FSGA/HAAF GARRISON
FT. STEWART, GA 31314

GARRISON SAFETY SOP – ANNEX T

CONFINED SPACE ENTRY

FSGA/HAAF Safety Program SOP
21 October 2024

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1. Purpose:

This Annex to the FSGA/HAAF Garrison Safety and Occupational Health (SOH) SOP establishes safe and proper operational procedures and responsibilities for testing, entering, and working in confined spaces in order to preclude injury or death due to exposure of hazardous, toxic or oxygen (O2) deficient atmospheres, as well as prevent injury or property damage resulting from fires or explosions.

2. Scope

This Annex to the Garrison SOH SOP applies to all military and civilian personnel assigned to the FSGA/HAAF Garrison. It is intended to provide additional information so all levels of leadership, SMs, and civilian workforce can properly implement the Garrison SOH Program.

3. References

29 CFR 1910.146 – Permit-Required Confined Spaces

29 CFR 1910.134 – Respiratory Protection

AR 25-400-2, The Army Records Information Management System (ARIMS)

AR 385-10, The Army Safety Program

DA Pam 25-403 – Guide to Recordkeeping in the Army

DA Pam 385-10, Army Safety Program

4. Records Management:

Records created throughout the processes prescribed by this Annex will be identified, maintained, and disposed of according to AR 25-400-2 (The Army Records Information Management System (ARIMS) and DA Pam 25-403 (Guide to Recordkeeping in the Army). The primary means of recordkeeping for the Garrison Safety Office (GSO) will be the Army Safety Management Information System (ASMIS) located at https://mishap.safety.army.mil . Record titles and descriptions are available on the ARIMS website https://www.arims.army.mil

5. Responsibilities

Garrison Safety Office (GSO):

- In conjunction with Industrial Hygiene will assist the Directorate of Public Works (DPW) to identify all confined space possibilities to identify all permit-required confined spaces, develop a confined space training program, and evaluate confined space work sites to ensure proper protective equipment is used where mechanical ventilation sufficient to maintain nonhazardous atmosphere is not provided.
- This evaluation should include:
    - Respiratory equipment.
    - Protective clothing.
    - Safety line.
    - Body harness.

- Communication equipment.
- Air monitoring equipment.
- Air testing equipment.

- Provide appropriate training to FSGA/HAAF employees who are required to be entry supervisors, attendants, or authorized entrants.

Directorate of Emergency Service - Fire:

- Appoint a confined space firefighter rescue team.
- Ensure personnel assigned to the confined space rescue team are provided with and trained to properly use the personal protective equipment, including respirators and rescue equipment necessary for making rescues from the installation's permit spaces.
- Ensure the rescue team is trained to perform the assigned rescue functions and has received the training required for authorized entrants.
- Ensure rescue teams practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, mannequins, or personnel through representative openings and portals whose size, configuration, and accessibility closely approximate those of the permit spaces from which rescues may be required.

Directorate of Public Works (DPW):

- Identify all confined spaces on FSGA/HAAF and will develop and maintain a map and list of all confined spaces on the installation. CS List will be reviewed periodically by the GSO.
- If the workplace contains permit spaces, exposed employees shall be informed by posting danger signs or by any other equally effective means, of the existence and location of and the danger posed by the permit spaces.

Contract Office Representatives (CORs):

- Inform contractors of any known CS in the area in which they will be performing work.
- If contractors are to enter PRCS, contractors will be informed of any known hazards and safety requirements. Contractors are required to meet all FSGA/HAAF, Federal, State, or Local regulatory requirements.

Supervisors of employees working in confined spaces:

- Ensure the confined space is identified and evaluated by the GSO and Industrial Hygienist.
- For each confined space entry, coordinate with DES Fire to identify contact requirements in the event of an emergency and ensure the confined space rescue team will be available.
- Initiate and post confined space entry permit at each confined space that poses a hazardous condition where all personnel can read it.
- Know the hazards that may exist during entry, including information on the mode, signs or symptoms, and consequences of the exposure.

