

DEPARTMENT OF THE ARMY
U.S. ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL
AND FORT SAM HOUSTON
Fort Sam Houston, Texas 78234-5014

FSH Memorandum
No. 385-6

15 December 1998

Safety
Confined Space Program

1. PURPOSE.

- a. To provide Fort Sam Houston (FSH) and contractor personnel with guidance and an overview of the Occupational Safety and Health Administration (OSHA) non-permit required and permit-required confined space requirements.
- b. To protect workers who must enter confined spaces.
- c. To review descriptions of confined space hazards and the controls necessary to ensure safe entry and exit into such places.
- d. To acquaint FSH and contractor personnel with the FSH policy on the entry into non-permit required and permit-required confined spaces.
- e. To establish policy of the use of non-entry retrieval equipment (i.e., life-line attached to a retrieval winch) as the standard and whenever possible.

2. APPLICABILITY.

This memorandum applies to all military, civilian and contractor personnel assigned or attached to FSH.

3. REFERENCES.

- a. AR 11-4, The Army Respiratory Program.
- b. FSH Reg 385-10, Occupational Safety and Health Program.
- c. FSH Memo 385-5, Respiratory Protection Program.
- d. OSHA Standard 29 CFR §1910.146, Permit-Required Confined Spaces.
- e. FSH Form 98-E, Employee Safety and Health Training Record.
- f. FSH Form 109-E, Confined Space Entry Permit.
- g. FSH Form 110-E, Confined Space Entry Permit Tracking Log.

*This memorandum supersedes FSH Reg 420-8, 1 May 1996

4. EXPLANATION OF TERMS.

- a. Confined space: An area sufficiently enclosed that could permit the accumulation of hazardous air contaminants and/or the possibility of an oxygen deficiency in which a person would have difficulty escaping in an emergency. Examples of confined spaces may include: boilers, sumps, storage tanks,

manholes, pits, vaults or trenches.

b. Non-permit required confined space:

(1) Is large enough and configured in such a way that it will allow an employee to enter and perform the assigned work.

(2) Has limited or restricted means for entry or exit.

(3) Is not designed for continuous employee occupancy.

c. Permit-required confined space:

(1) Meets the requirements of the non-permit required confined space.

(2) Contains or has a potential to contain a hazardous atmosphere.

(3) Contains a material that has the potential for engulfing an entrant.

(4) Has an internal configuration; 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.

(5) Contains any other recognized serious safety or health hazard.

5. BACKGROUND. The FSH Confined Space Program complies with OSHA Standard 29 CFR 1910.146, Permit-Required Confined Spaces, which mandates certain training, tests, and prescribed procedures be performed before personnel are permitted to enter or work in a confined space. Therefore, it is the policy of both, 29 CFR §1910.146 and FSH Reg 385-10, Occupational Safety and Health Program, to ensure safe conditions exist, and are maintained for personnel performing service or maintenance activities in confined areas posing special dangers or potentially serious hazards due to their configuration. Such health and safety hazards may include oxygen deficiency, combustible gases or vapor, toxic substances, physical or mechanical hazards and impaired communications. The hazards are not always readily apparent, detectable by odor or visually obvious; therefore, personnel may enter confined spaces without consideration of the potential dangers. To preclude injury or death to employees, it is paramount that all reasonable efforts are taken to identify and minimize the risks as well as to communicate to everyone the hazards involved. Employees must consider that all confined spaces contain the most unfavorable and unsafe conditions, and entry into or work in such spaces will be prohibited until all the prescribed training, tests, evaluations and procedures are performed. Every FSH employee and contractor who may be called upon to enter a permit required confined space as an authorized entrant, that serves as an attendant or an

2

entry supervisor, must receive and have documentation of job specific training with regard to the duties he/she has been assigned. Entry into a confined space is prohibited unless all individuals are appropriately qualified and trained.

6. RESPONSIBILITIES.

a. The Installation Safety Office (ISO) will:

(1) Serve as the focal point for the Confined Space Program.

(2) Develop and periodically review the policy for entry into permit-required confined spaces.

(3) Review all confined spaces that have been identified by

subordinate or tenant organizations.

(4) Assist in the identification of confined spaces.

(5) Review and approve the Confined Space Program for subordinate or tenant organizations.

(6) Delegate responsibilities to subordinate or tenant organizations for the tasks (7) through (11) for routine or recurring entries.

