DEPARTMENT OF THE ARMY
U.S. ARMY MILITARY DISTRICT OF WASHINGTON
103 Third Avenue
Fort Lesley J. McNair, DC 20319-5058

MDW Regulation
No. 385-2

9 July 1996

Safety
CONFINED SPACE PROGRAM

FOR THE COMMANDER:

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Colonel, GS
Chief of Staff

OFFICIAL:

for Richard R. Miller
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DISTRIBUTION:

A
B
C
D

**History.** This is a new regulation.

**Summary.** This regulation establishes responsibilities and procedures to protect employees from the hazards of entry into permit-required confined space(s).

**Applicability.** This regulation applies to all staff activities; installations; subordinate commands and activities; tenant and satellite activities assigned to and/or supported by the U.S. Army Military District of Washington (MDW) Major Command (MACOM) that have confined space(s).

**Supplementation.** Supplementation of this regulation is prohibited except upon approval of the Commander, MDW. Proposed supplements must be submitted for approval to Commander, MDW, ATTN: ANOS, 103 Third Avenue, Fort Lesley J. McNair, DC 20319-5058.

**Suggested improvements.** The proponent of this regulation is the MDW Safety Office. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to Commander, MDW, ATTN: ANOS, 103 Third Avenue, Fort Lesley J. McNair, DC 20319-5058.

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**Glossary**
Explanation of abbreviations and terms

**Reproducible forms** (NOTE: The following forms may be locally reproduced on 8 1/2 by 11 inch paper or electronically generated. A copy of each form (for reproduction purposes) is located at the back of this regulation.)

MDW Form 61-R-E, Confined Space Pre-Entry Checklist
MDW Form 61-1-R-E, Confined Space Entry Permit
MDW Form 61-2-R-E, Confined Space Exit Checklist


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### 1. Purpose

This regulation establishes the MDW Confined Space Program and prescribes policies, procedures, and responsibilities to protect employees from the hazards associated with entry into confined spaces in accordance with 29 Code of Federal Regulations (CFR), part 1910.146.

### 2. Related references

a. Occupational Safety and Health Standards, 29 Code of Federal Regulations, 1910.146, Confined Space.

b. Occupational Safety and Health Standards, 29 Code of Federal Regulations, 1910.1030, Bloodborne Pathogens.

c. Army Regulation 385-10, The Army Safety Program.

### 3. Explanation of abbreviations and terms

Abbreviations and special terms used in this regulation are explained in the glossary.

## 4. Responsibilities

a. The MDW Safety Director will provide overall policy guidance, coordination, and oversight of the confined space program.

b. Installation commanders will ensure that--

(1) The policies and procedures in this regulation are followed.

(2) Directors, commanders, and activity heads (assigned, tenants, and/or supported) assume the responsibility of or appoint a person(s) to identify and evaluate confined space(s) within their respective area(s). (NOTE: The person(s) assuming this responsibility usually is already operating in or has supervision over a confined space(s) and have received the appropriate training.)

c. Directors, commanders, and activity heads (assigned, tenants, and/or supported), or their appointee(s) will--

(1) Ensure that no individual is permitted to enter a "potential" confined space until a complete assessment of the space is made and authorization, by entry permit (MDW Form 61-1-R-E) when applicable, is obtained.

(2) Ensure that the classification of a confined space is based on the most probable hazardous condition in the working area, and consider all confined space(s) as "permit-required" space(s) pending results of the pre-entry evaluation.

(3) Ensure that "permit-required" space(s) are identified by posted signs or by written guidance, to prevent inadvertent or unauthorized entry into this space. Mode of identification will be as determined by the installation safety manager.

(4) Coordinate with the Director of Public Works to have signs made, when appropriate, for "permit-required" spaces, as follows: **DANGER - PERMIT-REQUIRED CONFINED SPACE - DO NOT ENTER.**

(5) Ensure all affected confined space employees receive confined space training. This training will be accomplished either through contractors, Directorate of Public Works personnel, installation safety office, industrial hygienist or other trained confined space instructors, ensuring compliance with paragraph 14 of this regulation.

