



ILLINOIS STATE UNIVERSITY CONFINE SPACE ENTRY PROCEDURE



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1. PURPOSE AND SCOPE

The purpose of Illinois State University's (ISU) Confined Space Procedure is to protect employees from the hazards associated with entering and conducting operations in confined spaces such as sewers, storage tanks, and utility tunnels. This program applies to employees who, while performing their duties, enter a confined space. The Occupational Safety and Health Administration's (OSHA) Permit Required Confined Space Entry Standard 29 Code of Federal Regulations 1910.146 requires Illinois State University to develop and implement procedures for safe confined space entry. The Illinois State University Confined Space Procedure has been developed to protect Illinois State University employees working in confined spaces. All departments are required to implement the practices and procedures outlined in this procedure.

2. RESPONSIBILITIES

Everyone involved in a confined space entry project has certain responsibilities. It is very important that every individual is familiar with his/her responsibilities.

a. ENVIRONMENTAL HEALTH AND SAFETY

- Review and update the Illinois State University Confined Space Entry Procedure to conform to current CFR standards.
- Ensure compliance with standards set forth in the program by periodic inspections.
- Assisting Supervisors with:
 - Providing training as set forth in procedure
 - Identification of confined spaces
 - Identify spaces that require a permit for entry
 - Labeling permit required confined spaces
- Provide guidance for the proper selection and use of appropriate air monitoring equipment, respiratory protection, and personnel protective equipment to meet the requirements of this program.

b. SUPERVISORS

- Conduct confined space operations in accordance with Illinois State University Confined Space Entry Procedure.
- Identify confined spaces on Illinois State University campus and report those identified spaces to the Environmental Health and Safety Office.
- Ensure that all employees required to perform any confined space entry receive the appropriate level of training.

- Provide necessary personal protective equipment.
- Take appropriate disciplinary action whenever an employee under his/her direction fails to follow safety precautions outlined in this procedure.

c. ENTRY SUPERVISOR

- Conduct confined space operations in accordance with Illinois State University Confined Space Entry Procedure.
- Obtain and complete the appropriate confined space entry permit when necessary.
- Must know the hazards which may be faced during entry.
- Ensure that the Authorized Entrant(s) and Attendant are properly trained before entering the permit area.
- Conduct a pre-entry meeting before entry into the permit required confined space to discuss entry procedure and hazards associated with the confined space.
- Ensure the entry permit is completed before authorizing or allowing entry.
- Ensure Authorized Entrants and Attendants adhere to all permit confined space entry procedures outlined in this procedure.
- Take appropriate measures to remove unauthorized personnel who are in or near an entry permit area.
- Cancel the entry authorization and terminate entry whenever acceptable conditions are not present.
- Terminate the permit once work has been completed and take the necessary actions to secure permit area.

d. ATTENDANT

- Conduct confined space operations in accordance with Illinois State University Confined Space Entry Procedure.
- Shall not be used for any other duties while the permit-required confined space is occupied.
- Must be stationed and remain outside the permit-required confined space at all times during entry operations.
- Will continuously maintain an accurate count of all persons in the permit required confined space.

- Must be able to recognize confined space hazards.
- Will monitor activities inside and outside the permit-required confined space to determine if it is safe for entrants to remain in the space.
- Maintain effective and continuous contact with Authorized Entrants during entry.
- Will order Authorized Entrants to evacuate the permit area immediately when:
 - A condition is observed which is not allowed in the entry permit.
 - Behavioral effects or symptoms of hazard exposure are detected.
 - A situation inside or outside the space is detected which could endanger the entrants.
 - The attendant must leave the workstation.
- Request any unauthorized person to exit the permit-required confined space immediately if they have entered the permit space.
- Must never enter the permit-required confined space to attempt rescue of entrants unless relieved by another authorized attendant.
- Must properly use any emergency rescue equipment provided for that use and perform any other assigned rescue and emergency duties without entering the permit-confined space.

e. ENTRANT

- Conduct confined space operations in accordance with Illinois State University Confined Space Entry Procedure.
- Attend permit-required confined space entry training and demonstrate the knowledge necessary to conduct permit required confined space entries safely.
- Understand the emergency procedures in case of an accident in a permit required confined space.
- Know all the hazards which may be faced during entry into a permit required confined space.
- Be able to recognize the signs and symptoms of exposure in the permit-required confined space.
- Always maintain contact with the attendant.
- Notify the attendant when the entrant must self-initiate an evacuation of a permit required confined space.

