

I. Purpose

- A. This procedure provides a uniform method for safe entry into confined spaces.

II. Scope

- A. This policy is applicable to all MTE employees who have a need to enter a confined space.

III. Definitions

A. Confined Space

A confined space is defined as having one or more of the following characteristics:

1. Contains or has the potential to contain a hazardous atmosphere.
2. Contains a material that has a potential for engulfing an entrant.
3. Has an internal configuration not suitable for continuous occupancy with limited entry and exit openings.
4. Contains any other recognized safety or health hazard.

B. Confined Space Entry Form

The written or printed document (Appendix A) that is provided by the employer to allow and control entry into the confined space.

C. 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 confined space). Hazardous atmospheres include:

1. Flammable gas, vapor, or mist in excess of 10% of its LEL.
2. O₂ concentrations Below 19.5% or above 23.5%.
3. Any other atmospheric condition that is immediately dangerous to life or health.

D. Hot Work Permit

The employer's written authorization to perform operations capable of providing a source of ignition. See Policy 108.

- E. **Retrieval System**
Equipment used for non-entry rescue of persons from permit spaces. A retrieval system must consist of a body harness with an attached retrieval line that is attached to either a permanent anchor or a lifting device.
- F. **Testing**
The process by which the hazards that may confront entrants of a confined space are identified and evaluated. The testing equipment detects: H2S, LEL, O2 levels. All confined spaces are considered hazardous environments until test proves otherwise.
- G. **Lockout**
Primary method of isolating confined spaces from energy sources and/or potential hazards. See policy 106.

IV. Procedure

- A. **General**
 - 1. A confined space entry form must be completed at the job site (Appendix A). A thoroughly trained individual will bring a confined space entry form and conduct necessary oxygen, hazardous gases, and temperature tests, and complete the appropriate portion of the form. The remainder of the form will then be completed, approved, and posted at the confined space prior to entry,
 - 2. Each department will develop standard lock-out lists for all confined spaces in their area. These lists will be kept current and maintained for use in securing these confined spaces. Only authorized personnel within the appropriate department will be responsible for securing the confined space for entry.
 - 3. An entry form is valid for the duration of one shift providing the confined space is not put back into service, and providing no atmospheric change takes place during the shift. If work crews are scheduled to change at the end of the shift, the confined space must have an atmospheric check done, and a new entry form posted before continuing work.
- B. **Training**
 - 1. All employees who may enter a confined space (including the safety watch) must be thoroughly trained in the operations to be done and in all hazards involved with the job. Training must

address emergencies that may arise during a confined space entry and proper response to these emergencies.

2. All persons that may authorize entry must be trained in addition to the above, in proper use of atmospheric testing equipment.

C. Preparation for Confined Space Entry

1. Equalization of pressure and material removal.
 - a. Vents must be opened.
 - b. Pressure gauges and or instrumentation must be checked.
 - c. Material must be emptied and if necessary the confined space should be flushed out and/or otherwise cleaned as necessary.

Note: No space should be entered if there is any doubt that conditions are safe. If hazardous materials are present, employees entering the space must wear protective clothing, including face shields, when opening entryways.

2. Ventilation
 - a. When top and bottom entryways are available, both must be opened.
 - b. Forced ventilation should be used when necessary.
3. Atmosphere
 - a. Oxygen level in the confined space must be 19.5 – 22.0 %
 - b. Entry is forbidden if hazardous gases or flammable/explosive vapors are present.
4. Temperature
 - a. The temperature of the confined space and atmosphere must be stabilized at a safe level.
5. Lock-Out
 - a. The lock-out procedure must be strictly adhered to.

- b. All pertinent mechanical clutches, control levers, agitators, and other power driven equipment must be locked out.
- c. All piping including sewer connections to and from the vessel will be evaluated and appropriate measures will be taken when necessary to secure the line.

D. Safety Equipment

- 1. Electrical lighting must be (a) low voltage (12 volts) with approved guard over light or (b) 110 volt with properly installed ground fault circuit interrupts and (a) or (b) must be explosion proof.
- 2. Air tools should be used whenever possible; if 110 volt power tools must be used they must be provided with ground fault circuit interrupters and service outlets must be polarized, three conductor type.
- 3. If entry is required to test the atmosphere of a confined space then a complete retrieval system including life line and harness must be used when testing the confined space prior to entry.
- 4. Any person entering a confined space must wear protective equipment which is appropriate for the work performed and for the condition of the confined space. Such clothing could include rubber suits, boots, gloves, face shields, proper respiratory protection, safety harnesses, etc.

E. Safety Watch

- 1. An employee will be designated Safety Watch during any confined space entry. This person(s) will undergo the same training as those entering the confined space.
- 2. The safety watch is to alert to any hazardous during the confined entry process, Their duties shall be to:
 - a. Keep continuous visual, voice, or radio contact with the persons inside the confined space.
 - b. Give normal assistance in handling tools, equipment, and messages when this does not interfere with item a above and does not require the safety watch to enter the confines space.
 - c. Respond to any unusual behavior of the personnel within the confined space.

- d. Prevent fouling of life lines or other lines entering the confined space.
- e. Call the emergency contact person in the event of an emergency and obtain necessary help.
- f. Assist in rescue without entering the confined space.
- g. Pay attention to any changing conditions in the immediate area.
- h. Maintain a head count for individuals in the confined space.

Note: The safety watch must never enter the confined space, even in an emergency situation.

F. Hot Work

- 1. Hot Work includes any operation which could provide a source of ignition, such as riveting, welding, cutting, grinding, burning, or heating. A Cutting and Welding Permit must be issued prior to this type of work beginning. During hot work operation, continuous monitoring must be performed (the lower explosive limit must not exceed 0%).

G. Vessel Entry by Contract Employees

- 1. Plant Management is responsible to ensure proper lock-out and confined space entry permitting as identified above.
- 2. The contractor will strictly adhere to the procedures identified here-in.
- 3. Plant Management is to make the contractor aware of the hazardous substances and other potential safety hazards that may be encountered in the confined space and immediate area.

V. Variances

- A. Any variation from this procedure must be done through Loss Prevention.

VI. References

29CFR 1910.146 Permit-Required Confined Space