(6) Ensure proper equipment maintenance as well as equipment training (at no cost to employees) is provided, and that personnel are familiar with the confined space entry equipment listed at paragraph 12 of this regulation.

(7) Within 30 days after the effective date of this regulation, provide an initial list of all confined space(s) under their area of responsibility to the installation safety manager. Each list, as appropriate, will be updated when new confined space(s) become known.

d. Directors of Public Works will ensure that warning signs per paragraph 4c(4) are made and installed in accordance with pertinent Army policy.

e. Directors of information management will approve communications support (radios) requests for confined space users.

f. Installation safety managers will--

(1) Issue specific written instructions for work in both permit and non-permit-required confined spaces as necessary.

(2) Receive and maintain the initial and subsequent updated lists of known confined spaces.

(3) Assist directors, commanders, activity heads (or their appointees), and entry supervisors in the identification and assignment of permit-required versus non-permit required confined spaces classifications.

(4) Ensure training is provided for all affected confined space employees, assist in confined space entry training as requested, and ensure compliance with paragraph 14 of this regulation.

(5) Review confined space standing operating procedures.

(6) Provide technical assistance on all matters of employee safety, health, and property conservation.

(7) Review all submitted MDW confined space forms (MDW Form 61-R-E, MDW Form 61-1-R-E, and MDW Form 61-2-R-E) and maintain them in accordance with the Modern Army Recordkeeping System (MARKS).

(8) For quality assurance purposes, conduct random samplings of identified confined space areas.

(9) Have available for review 29 CFR 1910.146 and 29 CFR 1910.1030.

g. Preventive medicine activity industrial hygienists will--

(1) Perform medical surveillance as necessary.

(2) Perform contaminants monitoring of confined spaces upon request.

(3) Assist safety personnel in assessing hazards and determining adequacy of protective measures upon request and consistent with available resources.

(4) Review all special case standing operating procedures (SOP) for routine entries into permit-required confined spaces upon request and consistent with available resources.

(5) Assist in confined space entry training as requested (consistent with available resources). See paragraph 14 of this regulation.

h. Supporting medical activity occupational health nurse will conduct required initial and annual health physicals and provide information to supervisor, upon request, on employee's physical ability to carry out assigned duties in confined spaces.

i. Installation fire department chiefs will--

(1) Serve as the primary rescue team for confined space operations and maintain a "stand-by" posture for rescue operations.

(2) Ensure training is conducted in rescue operations. Perform annual mocked rescue exercises utilizing actual permit-required or simulated permit-required space, in which dummies, mannequins, or actual persons are removed. Emergency rescue personnel will practice confined space rescues annually. See paragraph 14 of this regulation.

(3) Approve, prepare, and issue "hot work" permits (DA Form 5383-R).

j. Contracting representatives will--

(1) Inform contractors of the provisions of this regulation and ensure contractors do not enter any permit-required confined space unless proof is provided attesting personnel have been trained in confined space requirements.

(2) Consult with entry supervisor and the installation safety manager during project planning.

(3) Ensure contractors perform all work in confined spaces in accordance with this regulation and 29 CFR, Part 1910.146. The 29 CFR 1910.146 will be available in the installation safety office for review.

(4) Provide contractors information on likely hazards they may encounter in a given confined space.

k. Entry supervisors will--

(1) Be responsible for entry/work in confined spaces and ensure that the requirements of this regulation are implemented.

(2) Ensure employees are aware of the content and requirements of this regulation.

(3) Develop and maintain standing operating procedure(s) for all confined space operations, identifying all required personal protective clothing, equipment, and hazard control measures to be taken.

(4) Ensure other regulatory guidance is followed such as: hazard communication, respiratory protection, and lockout/tagout rules when pertinent.

(5) Utilize MDW Form 61-R-E (Confined Space Pre-Entry Checklist) to determine if identified confined space(s) meet the "permit-required" criteria as defined in the glossary, section II of this regulation. Coordinate this action with the installation safety manager per paragraph 4f(3) of this regulation.

