

# UNIVERSITY OF KENTUCKY CONFINED SPACE PROGRAM

## SCOPE AND APPLICATION:

The University of Kentucky has developed a written policy for safe entry into confined spaces. The University recognizes that certain environmental conditions within confined spaces are capable of causing death to anyone who enters the space without taking precautionary measures. Therefore, each entry into a confined space must be evaluated by the supervisor to determine the hazards involved and appropriate safety measures and controls that must be taken to ensure a safe environment

Safe entry into a confined space is the responsibility of both the supervisor and the employee who performs the work. Supervisors must ensure that this procedure is followed and that all personnel understand and comply with the safety requirements. the employee must inform the supervisor of any departure from this procedure.

## DEFINITION OF A CONFINED SPACE

A confined space is a space that is large enough and so configured that an employee can bodily enter and perform assigned work. It has limited or restricted means for entry or exit, and is not designed for continuous employee occupancy. Additionally, the space may contain a potentially hazardous atmosphere, it may have limited oxygen content, it may contain mechanical and /or electrical equipment which upon contact or activation may trap, crush, or electrocute persons in the space.

Some examples of confined spaces at the University of Kentucky include but are not limited to: sewers, septic tanks, sewage digestors, pump stations, wells, manure pits and tanks, silos, vats, ducts, utility vaults, process vessels, boilers, pipelines, pits, ventilation and exhaust units, storage bins, hoppers, and caves.

The University of Kentucky must evaluate each confined space to determine if that space is to be designated as a **Permit-Required Confined Space** or a **Non-permit Confined Space**.

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## (DEFINITION OF A CONFINED SPACE)

A **permit system** is the written procedures for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

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 space may be entered without a permit if a hazard is not taken into the space.

A **permit-required confined space** is any 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 asphyxia by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section.
4. Contains any other recognized serious safety or health hazard.

## GENERAL REQUIREMENTS:

1. The employer shall evaluate the workplace to determine if any spaces are **permit-required confined spaces**.
2. If the workplace contains permit spaces, the employer shall inform exposed employees by posting danger signs or other equally effective means such as a sign:

**DANGER---PERMIT REQUIRED  
CONFINED SPACE  
DO NOT ENTER**

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### **(GENERAL REQUIREMENTS):**

3. If the employer decides that employees will not enter permit spaces, the employer shall take effective measures to prevent employees from entering the space.
4. If the employer decides that employees will enter permit spaces, the employer shall develop and implement a written permit entry program.
  - A. Any conditions making it unsafe to remove the entrance cover shall be eliminated before the cover is removed.
  - B. When the entrance covers are removed the opening shall be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent accidental entry into the opening.
  - C. Before an employee enters the space, the internal atmosphere shall be tested with a calibrated direct-reading instrument for the following conditions in the order given:
    1. Oxygen content
    2. Flammable gases and vapors
    3. Potential toxic air contaminants
  - D. There may not be a hazardous atmosphere within the space whenever any employee is inside the space.
  - E. Continuous forced air ventilation shall be used as follows:
    1. An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere:
    2. The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the space.

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### **(GENERAL REQUIREMENTS):**

3. The forced air ventilation shall be so directed as to ventilate the immediate areas where an employee where an employee is or will be present within the space and shall continue until all employees have left the space.
- F. The Atmosphere within the space shall be periodically tested as necessary to ensure that the continuous forced air prevents the formation of a hazardous atmosphere.
- G. If a hazardous atmosphere is detected during entry:
  1. Each employee shall leave the space immediately.
  2. The space shall be evaluated to determine how the hazardous atmosphere developed: and,
  3. Measures shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.
- H. The employer shall verify that the space is safe for entry following the above requirements, and that a written certification that contains the date, the location of the space, and the signature of the person providing the certification has been completed.
6. When there are changes in the use or configuration of a non-permit confined space that might increase the hazards to entrants, the employer shall re-evaluate and if necessary reclassify it as a permit-required space.
7. A space classified by the employer as a permit-required confined space may be reclassified as a non-permit confined space under the following conditions:

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### **(GENERAL REQUIREMENTS):**

- (7.)
  - A. If the permit space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space and the permit space may be reclassified as a non-permit confined space for as long as the non atmospheric hazard remain eliminated.
  - B. If it is necessary to enter the permit space to eliminate hazards, such entry shall be performed following the entry rules for permit-required area. If testing and inspection during this time demonstrate that the hazards within the permit space have been eliminated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated.
  - C. The employer shall document the basis for determining that all hazards have been eliminated.
  - D. If hazards arise within the permit space that change the classification, the space must be reclassified.
- 8. When an employer arranges for another contractor to perform work that involves permit space entry, the host employer shall:
  - A. Inform the contractor that the workplace contains permit spaces that entry is allowed only as a permit required space.
  - B. Apprise the contractor of the elements of the confined space.
  - C. Coordinate entry operations with the contractor when both the owner and the contractor work in the same space.
  - D. Debrief the contractor at the conclusion of the operations regarding any hazards created by the activities of the other.
  - E. Inform the host employer of the permit space program the contractor will follow.