- Verify, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and authorizing entry to begin.
- Terminate the entry and cancel the permit upon completion of job.
- Verify that rescue services are available and that the means for summoning them are operable.
- Remove unauthorized individuals who enter or who attempt to enter the permit space during entry operations.
- Determine, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, which entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.
- Ensure safety precautions (proper respiratory equipment, protective equipment, safety line, safety harness) are taken in accordance with the preventive medicine service and installation safety office's evaluation.
- Establish confined space entry procedures and train employees on procedures.
- Provide emergency procedures and training for personnel assigned to a confined space entry job.
- Ensure confined space is monitored continuously in areas where authorized entrants are working to determine if acceptable entry conditions are being maintained during the course of the entry operations.

Authorized Confined Space Entrants:

- Know the hazards that may be faced during entry, recognize the signs and symptoms of exposure to the hazards and understand the consequences of exposure to a hazard.
- Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space.
- Properly use the following equipment:
    - Testing and monitoring equipment.
    - Ventilating equipment needed to obtain acceptable entry conditions.
    - Communications equipment.
    - Personal protective equipment (insofar as feasible engineering and work practice controls do not adequately protect employees).
    - Lighting equipment needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency.
    - Barriers and shields as required.
    - Equipment, such as ladders, needed for safe ingress and egress by authorized entrants.

- Exit the permit space, unless it is physically impossible to do so, when either the attendant orders evacuation, the automatic alarm is activated, or the entrants perceive that they are in danger.

Confined Space Attendants:

- Continuously maintain an accurate count of all persons in the confined space.
- Know the hazards that may be faced during entry, including information on the mode, signs, or symptoms, and consequences of the exposure.
- Be aware of possible behavioral effects of hazard exposure in authorized entrants.
- Remain outside the permit space during entry operations until relieved by another attendant.
- Communicate with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space.
- Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space, and order the authorized entrants to evacuate the permit space immediately under any of the following conditions:
    - The attendant detects a prohibited condition.
    - The attendant detects the behavioral effects of hazard exposure in an authorized entrant.
    - The attendant detects a situation outside the space that could endanger the authorized entrants.
    - The attendant cannot effectively and safely perform all the duties.
- Summon rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards.
- Take the following actions when an unauthorized person approaches or enters a permit space while entry is under way:
    - Warn the unauthorized person(s) that they must stay away from the permit space.
    - Advise the unauthorized person(s) that they must exit immediately if they have entered the permit space.
    - Inform the authorized entrant(s) and the entry supervisor if the unauthorized persons have entered the permit space.
    - Perform non-entry rescues as specified by the activity's rescue procedure.
    - Perform no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrant(s).

6. Policy

All confined spaces at FSGA/HAAF shall be considered permit required confined spaces and entry into or work on the boundaries of such space is prohibited until the space has been evaluated by a qualified person to establish appropriate safety precautions. This regulation outlines the program to implement this policy. Under certain conditions described in the OSHA standard 29 CFR 1910.146, the supervisor may use alternate procedures for worker entry into a

permit space. For example, if a supervisor can demonstrate with monitoring and inspection data the only hazard is an actual or potential hazardous atmosphere that can be made safe for entry using continuous forced air ventilation, the supervisor may be exempted from some requirements, such as permits and attendants. However, in these circumstances, the internal atmosphere of the space must be tested for oxygen content, flammable gases and vapors, and the potential for toxic air contaminants before any employee enters it and tested periodically thereafter during entry. The supervisor must provide continuous ventilation and verify the required measurements are performed before entry.