(7) Sign-off on all permits for permit-required confined spaces (FSH Form 109-E, Confined Space Entry Permit).

(8) Verify that all possible means have been employed in an effort to reduce the hazard classification of the space.

(9) Verify that entry supervisors are trained, qualified, and experienced to authorize permit-required confined space entries.

(10) Verify procedures and confirm that appropriate rescue teams and equipment are available prior to planned entry.

(11) Be the final approval authority for all confined space work.

(12) Assist entry supervisors in the selection of personal protective equipment (PPE).

(13) Provide or arrange for training of entry supervisors who issue entry permits and authorize entries into permit-required confined spaces.

(14) Evaluate the effectiveness of organizational procedures implemented to protect the entrants.

(15) Review the entire program at least annually to include, but not limited to the entry logs, any changes in the confined spaces, training records, and employee complaints about the effectiveness of the program.

(16) Be the final approval authority on all non-routine permit required confined space entries.

3

b. Preventive Medicine will:

(1) Provide training on the use, calibration, and care of atmospheric testing and monitoring equipment, and certify personnel to test confined spaces.

(2) Evaluate persons, as required by AR 11-4, The Army Respiratory Protection Program, and FSH Memo 385-5, Respiratory Protection Program, to use respiratory protection to ensure they are medically cleared to use the required devices.

(3) Assist in the training of personnel for confined space duties.

(4) Assist entry supervisors in the selection of appropriate respiratory equipment and other PPE.

(5) Assist entry supervisors in the interpretation of monitoring results.

(6) Evaluate confined spaces for hazardous atmospheres and Immediately Dangerous to Life and Health (IDLH) conditions as necessary.

(7) Coordinate on permits, as appropriate, for confined space work.

c. The Installation Fire Department will:

(1) Provide rescue support as requested or needed.

(2) Become familiar and acquainted with all confined spaces at FSH.

(3) Train and maintain proficiency in confined space rescue with regards to the confined spaces at FSH and document the training on FSH Form 98-E, Employee Safety and Health Training Record.

(4) Maintain rescue equipment and have it "ready" for use at all times.

(5) Assist in the training of personnel as appropriate.

(6) Provide air monitoring support when requested and when within their capability.

(7) Assist the ISO in evaluating the effectiveness of organizational programs.

d. Commanders/organization chiefs will:

(1) Identify both, non-permit required and permit-required confined spaces within respective areas of responsibility, as defined in paragraph 4.

(2) Provide a list of identified confined spaces to the ISO.

(3) Prepare a Standing Operating Procedure (SOP) concerning entry into non-permit required confined spaces.

4

(4) Place signs at all permit-required confined spaces that include wording such as:

DANGER - DO NOT ENTER PERMIT-REQUIRED CONFINED SPACE

(5) Provide annual training for entrants into non-permit required confined spaces and document training on FSH Form 98-E.

(6) Designate entrants, attendants, and entry supervisors for permit-required confined spaces.

(7) Follow the guidance in this memorandum.

(8) Ensure all personnel who are assigned duties and responsibilities which support the permit-required confined space program tasks are properly trained, equipped and qualified, and that the training is documented on FSH Form 98-E.

(9) Ensure required equipment is procured to support entry into confined spaces.

(10) Designate entry supervisors for permit required confined spaces.

(11) Notify the ISO 48 hours before entry into a permitted confined space (except in case of emergencies), and direct any specific needs or questions to the ISO.

(12) Ensure that Soldiers Awaiting Training (SAT) or other soldiers in a casual status are not used in any capacity in either non-permit required

or permit-required confined spaces.

e. Entry (on-site) supervisors for permit-required confined spaces will:

(1) Determine acceptable conditions are present at a permit space where entry is planned.

(2) Ensure a qualified person (trained in the operation of direct-reading oxygen, flammability, and toxicity monitoring equipment), evaluates and classifies the confined space.

(3) Coordinate assistance from the Preventive Medicine Service, the Fire Department, and the ISO, as required.

(4) Ensure workers are properly trained and qualified in safe operating and emergency procedures, use of protective equipment, and how to egress.

(5) Brief workers on the hazards of entry, (i.e., chemicals that were in the tank), the effects of inhalation of vapors, and what safety and health hazards are inherent in internal confined space operations.