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## PERMIT REQUIRED CONFINED SPACE PROGRAM

1. Implement the measures necessary to prevent the unauthorized entry.
2. Identify and evaluate the hazards of permit spaces before employees enter them.
3. Develop and implement means, procedures, and practices necessary for safe permit space entry operations, including, but not limited to the following:
  - A. Specifying acceptable entry conditions;
  - B. Isolation of the permit space;
  - C. Purging inerting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards;
  - D. Providing pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards; and
  - E. Verifying that conditions in the permit space are acceptable for entry into throughout the duration of an entry.
4. Provide and maintain at no cost to the employee the following equipment and ensure that the employee use that equipment properly.
  - A. Testing and monitoring equipment needed to test and monitor the atmosphere while working in the confined space.
  - B. Ventilating equipment needed to obtain acceptable entry conditions.
  - C. Communications equipment.
  - D. Personal Protective Equipment

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### **(PERMIT-REQUIRED CONFINED SPACE PROGRAM)**

- (4.)
  - E. Lighting equipment needed to enable employees to see well enough to work safely and to exit the space quickly in case of an emergency.
  - F. Barrier and shields as needed to protect the opening.
  - G. Equipment such as ladders, needed for safe ingress and egress.
  - H. Rescue and emergency equipment needed to rescue the entrant from the confined space.
  - I. Provide any other equipment necessary for safe entry into and rescue from the permit space.
- 5. Evaluate permit space conditions as follows when entry operations are conducted:
  - A. Test conditions in the permit space to determine if acceptable entry conditions exist before entry.
  - B. Test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained for the course of the entry operations.
  - C. When testing for atmospheric hazards, test first for oxygen, then combustible gases and vapors, then for toxic gases and vapors.
- 6. Provide at least one attendant outside the permit space into which entry is authorized for the duration of entry operations.
- 7. If multiple spaces are to be monitored by a single attendant, include in the permit program the means and procedures to enable the attendant to respond to an emergency affecting one or more of the permit spaces being monitored without distraction from the attendants duties.

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## **(PERMIT-REQUIRED CONFINED SPACE PROGRAM)**

8. Designate the persons who are to have an active role in entry operations. (for example authorized entrants, attendants, entry supervisors, or persons who test or monitor the atmosphere in a permit space).
9. Develop and implement procedures for summoning rescue and emergency services, for rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees and for preventing unauthorized personnel from attempting a rescue.
10. Develop and implement a system for the preparation, issuance, use and cancellation of entry permits as required by this section.
11. Develop and implement procedures to coordinate entry operation when employees of more than one employer are working simultaneously as authorized entrants in a permit space so that one does not endanger the employees of the other.
12. Develop and implement procedures necessary for concluding the entry after operations have been completed.
13. Review entry operations when the employer has reason to believe that the measures taken under the permit space program may not protect employees and revise the program to correct deficiencies found to exist before subsequent entries are authorized.
14. Review the permit-required confined space program using the canceled permits retained for one year and revise the program as required.

## **PERMIT SYSTEM FOR CONFINED SPACE PROGRAM**

Before entry is authorized, the employer shall document that the entry permit has been prepared and followed as outlined in the program.



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### **(PERMIT SYSTEM FOR CONFINED SPACE PROGRAM)**

1. Before entry begins, the supervisor shall sign the entry permit.
2. The complete permit shall be made available and posted at the time of entry.
3. the duration of the permit may not exceed the time required to complete the task.
4. The entry supervisor shall terminate and cancel the permit when the space and or when the activities have been completed.
5. the permit shall be retained for one year.

### **ENTRY PERMIT FOR CONFINED SPACE PROGRAM**

The entry permit that documents compliance with this section and authorizes entry to a permit space shall identify the following;

1. The permit space to be entered.
2. The purpose of the entry.
3. The date and the authorized duration of the entry permit.
4. The authorized entrants within the permit space by name or by such other means as will enable the attendant to determine quickly and accurately for the duration of the permit which entrants are inside the permit space.
5. The person serving as the attendant.
6. The person by name currently serving as supervisor with a space for the signature or initials of the entry supervisor who authorized entry.

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### **(ENTRY PERMIT FOR CONFINED SPACE PROGRAM)**

7. The hazards of the permit space to be entered.
8. The measures used to isolate the permit space and to eliminate or control permit space hazards before entry. (Lockout/tagout-isolate hazardous energy).
9. The acceptable entry conditions.
10. The results of initial and periodic tests performed for atmosphere monitoring and accompanied by the name of the testers and an indication of when the test were performed.
11. The rescue and emergency services that can be summoned and the means (such as the equipment to use and the numbers to call) for summoning aid.