



Confined Space Entry Program

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The University of Memphis

Confined Space Entry Program

Purpose

The purpose of this document is to inform and guide University of Memphis employees and contractors who may be required to enter confined spaces during the course of their jobs. Failure to comply with the procedures contained in this document can lead to serious injury or death. This Confined Space Entry Program has been developed and implemented in accordance with 29 CFR 1910.146 and University Policy UM1293.

Scope and Application

University of Memphis employees may be exposed to a variety of hazards during Confined Space entry. A confined space is 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 (e.g., tanks, vessels, silos, storage bins, hoppers, vaults, and pits); and
- Is not designed for continuous employee occupancy

This program applies to all University of Memphis employees who are required to enter a permit required confined space. A permit-required confined space is a confined space that has one or more of the following characteristics:

- Contains or has a 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.

The aforementioned term “hazardous atmosphere” means an atmosphere that may expose employees to the risk of death, incapacitation, or impairment of ability to self-rescue (that is, the 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 flammable limit (LFL)
- Airborne combustible dust at a concentration that meets or exceeds its LFL
- 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
- Any other atmospheric condition that is immediately dangerous to life or health (IDLH)

A non-permit confined space is 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. This program does not apply to non-permit confined spaces.

Signs shall be posted to identify the permit-required confined spaces on campus. These signs shall read: "DANGER – PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER."

Only a trained entry supervisor may initiate an entry. Trained entry supervisors include:

- Zone supervisors
- Maintenance supervisors
- Environmental Health and Safety personnel

Responsibilities

Environmental Health and Safety (EH&S)

EH&S personnel have the following responsibilities under this program:

- Develop, periodically review, and update the program;
- Assist other affected departments in complying with this program by serving as a source of information for regulatory and safety information;
- Assist in the development of training programs related to this program;
- Stop work when non-compliant actions are observed; and
- File and maintain completed Confined Space Permits.

Entry Supervisor

The entry supervisor is the person (e.g., supervisor or zone supervisor) responsible for determining if a permit space where entry is planned has acceptable entry conditions. S/he is also responsible for authorizing entry, overseeing entry operations, and terminating entry as required by this section. The entry supervisor shall:

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
- Verify 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 allowing entry to begin, by checking that the appropriate entries have been made on the permit;
- Terminate the entry and cancel the permit as required;
- Verify that rescue services are available and that the means for summoning them are operable. (Rescue service is the personnel designated to rescue employees from permit spaces);
- Remove unauthorized individuals who enter or who attempt to enter the permit space during entry operations; and
- Determine that entry operations remain consistent with the terms of the entry permit and that acceptable entry conditions are maintained, whenever responsibility for a permit space entry operation is transferred, and at intervals dictated by the hazards and operations performed within the space.

Attendant

The attendant is an individual stationed outside one or more permit spaces who monitors the authorized entrant and who performs all attendant's duties assigned in the permit space program. An attendant shall:

- 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;
- Continuously maintain an accurate count of authorized entrants in the permit space and ensure that the means used to identify authorized entrants accurately identifies who is in the permit space;
- 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;
- Order authorized entrants to evacuate the permit space immediately under any of the following conditions:
 - If the attendant detects a prohibited condition,
 - If the attendant detects the behavioral effects of hazard exposure in an authorized entrant,
 - If the attendant detects a situation outside the space that could endanger the authorized entrants, or
 - If the attendant cannot effectively and safely perform all the duties required of him;
- 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 unauthorized persons approach or enter a permit space while entry is underway:
 - Warn the unauthorized persons that they must stay away from the permit space,
 - Advise the unauthorized persons that they must exit immediately if they have entered the permit space, and
 - Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space;
- Perform non-entry rescues as specified by the rescue procedure;
- Perform no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

Authorized Entrants

An authorized entrant is an employee who is authorized by the employer to enter permit space. An authorized entrant shall:

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
- Properly use equipment as required;
- 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 as required;
- Alert the attendant whenever:
 - The entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or
 - The entrant detects a prohibited condition;
- Exit from the permit space as quickly as possible whenever:
 - An order to evacuate is given by the attendant or the entry supervisor,

- The entrant recognizes any warning sign or symptom of exposure to a dangerous situation,
- The entrant detects a prohibited condition, or
- An evacuation alarm is activated.

Procedures

Only a trained entry supervisor may initiate an entry. Trained entry supervisors include:

- Physical Plant Zone Supervisors
- Physical Plant Maintenance Supervisors
- Environmental Health and Safety Personnel

Initiate Entry

“Entry” means the action by which a person passes through an opening into a permit-required confined 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 into the space.

