect employees from hazardous atmospheres when engineering controls such as ventilation are inadequate, not feasible, or while engineering controls are being implemented.
- 4.1.2 Only respiratory devices approved by the National Institute of Occupational Safety and Health (NIOSH) and Base Operating Contractor Safety, Health, and Environmental (SHE) Industrial Hygiene (IH) are used at AEDC.
- 4.1.3 Respiratory protection required for work in a hazardous atmosphere must be chosen according to the contaminant and the level of atmospheric contamination. Each work-site that uses respiratory protection shall establish a written work

site-specific respiratory protection plan. The plan shall be approved by Base Operating Contractor Safety and Health and work area management, made available in the work area, and include at least the following information: tasks requiring respiratory protection, hazardous contaminants generated during the tasks, and the specific type of protection to be used for each task. Plans will be reviewed during routine industrial hygiene surveys. Outside contractors/subcontractors must present a written plan upon request.

- 4.1.4 Self-contained breathing apparatuses (SCBAs) are the only approved devices for entry into a hazardous environment of unknown atmospheric composition.
- 4.1.5 Only designated compressors shall be used as breathing air sources in conjunction with breathing air filtration boxes or equivalent devices. Any such devices shall be tested to ensure that the output air conforms to the requirements for Grade D breathing air described in ANSI/Compressed Gas Association (CGA) Commodity Specification for Air, G-7.1, to include:
- Oxygen content (v/v) of 19.5-23.5percent;
  - Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
  - Carbon monoxide (CO) content of 10 ppm or less;
  - Carbon dioxide content of 1,000 ppm or less; and
  - Lack of noticeable odor.
- 4.1.6 Regularly used breathing air systems installed in the industrial areas are tested quarterly. Temporary systems or any system brought back online after a prolonged period of downtime (greater than 3 months) and/or maintenance must be tested to ensure that the air product meets ANSI/CGA G-7.1 specifications before use.
- 4.1.7 Fittings used for supplied air systems must not be compatible with other air or gaseous systems. Quick-disconnect fittings can be used for connecting to the respirator and point-of-attachment while locking fittings must be used to interconnect lengths of breathing air hoses. Hoses used for supplied-air respirator applications shall not be used for any other industrial process and shall be labeled to identify their intended use.
- 4.1.8 Air filtration devices shall be operated and maintained in accordance with manufacturer's specifications **as required by OSHA 1910.134 Appendix B-2 and AFI 48-137, Section 6.**
- 4.1.9 All fixed breathing air system piping must be labeled to show its intended use.
- 4.1.10 Air sources that have the potential for carrying asphyxiating atmospheres or other hazardous products such as a system with a nitrogen back-up shall not be used for breathing air under any circumstances. These systems shall be expressly labeled to warn users of this hazard.
- 4.1.11 All respiratory protection devices shall be used in accordance with their NIOSH certification. (i.e. Escape respirators shall not be used to enter a hazardous atmosphere.)
- 4.1.12 Quantitative fit-testing shall be used to fit employees who use tight-fitting respirators. Qualitative methods can be used only when quantitative fit-testing equipment is not available and then only for half-face respirators. Protocols for fit-testing addressed in §1910.134: *Fit Testing Procedures (Mandatory) Appendix A* shall be strictly followed.
- 4.1.13 A minimum acceptable overall fit-factor is 100 for a half-face device and 500 for a full-face device when employing quantitative fit-testing methods.
- 4.1.14 Respirators equipped with a tight fitting facepiece must not be worn if facial hair comes between the sealing area of the facepiece and the face or if facial hair interferes with valve function.
- 4.1.15 Users may wear soft and gas-permeable contact lenses with a full-facepiece respirator providing there are no complications encountered during use.
- 4.1.16 If a spectacle, goggle, face-shield, or welding helmet must be worn with a facepiece, it must be worn so as not to adversely affect the seal between the face and facepiece. Prescription spectacle kits are to be provided by the user's organization and are available through an outside vendor.
- 4.1.17 Prior to fit-testing, all employees who are subject to using respiratory protection shall be medically evaluated by Base Operating Contractor Occupational Health to determine their fitness to use the device.
- 4.1.18 Emergency escape respirators and SCBAs shall be inspected at least monthly by the using organization. Documentation of the inspection must be maintained.
- 4.1.19 The using employee shall inspect his or her respirator before each use. Worn or deteriorated parts shall be replaced. If replacement parts cannot be obtained, the respirator shall be replaced.

