**Confined Space Entry UPPS No. 04.05.11**

**Issue No. 1**

**Effective Date: 11/01/2021**

**Next Review Date: 07/01/2024 (E3Y)**

**Sr. Reviewer: Director, Environmental, Health, Safety, Risk and Emergency Management**

**POLICY STATEMENT**

*Texas State University is committed to providing a safe working environment for its employees and contractors.*

# 01. BACKGROUND INFORMATION

01.01 Texas State University considers the safety and health of its employees and the entire university community to be of utmost importance. Reflecting this concern, the university will enforce proactive standards to assure that any employee entering a confined space will not be subjected to conditions that may cause injury, illness, or death.

01.02 The Environmental, Health, Safety, Risk and Emergency Management Department (EHSREM) is responsible for the training and oversight of the Confined Space Entry Permit Program. EHSREM will train and certify all Texas State employees that are required by their job duties to enter confined spaces.

01.03 This policy will be used in conjunction with other pertinent university policies, such as the [University Energy Lockout/Tagout Procedures policy](https://policies.txstate.edu/division-policies/finance-and-support-services/04-09.html) and the [Respiratory Protection Program policy](https://policies.txst.edu/university-policies/04-05-19.html), that relate to confined spaces.

01.04 This policy will adhere to the requirements in place to protect university and contractor employees working in confined spaces worksites.

# 02. DEFINITIONS

* 1. Acceptable Entry Conditions – the conditions that must exist in a permit-required confined space to allow entry and to ensure that employees involved with permit-required confined space entry can safely enter and work within the space.

02.02 Air Monitor – a device that measures the atmosphere of the confined space by the industry standard four gases, which are:

a. oxygen concentration (in percent O2);

b. flammability (in percentage of lower explosive limit);

c. carbon monoxide concentration (in parts per million [ppm]); and

d. hydrogen sulfide concentration (in ppm);

These are the standards of the industry and Texas State.

02.03 Attendant – an authorized individual stationed outside permit-required confined spaces who monitors the authorized entrants and who performs all attendants’ duties assigned in the employer's permit space program.

02.04 Authorized Entrant – an employee who is authorized by the employer to enter a permit-required confined space.

02.05 Confined Space – a space that:

a. is large enough and so configured that an employee can bodily enter and perform assigned work;

b. has limited or restricted means for entry or exit (e.g., tanks, vessels, silos, storage bins, hoppers, vaults, pits, and trenches); and

c. is not designated for continuous employee occupancy.

02.06 Emergency – any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit-required confined space that could endanger entrants.

02.07 Engulfment – the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated and can cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

02.08 Entry – any time any part of the entrant's body breaks the plane of an opening into the space.

02.09 Entry Permit – the written or printed document that is issued by a trained and authorized confined space entry permit writer to the entry supervisor to allow and control entry into a permit-required confined space.

02.10 Entry Supervisor – Texas State owner-designated representative responsible for determining if acceptable entry conditions are present at a permit-required confined space; and who authorizes and oversees entry operations and terminates entry if needed.

NOTE: An entry supervisor may also serve as an attendant or as an authorized entrant if they are trained and equipped as required by this policy for each role they fill. The entrant cannot simultaneously be the entry supervisor and attendant. The duties of an entry supervisor may be passed from one individual to another during the course of an entry operation.

* 1. Hazardous Atmosphere – an atmosphere that may expose employees to the risk of death, incapacitation, or impairment of ability to self-rescue due to one or more of the following conditions:
1. flammable gas, vapor, or mist in excess of 10 percent of its lower explosive limit (LEL);
2. airborne combustible dust at a concentration that meets or exceeds its LEL (dust obscures vision at a distance of five feet (1.52 m) or less);
3. atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
4. atmospheric concentration of any substance which could result in employee exposure in excess of its dose or permissible exposure limit; and
5. any other atmospheric condition that is immediately dangerous to life or health.

02.12 Immediately Dangerous to Life or Health – any condition that poses an immediate or delayed threat to life, will cause irreversible adverse health effects, or that would interfere with an individual's ability to escape unaided from a permit-required confined space.

