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Safety



**GRISSOM PERMIT REQUIRED CONFINED
SPACE ENTRY**

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This instruction implements AFPD 91-3, *Occupational Safety and Health*, dated 27 September 1993, as it relates to Permit Required Confined Space Entry. It establishes procedures for the Permit-Required Confined Space Entry program. This wing instruction is published as a single document to replace organizational Master Entry Plans that may be required by AFOSH Standard 91-25, *Confined Spaces*. It appraises specific responsibilities for and clarifies employer and employee responsibilities as outlined in Air Force and OSHA regulations/standards. It implements the requirements of AFOSH Standards 91-25, 127-10, *Civil Engineering*, *ANSI Standard Z117.1-1989* and other Air Force and OSHA requirements contained in 29 CFR 1910 and 29 CFR 1926 pertaining to the Permit Required Confined Space Entry program. This instruction does not apply to Fuel Cell operations that are outlined in TO 1-1-3. These procedures are contained in the 434th Maintenance Squadron Master Permit Required Plan.

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Chapter 1

GENERAL

1.1. Hazards. Personnel entering or working in Permit Required Confined Spaces may encounter a number of potentially serious hazards. Such hazards may include lack of sufficient oxygen to support life, excessive oxygen levels which increase the danger of fire or explosion, presence of flammable or explosive atmospheres and materials, or the presence of toxic atmospheres and materials. These hazards are not always readily apparent, detectable by odor, or visually obvious, which may result in personnel entering Permit Required Confined Spaces without consideration of the potential dangers. Therefore, employees will consider that all Permit Required Confined Spaces (as described in this instruction) contain the most unfavorable and unsafe conditions and entry into, or work in, such spaces is prohibited until the tests, evaluations, and prescribed procedures of this instruction are performed to ensure that safe conditions exist and are maintained.

1.2. Scope. This instruction provides minimum safety requirements to be followed while entering, exiting and working in Permit Required Confined Spaces at normal atmospheric pressure. While general in nature, this instruction is applicable to, but not limited to, any tank, boiler, vault, well, manhole, or lift station on this installation. This instruction provides general instructions and requirements for horizontal and vertical tank/ Permit Required Confined Space entry. This instruction along with other individualized special publications shall govern safety requirements for Permit Required Confined Space entry. Individual physical limitations, hazards, and monitoring requirements shall be determined by the Confined Space Program Team, hereafter referred to as the CSPT. **NOTE:** This instruction does not pertain to aircraft fuel cell repair, petroleum tank cleaning, or tunnels specifically designed for human occupancy.

1.3. Purpose. The purpose of this instruction is to provide procedures for Permit Required Confined Space entry. The preparation, inspection, and repair of individual tanks, boilers, manholes, and fuel/water separators are covered by individual technical orders. Except as noted, in case of conflict between this instruction and other technical orders or manuals concerning safe entry and authorized safety equipment, this instruction shall govern. For the purpose of this instruction, the phrase "Permit Required Confined Space" means an area which by design has limited openings for entry and exit; unfavorable natural ventilation that could contain or produce any actual or potentially hazardous atmosphere or other recognized safety or health hazard; or contains the potential for engulfment by particulate matter or by a liquid; and whose primary function is something other than human occupancy. Procedures contained herein are to be considered mandatory and no deviation is permitted unless authorized by Safety, Fire Department, and/or Bioenvironmental Engineering Services.

1.4. Application. This instruction is applicable to all personnel assigned to Grissom Air Reserve Base who, in the performance of their duties either on or off this installation, may be required to enter a Permit Required Confined Space. This instruction shall not apply to emergency rescue attempts performed by fire department personnel.

1.5. Duties and Responsibilities:

1.5.1. Each functional manager, supervisor, and employee will ensure this instruction is enforced. Personnel safety is of prime importance and at no time will safety be jeopardized for the accomplishment of the task. Functional managers will ensure the procedures contained in this instruction are

complied with. Further, it is their responsibility to ensure that everyone involved in entry of any Permit Required Confined Space is briefed and understands his/her role in the operation. Personnel shall be made aware of the hazards involved with the Permit Required Confined Space requiring entry, equipment to be used, precautions to be observed, and that no entry will be made if condition exists which would constitute a safety hazard.

