



TEXAS TECH UNIVERSITY™

Operating Policy and Procedure

OP 60.16: Confined Space Entry Program

DATE: April 29, 2020

PURPOSE: The purpose of this Operating Policy/Procedure (OP) is to ensure the safety of personnel required to enter and conduct work in confined spaces. The program describes procedures for defining and working in confined spaces that meets the requirements of [29 CFR 1910.146](#).

REVIEW: This OP will be reviewed in April of even-numbered years by the Assistant Vice President for Research (Environmental Health & Safety) with substantive revisions forwarded through the Associate Vice President for Research (Responsible Research) to the Vice President for Research.

POLICY/PROCEDURE

1. Intent

Entering and working in confined spaces has been and will continue to be an integral part of daily activity by Texas Tech University employees. This document has been developed to ensure the safety of personnel required to enter and conduct work in confined spaces. The program contained herein describes reasonable and necessary policies and procedures for any and all facilities, departments, and individuals who are associated with confined space entry operations. **This program and all parts of [29 CFR 1910.146](#) shall apply to all confined space entry operations conducted at Texas Tech University institutions (TTU).**

2. Definitions

- a. *Attendant* – A person designated by the department head in charge of entry to remain outside the confined space and to be in constant communication with the personnel working inside the confined space.
- b. *Authorized Entrant* – A person who is approved or assigned by the department head in charge of the entry to perform a specific type of duty or duties or to be at a specific location at the job site.
- c. *Confined Space* – A limited or restricted means of entry or exit that is large enough for an employee to enter and perform assigned work but is not designed for continuous occupancy by the employee. These spaces include, but are not limited to, underground vaults, tanks, storage bins, pits and diked areas, vessels, and boilers.
- d. *Entry* – 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.

- e. *Entry Permit* – The written or printed document that is provided by the employer to allow and control entry into a permit space and that contains the information specified in this program.
- f. *Entry Supervisor* – The department head or the designated representative (such as the foreman or crew lead) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this program.

Note: An *entry supervisor* also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this program for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of entry operation.

- g. *Hazardous Atmosphere* – An atmosphere that may expose employees to the risk of death, incapacitation, and 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% of its lower flammable limit (LFL)
 - Airborne combustible dust at a concentration that meets or exceeds its LFL
Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less.
 - Atmospheric oxygen concentration below 19.5% or above 23.5%
 - 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 [29 CFR 1910](#) and that could result in employee exposure in excess of its dose or permissible exposure limit. (*SEE NOTE BELOW*)

NOTE: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, and 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 Safety Data Sheets that comply with the [Hazard Communication Standard, section 1910.1200](#), published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

- h. *Non Permit-Required Confined Space* is a confined space that does not contain, nor has the potential to contain, any hazard capable of causing death or serious physical harm (with respect to atmospheric hazards).
- i. *Permit-Required Confined Space* is a confined space that is potentially hazardous. A permit-required confined space has one or more of the following characteristics:

- (1) Contains or has a potential to contain a hazardous atmosphere;
- (2) Contains a material that has the potential for engulfing an entrant;
- (3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section; or
- (4) Contains any other recognized serious safety or health hazard. Examples of serious safety or health hazards might include:
 - (a) Fall hazards
 - (b) Unguarded machinery
 - (c) Extreme heat or cold
 - (d) Steam pipes or chemical lines
 - (e) Hazardous noise levels
 - (f) Electrical hazards
 - (g) Presence of asbestos
 - (h) Potentially hazardous levels of dust

3. Responsibilities

a. Environmental Health & Safety shall:

- (1) Conduct online and classroom-based training for personnel to enter Permit-Required Confined Spaces;
- (2) Review and update the Confined Space Entry Program to conform to current standards;
- (3) Maintain confined space atmospheric testing and monitoring equipment;
- (4) Issue Confined Space Entry Permits;
- (5) Ensure compliance with standards set forth in the program by periodic inspection of entry sites and canceling permits where unsafe conditions are present; and
- (6) Assist supervisors with:
 - (a) Providing training as set forth in the program;
 - (b) Identification of confined spaces;
 - (c) Identifying spaces that require a permit for entry; and
 - (d) Labeling permit-required confined spaces

b. Supervisors shall:

- (1) Identify confined spaces within facilities or areas under their control;
- (2) Ensure all personnel are qualified and trained to enter Permit-Required Confined Spaces;
- (3) Identify hazards within a confined space under their control;

- (4) Document that all requirements for a specific confined space entry have been met by performing and signing the confined space entry planning worksheet and providing it to EHS for review. This worksheet can be found in Attachment B;
- (5) Ensure that the required atmospheric tests are performed at the confined space and the results recorded on the permit prior to entry authorization;
- (6) Obtain and maintain all equipment necessary to complete the confined-space entry project;
- (7) Terminate the entry and cancel the permit when:
 - (a) Entry operations covered by the entry permit have been completed; and
 - (b) A condition that is not allowed under the entry permit arises in or near the permit space.
- (8) Determine, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with terms of the entry permit and ensure that acceptable entry conditions are maintained.

c. Authorized Entrants

The person(s) authorized to enter a confined space shall be responsible for and receive training in the following:

- (1) The knowledge of hazards that may be faced during entry, including the mode, signs or symptoms, and consequences of the exposure;
- (2) Proper use of equipment, which includes:
 - (a) Atmospheric testing and monitoring equipment;
 - (b) Ventilating equipment needed to obtain acceptable entry conditions;
 - (c) Communication equipment necessary to maintain contact with the attendant;
 - (d) Personal protective equipment as needed;
 - (e) Lighting equipment as needed;
 - (f) Barriers and shields as needed;
 - (g) Equipment, such as ladders, needed for safe ingress and egress;
 - (h) Rescue and emergency equipment as needed; and
 - (i) Any other equipment necessary for safe entry into and rescue from permit spaces.
- (3) Communication 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 if required;
- (4) Alert the attendant (standby person) whenever:
 - (a) The entrant recognizes any warning sign or symptom of exposure to a dangerous situation; or
 - (b) The entrant detects a prohibited condition.
- (5) Exiting the permit space as quickly as possible whenever:
 - (a) An order to evacuate has been 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; or
- (d) An evacuation alarm is activated.

d. Attendants

Persons authorized to perform duties as attendant shall be responsible for and receive training in the following:

- (1) Knowing the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of exposure;
- (2) Awareness of possible behavioral effects of hazard exposure in authorized entrants;
- (3) Continuously maintaining an accurate count of authorized entrants in the permit space and ensuring that the means used to identify authorized entrants accurately identifies who is in the permit space;
- (4) Remaining outside the permit space during entry operations until relieved by another attendant;
- (5) Attempting **non-entry** rescue if proper equipment is in place and the rescue attempt will not present further hazards to the entrant or attendant;
- (6) Communicating with authorized entrants, as necessary, to monitor entrant status and to alert entrants of the need to evacuate the space when conditions warrant;
- (7) Monitoring activities inside and outside the space to determine if it is safe for entrants to remain in the space and ordering the authorized entrants to evacuate the permit space immediately under any of the following conditions:
 - (a) If the attendant detects a prohibited condition;
 - (b) If the attendant detects the behavioral effects of hazard exposure in an authorized entrant;
 - (c) If the attendant detects a situation outside the space that could endanger the authorized entrants; or
 - (d) If the attendant cannot perform all the duties required by this program effectively and safely.
- (8) Summoning rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards;
- (9) Taking the following actions when unauthorized persons approach or enter a permit space while entry is underway:
 - (a) Warning the unauthorized persons that they must stay away from the permit space;
 - (b) Advising the unauthorized persons that they must exit immediately if they have entered the permit space; and
 - (c) Informing the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space.

- (10) Performing no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

4. Procedures

- a. When a permit-required confined space must be entered, supervisors must perform and document the pre-entry planning and training with the authorized entrant, standby person, and attendant. When the planning and training have been completed, contact EH&S.
- b. Environmental Health & Safety will provide pre-entry atmospheric testing and personal monitoring equipment to the onsite attendant and issue confined space entry permit after the site review.
- c. When work is completed or a situation that violates the terms of the permit arises, then the permit is terminated and EH&S should be notified.
- d. A permit is authorized **only** for the duration of the job. If there is an extended break during the job, the atmosphere must be tested before re-entry.
- e. All permit-required spaces must be labeled with a permanent sign that states, "DANGER confined space permit required."

[Attachment A: Confined Space Entry Permit](#)

[Attachment B: Confined Space Entry Planning Worksheet](#)