- Be familiar with the personal protective equipment needed for safe entry and exit. (i.e. safety harness, respirator, or clothing).
- Use the necessary personal protective equipment properly.
- At least one entrant must have a confined space monitor on his/her person while in the confined space.
- Exit the permit-required confined space unless physically impossible to do so when:
 - The attendant orders an evacuation.
 - An automatic alarm is activated.
 - The authorized entrants perceive that they are in danger.

3. DEFINITIONS

Acceptable entry conditions means the conditions that 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.

Attendant means an individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the Confined Space Procedure.

Authorized entrant means an employee who is authorized by the Illinois State University to enter a permit space.

Confined space means a space that:

- (1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- (2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and
- (3) Is not designed for continuous employee occupancy.

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

Engulfment means the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to 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.

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.

Entry permit (permit) means the written or printed document that is provided by the employer to allow and control entry into a permit space

Entry supervisor means the person (such as the foreman, or crew chief) 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 section.

NOTE: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

Hazardous atmosphere means 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 space), injury, or acute illness from one or more of the following causes:

- (1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
- (2) 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 (1.52 m) or less.

- (3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
- (4) Atmospheric concentration of any substance for which could result in employee exposure in excess of its dose or permissible exposure limit;
- (5) 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 Material Safety Data Sheets, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

Hot work permit means the written authorization to perform operations (for example, welding and cutting,) capable of providing a source of ignition.

Immediately dangerous to life or health (IDLH) means any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects that would interfere with an individual's ability to escape unaided from a permit space.

Inerting means the displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

Isolation means the process by which a permit space is removed from service and completely protected against the release of energy and material into the 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.

Non-permit confined space means 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.

Oxygen deficient atmosphere means an atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen enriched atmosphere means an atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required confined space means a confined space that 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 which slopes downward and tapers to a smaller cross-section; or
- (4) Contains any other recognized serious safety or health hazard.

Permit system means the written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

Rescue service means the personnel designated to rescue employees from permit spaces.

Retrieval system means 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.

Testing means the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

4. TRAINING

Each employee must attend appropriate training before being assigned duties in confined space areas. Training will be coordinated or supervised through the Environmental Health and Safety Office.

- Employees must complete training upon initial assignment, when there is a change in assigned duties, or when there is a change that presents a hazard about which employees have not been trained.
- Refresher training must be conducted at least every five years.
- Training records will be maintained by the department. These records must include the date(s) of the training, the name of the instructor, and the name of the employee(s) to whom the training was given.
- There are three levels of Confined Space Training;
 - Awareness
 - Awareness training is provided to all individuals who may encounter confined spaces/permit-required confined spaces as part of their assigned duties.
 - Confined Space Entry
 - Confined Space Entry Training is provided to all individuals who enter confined spaces.
 - Permit-Required Confined Space Entry
 - Permit-required Confined Space Entry Training is designed for those individuals who may be required to participate in the entry of a permit-required confined space (i.e. attendant duties, entrant, or entry supervisor duties.)
- Retraining shall be provided whenever there are deviations from the Confined Space Entry Procedure or there are inadequacies in the employee's knowledge or use of these procedures.

5. IDENTIFYING CONFINED SPACE HAZARDS

- Recognition is an important aspect of making a safe entry into confined spaces. Not all confined spaces will be considered permit required confined spaces. To clarify what constitutes a confined space, the following definition will be used:
 - Confined Space
 - Is large enough or so configured that an employee can bodily enter and perform assigned work.

- Has limited or restricted means for entry or exit.
- Is not designed for continuous employee occupancy.
- 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.
- Permit-Required Confined Space
 - A confined space that is potentially hazardous?
 - A permit-required confined space 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 that slopes downward and tapers to a smaller cross-section: or
 - Contains any other recognized serious safety or health hazard.
- Supervisors are directly responsible for ensuring the safety of their employees in regards to confined spaces. This includes recognition of confined spaces and ensures proper precautions are taken for their safety.