1.5.2. Installation Ground Safety (SEG):

1.5.2.1. Serves as the focal point for implementation of this instruction.

1.5.2.2. Coordinates the installation Permit Required Confined Space program.

1.5.2.3. Leads the Installation Permit Required Confined Space Program Team (CSPT).

1.5.2.4. In coordination with the Fire Department, and Bioenvironmental Engineering Services evaluates and conducts the necessary tests to determine the real or potential hazard for each identified Permit Required Confined Space.

1.5.2.5. Retains documentation identifying each Permit Required Confined Space and the evaluation made by the CSPT.

1.5.2.6. Approves entry permits, AF Form 1024, Confined Spaces Entry Permit, for all Permit Required Confined Spaces. (In the absence of Safety, either Fire Department and/or Bioenvironmental Engineering Services can approve entry.)

1.5.3. The Installation Fire Chief:

1.5.3.1. Provides normal rescue support for Permit Required Confined Space entry.

1.5.3.2. Assists Safety and Bioenvironmental Engineering Services during evaluation and necessary tests to determine the real or potential hazard for each identified Permit Required Confined Space.

1.5.3.3. Assists, as required, in training personnel for Permit Required Confined Space duties.

1.5.3.4. Assists in the identification and selection of required equipment.

1.5.3.5. In conjunction with Safety and Bioenvironmental Engineering Services determines atmospheric monitoring requirements.

1.5.4. Bioenvironmental Engineering Services:

1.5.4.1. Enrolls all personnel who may be required to enter a Permit Required Confined Space in the base respiratory protection program according to AFOSH Standard 48-1, Respiratory Protection Program.

1.5.4.2. Recommends appropriate respirators (air purifying/air supply) and parts.

1.5.4.3. Provides local training on the use, calibration (user), and care of atmosphere testing and monitoring equipment. Certifies organizational personnel, as required, to test and classify Permit Required Confined Spaces.

1.5.4.4. Assists Safety and Fire Department during evaluation and necessary tests to determine the real or potential hazard for each identified Permit Required Confined Space.

1.5.4.5. In conjunction with Safety and Fire Department personnel, determines atmospheric monitoring requirements.

1.5.5. Permit Required Confined Space Program Team is appointed to work together for the purposes of organizing and controlling the installation Permit Required Confined Space program. The CSPT is comprised of representatives from:

1.5.5.1. Installation Ground Safety (Chairperson).

1.5.5.2. Base Fire Department.

1.5.5.3. Bioenvironmental Engineering Services.

1.5.5.3.1. The above three sections assist the functional managers in the identification, evaluation, and classification of all Permit Required Confined Spaces. They develop and provide a CSPT training program to ensure all personnel, both military and civilian, are adequately trained in the procedures necessary for Permit Required Confined Space entry. The above three in conjunction with functional managers, develop a Master Entry Program (MEP).

1.5.5.4. Base Civil Engineering.

1.5.5.5. Base Motor Pool.

1.5.5.6. Base Fuels.

1.5.5.7. Maintenance Squadron.

1.5.5.8. 434 CES.

1.5.6. Supervisors or persons who authorize the entry:

1.5.6.1. In coordination with Safety, the Fire Department, and Bioenvironmental Engineering Services, evaluates and conducts the necessary tests to determine the real or potential hazard for each identified Permit Required Confined Space. This evaluation, at a minimum, includes the following:

1.5.6.1.1. The physical characteristics and location of the Permit Required Confined Space.

1.5.6.1.2. The existing or potential atmospheric conditions of the Permit Required Confined Space:

1.5.6.1.2.1. Oxygen level.

1.5.6.1.2.2. Toxicity.

1.5.6.1.2.3. Combustibility.

1.5.6.1.3. The risk of engulfment by bulk materials or liquids.

1.5.6.1.4. The current and past uses of the Permit Required Confined Space that may adversely affect the atmosphere.

1.5.6.1.5. Any other physical or special hazards associated with the Permit Required Confined Space such as but not limited to:

1.5.6.1.5.1. Mechanical hazards.

1.5.6.1.5.2. Temperature extremes.

1.5.6.1.5.3. Electrical shock.

1.5.6.2. If usage or conditions associated with entry or work processes change within the Permit Required Confined Space, it is the responsibility of the workplace supervisor to notify Safety, the Fire Department, and/or Bioenvironmental Engineering Services of this change to allow a re-evaluation of the Permit Required Confined Space as necessary.