(6) In conjunction with the pre-entry evaluation, review the Material Safety Data Sheets (MSDS), job procedure(s), and safe work practices, as appropriate.

(7) Initiate the confined space entry permit (MDW Form 61-1-R-E), documenting the completion of measures taken to control/eliminate hazards to entrants.

(8) Issue entry permits, as appropriate, and ensure that they are--

(a) Used for entry into all confined spaces designated "permit-required."

(b) Valid for only one shift. A new entry permit is required before a relief shift begins work.

(c) Posted in a conspicuous location adjacent to the confined space access opening.

(d) A copy is forwarded to the installation safety manager, which will be retained on file for a period of at least 1 year.

(9) Ensure precautionary measures specified on MDW Form 61-1-R-E are followed.

(10) Obtain a "hot work" permit, DA Form 5383-R, from the installation fire department chief, before any hot work is started.

(11) Provide necessary training and pre-entry briefings to authorized attendants and entrants on all potential hazards of the confined space to be entered and ensure that each attendant/entrant is aware of the effects of potential exposure. Training will include information on mode, signs and symptoms, and consequences of exposure. See paragraph 14 of this regulation.

(12) Verify that all tests have been conducted and all procedures and rescue equipment are in place before endorsing permit.

(13) Verify that rescue services are available and that the means for summoning them are operable.

(14) Verify with the installation occupational health nurse, the physical condition of all persons entering a confined space area.

(15) Contact the installation safety manager for assistance in abating/controlling hazards within confined spaces as needed.

(16) Conduct initial atmospheric tests in accordance with paragraphs 8 and 9 of this regulation, to ensure a safe atmosphere. Perform subsequent tests, as often as needed.

(17) Retest the atmosphere whenever all entrants must exit a confined space (for any reason), before anyone is allowed entrance or re-entry into that space.

(18) Continually monitor the atmosphere whenever hot work is conducted within a confined space.

(19) Ensure that an attendant is positioned outside of all occupied confined space at all times.

(20) Terminate entry and cancel permits whenever an imminent hazard is noted that was not previously addressed/abated.

(21) Submit MDW Form 61-R-E, MDW Form 61-1-R-E, and MDW Form 61-2-R-E, to the installation safety office, following completion of work in a permit-required confined space.

l. Attendants will--

(1) Be present for all training/briefings by entry supervisor on the hazards of the confined space to be entered and be aware of the effects of potential exposures. See paragraph 14 of this regulation.

(2) At no time enter the confined space, but remain outside the space until relieved by another attendant or the entry supervisor.

(3) Prevent unauthorized entry into the space and perform non-entry rescues in accordance with emergency procedures outlined in paragraph 6 of this regulation.

(4) Maintain continuous count and identification of authorized entrants/attendants.

(5) Communicate with entrants to monitor their status.

(6) Monitor activities inside and outside the permit space and order exit if necessary.

(7) Summon rescuers if necessary. Have a functioning radio in their possession at all times to contact the installation fire department.

(8) Not perform other duties which could interfere with their primary duty to monitor and protect the safety of authorized entrants.

m. Authorized entrants will--

(1) Be present for all training/briefings from the entry supervisor regarding the hazards they may face during entry and be aware of the effects of potential exposure. See paragraph 14 of this regulation.

(2) Wear appropriate protective clothing (paragraph 11a) at all times and obtain and use the required equipment (paragraphs 11b and 12) prior to entering confined space.

(3) Communicate with the attendant as necessary to enable the attendant to monitor entrant status and alert entrants of the need to evacuate the space when necessary.

(4) Alert the attendant whenever the entrant recognizes any warning sign or symptom of exposure to a dangerous situation or detects a prohibited condition.

(5) Exit from the permit space as quickly as possible whenever:

(a) An order to evacuate is given by the attendant or the entry supervisor.

(b) The entrant recognizes any warning sign or symptom of exposure to a dangerous situation.

(c) The entrant detects a prohibited condition.

(d) An evacuation alarm is activated.