- A confined space is a space that is large enough and configured for an individual to enter and perform work, has limited or restricted means to enter and perform work, has limited or restricted means for entry or exit, and is not designed for continuous employee occupancy.
- A permit-required confined space (PRCS) is a confined space that has any one of the following characteristics:
    - Contains or has the potential to contain, a hazardous atmosphere.
    - Contains a material which has a potential for engulfing an entrant.
    - Is internally configured such that an entrant could be trapped or asphyxiated.
    - Contains any other recognized serious safety or health hazard.
- Confined spaces are, but are not limited to, boilers, degreasers, furnaces, pipelines, pits, pumping stations, septic tanks, sewage digesters, sewers, manholes, silos, storage tanks, utility vaults, vats, tunnels, cells, ducts, or similar type enclosures
- The following requirements will be followed in accordance with Part 1910.146, Title 29, Code of Federal Regulations (29 CFR 1910.146):
    - An entry supervisor will verify that appropriate entries have been made before entry into a permit-required confined space.
    - Permits will be completed and posted at entry of confined space.
- Personnel who are required to work in a permit-required confined space or in support of those working in a permit required confined space will have additional training in the following areas:
    - Emergency entry and exit procedures.
    - Use of respirators, as required.
    - Current certification in basic first aid and cardiopulmonary resuscitation (CPR) skills for personnel performing rescue service.
    - Lockout procedures are specific to the confined space in which they operate.
    - Safety equipment use.
    - Rescue and training drills designed to maintain proficiency will be given initially to new employees, and thereafter at least annually or at more frequent intervals as determined necessary by the supervisor.
    - Permit system − what the permit says and what it means.

- Recommended work practices.

- Training will be provided to each affected employee:
  - Before the employee is first assigned duties under this regulation.
  - Before there is a change in assigned duties.
  - Whenever there is a change in permit space operations that present a hazard for which an employee has not previously been trained.
  - Whenever the employer has reason to believe that there are either deviation from the permit space entry procedures or that there are inadequacies in the employee's knowledge or use of these procedures.
- Testing and monitoring will be performed in the following manner:
  - The tests performed will be conducted in the following order: oxygen content, flammability, and toxic materials. These tests will include upper explosion limit (UEL) and lower explosion limit (LEL) readings.
  - Entry into a confined space for any type of hot work will be prohibited when tests indicate the concentration of flammable gases in the atmosphere is greater than 10 percent of the lower explosive limit/lower flammability limit (LEL/LFL).

NOTE: *HOT WORK PERMITS WILL BE OBTAINED THROUGH FIRE AND EMERGENCY SERVICES.*

  - Equipment for continuous monitoring of gases and vapors will be explosion-proof (if used inside the confined space) and equipped with an audible alarm or danger signaling device that will alert employees when a hazardous condition develops.
  - The percentage of oxygen for entry into a confined space will be no less than 19.5 percent nor greater than 23.5 percent at 760 mmHG (standard atmosphere).
- Labeling and posting will be done in the following manner:
  - All warning signs will be printed in both English and in the predominant language of the workers who do not read English.
  - All entrances to any confined space will be posted; signs will include but not necessarily be limited to the following information: *DANGER CONFINED SPACE ENTRY BY PERMIT ONLY.*
  - When a specific work practice is performed, or specific safety equipment is necessary, an applicable statement will be added (for example, *RESPIRATOR REQUIRED FOR ENTRY, LIFELINE REQUIRED FOR ENTRY, HOT WORK PERMITTED*).
  - Emergency procedures, including phone numbers of fire department and emergency medical services, will be posted conspicuously within the immediate area of the confined space, or by the telephone from which help would be summoned.
- Safety equipment and clothing should take in consideration the following, in accordance with the appropriate required regulations:
  - Eye and face protection.
  - Head protection.