6. IDENTIFICATION AND POSTING

- All confined spaces located within a facility should be identified. Once the space has been identified as a Confined Space, EHS shall determine if a permit is required.
- All confined spaces and permit required confine spaces will be posted accordingly.

Note: Conditions created by the work-n-progress should always be evaluated regarding determining how the confine space is to be classified. For instance, if hot work is to be performed inside a confined space, it will automatically be classified as permit-required due to potential for development of hazardous atmosphere; or if there is any exposure to energized components, it will automatically be considered a permit-confined space.

7. HOT WORK PERMIT REQUIREMENTS

- It is the responsibility of the welders, cutters, and their supervisors to ensure the Hot Work Procedure is followed when hot work is conducted in a confined space.
- When hot work is conducted in a confined space, the confined space will be changed to a permit required confined space unless prior approval is given from the Environmental Health and Safety Office.

8. NON-PERMIT CONFINED SPACE PRE-ENTRY

- Because conditions associated with confined spaces can change over time all Illinois State University employees will follow their departmental Confine Space Program prior to entering a non-permit confined space. If your department does not have a Confine Space Program contact the Environmental health and Safety Department for further instructions.

9. PERMIT REQUIRED CONFINED SPACE

- Once the entry has been planned, supervisors must ensure that all employees involved are trained on their specific jobs (i.e. attendant, entrant(s), and entry supervisor).
- Normal Fire Department must be notified of the date and projected time spent in the permit confined space.
- Before each entry into a permit required confined space, a pre-entry meeting must take place. This meeting will:
 - Identify the work detail.
 - Ensure all hazards have been eliminated (i.e. isolate or control all energy sources)
 - Assign each employee the job(s) he/she is to perform.
 - Inform personnel of:
 - All known or suspected hazards and any symptoms associated with hazardous atmosphere conditions.
 - Any access or exit problems.
 - Any equipment that needs to be locked or tagged out following the
 - Contents of confined space.
 - All required personal protective equipment.

- The entry supervisor will remove the permit and sign the block entitled “Work Completion”.
- All completed permits will be returned to the supervisor.
- Permits will be kept on file for 3 years.

10. RECLASSIFICATION OF PERMIT REQUIRED SPACES

- A space classified as a permit required confined space might be reclassified as a non-permit confined space under the following conditions:
 - If the permit space possesses no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space, the permit space may be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated.
 - If it is necessary to enter the permit space to eliminate the hazards, such entry shall be performed under the permit entry system of this program. If testing and inspection during that entry demonstrate that the hazards within the permit space are eliminated the space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated.
 - The person responsible for the confined space entry is to document that all hazards in a permit space have been eliminated via a certification form that contains the date, location of the space, and the signature of the person making the determination. (See Attachment 2). This certification shall be available to each employee entering the space.
 - If hazards arise within a permit space that has been declassified, each employee shall exit the space. The space must be reclassified a permit required confine space.

11. EMERGENCY RESCUE

Note: Confined space rescue services are provided by the Normal Fire Department.

- If an employee becomes disabled in a confined space, obtain medical assistance via radio or by dialing 911.
- Authorized attendants, entry supervisors, or persons other than the rescue team must not enter a confined space to facilitate a rescue.
- When a retrieval system is required, a retrieval line must be attached to the full body harness at a location that is the safest means for removal of the entrant(s).
- The attendant is to provide Rescue Services (Normal Fire Department) with the information necessary to facilitate a rescue.

- The attendant will not leave the site until the entrants have been rescued or another trained individual has relieved him/her.
- Rescue Services must be trained and qualified to perform confined space rescue and perform drills on campus periodically.

