

**UNIVERSITY OF HOUSTON  
ENVIRONMENTAL HEALTH AND SAFETY  
POLICIES AND PROCEDURES**

**SECTION: ENVIRONMENTAL HEALTH AND SAFETY**

**SUBJECT: CONFINED SPACE ENTRY**

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**I. PURPOSE**

The purpose of this procedure is to ensure the safety and health of UH employees who may enter a confined space during the performance of their respective job duties. Historically confined space entry has proved to be a dangerous activity and there have been many employee fatalities. In response to this hazard the Occupational Safety and Health Administration (OSHA) promulgated a comprehensive rule, Permit-required Confined Spaces, which requires that each "entry" become a permit event where the conditions (explosive atmosphere, oxygen deficient, etc) are monitored, hazards are evaluated prior to and a permit is given prior to the actual entry. These stringent rules can be found in Title 29 of the Code of Federal Regulations (CFR), Part 1910.146.

On occasion University employees may have to enter a confined space to perform maintenance or repair function. In order to ensure their safety the Environmental Health and Safety Department (EHS) has developed this procedure.

**II. KEY DEFINITIONS**

*"Confined space"* means a space that:

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

*"Permit-required confined space (permit 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 with the potential for engulfing someone who enters the space
- (3) Has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section
- (4) Contains any other recognized serious safety or health hazard.

*"Hazardous atmosphere"* means 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:

- (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 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  
[NOTE: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.]
- (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 that comply with the Hazard Communication Standard, section [1910.1200 of 29 CFR](#), published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.]

### III. APPLICABILITY

The procedures outlined in this document apply *only to UH employees*. Contractors, sub contractors, vendors and any other parties are expected to follow the OSHA standard found in 29 CFR 1910.146 when doing any permit required confined space entry work on behalf of the University. Prior consultation with the EHS is mandatory before entering any spaces for both UH employees and all others. UH personnel should be prepared to discuss the entry, potential hazards, and measures taken to ensure safety with the EHS at the pre-entry briefing.

### IV. PROCEDURES

The following steps are required for UH employees prior to entering any permit required confined space:

Contact the EHS (713) 743-5858 during normal University business hours and request a confined space entry consultation at least 24 hours prior to the entry.

An EHS staff member will be assigned and contact the requestor to meet and discuss the specifics of the entry.

A decision will be made at the pre-entry meeting as to whether the entry will require a permit (*Example*: meets the definition above for permit required confined space) or not. Entries deemed *non permit* may proceed with no further action. Before entering a confined space, evaluate the area and complete a Confined Space Permit Form and Entry Document (Appendix A).

To complete the form, determine the following information:

- Identity and location of the confined space
- Purpose for entering the area
- Known and potential hazards

- Required isolation methods (e.g., lockout/tagout)
- Environmental conditions of the confined space
- Atmospheric readings to verify that acceptable environmental conditions are met and maintained
- Rescue services, procedures, and equipment that may be necessary in case of an emergency
- Communication procedures to be used
- Personal protective equipment to be used
- Any additional information relating to the specific circumstances of the confined space
- Obtaining Entry Permission
- Names of the following:
  - Person authorizing entry
  - Supervisor
  - Authorized entrants
  - Authorized attendants
- Employees must notify the person who authorizes entry before working in confined spaces.
- The person who authorizes entry refers to any records on file and identifies the actual or potential hazards of the area in question. If no file exists for the specific space, a new one is developed.
- The person who authorizes entry then reviews and approves the entry form as appropriate. A copy of the form is filed for future reference.

Permit required entries will be scheduled for a specific time and date.

The EHS staff member will accompany the entrant or entrants to the specific location.

A pre-entry monitoring survey will be conducted and a review of the planned activity will be conducted.

If the survey does not indicate the presence of potentially harmful conditions and the EHS staff member is satisfied that activities planned can be conducted safely, a permit for entry will be issued.

The permit will be valid only for the expected length of the work and is not renewable.

The entrant or entrants are required to have an observer, who can readily contact the entrant or entrants, capable of summoning help at all times the space is occupied.

## V. REFERENCES

*29 CFR 1910.146, Permit-required Confined Spaces (Occupational Safety and Health Administration)*

## APPENDIX A - Confined Space Entry Permit

Job/Site I.D. \_\_\_\_\_ Job Supervisor: \_\_\_\_\_

Equipment to be worked on: \_\_\_\_\_ Date of Job \_\_\_\_\_

Work to be performed: \_\_\_\_\_

Stand-by personnel: \_\_\_\_\_

1. Initial Atmospheric checks: Date/Time \_\_\_\_\_ Oxygen \_\_\_\_\_  
Explosive \_\_\_\_\_ Toxic \_\_\_\_\_

2. Testers signature: \_\_\_\_\_

3. Source isolation: N/A Yes No  
Disconnected and Locked ( ) ( ) ( )

4. Ventilation Modification: ( ) ( ) ( )  
Mechanical ( ) ( ) ( )  
Natural Ventilation only ( ) ( ) ( )

5. Atmospheric check after Isolation and ventilation:  
Oxygen \_\_\_\_\_ % > 19.5%  
Explosive \_\_\_\_\_ % L.E.L. < 10  
Toxic \_\_\_\_\_ PPM < 10 PPM  
Tester signature \_\_\_\_\_ Date/Time \_\_\_\_\_

6. Communication procedure: \_\_\_\_\_

7. Rescue procedures: \_\_\_\_\_

8. Equipment: N/A Yes No  
Direct reading gas monitor ( ) ( ) ( )  
Safety harness and lifeline for entry and standby persons ( ) ( ) ( )  
Hoisting equipment ( ) ( ) ( )  
Powered communication equipment ( ) ( ) ( )  
Protective clothing ( ) ( ) ( )

We have reviewed the work authorized by this permit and the information contained herein. Written instructions and safety procedures have been received and are understood. Entry cannot be approved if any squares are marked in the "No" column. This permit is not valid unless all appropriate items are completed.

Prepared by: \_\_\_\_\_

EHS Approval: \_\_\_\_\_

Date and Time Issued: \_\_\_\_\_ Date and Time Expires: \_\_\_\_\_

**This permit is to be kept at the job site. Return job site copy to EHS following job completion.**