- 4.1.20 Inspection procedures for all respirators will include visual assessment of straps, gaskets, elastomeric facepieces, hoses, filters, cartridges, canisters, receptacles, valves, and any other part of the device for chemical or physical damage. Any procedure advised by the manufacturer of the device will also be conducted as part of the inspection. Any condition that may affect the ability of the device to protect the worker shall warrant immediate repair or replacement of the device.
- 4.1.21 Respirators shall be regularly cleaned and disinfected (i.e., after each use) following either OSHA or manufacturer cleaning instructions. Alcohol wipes are not to be used as they can degrade the mask over time.
- 4.1.22 Respirators shall be stored in a convenient, clean, and sanitary location. A central storage location should be designated in each work area. If centralized storage is not feasible for the organization, the employee should use an otherwise acceptable personal storage location (i.e. personal storage locker), providing that location is sanitary and does not place the respirator in a degrading environment. Toolboxes, job boxes, vehicles and outside environments are not acceptable means of storage.
- 4.1.23 Cartridge change-out schedules must be developed for any task requiring employees to use chemical cartridges.
- 4.1.24 Filtering facepieces are the only masks approved for use at AEDC on a voluntary use basis. The using organization shall develop a written plan of use which Industrial Hygiene must approve. Employees must be trained on the written plan as well as OSHA's 1910.134 appendix D prior to use.

## 4.2 Responsibilities

### 4.2.1 Base Operating Contractor Safety, Health and Environmental (SHE)

- 4.2.1.1 Develop and maintain the AEDC Respiratory Protection Program. Identify a member of the SHE staff as the Respiratory Protection Program Administrator.
- 4.2.1.2 Prepare and administer a training program concerning the familiarization, use, limitations, and storage of respiratory protection, and perform respirator fit testing. Provide respirator training for supervisors.
- 4.2.1.3 Provide fit-testing services for all users of tight-fitting respirators following OSHA fit-testing procedures defined in 1910.134 Appendix A.
- 4.2.1.4 Provide employee a GC-1482 Respirator Fitting Card indicating date of approvals achieved through fit-testing.
- 4.2.1.5 Provide consulting services necessary to ensure the proper selection of respiratory protective devices for protection against hazardous atmospheres and toxic materials.
- 4.2.1.6 Provide assistance with development of work-site specific respiratory protection procedures, respirator-specific user instructions, and cartridge change-out schedules.
- 4.2.1.7 Review the results of breathing air analysis and ensure quality is within the specifications for Grade D breathing air described in ANSI/CGA Commodity Specification for Air, G-7.1.
- 4.2.1.8 Evaluate compliance with the work-site specific respiratory protection procedures during routine industrial hygiene surveys. Report issues with workforce use of respiratory protection during site audits and surveys to the Respiratory Protection Program Administrator. These findings may be addressed by the Program Administrator to fulfill regular review requirements for this program.
- 4.2.1.9 Coordinate service and calibration activities as required for quantitative fit-testing equipment.
- 4.2.1.10 Evaluate the comprehensive effectiveness of the program reviewing comments from employees provided on questionnaires and information provided by industrial hygienists during shop surveys. Program feedback will be collected during fit-testing.
- 4.2.1.11 Perform annual reviews of employees on the respirator program through IH surveys. Ensuring those employees no longer needing and/or using respiratory protection are removed from the program.