1.5.6.3. Each supervisor/foreman having personnel required to enter a Permit Required Confined Space personally supervises all tasks that required entry into a confined space.

1.5.7. Workers entering Permit Required Confined Spaces:

1.5.7.1. Fully understand all procedures, safety guards, and emergency egress/rescue procedures before signifying such understanding on the required AF Form 1024, **Confined Spaces Entry Permit**.

1.5.7.2. Follow all safety work procedures.

1.5.7.3. Notify the supervisor when hazards exist that have not been corrected or a change in conditions should occur while working in a Permit Required Confined Space.

1.5.8. Attendants:

1.5.8.1. Remain outside the Permit Required Confined Space and at no time attempt to make rescue involving entry into the Permit Required Confined Space.

1.5.8.2. Maintain continuous communications with entrants within the Permit Required Confined Space by voice or radio in addition to their respective control centers.

1.5.8.3. Have authority to order entrants to exit the Permit Required Confined Space at the first indication of unexpected hazards. The attendant will also order the entrants to exit the Permit Required Confined Space if notified that a dedicated rescue team is no longer available, if required.

1.5.8.4. Remain at the entrance of the Permit Required Confined Space and never leave unless replaced by an equally qualified individual.

1.5.8.5. Keep unauthorized personnel away from the entrance of the Permit Required Confined Space and ensure no smoking is observed within 50 feet of the opening.

Chapter 2

PERMIT REQUIRED CONFINED SPACE GROUPS

2.1. Permit Required Confined Spaces, definition and type:

2.1.1. Permit-Required Confined Spaces Group I. Are spaces that require one member of Safety, the base Fire Department, or Bioenvironmental Services to be present at the proposed work site prior to atmospheric testing being accomplished and the completion of the entry permit, AF Form 1024. Entry will not be allowed in any Permit Required Confined Space without the approval of the Safety, the base Fire Department, or Bioenvironmental Services official present at the work site. Specific procedures for entry into Permit-Required spaces are as follows:

2.1.1.1. Prior to entry into a potentially hazardous Permit Required Confined Space, the entry (on-site) supervisor will notify either Safety, the base Fire Department, or Bioenvironmental Engineering Services that entry is required into a Permit Required Confined Space. Any entry into a Permit Required Confined Space will require one member of either Safety, the base Fire Department, and/or Bioenvironmental Engineering Services to be present at the Permit Required Confined Space site to be entered prior to any atmospheric testing being accomplished.

2.1.1.2. Before reporting to the work site, the entry (on site) supervisor will ensure the proper entry permit, AF Form 1024 is obtained and all required monitoring equipment, rescue equipment and Personal Protective Equipment (PPE) is on-hand and in serviceable condition.

2.1.1.3. The entry (on-site) supervisor will notify the base Fire Department of the requirement to enter a Permit Required Confined Space and that a dedicated rescue team will be required. If at any time the rescue team is required for other duties, the individual/s that have entered a Permit Required Confined Space will be required to exit the space until a rescue team is again available for dedicated duty. The Fire Department will notify the entry (on-site) supervisor to ensure evacuation of the Permit Required Confined Space. The dedicated rescue team is not required to be at the entry site, unless determined necessary by the on-duty senior fire official, or the Safety, Fire Department, or Bioenvironmental Engineering Services official on site.

2.1.1.4. The entry (on-site) supervisor will perform monitoring requirements at the work site in the presence of Safety, Fire Department, and/or Bioenvironmental Engineering Services officials. After testing the site, it is up to Safety, the Base Fire Department, and/or Bioenvironmental Engineering Services officials to determine if approval for entry is granted according to AFOSH Standard 91-25. Entry into a space containing a high Immediately Dangerous to Life and Health (IDLH) reading is authorized only in cases of extreme emergency, such as, emergency repairs that if not completed at this time, could cause a serious health hazard or a potential explosive environment. Authorization for entry into this type of confined space can only be granted by the Installation Commander or the Support Group Commander. A rescue team will not be required to be present at the entry site unless after atmospheric testing is accomplished it is found to be an IDLH environment.

2.1.1.4.1. If after testing the space, Safety, the base Fire Department, and/or Bioenvironmental Engineering Services officials have determined an IDLH condition, every effort will be made by the entry (on-site) supervisor to reduce the hazard within the Permit Required Confined Space prior to any entry being made. This may be accomplished by isolation, ventilation,

or other techniques to result in a non-IDLH condition within the Permit Required Confined Spaces.