    - Foot protection.
    - Body protection - gloves, aprons, and over-suits.
    - Hearing protection.
    - Respiratory protection - the use of respiratory protection will be determined by the supervisor.
    - Hand protection.
    - A safety belt with "D" rings for attaching a lifeline will be worn at all times.
- The combination of a body harness with lifeline will be used when:
    - An employee is required to enter to complete the gas analysis.
    - An employee is working in an area where entry for the purpose of rescue would be contradicted.
    - Any failure to ventilation would allow the build-up of toxic or explosive gases within the time necessary to evacuate the area.
    - The atmosphere is immediately dangerous to life and health.
- If the exit opening is less than 18 inches (45 centimeters) in diameter, a wrist type harness will be used.
- Work practices are as follows:
    - Purging and ventilating include:
        - Blower controls will be a safe distance from the confined area, and audible alarm will be installed in all equipment to signal when there is a ventilation failure.
        - Air flow measurements will be made before each work shift to ensure adequate ventilation is being maintained. Where continuous ventilation is not part of the operating procedure, the atmosphere will be tested until continuous acceptable levels of oxygen and contaminants are maintained for three tests at 5-minute intervals.
        - Local exhaust will be provided when general ventilation is inadequate due to the restrictions in the confined space or when high concentrations of contaminants occur in the breathing zone of the worker.
    - Isolation/lockout/tagging includes:
        - The isolation procedures will be specific for each type of confined space.
        - Confined spaces will be completely isolated from all other systems by physical disconnection, double block, and/ or blanking off all lines.
        - Where complete isolation is not possible (sewers and utility tunnels), specific written safety procedures approved and enforced by the supervisor will be used.
        - Shut-off valves serving the confined space will be locked in the closed position and tagged for identification.

        - Electrical isolation of the confined space will be accomplished by locking circuit breakers and or disconnects in the open (off) position with a key-type padlock.
        - Mechanical isolation can be achieved by disconnecting linkages or removing drive belts or chains.
    - Medical. Workers who enter a confined space will be provided physical examination by the FSGA/HAAF Occupational Health Clinic. The physical examination will:
        - Include a demonstration of the workers' ability to use negative and positive pressure respirators.
        - Include a demonstration of the workers' ability to see and hear warnings (flashing lights, buzzers, or sirens).
        - Place emphasis on several evaluations of the employees' ability to carry out their assigned duties and the detection of anything that may preclude confined space work.
- Entry and rescue procedures are as follows:
    - Entry procedures include:
        - The internal atmosphere will be tested prior to an employee entering the space.
        - Testing will be conducted with a calibrated direct-reading instrument.
        - Confined space entry permit will be completed.
        - Adequate ventilation or protective equipment will be implemented to ensure atmosphere is free of hazard to entrants.
    - Rescue procedures, specifically designed for each entry, include:
        - A trained person with a fully charged, positive pressure, self-contained breathing apparatus (SCBA) will be on standby during a confined space rescue entry.
        - The standby person will maintain unprotected lifelines and communications to all workers in the confined space.
        - Under no circumstances will the standby person enter the confined space until the first person is relieved and is assured that adequate assistance is present.
        - Before workers enter the confined spaces, the fire department will be notified.
    - First aid provisions include:
        - There must be someone readily available in the area of the confined space that is currently trained in CPR and basic first aid procedures.
        - Before workers enter the confined spaces, the fire department must be notified.

7. Confined Space Entry Permits

- Permit Systems. A permit, signed by supervisor, verifying pre-entry preparations have been completed and the space is safe to enter, must be posted at entrances or otherwise made available to entrants before they enter a permit space. The duration of entry permits must not exceed a single shift.

- Entry Permits. Entry permits must include the following information:
  - Date of entry.
  - Time of entry.
  - Site location/building.
  - Description of work to be performed.
  - Permit expiration (date/time). The permit is valid for only one shift.
  - Name of entry supervisor who authorizes entry. Entry supervisor will print and sign the permit.
  - Name of permit space to be entered, authorized entrant(s), authorized attendant(s), and name(s) of the authorized entry supervisors. After the entry supervisor places the names of the authorized entrant(s) and attendant(s), the entrant(s) and attendant(s) will sign next to their names verifying they understand the requirements of confined space operations.
  - Preparation for entry. List what methods were implemented to ensure confined space hazards have been eliminated.
  - Rescue Team contact number.
  - Communication procedures and equipment to maintain contact during entry.
  - Hazards of the Confined Space. All hazards the entrant may face will be listed.
  - Tests to be taken. Pre-Entry test results will be entered on the permit with the date/time of the test. Any additional tests will be entered on the permit (2nd, 3rd, and 4th). The air monitor tests to be taken are oxygen level (O2), Lower Explosive Limit (LEL), Carbon Monoxide (CO), Hydrogen Sulfide (H2S), and others (additional air monitoring tests will be documented on the form).