**5. Sewer entry system entry**

a. Sewer entry differs in three vital respects from other permit entries; first, there rarely exists any way to completely isolate the space to be entered; second, because isolation is not complete, the atmosphere may suddenly and unpredictably become lethally hazardous (toxic, flammable or explosive) from causes beyond the control of the entrant or employer; and third, experienced sewer workers are especially knowledgeable in entry and work in their permit spaces because of their frequent entries.

b. The directors, commanders, activity heads, and entry supervisors will designate as entrants only employees who are thoroughly trained in the employer's sewer entry procedures and who demonstrate that they follow these entry procedures exactly as prescribed when performing sewer entries.

c. Entrants will be trained in the use of, and be equipped with, atmospheric monitoring equipment which sounds an audible alarm, in addition to its visual readout, whenever one of the following conditions are encountered (measured as an 8-hour time-weighted average):

(1) Oxygen concentration is less than 19.5 percent.

(2) Flammable gas or vapor is at 10 percent or more of the lower flammable limit (LFL).

(3) Hydrogen sulfide or carbon monoxide is at or above 10 ppm or 35 ppm, respectively, measured as an 8-hour time-weighted average.

d. Each director, commander, activity head (or their appointee), or entry supervisor must consider the unique circumstances of sewer system entries, including the predictability of the atmosphere, and determine the best type of testing instrument for each specific sewer system entry operation.

(1) Oxygen sensor/broad range sensor is best suited for initial use in situations where the actual or potential contaminants have not been identified.

(2) Substance-specific devices, which measure the actual levels of specific substances, are best suited for use where actual and potential contaminants have been identified.

e. The selected testing instrument will be carried and used by the entrant in sewer line work to monitor the atmosphere in the

entrant's environment, and in advance of the entrant's direction of movement to warn the entrant of any deterioration in atmospheric conditions. Where several entrants are working together in the same immediate location, one instrument, used by the lead entrant, is acceptable.

f. Sewer crews will develop and maintain liaison with the local weather bureau and installation fire department so that sewer work may be delayed or interrupted and entrants withdrawn whenever sewer lines might be suddenly flooded by rain or fire suppression activities, or whenever flammable or other hazardous materials are released into sewers during emergencies.

**6. Emergency Procedures**

In the event of an emergency, the authorized attendant will summon help immediately by radio. If non-entry rescue is possible, attempt non-entry rescue, but only after notification for assistance by radio is made to the installation fire department. At no time will the attendant enter the confined space. Rescue personnel must respond wearing full protective gear and self-containing breathing devices.

**7. Isolating and Securing (lockout)**

Before personnel are allowed to enter a confined space, all hazardous energy sources will be identified, isolated, and secured (lockout/tagout) to isolate hazard. All pumps and lines which may reasonably cause contaminants to flow into the space will be disconnected, blinded, and locked out, or effectively isolated by other means to prevent development of dangerous air contamination or engulfment.

**8. Atmospheric Testing**

Confined spaces may contain hazardous atmospheres. To protect personnel against such hazards, atmospheric tests will be conducted prior to entry to determine the kind and extent of hazardous materials present, the procedures required to eliminate or reduce them, and required personal protective equipment. Testing will be accomplished from the confined space, using calibrated direct-reading instruments, for the following conditions in the order given:

a. Oxygen content.

b. Flammable gases and vapors.

c. Potential toxic air contaminants.

**9. Testing Equipment**

a. All testing equipment must meet calibration requirements, be designed for the anticipated hazards, and be approved by the entry supervisor.

b. Tests for flammability will be taken with combustible gas indicators.

c. Combustible gas detectors will be set to alarm at 10 percent of the lower explosive limit.

d. Tests for oxygen will be taken with a direct-reading instrument.

e. Tests for concentrations of immediately dangerous to life or health (IDLH), or permissible exposure limit (PEL) of hazardous materials will be conducted by the industrial hygienist.

f. All test equipment will be calibrated in accordance with manufacturer's specifications and tested to ensure that all units are in proper operating condition at all times. All instruments will be field checked immediately prior to use.

g. For equipment not used frequently, a monthly field check will be conducted to ensure ready availability of equipment.