2.1.1.4.2. Once the IDLH atmosphere has been eliminated, either the Safety, Fire Department, or Bioenvironmental Engineering Services official on site may approve entry.

2.1.1.4.3. Personnel entering confined spaces with known or estimated IDLH conditions wear a positive pressure SCBA or a supplied-air respirator with escape SCBA (see AFOSH Standard 48-1). In addition, equip personnel with a harness of a type suitable to permit extraction of the person (does not become a hindrance to the extraction), a lifeline securely attached to the harness, and such other necessary PPE suitable for the conditions and exposures.

NOTE: When the use of a lifeline would present additional hazards, other alternative must be considered.

2.1.1.5. The entry (on-site) supervisor will complete the entry permit, AF Form 1024, in duplicate with one copy being maintained at the work site, and the other copy being retained by Wing Safety or the other official approving entry. At the completion of the work, or at the expiration of the permit, forward the work site permit to Wing Safety.

2.1.1.6. Prior to entry into a Permit Required Confined Space, the attendant establishes communications with the person entering the space. In addition, the attendant must have and maintain communications with their respective control center. If at any time, either of these communications are broken, the person entering the Permit Required Confined Space must immediately evacuate the space.

2.1.1.7. The permit authorizes entry into a specific Permit Required Confined Space, for a specific purpose, by a specific work crew, and for a period not to exceed a single shift or a time established by Safety, the base Fire Department, or Bioenvironmental Engineering Services officials. Rescue team entry is exempted from this requirement.

2.1.1.8. Personnel entering the space are equipped with a National Institute of Occupational Safety and Health (NIOSH) approved pressure demand self-contained or supplied-air breathing apparatus. A harness of a type suitable to permit extraction of the person from the space, a lifeline securely attached to the harness, and such other necessary PPE suitable to the conditions and exposure will be utilized.

2.1.1.9. Only explosion-proof or intrinsically safe equipment is used where flammable or explosive atmospheres are present.

2.1.1.10. When, upon initial testing, it is determined that ventilation is required to remove detected contaminants and/or provide adequate oxygen levels, the entry (on-site) supervisor ensures ventilation is provided during entry and occupancy of the space on a continuous basis.

2.1.1.11. When operations to be conducted inside the Permit Required Confined Space have the potential to cause an IDLH atmosphere without industrial ventilation, the entry (on-site) supervisor ensures ventilation (general dilution, or local exhaust) is used to maintain the atmosphere within the space.

2.1.1.12. If the Permit Required Confined Space requires the opening of a ground pit/manhole, the entry (on-site) supervisor will provide appropriate vehicle and pedestrian guards, barriers, or other means to protect the entry party and attendants from local traffic. Do this by the use of cones,

yellow tape, or any other appropriate means to ensure the area is roped off to prevent unauthorized entry by other personnel. At no time will the Permit Required Confined Space open and unattended.

2.1.1.13. If usage or conditions associated with entry or work processes change within the Permit Required Confined Space, this permit is revoked. It is the responsibility of the entry (on-site) supervisor to notify Safety, the base Fire Department, and/or Bioenvironmental Engineering Services of this change to allow a re-evaluation of the confined space as necessary.

2.1.2. Permit Required Confined Spaces Group II. Are spaces that require the entry (on-site) supervisor to accomplish the atmospheric testing and then complete the entry permit, AF Form 1024. The entry (on-site) supervisor serves as the form approving authority indicating that all requirements of the entry permit have been accomplished and that it is safe for employees to enter the Permit Required Confined Space. Specific procedures for entry into a Permit Required Confined Space are as follows:

2.1.2.1. Before reporting to the work site, the entry (on-site) supervisor ensures the proper entry permit, AF Form 1024 is obtained and all required monitoring equipment, rescue equipment and PPE is on-hand and in serviceable condition.