### 4.2.2 Base Operating Contractor Organizations

- 4.2.2.1 Each work-site using respiratory protection shall coordinate with operating contractor Safety and Health to establish written work-site specific respiratory protection procedures. Procedures shall be posted in the work area and reviewed during routine industrial hygiene surveys. These procedures shall include at least the following:
- tasks requiring respiratory protection,
  - hazardous contaminants generated during the tasks, and
  - the specific type of protection to be used for each task

- 4.2.2.2 Request Safety and Health services, as needed, to evaluate and recommend the level of respiratory protection for those operations not covered by the work-site specific respiratory protection procedures and when unique conditions arise that may create hazardous conditions not addressed in the written procedures.
- 4.2.2.3 Ensure that site-specific instructions and documentation is provided for employees who use respiratory protection and made available to those employees during all shifts.
- 4.2.2.4 Ensure that employees who wear respiratory protective equipment are medically approved, fitted, and trained for use of that equipment before assignments requiring respiratory protection. Ensure that employees present a GC-1482 Respirator Fitting Card issued by Safety and Health, indicating the properly fitted respirator and its size, before they are issued respiratory protection equipment.
- 4.2.2.5 Ensure employees use respiratory protective equipment as specified through procedures or specific instruction.
- 4.2.2.6 Provide acceptable storage space and identification for respiratory protective equipment.
- 4.2.2.7 Procure and maintain adequate supplies of respiratory protection equipment and accessories to meet usage requirements of assigned personnel.
- 4.2.2.8 Ensure monthly inspection of non-SCBA emergency respirators, including all air-purifying emergency-use devices and EEBAs. The exception is if the device(s) has been tagged out with a *Respirator Non-Conformance Notice* tag and secured in a locked cabinet or storage facility, a monthly inspection is not required.
- 4.2.2.9 Maintain a current copy of this standard in each workplace where respiratory protection is used.
- 4.2.2.10 Ensure breathing air has been tested and meets acceptable criteria prior to employees usage.
- 4.2.2.11 Filtering facepieces (dust masks) are for low hazard or nuisance applications only and shall not be ordered for employees unless approval has been granted by IH the processes for which the mask can be used have been identified, and employees have been trained on these processes.

#### **4.2.3 Base Operating Contractor Employees Who Use Respiratory Protection**

- 4.2.3.1 Comply with all applicable regulations, policies and instructions regarding the use of respiratory protection.
- 4.2.3.2 Notify supervision and Occupational Health of any health conditions that may affect their ability to wear respiratory protective equipment. Examples include development of cardiovascular or respiratory ailments. Users of tight-fitting respirators shall contact Safety and Health in the event of any physical changes that may affect the sealing ability of the user's tight-fitting respirator, such as weight gain or loss of 20 pounds, facial surgery or facial scarring, so that fit-testing may be conducted to ensure the respirators still fit.
- 4.2.3.3 Conform to the requirement to be clean-shaven in the contact area of the respirator if required to wear such device in the performance of assigned duties.
- 4.2.3.4 Participate in any respirator program feedback efforts to provide information to the Respiratory Protection Program Administrator for program assessment and improvement.
- 4.2.3.5 Candidates for respirator clearance shall be required to complete Form GC-1689 Respirator User Initial Medical Evaluation per OSHA requirement. Occupational Health will approve the candidate based on the information provided; further medical evaluations and examinations may be required for approval. A written recommendation for respirator approval shall be provided for the employee after completion of the assessment. Occupational Health shall maintain this record until termination of employment.
- 4.2.3.6 If an employee so chooses, he may voluntarily wear a respirator even though it may not be warranted. The employee shall first review the policy for voluntary respirator use included in this standard (Annex B) and the organization's approved voluntary use policy with their supervisor. Employees shall notify Safety and Health if voluntary use desired without an approved plan in place.

#### **4.2.4 Base Operating Contractor Occupational Health**

- 4.2.4.1 Provide physical examinations and appropriate medical tests to ensure that employees required to wear respiratory protection can do so safely. Candidates for respirator clearance shall be required to complete Form GC-1689 Respirator User Initial Medical Evaluation per OSHA requirement. Occupational Health will approve the candidate based on the information provided; further medical evaluations and examinations may be required for approval. A written recommendation for respirator approval shall be provided for the employee after completion of the assessment. Occupational Health shall maintain this record until termination of employment. Medical approval by Occupational Health is conducted as follows:

- **Initial Certifications:** Initial certifications are administrated by having the employee complete Form GC-1689 *Respirator User Initial Medical Evaluation*. The PLHCP reviews information indicated on the GC-1689 and examines the candidate for cardiac and respiratory status.
  - **Re-Certification:** The employee is re-evaluated by a respirator-only recall or as part of the existing annual physical. Qualifying questions on the physical update form are administered and the PLHCP examines the candidate for cardiac and respiratory status. Questions concerning heart and lung conditions, visits for medical treatment, weight limitations, and changes in prescription medication treatment are asked.
  - As a result of the examination process, an employee will then be 1) approved for respirator use in one or more categories of protection or 2) classified as either temporarily or permanently restricted from respirator use. Documentation of initial certification is provided for the employee.
- 4.2.4.1 Notify the employee, supervision, and Industrial Hygiene of medical limitations affecting the approval to wear respiratory protective equipment. Special eyewear for full-face respirators shall be ordered through outside vendor in accordance with operating contractor procedures.

## 5.0 Base Operating Contractor Training

- 5.1 Respirator users shall receive annual training by the SHE staff. Respirator fit-testing shall be conducted annually for all tight-fitting facepiece respirators. Employees are approved to wear only those respirators for which a satisfactory fit-test has been obtained.
- 5.2 Training topics for respirator use shall include:
- the importance of respiratory protection
  - selection, use and care of respirators
  - respiratory hazards encountered within an employee's area
  - limitations of respirators
  - fit testing
  - emergency use procedures
  - medical signs and symptoms limiting the effective use of respirators
- Employees will be retrained annually or as needed (e.g., some employees do not consistently use respiratory protection). Respirator training will be documented by Industrial Hygiene.
- 5.3 Filtering facepiece users must be trained on the written plan of use and information provided in OSHA 1910.134 Appendix D prior to use, then annually thereafter. (See Annex B of this standard).

## 6.0 Inspections/Audits

Base Operating Contractor Industrial Hygiene shall perform surveys of work areas to evaluate processes and tasks performed to determine the level of hazard associated with them. These evaluations are reported to the area manager and are to be reviewed with each employee in the work area as well as any new employee. Hazardous substances are identified and control methods evaluated.

## 7.0 REFERENCES

OSHA 1910.134, Respiratory Protection

OSHA 1926.103, Respiratory Protection

Compressed Gas Association, *Compressed Air for Human Respiration*, Pamphlet G7-2008

ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-2004

AFI 48-137, Respiratory Protection Program , July 2014

## 8.0 ANNEXES

- A. AEDC Policy for Emergency Use of Respirators
- B. Information for Employees Using Respirators When Not Required Under this Standard

## 9.0 SUPPLEMENT

NFAC A321-0801-XSP F4 Respiratory Protection



## ANNEX A

### AEDC Policy for Emergency Use of Respirators

Due to the mass amount of chemical products that are stored and used at AEDC, the potential for use of respirators in an emergency scenario is anticipated. These respirators must be used appropriately for the type of airborne hazard encountered. The following guidelines describe how these respirators will be used, according to the class of respirator and type of hazard involved:

*Air-Purifying Respirators*: Air-purifying respirators are typically used in planned work settings for known and relatively low hazard concentrations. However, they may be used in emergency scenarios providing that 1) reliable methods of quantifying the hazard must be available (such as use of real-time industrial hygiene instrumentation, detector tubes, or laboratory analysis), 2) the product of the concentration and NIOSH or ANSI protection factor assigned to that class of respirator does not exceed the applicable exposure limit, 3) cartridge breakthrough data is readily available to determine allowed use time in the event that the hazard is of vapor or gas nature, and 4) the responder has first been medically cleared, trained, and fitted for the mask to be used.

*Airline Supplied-Air Respirators*: Standard airline respirator configurations may be used in known hazard concentrations. As with air-purifying respirators, similar conditions are applicable: 1) reliable methods of quantifying the hazard must be available (such as use of real-time industrial hygiene instrumentation, detector tubes, or laboratory analysis), 2) the product of the concentration and NIOSH or ANSI protection factor assigned to that class of respirator does not exceed the applicable exposure limit, and 3) the responder has first been medically cleared, trained, and fitted for the mask to be used.