**10. Immediately Dangerous to Life or Health (IDLH) Atmospheres**
The IDLH is 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.

a. If toxic agents are present or suspected to be present, the atmosphere will be tested for specific agents by the installation industrial hygiene officer or entry supervisor.

b. When the test indicates a potential hazard to life or health, the space will be ventilated prior to and during entry to maintain safe atmospheric conditions during the operation.

c. A self-contained breathing apparatus or supplied air respirator with escape bottle will be worn when an atmosphere exists that is determined to be an IDLH or exceeds the PEL, or such a condition is reasonably anticipated.

d. The testing of the atmosphere for a particular toxic material is not necessary where the presence of that material is known by virtue of a previous test and appropriate personal protective equipment is available. If procedures may alter the atmospheric composition, continuous monitoring will be performed.

**11. Protective Clothing and Equipment**

a. All employees serving as entrants will wear the appropriate protective clothing based on the hazards present within the permit space along with specific guidance provided in the MSDS and job hazard analysis.

b. Each authorized entrant will wear a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, or above the entrants's head. The other end of the retrieval line will be attached to a mechanical device or a fixed point outside the permit space in such a manner that rescue can begin as soon as the need arises. (An exception for the use of wristlets in lieu of the chest or full body harness must be approved by the installation safety office).

c. Defective or damaged personnel protective equipment will be placed out-of-service upon discovery. The entry supervisor will be notified of the defective equipment and the action taken.

**12. Confined Space Entry Equipment**

The authorized entrant's employing agency is responsible for providing proper equipment maintenance as well as equipment training at no cost to employee. Confined space entry equipment includes:

a. Monitoring equipment for testing atmospheric conditions.

b. Communications equipment necessary to communicate with entrant.

c. Personal protective clothing and equipment insofar as feasible engineering and work practice controls do not adequately protect employees.

d. Portable lighting needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency.

e. Barriers and shields required to protect entrants from external hazards.

f. Portable ladder approved for specific task.

g. Rescue equipment will be readily available at the confined space for immediate use by rescue personnel.

h. Compressed gas cylinders are never to be taken into confined space and will be turned off at the cylinder valve when not in use. Self-contained breathing apparatuses are an exception.

i. A mechanical device to retrieve personnel from vertical type permit spaces that are more than 5 feet deep.

j. Any other equipment necessary for safe entry into and rescue from permit spaces.

**13. Special Hazards**

When it is necessary to perform other hazardous work inside the

confined space, the nature of the job hazards and the necessary safety precautions will be thoroughly evaluated on a case-by-case basis. A job hazard analysis or SOP will be prepared for these tasks. The entry supervisor will clearly describe the precautions on MDW Form 61-1-R-E, and will ensure all special precautions are communicated effectively to personnel who will perform the work. In certain cases other permits may be required (e.g., welding and cutting).

a. Wet locations: Confined spaces which contain residual water or have wet surfaces due to condensation will have all electrical equipment fed through a ground fault interrupter to reduce the risk of electrical injuries.

b. Hot work (burning) inside confined spaces:

(1) All procedures for welding and cutting (hot work), will be conducted with personal protective equipment and will include the use of the installation hot work permit.

(2) A continuous combustible gas detector will be utilized and monitored by the entry supervisor. If the detector indicates the presence of combustible gas in excess of 10 percent lower explosive level in a confined space, all hot work, welding or cutting will be stopped immediately and resumed only after it is determined that it is safe to continue work.

(3) When welding or burning will take place inside the confined space, approved continuous supplied air respirators or self-contained pressure demand breathing apparatus may be required for all employees inside the confined space.

(4) Welding and cutting (hot work) will not be conducted if flammable dusts are present in the confined space or in the air around the confined space.

(5) Cylinders of compressed gases used for welding will never be taken into a confined space and will be turned off at the cylinder valve when not in use. The torch and hose will be removed from the confined space overnight and at the change of shifts. Open-end fuel gas and oxygen hoses will be immediately removed from the enclosed spaces when they are disconnected from the torch or other gas-consuming devices.