Prior to initiating entry, the entry supervisor shall utilize a [Confined Space Permit](#) form to document conditions, personnel assignments, and related information. The entry supervisor shall select the entry team, including an attendant and authorized entrant, and shall verify the training of the entry team. The entry supervisor shall inform the rescue service team when and where the entry is planned to occur.

Pre-Entry

The entry supervisor, the attendant, and the entrant shall meet at the confined space. The entry supervisor shall review specific procedures for the confined space and review tasks to complete for the job.

The attendant shall bring any equipment that may be needed during entry to the space, including but not limited to: personal protective equipment, communication devices, testing and monitoring devices, tools, equipment, and materials. S/he should test all equipment to ensure it is in working order prior to entry.

The attendant shall barricade the area to prevent other employees from interfering.

Physical Plant or other designated personnel shall block and blind any maintenance pipes. The entrant shall lockout and tagout any energy sources that are accessible from outside the space. Employees shall follow the Lockout /Tagout Program. (Blinding means 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.)

The entry supervisor shall verify that it is safe to open the space, and the entrant shall open the space.

The attendant shall test the atmosphere. Testing is the process by which the hazards that may confront entrants of the permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space. The entry supervisor shall record the testing results on the permit.

The attendant shall provide ventilation if a hazardous atmosphere is detected, retesting the atmosphere and adjusting ventilation as needed. The attendant shall continue ventilation for the duration of the entry.

The entry supervisor shall assign the attendant to address any other hazards indicated on the permit.

The entry supervisor shall place the rescue service team on stand-by.

The entry supervisor shall review the permit to check for completeness and correctness. S/he shall ensure that acceptable entry conditions are met. Acceptable entry conditions means that conditions must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space. S/he shall authorize the permit with his/her signature.

Entry

The attendant shall be in place to monitor the entry.

The entrant shall be properly equipped before entering the permit space. The attendant shall help the entrant put on personal protective equipment and retrieval system. (A retrieval system is the equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.) The entrant shall enter the space.

The attendant shall remain at the space and continuously monitor:

- The status of the entrant,
- Any hazards outside of the space, and
- The atmosphere of the space

If the job is completed uneventfully and neither the entrant nor the attendant detects a hazardous condition, the entrant shall leave the space. This is the end of the entry. The entry supervisor shall cancel the permit. He shall review the process with Environmental Health and Safety personnel and file the permit with the Environmental Health and Safety office.

If the entrant or the attendant detects a hazardous condition, the attendant shall order the entrant to leave the space. The attendant should perform a non-entry rescue if the entrant needs help to leave the space. If a non-entry rescue is not possible, the rescue service shall rescue the entrant. The entry supervisor shall cancel the permit upon the entrant leaving the space.

Re-entry

The entry team shall review the entry and identify the following:

- Any hazards that were encountered or created in the previous entry,
- Cause of hazards that were encountered or created in previous entry, and
- Hazard control methods for future entries.

The entry supervisor shall file the canceled permits in the Environmental Health and Safety Office. Entry permits shall be saved for one (1) year.

Entry may re-occur after a new permit is completed and the above process re-initiated.

Coordination with Contractors

If contractors will be working in or near permit spaces, the department hiring such contractors shall inform the contractor of the permit spaces and the permit space requirements. S/he shall describe to the contractor of the hazards identified in the permit spaces and the precautions and procedures that have been implemented for protection in the permit space.

Environmental Health and Safety personnel shall coordinate entry operations with the contractor when contract employees will be working near the same permit space. S/he shall debrief the contractor at the end of the entry regarding the permit space program followed and any hazards encountered or created in permit spaces during entry.

Training

Before initiating a permit-required confined space entry, the entrant, attendant, and supervisor must be trained on confined spaces. All employees shall acquire understanding, knowledge, and skills necessary for the safe performance of duties required. Training shall be provided to each affected employee:

- Before the employee is first assigned duties
- Before there is a change in assigned duties
- Whenever there is a change in permit space operations that presents a hazard in which the employee has not been trained
- Whenever non-compliance with this program occurs.

Program Evaluation

Environmental Health and Safety shall conduct periodic evaluations of the workplace to ensure that the provisions in this program are being implemented. The evaluations shall include regular consultations with employees who are involved in confined space entry. Problems identified shall be noted in an inspection log and addressed by the EH&S. The report shall list plans to correct deficiencies in the confined space program and target dates for the implementation of those corrections.

Documentation and Recordkeeping

An electronic copy of this program is available on the Environmental Health and Safety website. A paper copy and the TOSHA standard are kept in 216 Browning Hall and are available to all employees who wish to review them.

Copies of training records are maintained in 216 Browning. Records shall be updated as new employees are trained and as existing employees receive refresher training.