2.1.2.2. The entry (on-site) supervisor notifies either Wing Safety, the base Fire Department, or Bioenvironmental Engineering Services of the requirement to enter a Permit Required Confined Space. Furnish these agencies the following information:

2.1.2.2.1. Location of Permit Required Confined Space to be entered.

2.1.2.2.2. Time of expected entry and expected duration of time.

2.1.2.2.3. The name of personnel entering the Permit Required Confined Space.

2.1.2.2.4. Tasks to be performed while in the Permit Required Confined Space.

2.1.2.3. Notify the Base Fire Department Rescue Squad when it is necessary to enter a Permit Required Confined Space. The attendant remains in radio contact with their respective control center in case the fire department would require the individual to vacate the Permit Required Confined Space. This may occur if the dedicated rescue squad were required for other duties for an extended period of time, to be determined by the on-duty fire chief.

2.1.2.4. The entry (on-site) supervisor performs monitoring requirements at the work site and completes the Permit Required Confined Space permit, AF Form 1024, indicating readings received and entering the date readings were taken. Complete and maintain the entry permit, AF Form 1024 at the work site. At the completion of the work, or at expiration of the permit, forward the permit to Wing Safety. The permit is revoked whenever any testing required shows conditions in the space above permit limits. The entry (on-site) supervisor stops operations and notifies Wing Safety, the base Fire Department, and/or Bioenvironmental Engineering Services that a change in conditions have taken place. The permit may also be revoked when any condition of the permit is not followed or enforced.

2.1.2.5. If the Permit Required Confined Space requires the opening of a ground pit/manhole, the entry (on-site) supervisor provides appropriate vehicle and pedestrian guards, barriers, or other means to protect the entry party and attendants from local traffic. Do this by the use of cones, yellow tape, or any other appropriate means to ensure the area is roped off to prevent unauthorized

entry by other personnel. At no time will the Permit Required Confined Space be left open and unattended.

2.1.2.6. If usage or conditions associated with entry or work processes change within the Permit Required Confined Space, this permit is revoked. It is the responsibility of the entry (on-site) supervisor to notify Safety, Fire Department, and/or Bioenvironmental Engineering Services of this change to allow a re-evaluation of the Permit Required Confined Space as necessary.

Chapter 3

ATMOSPHERIC TESTING

3.1. Atmospheric Monitoring. Many operations, due to the potential to generate hazardous conditions, require atmospheric monitoring as the work progresses to ensure that safe conditions are maintained. The frequency and types of testing conducted are dependent upon prevailing conditions and the nature of the operations. No single rule can be established for all operations and conditions. The continuous monitoring of oxygen levels, flammable vapor levels, and toxicity levels are required for all Permit Required Confined Space operations unless so indicated on the specific AF Form 1024.

3.2. Monitoring Requirements. It is the responsibility of the functional manager to ensure monitoring is properly accomplished prior to entry for all Permit Required Confined Spaces. The entry (on-site) supervisor carefully evaluate monitor readings for the following types of operations:

3.2.1. Do not allow hot work that has the potential of generating hazardous concentrations of toxic materials, (examples: welding, cutting, brazing, soldering, etc.) unless an AF Form 592, USAF Welding, Cutting, and Brazing Permit, has been issued and a new AF Form 1024 for the specific operation has been issued.

3.2.2. Application of preservatives, paints, epoxies, solvents, etc., which may involve hazardous concentrations of toxic or flammable vapors. If any task requires the introduction of any chemical substance into the Permit Required Confined Space, AF Form 1024's are revoked. A new AF Form 1024 for the specific operation must be issued.

3.2.3. Cleaning operations, sludge removal, etc., which may produce or cause release of hazardous concentrations of toxic or flammable vapors.

3.2.4. Any similar operations which posses the potential for producing or releasing toxic, flammable, or asphyxiating atmospheres or material into the space. Allow no person to enter a Permit Required Confined Space until the atmosphere of the Permit Required Confined Space is sampled and the air quality if determined for all levels and all areas within the space. These readings must meet standards as identified for the specific space.

3.2.5. Sample the atmosphere of a Permit Required Confined Space for:

3.2.5.1. Oxygen.

3.2.5.2. Combustible gas.

3.2.5.3. Any toxic substance which an employee is expected to work with or likely to be exposed to and which, the employer has reason to believe, may be present.

3.2.6. Use a sampling device which can simultaneously test for oxygen and combustible gas without manual switching to sample the atmosphere of a Permit Required Confined Space.