(6) All spaces will be continuously, atmospherically monitored during hot-work operations within a confined space.

**14. Training and Education**

a. Before initial work assignment begins, the employee's agency must provide training for all personnel who are required to work in permit-required spaces. The training must provide the

employees with the understanding, knowledge, and skills necessary for the safe performance of duties in accordance with this regulation. Training must be provided before the employee is first assigned duties by this regulation. Additional training is required when--

(1) The job duties change.

(2) There is a change in the permit-space program or the permit-space operation presents a new hazard.

(3) When an employee's job performance reflects that there are inadequacies in the employee's knowledge or use of confined space procedures.

b. Rescue team members must also be trained in accordance with paragraph 4i(2) of this regulation to include cardiopulmonary resuscitation and first aid training.

c. Employees identified as first aid responders will need to be entered into the bloodborne pathogen program and meet the requirements of 29 CFR 1910.1030.

d. The employee's agency must, upon completion of training, certify that the training has been accomplished. The certification will contain each employee's name, the signatures or initials of the trainers, and the dates of training.

# Glossary

## Section I
## Abbreviations

CFR.....code of federal regulations
IDLH.....immediately dangerous to life or health
MDW.....U.S. Army Military District of Washington
MSDS.....material safety data sheet
PEL.....permissible exposure limit

## Section II
## Definitions

| | |
|---|---|
| Attendant | Individual who is stationed outside one or more permit-required confined space, who monitors the authorized entrants, and performs all duties assigned to the attendant by the permit program. |
| Authorized entrant | Employee who is authorized by the entry supervisor to enter a permit space. |
| Confined space | A space which has adequate size and configuration for employee entry, has limited means of access or egress, and is not designed for continuous employee occupancy. |
| Entry supervisor | The person (such as the supervisor, foreman, or crew chief) responsible for determining if the acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry, and overseeing entry operations, and for terminating entry. |
| Hot work | Work that produces arcs, sparks, flames, heat, or other sources of ignition. |
| Non-permit confined space | Confined space which does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm. Examples of non-permit confined spaces include vented vaults, motor control cabinets, and dropped ceiling. Although they are "confined spaces," these spaces have either natural or permanent mechanical ventilation to prevent the accumulation of a hazardous atmosphere, and they do not present engulfment or other serious hazards. |
| Permit-required confined space | Confined space which has one or more of the following characteristics: |

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

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

(c) 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.

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

# CONFINED SPACE PRE-ENTRY CHECKLIST

(MDW Regulation 385-2)

| 1. JOB SITE | 2. JOB SUPERVISOR | 3. STANDBY PERSONNEL |
|---|---|---|
| | | |

| 4. DATE ISSUED | 5. TIME ISSUED | 6. DATE EXPIRES | 7. TIME EXPIRES |
|---|---|---|---|
| | | | |

8. EQUIPMENT TO BE WORKED ON

9. WORK TO BE PERFORMED

10. TEST(S) TO BE TAKEN

| ATMOSPHERIC CHECKS a. | | SOURCE ISOLATION (NO ENTRY) b. | | | | VENTILATION MODIFICATION c. | | | |
|---|---|---|---|---|---|---|---|---|---|
| TIME | | | N/A | YES | NO | | N/A | YES | NO |
| OXYGEN | % | PUMPS OR LINES BLINDED | | | | MECHANICAL | | | |
| EXPLOSIVE | % L.F.L. | | | | | | | | |
| TOXIC | PPM | | N/A | YES | NO | | N/A | YES | NO |
| TESTER'S SIGNATURE | | DISCONNECTED OR BLOCKED | | | | NATURAL VENTILATION ONLY | | | |

11. ATMOSPHERIC CHECK AFTER ISOLATION AND VENTILATION

| | | |
|---|---|---|
| OXYGEN | % | > 19.5% |
| EXPLOSIVE | % L.F.L. | < 10% |
| TOXIC | PPM | < 10 PPM H (2)S |
| TIME | | |
| TESTER'S SIGNATURE | | |