NOTE: *HOT WORK PERMITS WILL BE ISSUED BY SIAD FIRE AND EMERGENCY SERVICES.*

Appendix A – Abbreviations

AR	Army Regulation
ARIMS	Army Records Information Management System
ASMIS	Army Safety Management Information System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COR	Contract Office Representative
DA Pam	Department of the Army Pamphlet
DPW	Directorate of Public Works
DoDI	Department of Defense Instruction
FSGA	Fort Stewart Garrison
GC	Garrison Commander
GSO	Garrison Safety Office
H2S	Hydrogen Sulfide
HAAF	Hunter Army Airfield
O2	Oxygen
OSHA	Occupational Safety and Health Administration
POC	Point of Contact
PPE	Personal Protective Equipment
PRCS	Permit-Required Confined Space
RM	Risk Management
SM	Service Member
SOH	Safety and Occupational Health
SOHMS	Safety and Occupational Health Management Systems
SOP	Standard Operating Procedure
USO	Unit Safety Officer

APPENDIX B – Definitions

Acceptable Entry Conditions: The conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required space entry can safely enter into and work within the space.

Attendant: An individual stationed outside a permit space that observes the conditions and supports the authorized entrant.

Authorized Entrant: An employee who is authorized by supervisor to enter a permit required space.

Blanking or Blinding: The absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Confined Space: Confined space" means a space that:

- Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and
- Is not designed for continuous employee occupancy.

Double Block and Bleed: The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Emergency: Any occurrence, (including any failure of hazard control or monitoring equipment) or event, internal or external, to the permit space that could endanger entrants.

Engulfment: The surrounding and effective capture of a person by a liquid or finely divided (flow able) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entry: The action in which a person passes through an opening into a permit-required space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant’s body breaks the plane of an opening.

Entry Permit: The written or printed document that is completed and authorized by the organization performing the work to allow and control entry into a permit space and that contains the information specified in paragraph (f) of this section.

Entry Supervisor: The person (such as the employer) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned.

Note: *An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped in accordance with local and federal regulations. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.*

Hazardous Atmosphere: An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

- Flammable gas, vapor, or mist in excess of 10 percent of its lower explosive limit (LEL)
- Airborne combustible dust at a concentration that meets or exceeds its LEL

NOTE: *This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less*.

- Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent
- Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances, of this Part and which could result in employee exposure in excess of its dose or permissible exposure limit

NOTE: *An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by* this provision.

- Any other atmospheric condition that is immediately dangerous to life or health.

NOTE: *For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Material Safety Data Sheets that comply with the Hazard Communication Standard, section 1910.1200 of this Part, published information, and internal documents can provide guidance in establishing acceptable atmospheric* conditions.

Hot Work Permit: The employer's written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

****NOTE****: Hot Work Permits must be obtained through Fire and Emergency Services only.*

Immediately Dangerous to Life or Health (IDLH): Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.

NOTE: *Some materials - hydrogen fluoride gas and cadmium vapor, for example – may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.*

Inerting: The displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

NOTE: *This procedure produces an IDLH oxygen-deficient atmosphere.*

Isolation: The process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as blanking or blinding; block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.

Line Breaking: The intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, toxic material, inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Non-Permit Confined Space: A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

O2 Deficient Atmosphere: An atmosphere containing less than 19.5% O2 by volume.

O2 Enriched Atmosphere: An atmosphere containing more than 23.5% O2 by volume.

Permit-Required Confined Space (PRCS): A confined space that has one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere.
- Contains a material that has the potential for engulfing an entrant.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard.

Prohibited Condition: Any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

Testing: The process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

APPENDIX C – ANNUAL GSO REVIEWS

DATE	REVIEWED BY	CHANGES Y/N	SUMMARY OF CHANGES
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