3.2.6.1. Equip the sampling device with audible or visible warning devices, or both, which indicate when an atmosphere of a Permit Required Confined Space has:

3.2.6.1.1. An oxygen content less than 19.5% or greater than 23.5%;

3.2.6.1.2. A combustible gas content 10% or more of the lower explosive limit (LEL).

- 3.2.6.2. Calibrate the sampling device in accordance with the manufactures specifications and annotate the AF Form 2032, **Inspection Extension**, which is affixed to the instrument.
- 3.2.6.3. Perform the self-check of the sampling device before each sampling. An addition, if the Permit Required confined Space in which the sampling device has been removed is exited for a period of time to exceed 30 minutes, turn the device off.
- 3.2.6.4. Use a non-sparking probe attached to the sampling device or the sampling device to sample the atmosphere of a Permit Required Confined Space. When entry to a Permit Required Confined Space is by means of a manhole, insert the probe shall be inserted through the pick-hole of the manhole cover if possible, or pry the manhole cover open on the downwind side to allow just enough room for insertion of the probe or the device. Take readings at various vertical levels of the confined space and laterally, as possible, prior to entry.
- 3.2.7. If the readings required for the specific Permit Required Confined Space are obtained, then entry may be authorized by the on-site supervisor or by Safety, Base Fire Department, or Bioenvironmental Engineering Services representative present at the proposed work site.
- 3.2.8. If at any time during entry of the Permit Required Confined Space monitor readings exceed the authorized level, the entrant must immediately exit the space. If this should occur, notify Safety, Base Fire Department, and/or Bioenvironmental Engineering Services representatives and the present permit, AF Form 1024 is revoked.

Chapter 4

EMERGENCY RESPONSE

4.1. Emergency and Rescue Procedures. The activity functional manager/entry (on-site) supervisor plans emergency and rescue procedures consistent with the nature of the operations and conditions within the Permit Required Confined Space. Statistics indicate that more than 60 percent of Permit Required Confined Space fatalities occur among potential rescuers. Base fire department personnel perform emergency rescue only. The base fire department provides rescue support for all Permit Required Confined Space entries on this Air Force installation.

4.1.1. The entry (on-site) supervisor in charge of entry into a Permit Required Confined Space notifies the fire department, prior to entering any Permit Required Confined Space, to coordinate emergency rescue assistance and ensure their availability. When deemed appropriate by the fire chief or his representative, or when personnel are required to enter a Permit-Required confined space having a IDLH atmosphere reading higher than the acceptable level as listed on the AF Form 1024 for that specific space, the rescue team stands by at the scene.

4.1.2. If entry is required into a Permit Required Confined Space, a dedicated rescue team is required. The rescue team stands-by at the fire station, available for response if required. The rescue team is not required to be present at the entry site unless, after atmospheric testing is accomplished and readings are found to be higher than the acceptable level as listed on the AF Form 1024 for that specific space. If at any time the rescue team is required for other duties, the individuals that have entered a Permit Required Confined Space are required to exit the space until a rescue team is again available for dedicated duty. The Fire Department notifies the entry (on-site) supervisor of the requirement to evacuate the Permit Required Confined Space. The entry (on-site) supervisor ensures immediate evaluation of the Permit Required Confined Space by their personnel.

4.2. Rescue Equipment Inspection:

4.2.1. All safety belts, harnesses, lifelines, and straps meet ANSI Standard Z359 and have the manufacturer's name, identification code, and the date of manufacture stamped on the equipment or on a permanently attached tag.

4.2.2. The supervisor inspects all rescue equipment upon receipt and by the worker prior to each use. A scheduled inspection of all equipment, both in use and in storage, is made by the responsible supervisor at least every 6 months. A written record of this inspection is kept by the supervisor, listing individual items of equipment by number, condition, defects, and action taken if defects are found. This record is kept by the supervisor and made available for examination during inspections. Attachment 10, AFOSH Standard 127-31, *Personal Protective Equipment* furnishes detailed inspection information. Immediately remove any item of rescue equipment failing to meet the inspection criteria in attachment 10, AFOSH Standard 127-31. Inspect any tripod or davit arm retrieval system using manufacturer's specifications.

4.2.3. Number all safety belts and harness, lifelines, tripods, and davit arm retrieval systems in such a way as to be readily identifiable to compare with the listing identified in paragraph 4.2.2. above.