02.13 Isolation – the process by which a permit space is removed from service and completely protected against the release of energy and material into space by such means as blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.

02.14 Line Breaking – the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

02.15 Modes of Exposure – the routes a hazardous material takes to cause injury: inhalation, ingestion, or absorption.

02.16 Non-Permit Confined Space – a confined space that does not contain or, with respect to atmospheric hazards, has the potential to contain any hazard capable of causing death or serious physical harm.

* 1. Permit-Required Confined Space – a confined space that has one or more of the following characteristics:
	2. contains or has potential to contain a hazardous atmosphere;
	3. contains a material that has the potential for engulfing an entrant;
	4. has an internal configuration such that an entrant could be trapped or asphyxiated; or
	5. contains any other recognized serious safety or health hazard (e.g., hot work, medium voltage, or electrical circuits).

02.18 Permit-Required Confined Space Program – the employer's overall program for controlling and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit-required confined spaces.

02.19 Permit System – the employer's written procedure for preparing and issuing permits for entry and for returning permit-required confined spaces to service following termination of entry.

02.20 Prohibited Condition – any condition in a permit-required confined space that is not allowed by the permit during the period when entry is authorized.

02.21 Rescue Service – the personnel designated to rescue employees from permit-required confined spaces.

02.22 Retrieval System – the equipment (including a retrieval line, chest or full-body harness or wristlets, and a lifting device or anchor) used for non-entry rescue of persons from permit-required confined spaces.

02.23 Testing – the process by which the hazards that may confront entrants of a permit-required confined space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit-required confined space. Testing enables employees to determine if acceptable entry conditions are present immediately prior to and during entry.

# 03. PROCEDURES FOR RECLASSIFICATION OF SPACES

03.01 When there are changes in the use or configuration of a non-permit confined space that might increase the hazards to entrants, EHSREM will reevaluate that space and, if necessary, reclassify it as a permit-required confined space.

03.02 A space classified by EHSREM as a permit-required confined space may be reclassified as a non-permit confined space under the following conditions:

1. if the permit-required confined space poses no actual or potential atmospheric hazards and if all hazards within the space have been eliminated without entry into the space, the permit-required confined space may be reclassified as a non-permit-required confined space for as long as the non-atmospheric hazards are eliminated.
2. if testing and inspection during entry demonstrate that the hazards within the permit-required confined space have been eliminated, the permit-required confined space may be reclassified as a non-permit-required confined space for as long as the hazards remain eliminated.

NOTE: Control of atmospheric hazards through forced air ventilation does not constitute elimination of the hazards.

1. if hazards arise within a space that has not been declassified to a non-permit-required confined space, each employee in the space shall exit the space. The entry supervisor will reevaluate the space and determine whether it must be reclassified as a permit-required confined space at that time.

# 04. PROCEDURES FOR ENTRY INTO PERMIT-REQUIRED CONFINED SPACES

04.01 General Overview

Only authorized personnel who have taken permit-required confined space training are allowed to perform permit-required confined space entry work. Only Texas State personnel who have taken permit issuers confined space training through EHSREM are authorized to write confined space entry permits. Before entry into a permit-required confined space, a [Confined Space Entry Permit](https://www.fss.txst.edu/ehsrm/programs/confined-space-entry/procedures.html) must be obtained from EHSREM or a university-trained permit writers. The permit will serve as a checklist to ensure that all existing hazards have been identified and correct protective measures have been taken. Confined space entry permits will only be issued for a specific job, time frame, and only to authorized and trained individuals performing the work. A confined space entry permit is always required for entry into a permit-required confined space.