*Supplied Air Breathing Apparatus (SCBA)*: Pressure-demand SCBA devices are to be used 1) by the AEDC Fire Department for structural fire-fighting response or 2) by any AEDC employee who engages a confirmed or suspect emergency airborne hazard release of unknown concentration. The only allowed exception for the second condition is the use of a supplied-air airline respirator with air-bottle back-up, which is not typically available at AEDC. Only vendor-certified Fire Department personnel are allowed to work on SCBA. Air cylinders shall only be filled with Grade D breathing air as defined by the Compressed Gas Association.

*Emergency Escape Breathing Apparatus (EEBA's)*: EEBA's have and may be used for test-related scenarios where toxic products may be encountered and surrounding personnel may be exposed. These devices are configured with air cylinders and pull-over hoods which provide 5 to 10 minutes of escape air. These devices shall never be used for entry into a known or suspect toxic atmosphere. EEBA's shall be maintained with the inspection and maintenance requirements of other emergency respirators if they are in use. Those that are kept for future use do not have to be regularly inspected or maintained, but must be tagged out with a *Respirator Nonconformance Notice* and secured by the owner so that they can not be accessed by employees. Any EEBA that is brought back into use must be functionally brought up-to-date (including provision for hydrostatic testing) before use is resumed. Air cylinders shall only be filled with Grade D breathing air as defined by the Compressed Gas Association.

*Military Issued Gas Masks*: Gas masks are issued to active military personnel for deployment or readiness response purposes. Base Operating Contractor Industrial Hygiene's sole responsibility in this effort is for quantitative fit-testing. The USAF assumes all other responsibilities for use of these devices, including provision of the mask and associated supplies, medical clearance, training and maintenance.

## **ANNEX B**

### **Information 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 and/or the American Conference of Governmental Industrial Hygienists (ACGIH) 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 shall 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 for Occupational Safety and Health of the U.S. 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.

# A321-0801-XSP F4 Respiratory Protection Supplement

This supplement has been approved for the NFAC Site.

**Review:** This supplement will be reviewed and updated using the same cycle as the AEDC Safety Safety Standard F4 “Respiratory Protection.”

**References:** AEDC Safety Standard F4, Respiratory Protection at the AEDC NFAC Site.  
29 CFR 1910.134 Appendix D, Respiratory Protection.

**Scope:**

This supplement establishes and maintains a program of respiratory protection to aid in the prevention of occupational diseases caused by breathing contaminated air. The respiratory protection program shall be implemented when effective engineering controls such as local ventilation or material substitution are not feasible at NFAC.

The purpose of this supplement is to references guidelines, requirements, and responsibilities for the handling, storage, use, medical evaluation, training, fitting, and selection of all air-purifying and supplied-air devices used for the protection of NFAC personnel from atmospheric contaminants and oxygen-deficient atmospheres.

This supplement applies to all NFAC personnel, customers and vendors.

**NFAC Worksite Application:**

NFAC will follow the local NASA Ames Procedural Requirements APR 1700.1 Chapter 28 “Respiratory Protection.”

I. NFAC Site Management shall:

Ensure that the NASA Ames Respiratory Protection is followed.

II. NFAC Supervisors and Test Directors shall:

1. Ensure that the NASA Ames Respiratory Protection is followed by staff, customers and vendors.
2. Ensure that personnel have the proper respirator to mitigate the hazard.

III. NFAC Safety Engineer/Management Designee shall:

1. Assess and monitor all activities requiring respiratory protection.
2. Ensure that personnel have the proper respirator that mitigate the hazard utilizing the NASA Ames Respirator Form “ARC 28 09.”
3. Ensure personnel requiring respirators are currently trained, medically cleared, and receive annual fit testing by NASA Industrial Hygienist.
4. Maintain list of processes approved for voluntary respirator use.

IV. NFAC Staff shall:

1. Personnel requiring respirators will maintain training through NASA Ames Code Q training and be medically cleared on an annual basis.
2. Receive Annual Fit testing by NASA Industrial Hygienist.