12. COMMUNICATION PROCEDURES

13. RESCUE PROCEDURES

| ENTRY, STANDBY, AND | YES | NO | EQUIPMENT | N/A | YES | NO | EQUIPMENT | N/A | YES | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| SUCCESSFULLY COMPLETED REQUIRED TRAINING? | | | DIRECT READING GAS MONITOR TESTED | | | | POWER COMMUNICATIONS | | | |
| | | | HOISTING EQUIPMENT | | | | SCBA'S FOR ENTRY AND STANDBY PERSONNEL | | | |
| IS THE TRAINING CURRENT? | | | SAFETY HARNESSES AND LIFELINES FOR ENTRY AND STANDBY PERSONNEL | | | | ALL ELECTRIC EQUIPMENTLISTED AS CLASS I, DIVISION I, GROUP D AND NON-SPARKING TOOLS | | | |

14. .... PERIODIC ATMOSPHERIC TEST(S) TO BE TAKEN

| | % | TIME | % | TIME | % | TIME | % | TIME |
|---|---|---|---|---|---|---|---|---|
| OXYGEN | | | | | | | | |
| EXPLOSIVE | | | | | | | | |
| TOXIC | | | | | | | | |

NOTE: WE HAVE REVIEWED THE WORK AUTHORIZED BY THIS PERMIT AND THE INFORMATION CONTAINED HEREIN. WRITTEN INSTRUCTIONS AND SAFETY PROCEDURES HAVE BEEN RECEIVED AND ARE UNDERSTOOD. ENTRY CANNOT BE APPROVED IF SQUARES ARE MARKED IN THE "NO" COLUMN. THIS OS NOT VALID UNLESS ALL APPROPRIATE ITEMS ARE COMPLETED

| 15. PERMIT PREPARED BY (SUPERVISOR) | 16. APPROVED BY (UNIT SUPERVISOR) | 17. REVIEWED BY *(PRINT NAME AND SIGN)* |
|---|---|---|
| | | |

NOTE: A COPY OF THIS CHECKLIST IS TO BE KEPT AT THE JOB SITE. RETURN THE JOB SITE COPY TO THE INSTALLATION SAFETY OFFICE FOLLOWING THE COMPLETION OF THE JOB.

COPIES: ORIGINAL TO THE INSTALLATION SAFETY OFFICE
1 COPY TO THE UNIT SUPERVISOR
1 COPY AT THE JOB SITE

# CONFINED SPACE ENTRY PERMIT

(MDW Regulation 385-2)

| 1. DATE | | |
|---|---|---|
| 2. SITE LOCATION | 3. PURPOSE OF ENTRY | 4. TIME |
| 5. SUPERVISOR | 6. TYPE OF CREW | 7. TELEPHONE NUMBER |

8. COMMUNICATION PROCEDURES

9. RESCUE PROCEDURES

10. REQUIREMENTS COMPLETED

| REQUIREMENT | DATE | TIME | REQUIREMENT | DATE | TIME |
|---|---|---|---|---|---|
| LOCKOUT/DE-ENERGIZE/ TRY-OUT | | | FULL BODY HARNESS WITH "D" RING | | |
| LINE(S) BROKEN-CAPPED-BLANKED | | | EMERGENCY ESCAPE RETRIEVAL EQUIPMENT | | |
| PURGE-FLUSH AND VENT | | | LIFELINESS | | |
| VENTILATION | | | FIRE EXTINGUISHER | | |
| SECURE AREA (POST AND FLAG) | | | LIGHTING (EXPLOSIVE PROOF) | | |
| BREATHING APPARATUS | | | PROTECTIVE CLOTHING | | |
| RESUSCITATOR-INHALATOR | | | RESPIRATOR(S) (AIR PURIFYING) | | |
| STANDBY SAFETY PERSONNEL | | | BURNING AND WELDING PERMIT | | |