5

(6) Inspect the work area, tools and equipment, to identify and correct hazards.

(7) Select the appropriate PPE and ensure the availability and use of all protective clothing and other PPE necessary for safe entry.

(8) Ensure respiratory equipment is in a safe operating condition and personnel are trained to understand the proper procedures for use.

(9) Ensure all electrical power sources and equipment meet safety requirements for the atmosphere in the confined space.

(10) Ensure all electrical power and other energy sources are de-energized and locked out.

(11) Establish and review the emergency procedures to rescue persons incapacitated in the confined space.

(12) Be the last person to sign the permit after all conditions are met, and ensure that the permit is maintained at the site where the entry is planned.

(13) Provide an attendant for each permit entry.

(14) Enter permit number and information on the log sheet (FSH Form 110-E, Confined Space Entry Tracking Log).

(15) Provide appropriate barriers or other means to protect the entry party and attendants from local traffic hazards, and to protect non-entering personnel from hazards arising from the confined space.

(16) Determine and evaluate the source (i.e., removal of residue from the space, repair of leaking valve or pipe in the space, etc.), of any suspected atmospheric condition found at the time of entry.

(17) Revoke the entry permit, terminate the entry, and secure the

site when becoming aware of a prohibited or unexpected condition. Ensure a new entry permit is processed prior to re-entry.

(18) Provide communication means to summon assistance when at remote sites (away from a telephone where visual or oral contact with the entrant is not possible).

f. Confined space entrants are workers who enter confined spaces. They will:

(1) Fully understand all procedures, safeguards and emergency egress, and (or) rescue procedures associated with the entry.

(2) Notify the entry supervisor when hazards exist that have not been corrected.

6

(3) Follow all safe work procedures required by supervisory personnel, safety and fire representatives.

g. Confined space attendants will:

(1) Maintain an accurate accounting of entrants (who and number), in the permit space.

(2) Remain outside the permit space and not attempt rescue mission involving entry, until the rescue team has been notified and assistance has arrived. Make rescue efforts by means of the life-line or non-entry retrieval devices until assistance arrives. The attendant must not enter the permit-required confined space.

(3) Maintain continuous communication with all authorized entrants within the permit space by voice, radio, telephone, visual observation or other equally effective means.

(4) Have authority to order entrants to exit the confined space at the first indication of a non-permitted condition, an unexpected hazard indication of a toxic reaction (i.e., unusual conduct by the entrants), or if a situation occurs outside the space that could pose a hazard to the entrants.

(5) Know the procedure and have the means to summon immediate emergency assistance if needed.

(6) Remain at the attendant's post and not leave for any reason (except self-preservation), unless replaced by an equally qualified individual. Order the entrants to exit the space if the attendant must leave and there is no replacement.

(7) Keep unauthorized persons from entering the permit space.

h. The FSH Medical Command Contracting Center will ensure all contracts which require entry into confined spaces contain verbiage to ensure the contractor(s) performing the work has a Confined Space Program, to include monitoring equipment and trained personnel.

i. Operations and maintenance contractors must fully implement their Confined Space Program. Their Quality Control/Safety Office will sign the permits for entry into permit-required confined spaces.

j. Other contractors will provide documentation to the ISO of a fully implemented Confined Space Program if their work requires entry into a

confined space. This documentation will be provided and reviewed prior to the start of work. The following will be reviewed once the contractor is on site:

- (1) Ensure all required equipment and monitoring devices are available and are in proper working order.
- (2) Ensure the contractor's personnel have been properly trained for confined space entry.

7

(3) Inform the contractor that FSH has "permit-required confined spaces," that may only be entered under a Permit Confined Space Program.

(4) Appraise the contractor of the associated hazards.

(5) Coordinate entry procedures with the contractor.

(6) Contractors who experience a hazard in a confined space must notify the ISO immediately to document the hazard or change in the confined space.