04.02 Pre-Entry Procedures

1. Only properly trained Texas State personnel authorized by a current confined space entry permit will be allowed to enter permit-required confined spaces.
2. Authorized employees will be aware of Texas State’s [[Inventory of Confined Spaces](https://www.fss.txstate.edu/ehsrm/programs/Confined-Space-Entry/map.html)](https://www.fss.txstate.edu/ehsrm/programs/Confined-Space-Entry/map.html) and their hazards.
3. Any condition making it unsafe to remove an entrance cover will be eliminated before the cover is removed.
4. At point of entry, the entrant must verify that the conditions in the space are within acceptable limits, as specified by [OSHA 29 CFR 1910.146(b)](https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.146), and must have a [Confined Space Entry Permit](https://www.fss.txst.edu/ehsrm/programs/confined-space-entry/procedures.html) issued by EHSREM or an EHSREM-trained permit writer.
5. A [Confined Space Entry Permit](https://www.fss.txst.edu/ehsrm/programs/confined-space-entry/procedures.html) can be filled out for up to six confined space locations that are to be entered for isolation purposes as long as the workers, scope of work, attendants, and entrants do not change.
6. Prior to entry, workers will monitor the space with a four-gas air monitor, ventilate through natural means or mechanical (if needed), and record readings of oxygen, carbon-monoxide, and air monitor readings at regular intervals.
7. When entrance covers are removed, the opening will be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the confined space opening.

04.03 Safety Equipment

The following equipment will be used as needed when entering a confined space:

1. four-gas air monitor;
2. ventilating equipment;
3. communication equipment;
4. personal protective equipment, as required by the specific task and location whenever engineering and work practice controls do not adequately protect employees;
5. lighting equipment, as required;
6. necessary barriers and shields;
7. ladders needed for safe entry and exit;
8. necessary rescue and emergency equipment; and
9. any other equipment necessary for safe entry into and rescue from confined spaces.

04.04 Emergency Procedures – In case of emergency:

a. The attendant will call 911 and ask for the University Police Department (UPD) dispatcher. UPD will request a rescue crew from the San Marcos Fire Department (SMFD) and send UPD officers to the rescue site to make sure SMFD has unobstructed access to the rescue site.

b. The attendant will monitor and protect the rescue site until SMFD is on site, using the tripod and hoist and harness, but under no circumstances will the attendant enter the confined space themselves.

c. The attendant will perform first aid or cardiopulmonary resuscitation (CPR) for rescued workers if needed.

d. The attendant will prevent unauthorized personnel from attempting a rescue.

04.05 Entry Permit Procedures

1. The entry supervisor, or designee, of the shop receiving the work order, will request a [Confined Space Entry Permit](https://www.fss.txst.edu/ehsrm/programs/confined-space-entry/procedures.html) from EHSREM or a university-trained permit writer for each project that requires workers to enter a permit-required confined space. An updated list of entry supervisors for each individual shop and contractor working for Texas State is to be approved and maintained at the manager or supervisor's level with a copy sent to EHSREM.
2. An EHSREM specialist or a university-trained permit writer, will complete the permit onsite with the entry supervisor, and the entry supervisor will authorize entry per the following:

	1. EHSREM or a university-trained permit writer will perform atmosphere testing of the confined space; gas test and air monitor readings will then be recorded on the appropriate line as required by permit.
	2. When the entry supervisor is satisfied that the working conditions are safe, the supervisor will sign the entry permit, post the permit outside of the confined space, and will authorize the workers to enter the confined space.
	3. At the conclusion of the job, the permit will be signed as completed and any appropriate remarks will be added.
	4. A copy of the completed permit will be filed in the affected shop office and the original will be returned to EHSREM.
	5. The permit will be canceled upon completion of the project, an emergency, or when conditions not allowed by the entry permit are found to exist in or near the permitted space. The order to evacuate the confined space can originate from the entry supervisor, entrant, or attendant.

# 05. SAFETY EQUIPMENT

05.01 Texas State employers will provide the following equipment to employees, maintain equipment properly, and train employees to use that equipment properly:

1. testing and monitoring equipment needed to verify that hazardous atmospheric conditions are not present;
2. ventilating equipment needed to obtain acceptable entry conditions;
3. necessary communications equipment;
4. personal protective equipment (e.g., gloves, eye protection, respirators);
5. lighting equipment needed to enable employees to see well enough to perform their function;
6. necessary barriers and shields;
7. equipment, such as ladders, needed for safe entry and exit by authorized entrants;
8. necessary rescue and emergency equipment;
9. any of the necessary equipment needed for safe entry into permit spaces; and
10. a sign reading, "DANGER – PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER" (or similar language) to be posted at each permit-required confined space.