NOTE: ITEMS THAT DO NOT APPLY ENTER N/A IN THE BLANK

**RECORD CONTINUOUS MONITORING RESULTS EVERY 2 HOURS**

11. CONTINUOUS MONITORING

| TEST(S) TO BE TAKEN a. | PERMISSIBLE ENTRY LEVEL b. | YES | NO | TIME | TIME | TIME | TIME | TIME | TIME | TIME | TIME |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PERCENT OF OXYGEN | 19.5% TO 23.5% | | | | | | | | | | |
| LOWER FLAMMABLE LIMIT | UNDER 10% | | | | | | | | | | |
| CARBON MONOXIDE | (+) 35PPM | | | | | | | | | | |
| AROMATIC HYDROCARBON | (+) 1PPM (*) 5PPM | | | | | | | | | | |
| HYDROGEN CYANIDE | (SKIN) (*) 4PPM | | | | | | | | | | |
| HYDROGEN SULFIDE | (+) 10PPM (*) 15PPM | | | | | | | | | | |
| SULFUR DIOXIDE | (+) 2PPM (*) 5PPM | | | | | | | | | | |
| AMMONIA | (*) 35PPM | | | | | | | | | | |

NOTE: (*) SHORT-TERM EXPOSURE LIMIT: EMPLOYEE CAN WORK IN THE AREA UP TO 15 MINUTES EVERY 2 HOURS
(+) 8-HOUR TIME WEIGHTED AVERAGE

| 12. REMARKS: | |
|---|---|
| 13. GAS TESTER NAME<br>_____<br>_____<br>_____ | 14. INSTRUMENT (S) USED<br>_____<br>_____<br>_____ |
| 15. MODEL AND/OR TYPE<br>_____<br>_____<br>_____ | 16. SERIAL AND/OR UNIT NUMBER<br>_____<br>_____<br>_____ |
| NOTE: ** SAFETY STANDBY PERSONNEL ARE REQUIRED FOR ALL CONFINED SPACE WORK** | |
| 17. SAFETY STANDBY PERSONNEL<br>_____<br>_____<br>_____ | 18. CONFINED SPACE ENTRANT(S)<br>_____<br>_____<br>_____ |

| 19. SUPERVISOR AUTHORIZING | | |
|---|---|---|
| a. WERE ALL CONDITIONS SATISFIED? | b. DEPARTMENT | c. TELEPHONE NUMBER |

| 20. EMERGENCY TELEPHONE NUMBERS | |
|---|---|
| a. AMBULANCE | b. SAFETY OFFICE |
| c. FIRE | d. GAS COORDINATOR |

NOTE: A COPY OF THIS PERMIT IS TO BE KEPT AT THE JOB SITE. RETURN THE JOB SITE COPY TO THE INSTALLATION SAFETY OFFICE FOLLOWING THE COMPLETION OF THE JOB.

COPIES: ORGINIAL TO THE INSTALLATION SAFETY OFFICE
1 COPY TO THE UNIT SUPERVISOR
1 COPY AT THE JOB SITE

REVERSE SIDE OF MDW FM 61-1-R-E, 1 JUN 96

# CONFINED SPACE EXITING CHECKLIST

(MDW Regulation 385-2)

| 1. LOCATION | 2. TIME |
|---|---|
| | |

QUESTIONS THAT SHOULD BE ANSWERED BEFORE EXITING CONFINED SPACE

| | YES | NO | N/A | INITIAL |
|---|---|---|---|---|
| 3. HAVE ALL DEBRIS, TOOLS, AND EQUIPMENT BEEN REMOVED FROM THE AREA? | | | | |
| 4. ARE ALL PERSONNEL OUTSIDE OF THE AREA AND ACCOUNTED FOR? | | | | |
| 5. ARE ALL OPENINGS CLOSED AND FASTENED SECURELY? | | | | |
| 6. ARE ALL LOCKOUT AND SAFETY TAGS REMOVED? | | | | |
| 7. ARE ALL LINES AND VALVES RESTORED TO NORMAL OPERATING CONDITIONS? | | | | |
| 8. IS EQUIPMENT READY TO OPERATE? | | | | |

9. COMMENTS

| 10. TITLE AND SIGNATURE | 11. DIVISION/BRANCH | 12. DATE |
|---|---|---|
| | | |

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