7. TRAINING. The OSHA requires three levels of training concerning confined spaces. This training must be conducted and documented on FSH Form 98-E.

a. General confined space training for all employees who work around confined spaces must include:

- (1) General overview of the FSH Confined Spaces Program.
- (2) Definitions of non-permit required confined spaces.
- (3) Specific types of confined spaces at or near the workplace and the hazards associated with them.
- (4) Explanation of the permit system.
- (5) Emergency procedures.

b. Non-permit required confined space entrants training will include:

- (1) Same as paragraph a.
- (2) Explanation as to why the confined spaces are considered "non-permit required."
- (3) Changes that could make the spaces "permit required."
- (4) Review of the workplace specific SOP.

c. Permit-required confined space training will include:

- (1) All of the above.
- (2) For entrants:
 - (a) Equipment use.
 - (b) Evacuation.
 - (c) Isolation of hazardous energy sources (lockout/tagout).
- (3) For attendants:

(a) Control of access.

8

(b) Observe entrants behavior.

(c) Emergency procedures.

(4) For supervisors:

(a) Determining acceptable entry conditions.

(b) Authorizing entry.

(c) Overseeing entry operations to include such items as ensuring fresh air ventilation systems aren't near exhausts, vehicles aren't idling near-by, tools can't be dropped; and terminating entry.

(5) Training for emergency procedures. (Training should be on the procedures to be followed and equipment to be used.)

(6) Training for personnel who will conduct atmospheric monitoring:

(a) Order of monitoring.

(b) Permissible exposure levels.

8. OPERATING PROCEDURES.

a. Whenever it is determined that confined space work must be done, the following steps must be taken:

(1) An entry supervisor will be appointed.

(2) The entry supervisor will select employees to participate in the confined space operation and assign them the roles of entrants or attendants.

(3) The supervisor will confirm that the employees have had the required training for the roles that they have been assigned.

(4) The entry supervisor completes the confined space entry permit request and submits it to the ISO or organizational Safety Officer within 48 hours prior to entry for approval (under normal conditions, entry will not be approved during non-business hours).

(5) Initial atmospheric conditions must be conducted just prior to entry.

b. If the results of the test indicate no hazardous conditions:

(1) The Safety Officer will issue the confined space entry permit. A copy of the permit must be maintained at the site where the entry is planned.

(2) The entrance will be opened and appropriate barriers set up to prohibit unauthorized persons from entering the space, and to protect entrants from external hazards.

9

(3) Entrants will put on all appropriate PPE before work in the space can begin.

(4) Continuous monitoring must be conducted by the entry supervisor

or designee.

(5) If at any point the atmospheric conditions change, entrants must exit the space and the Safety Office must be contacted.

(6) Permits must be maintained for at least 1 year.

c. If the results of the test indicate hazardous conditions:

(1) The confined space is to be ventilated for 1 hour.

(2) The atmosphere must be retested.

d. If more than one employer's employees will be entering a permit-required confined space at the same time, a pre-entrance meeting should be held with the entry supervisors of all involved employers and the ISO. All entry procedures and issues will be agreed upon and written into the permit.

9. EMERGENCY PROCEDURES.

a. The attendant, upon recognizing that an emergency situation exists will notify all entrants to evacuate the confined space immediately.

b. The attendant will contact (without leaving the area or without being replaced by another authorized attendant), the following in this order:

(1) Fire Department (designated Confined Space Rescue Team).

(2) Entry supervisor.

(3) Organizational Safety Office.

(4) ISO.

(5) Preventive Medicine Service.

(6) Security.

c. The attendant will assist the arriving responders by providing them with any information that will be helpful to their rescue attempts, including:

(1) Information on the entry permit.

(2) Observations of the situation.

(3) Information provided to the attendant by the entrants.

(4) Any other helpful or pertinent information.

10

d. The entry supervisor will immediately cancel the entry permit, noting the nature of the problem causing the emergency situation.

10. CONCLUDING CONFINED SPACE OPERATIONS.

a. All entrants must exit the space, removing any equipment or tools that were taken into the space as part of the operation.

b. Entrances to the space must be closed (and locked or sealed as appropriate).

c. The entry supervisor will cancel the permit and note any problems that occurred during confined space operations.

d. Equipment will be cleaned, necessary maintenance performed, and returned to its proper storage location.

11

The proponent of this memorandum is the Directorate of Public Safety. Users are invited to send comments and suggested improvements on DA form 2028 (Recommended Changes to Publications and Blank forms) to the Commander, U.S. Army Medical Department Center and School and Fort Sam Houston, ATTN: MCGA-DPS, Fort Sam Houston, TX 78234-5014.

FOR THE COMMANDER:

/S/
OFFICIAL:
MICHAEL F. MERRILL
Director of Information
Management

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