Chapter 5

TRAINING

5.1. General Requirements:

5.1.1. The functional manager is responsible for the training of personnel required to enter a Permit Required Confined Space. All personnel who work in the vicinity of Permit Required Confined Spaces and those assigning personnel to work within a Permit Required Confined Space must be made aware of the hazards associated with Permit Required Confined Space operations. The functional manager identifies those personnel requiring training to the Wing Ground Safety Office. The Wing Ground Safety Office, in coordination with the Base Fire Department and Bioenvironmental Engineering Services conducts the required training.

5.1.2. Conduct training initially (by Safety) upon assignment to a position that could require entry into a Permit Required Confined Space. Accomplishes this training prior to entry into any Permit Required Confined Space. Conducts annual refresher training by supervisors for all functional managers, and personnel who are responsible for entry, or may be required to enter a Permit Required Confined Space. It is the functional manager's responsibility to ensure all personnel are scheduled for training and documented on AF Form 55, **Employee Safety and Health Record**.

5.2. Training for the Entry (On-Site) Supervisor. Functional managers, supervisors and personnel who authorize entry into Permit Required Confined Spaces or who are in charge of Permit Required Confined Spaces must meet the following training requirements:

5.2.1. Perform the duties and responsibilities outlined in AFOSH Standard 91-25, para 5.3.

5.2.2. Recognize the effects of exposure to hazards reasonable expected to be present in the Permit Required Confined Space as well as the nature of the hazard and the need to perform appropriate testing to determine if it is safe to enter.

5.2.3. Training on the specific equipment being used for Atmospheric Monitoring and interpretation of results.

5.2.4. Emergency procedures.

5.2.5. Duties of both the entrant and the attendant.

5.2.6. Proper use of communications equipment.

5.2.7. Procedures for summoning rescue or emergency equipment.

5.2.8. Recognition of early behavioral signs of potential overexposure caused by contaminants whose presence can be anticipated.

5.3. Training for Atmosphere Monitoring Personnel:

5.3.1. Bioenvironmental Engineering Services provides training for all personnel required to use monitoring equipment prior to entry into a Permit Required Confined Space and includes the use, calibration (user), and care of atmosphere testing and monitoring equipment. This includes the basic knowledge of the work being performed, the anticipated hazardous contaminants, and any process which could significantly alter original conditions inside or outside the Permit Required Confined

Space. It is important for individuals conducting atmospheric tests to possess adequate knowledge of the proper operation of monitoring equipment as well as its limitations associated with anticipated conditions (such as inaccurate measurement readings for flammable gas when the oxygen level is below 16% for certain equipment).

5.3.2. A qualified person, who is trained and certified according to paragraph 5.6 AFOSH Standard 91-25, performs Permit Required Confined Space testing and monitoring. The tester also meets the training requirements of an entrant, if entry is required to conduct the tests.

5.3.2.1. Training on the specific equipment being used and interpretation of results.

5.3.2.2. Testing will be performed in the following sequence:

5.3.2.2.1. Oxygen Content. Many combustible gas indicators/explosimeters require oxygen for proper operation (generally 10 to 30 percent oxygen by volume).

5.3.2.2.2. Flammable Hazard. Make corrections for known flammable components, if different from the calibration gas, according to the manufacturer's instructions.

5.3.2.2.3. Toxic Materials. Measure toxic materials known or expected to be present in addition to the toxic flammable components and compare with the applicable standard for the determination of initial Permit Required Confined Space classification.

5.4. Training for Entrants. Supervisors of Permit Required Confined Space work/entry ensure each employee required to enter a Permit Required Confined Space is trained in emergency procedures and has received training covering the following subjects prior to entering a Permit Required Confined Space:

5.4.1. Toxic effects and the use of monitoring equipment

5.4.2. The proper use of all Personal Protective Equipment (PPE), including respirators and clothing required for entry or rescue, and the proper use of protective shields and barriers.

5.4.3. Modifications or alterations of normal work practices that are necessary for Permit Required Confined Space work.

5.4.4. First aid to include CPR.

5.4.5. Lockout procedures.

5.4.6. Safety equipment use.

5.4.7. Permit system.

5.5. Training for Attendants. Supervisors ensure that training for the attendant meets the same training requirements for those of the entrant, and includes the following areas:

5.5.1. Emergency procedures.

5.5.2. Duties of the attendant.

5.5.3. Proper use of communications equipment.

5.5.4. Procedures for summoning rescue or other emergency equipment.

5.5.5. Recognition of early behavioral signs of potential overexposure caused by contaminants whose presence can be anticipated.