# 06. RESCUE AND EMERGENCY SERVICES

06.01 When the university arranges to have persons other than the university’s employees perform permit-required confined space rescue, the university will provide the rescue service with access to all permit spaces from which rescue may be necessary.

06.02 To facilitate non-entry rescue, each authorized entrant will use a full-body harness with a retrieval line attached, unless the retrieval equipment would increase the overall risk of injury or will not contribute to the rescue of the entrant. The other end of the retrieval line will be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device will be available to retrieve personnel from vertical type permit spaces more than five feet deep.

06.03 A safety data sheet will be made available to the medical facility treating injured entrants exposed to hazardous substances.

# 07. TRAINING PROCEDURES

07.01 EHSREM must provide proper training for all employees who are required to work in permit-required confined spaces. Upon completion, EHSREM must ensure that employees have acquired the understanding, knowledge, and skills necessary for the safe performance of their duties in these spaces. Additional training is required when:

1. job duties change;
2. there is a change in the permit-space program, or the permit-space operation presents a new hazard; and
3. when an employee’s job performance shows deficiencies.

Training is also required to include CPR and first-aid training. EHSREM must certify that training has been completed. Upon completion of training, employees must receive a certificate of training that includes the employee’s name, signature or initials of trainers, and dates of training. The certification must be made available for inspection by employees and their supervisors.

07.02 All employees assigned as entrants, attendants, or entry supervisors will be required to attend a Confined Space Entry Safety training session provided by EHSREM.

07.03 Bi-annual refresher Confined Space Entry Safety training will be provided for all affected employees of all appropriate shops by EHSREM, or designee.

07.04 Ongoing training will be provided on an as-needed basis by the shop supervisor, or designee. This training does not meet the bi-annual refresher training requirement and is only intended as supplementary training.

07.05 This ongoing training will establish employee proficiency in the duties required by this section and will introduce new or revised procedures, as necessary.

07.06 Refresher training provided by EHSREM will be required on an annual basis for CPR and once every three years for first aid.

07.07 Train the trainer for qualified Confined Space Entry Permit writer classes will be provided to the supervisors of critical areas using [confined space entry permits](https://gato-docs.its.txstate.edu/risk-management/TSU-Confined-Space-Entry-Permit-4/TSU%20Confined%20Space%20Entry%20Permit%204.pdf) to complete their many tasks requiring confined space entry. The areas needing these trained permit writers are:

1. medium voltage supervisor and technicians;
2. steam shop supervisors; and
3. network operations technicians.

# 08. POSITIONS AND DUTIES

08.01 Duties of the authorized entrant include:

1. knowing the hazards that may be faced during entry, including information on the mode (e.g., inhalation or dermal absorption), signs or symptoms, and consequences of the exposure;
2. using appropriate personal protective equipment properly (e.g., face and eye protection, and others forms of barrier protection, such as gloves, aprons, and coveralls);
3. communicating with the attendant as necessary (e.g., cell phone, radio, visual observation) to enable the attendant to monitor the entrants' status as well as to alert the entrant to evacuate;
4. alerting the attendant whenever:

	1. the entrant recognizes any warning signs or symptoms of exposure to a dangerous situation; or
	2. the entrant detects a prohibited condition;
5. exiting from the permit-required confined space as quickly as possible whenever:

	1. an order to evacuate is given by the attendant or the entry supervisor;
	2. the entrant recognizes any warning signs or symptoms of exposure to a dangerous situation;
	3. the entrant detects a prohibited condition; or
	4. an evacuation alarm is activated.

08.02 Duties of the attendant:

1. first and foremost, remains outside the permit-required confined space during entry operations until relieved by another trained attendant;
2. knows the hazards that may be faced during entry and the consequences of the exposure;
3. is aware of the possible behavioral effects of hazard exposure in authorized entrants;
4. continuously maintains an accurate count of the authorized entrants in the permit-required confined space and verifies who is in the space as indicated on the entry permit;
5. communicates with the authorized entrant as necessary to monitor entrant's status and to alert entrants of the need to evacuate the permit-required confined space;
6. monitors activities inside and outside the permit-required confined space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit-required confined space immediately under any of the following conditions:

	1. if the attendant detects a prohibited condition;
	2. if the attendant detects the behavioral effects of hazard exposure in an authorized entrant;
	3. if the attendant detects a situation outside the space that could endanger the authorized entrants; or
	4. if the attendant cannot effectively and safely perform all the duties required.
7. summons rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit-required confined space hazards;
8. takes the following actions when unauthorized persons approach or enter a permit-required confined space while entry is underway:
	1. warns the unauthorized persons that they must exit immediately if they have entered the permit-required confined space; and
	2. contacts UPD in the event that the unauthorized persons do not cooperate.
9. performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

08.03 Duties of the entry supervisor:

1. knows the hazards that may be faced during entry, including information on the modes, signs or symptoms, and consequences of the exposure;
2. verifies emergency plans by checking that the appropriate entries have been conducted and that all procedures and equipment specified by the permit are in place before signing the permit and allowing the entry to begin;
3. terminates the entry and cancels the permit as required;
4. verifies that the means for summoning the rescue services are operable;
5. removes unauthorized persons who enter or who attempt to enter the permit-required confined space during entry operations, or contacts UPD if the unauthorized persons do not cooperate; and
6. determines at intervals dictated by the hazards and operations performed within the permit-required confined space, that the entry conditions remain consistent with terms of the entry permit.

# 09. CONFINED SPACE ENTRY PROCEDURES FOR NON-UNIVERSITY PERSONNEL

09.01 A copy of Texas State’s [Confined Space Entry Program](https://www.fss.txstate.edu/ehsrm/programs/Confined-Space-Entry.html) will be available to all contractors who must work in Texas State confined spaces. It will be the responsibility of the Texas State owner-designated representative overseeing the project to assure that the contractor is aware that a Confined Space Entry policy that meets OSHA requirements must be followed.

1. When the university arranges to have contractor personnel perform work that involves permit-required confined space entry, the university personnel overseeing the project will:

	1. inform the contractor that the workplace contains permit-required confined spaces and that permit-required confined space entry is allowed only through compliance with a permit space program;
	2. apprise the contractor of the elements, including the hazards identified and the university's experience with the space, that make the space in question a permit-required confined space;
	3. apprise the contractor of any precautions or procedures that the university has implemented for the protection of employees in or near permit-required confined spaces where contractor personnel will be working; and
	4. coordinate entry operations with the contractor, when both university personnel and contractor personnel will be working in or near permit-required confined spaces. When university personnel are involved, the Texas State [Confined Space Entry Program](https://www.fss.txstate.edu/ehsrm/programs/Confined-Space-Entry.html) will be the minimum standard.
2. In addition to complying with this policy, each contractor who is retained to perform permit space entry operations will:

	1. obtain any available information regarding permit-required confined space hazards and entry operations from the university;
	2. coordinate entry operations with the university, when both university personnel and contractor personnel will be working in or near permit-required confined spaces;
	3. inform the university of the permit space program that the contractor will follow, that must meet OSHA regulations;
	4. inform the university of any hazards confronted or created in permit-required confined spaces during entry operations;
	5. provide safety equipment needed for the specific permit-required confined space project; and
	6. provide documentation of authorized personnel who have taken confined space training for entrants and attendants that are allowed to perform permit-required confined space entry work.

# 10. TEXAS STATE FACILITIES INVENTORY OF CONFINED SPACES

10.01 The EHSREM website contains a list of all current [confined spaces](https://www.fss.txstate.edu/ehsrm/programs/Confined-Space-Entry/map.html) on the Texas State campus.

# 11. REVIEWERS OF THIS UPPS

11.01 Reviewers of this UPPS include the following:

Position Date

Director, Environmental, Health, July 1 E3Y

Safety, Risk and Emergency

Management

Director, Facilities Operations July 1 E3Y

Director, Utilities Operations July 1 E3Y

# 12. CERTIFICATION STATEMENT

This UPPS has been approved by the following individuals in their official capacities and represents Texas State policy and procedure from the date of this document until superseded.

Director, Environmental, Health, Safety, Risk and Emergency Management; senior reviewer of this UPPS

Executive Vice President for Operations and Chief Financial Officer

President