12. CONTRACTOR REQUIREMENT

- When any department arranges to have contractors perform work that involves entry into a permit-required confined space, the department must:
 - Inform the contractor that the workplace contains permit-required confined spaces, and that permit-required confined space entry is allowed only by following a proper confined space entry program meeting established OSHA requirements.
 - Apprise the contractor of any hazards identified and the department's experience with the space.
 - Inform the contractor that ISU employees entering the permit-required confined space must follow ISU Confined Space Entry Procedure and the contractor must follow their Confined Space Entry Procedure.

13. ELEVATOR PIT ENTRY

- Anyone entering a elevator pit must contacted the elevator pit contractor prior to entry.
 - The elevator contractor in conjunction with Illinois State University will use lockout tagout procedures to lockout the elevator(s).
 - Once this is complete the elevator pit will be reclassified (as per section 12 of this procedure).
 - Once all the work in the elevator pit is completed, the elevator contractor will be contacted to place the elevator back into service.
 - Lockout tagout start-up procedures will be followed for start-up and return to service of the elevator.

APPENDIX A: CONFINED SPACE ENTRY PERMIT



CONFINED SPACE ENTRY PERMIT

Permit Number _____ Date _____

Location & Description of Confined Space:

Purpose of Entry:

Schedule Start _____	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	Schedule Finish _____	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
Day/Date/Time		Day/Date/Time	

► **Employee(s) in charge of entry:**

Entrants:

Attendants:

► **Pre-Entry Authorization:**

{ Check those items below which are applicable to your confined space permit. }

TYPES OF HAZARDS

- ☞ Oxygen-Deficient Atmosphere
- ☞ Oxygen-Enriched Atmosphere
- ☞ Welding/Cutting
- ☞ Engulfment
- ☞ Toxic Atmosphere
- ☞ Flammable Atmosphere
- ☞ Energized Electrical Equipment
- ☞ Entrapment
- ☞ Hazardous Chemical

Note: If welding/cutting operations are to be performed, attached Hot Work Permit.

SAFETY PRECAUTIONS

- ☞ Self-Contained Breathing Apparatus
- ☞ Air-Line Respirator
- ☞ Remarks _____
- ☞ Ventilation
- ☞ Lifelines
- ☞ Fire Extinguishers
- ☞ Respirators
- ☞ Lockout/Tagout

ENVIRONMENTAL CONDITIONS

TESTS TO BE TAKEN	DATE/TIME	RE-TESTING	DATE/TIME
Oxygen: _____ %	_____ a/p	Oxygen: _____ %	_____ a/p
Lower Explosive Limit: _____ %	_____ a/p	Lower Explosive Limit: _____ %	_____ a/p
Toxic Atmosphere: _____		Toxic Atmosphere: _____	
Instruments Used: _____		Instruments Used: _____	

► **Employee Conducting Safety Checks** **SIGNATURE:**

Remarks on the overall condition of the confined space. _____

Entry Authorization

All actions and/or conditions for safe entry have been performed.

Person in Charge of Entry _____
SIGNATURE

Work Completion

Work has been completed and all entrants have exited permit space.

Person in Charge of Entry _____
SIGNATURE

IN CASE OF EMERGENCY CALL 911

APPENDIX B: RECLASSIFICATION OF PERMIT REQUIRED CONFINED SPACE

Reclassification of Permit Required Confined Space

ILLINOIS STATE
UNIVERSITY



Illinois State University

NON-PERMIT CONFINED SPACE CERTIFICATION

This document certifies that the _____ has been approved for a change in status from a Permit Confined Space to a Non-Permit Confined Space. The following conditions have been met:

All entrants/attendants involved in any entry have completed the University's Confined Space Entry training.

Atmospheric testing has verified a safe atmosphere within the space, and entrants shall carry a confined space monitor with them during the time they are in the space.

All identified hazards have been eliminated.

Types of Hazards Eliminated

- | | |
|--|---|
| <input type="checkbox"/> Engulfment | <input type="checkbox"/> Energized Electrical Equipment |
| <input type="checkbox"/> Crushing Hazard | <input type="checkbox"/> Entrapment |
| <input type="checkbox"/> Natural Gas | <input type="checkbox"/> Other _____ |

Describe procedure used to remove hazard. _____

_____.

Date: _____ Certification Completed By: _____
Printed Name

Signature