5.6. Training for Emergency Response Personnel:

5.6.1. The base Fire Department is responsible for all training for rescue personnel.

5.6.2. The base Fire Department assists in training all personnel required to enter a Permit Required Confined Space on the hazards associated with specific Permit Required Confined Spaces on this installation. In addition, address any rescue limitations with specific spaces they may encounter.

5.7. Training Documentation. The supervisor documents training on the AF Form 55. On the AF Form 55, Section V, in block A, enter the date of training and the words "Permit Required Confined Space Qualified." Ensure both the supervisor and the individual sign the entry certifying completion of training. For initial training, enter the date in the initial block. Annotate subsequent refresher training in the block labeled annual.

Chapter 6

WARNING SIGNS AND SYMBOLS

6.1. Permit Required Confined Space Warning Signs. The functional manager or workplace supervisor of all Permit Required Confined Spaces, in coordination with Safety, the base Fire Department, and Bioenvironmental Engineering Services, marks each Permit Required Confined Space listed in attachment #1 of this regulation. Post a sign stating: "DANGER- Permit Required Confined Space-Entry by Permit Only" or equivalent approved by Wing Safety. Post these signs within each Permit Required Confined Space so as to be seen as soon as the cover/lid is removed.

6.2. Precautionary Equipment. Signs and symbols to warn others that the area is hazardous and that work is being done within a Permit Required Confined Space may be required.

6.2.1. Traffic Warning Cones. When working within a Permit Required Confined Space that may be positioned in a road way requires the placement of "traffic warning cones." Place these cones so as to warn other personnel to stay clear of the area, as well to provide a reasonable degree of safety to the worker.

6.2.2. Barricades and/or Pylons. When the entrance cover of a Permit Required Confined Space is removed, the opening shall be promptly guarded by a railing, temporary cover, or any other temporary barrier that will prevent an accidental fall through the opening and will protect each employee working in the space from foreign objects entering the space. This temporary barrier consists of brightly colored "yellow caution tape," or a suitable substitute, and utilized in conjunction with warning cones to ensure personnel remain out of the area. Security Police must be notified any time personnel will be required to work in a roadway or within a parking lot to assist in traffic control.

Chapter 7

CONTRACTOR REQUIREMENTS

7.1. General. When a civilian contractor is contracted to perform work on this installation, which may require the entrance into a identified Permit Required Confined Space, the contractor, and all sub-contractors, must comply with the provisions of this instruction and 29 CFR 1910.146.

7.2. Base Civil Engineering:

7.2.1. During project/contract development, ensures all potential Permit Required Confined Spaces that a contractor may be required to make entry into, are identified within the project/contract.

7.2.2. Ensures all potential Permit Required Confined Spaces that may require entry by a civilian contractor are identified to the Base Contracting Office.

7.3. The Base Contracting Office:

7.3.1. During contract bids, ensures that all bidders are notified that the specific project/contract may require the entry into a Permit Required Confined Space.

7.3.2. Briefs the contractor that the workplace contains a permit-required space and that entry into the permit space will be accomplished according to an approved permit space program according to OSHA 29 CFR 1910.146 and this instruction.

7.3.3. Notifies each bidder of the requirement to furnish a copy of their Permit Required Confined Space Entry Plan and their Permit Required Confined Space Entry Permit, for review by Wing Safety, as required by 29 CFR 1910.146(d). This review must be accomplished prior to any site survey, which may require entry into any Permit Required Confined Space.

7.4. The Wing Safety Office (in their absence, the Fire Department):

7.4.1. Reviews all contractor Permit Required Confined Space Entry plans and permits and returns any comments to the Base Contracting Office.

7.4.2. When notified by the Base Contracting Office, briefs the contractor on the contents of any identified Permit Required Confined Space that the contractor may be required to enter, and the potential hazards that make the space permit-required.

7.4.3. Briefs the contractor, when entry into a permit-required confined space becomes necessary, on precautions and procedures that have been implemented by this organization to protect workers.

7.4.4. Advises the contractor that they are responsible for the safety of their personnel and, in coordination with the Base Civil Engineer, inform them of the base procedures for emergency rescue procedures for this installation.

7.4.5. Debriefs the contractor, at the termination of entry operations, of any lessons-learned or problems encountered or created during entry operations.

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