

## 01000S02-CONFINED SPACE ENTRY

### PURPOSE:

When entering some confined spaces above a solid ceiling, a manhole, a pit, a tunnel, the incinerator, or a storage tank there may be danger in the form of combustibles, entrapment, toxic gases, or a lack of oxygen. To safeguard the well being of the workers, precautions must be taken so the work can be accomplished in the safest manner.

### POLICY:

Personnel who enter into a confined space must exercise caution for their personal safety. Entry into some confined space may require wearing an appropriate respirator and protective clothing. In addition, the person entering may require a lifeline attached to them for retrieval. If the space is permit required, continuously monitoring for oxygen, combustibles, and toxic gases will occur. Communication between the person in the confined space and the spotter must take place during the entire process. This may be by radio or direct conversation. A permit for entry of some confined space must be issued to assure that all steps have been carefully reviewed and followed.

### PROCEDURE:

1. Before entry is made into a permit required confined space, such as a manhole, a permit shall be obtained from the General Contractor. The permit is required for each new entry. See Appendix "B".
2. The permit required confined space atmosphere shall be tested for 15 minutes before entry takes place. In addition, if conditions are subject to change, continuous monitoring shall be done throughout the time anyone is in the space.
3. If the confined space is a manhole:
  - a. The atmosphere test should first be made prior to entry at various levels in the manhole. The test should indicate oxygen level and explosive level. Monitoring will continue during the entire time of entry. The manhole shall be ventilated with a power blower during entry. In addition, whenever possible, the up-stream and down-stream manhole covers will be opened for natural ventilation.
  - b. At least one person stationed outside the permit required confined space shall be trained in CPR. In case of emergency, another person shall be prepared to execute a rescue from the confined space and call 911 for the confined entry rescue team. The person entering confined space shall never be left alone. (Under no circumstances shall the spotter enter confined space until more help arrives.) If entry is made, appropriate personnel protection is required.
  - c. Person entering a manhole shall wear a harness with a lifeline attached to a lift above the manhole. The lifeline shall remain attached at all times. The person may need a full face positive pressure respirator if the monitoring device shows dangerous levels of oxygen or other hazardous gases. If combustibles are present, ventilation will occur until safe to enter. The respirator air supply shall be provided from an appropriate explosion proof source of air capable of producing at least 8 CFM of air.
  - d. Provisions for constant communication with person in the confined space must be available. This may be accomplished by verbal, radio, and life line rope tug communication.
  - e. Any line powered electrical equipment used in the manhole shall be supplied through a G.F.C.I. for prevention of electrical shock. Low voltage or battery operated equipment is also approved. Lock Out/Tag Out Policy should be followed as may be appropriate.
  - f. Fuel powered equipment shall not be used in the manhole.
4. If confined entry is in a tank or pit:
  - a. The confined space atmosphere must be tested for 15 minutes before entry takes place and during the operation. If the tank is hot, it will be allowed to cool before entering.
  - b. One person shall be stationed outside the tank or pit. One person trained in CPR and first aid shall be outside the confined space. In case of emergency, either person shall be prepared to execute a rescue from the confined space and call 911 for the confined entry rescue team. (Under no circumstances shall the spotter enter confined space until more help arrives.).
  - c. Person entering tank or pit shall wear a lifeline, attached at all times.

## 01000S02-CONFINED SPACE ENTRY

Author: Med Center

Dated: 6/95

Applies to: Med Center / Hospital only  
University of Kentucky

## 01000S02-CONFINED SPACE ENTRY

- d. If atmosphere is dangerous or low in oxygen, person shall wear an appropriate respirator. Ventilation of the area is also required.
  - e. Any line powered electrical equipment used in the tank or pit shall be supplied through a G.F.C.I. for prevention of electrical shock or low voltage or battery powered equipment.
5. If confined space is the incinerator, the following shall occur:
- a. The electrical power shall be locked out according to Lock Out/Tag Out Policy.
  - b. The hydraulic system shall be made inoperative.
  - c. The charging chamber door shall be opened and blocked open with an adequate support.
  - d. All other doors shall be opened for proper ventilation.
  - e. Entry shall not occur until the chamber is sufficiently cool.
  - f. All natural gas lines shall be valved off.
  - g. Entry into the upper chamber requires a permit.
  - h. A spotter shall remain at the site while entry occurs.
6. If entry is required in sub-basements or tunnels:  
If oxygen content of atmosphere is at least 19.5% and no toxic gases are present, no supplied air respirator is required. If less than 19.5% and/or toxic and/or flammable vapors are present, ventilation is required, a supplied air respirator must be used.
7. Personnel working in most confined spaces shall limit work time to one hour increments. The personnel outside of the confinement shall monitor the time. All personnel shall be properly instructed in technique to use and the potential dangers.
8. Entry shall be practiced at least annually. This training should be documented.
9. See Appendix "A" for Fire Department Rescue Team procedures.

### Appendix A

#### Confined Space Emergency and Rescue

1. Each confined space entry shall be assessed for the degree of risk. Preparation for handling an emergency will be proportioned to the degree of risk. This shall include precautions to be taken and reserve equipment necessary such as:
  - a. Respirators
  - b. Lifelines and related equipment
  - c. Tools
  - d. Eye protection/personal protective equipment
  - e. Radios/communication
  - f.
2. Standby personnel shall call 911 for the confined space rescue team if an emergency should arise.
3. If the person in the confined space has become incapacitated, a rescuer may enter the space if a supplied air respirator with five minute escape bottle is worn. Another person must be on standby before entry takes place. A self-contained breathing apparatus connected to a source available capable of producing at least 8 CFM per person must be during reserve operations.
4. The area around the site shall be contained to restrict unnecessary traffic and personnel.

## 01000S02-CONFINED SPACE ENTRY

Author: Med Center

Dated: 6/95

Applies to: Med Center / Hospital only  
University of Kentucky

# 01000S02-CONFINED SPACE ENTRY

## APPENDIX B

### CONFINED SPACE ENTRY PERMIT

The following areas require this permit:

Any Manhole Incinerator (See Step 5-g) Any Tank or Pit

Entry Date: \_\_\_\_\_ Entry Time: \_\_\_\_\_ AM or PM

Location of Confined Space: \_\_\_\_\_

Why are we entering? \_\_\_\_\_

Description of work: \_\_\_\_\_

Employees Assigned: \_\_\_\_\_

Entry Supervisor: \_\_\_\_\_ Attendant: \_\_\_\_\_

Outside Contractors: \_\_\_\_\_

#### Isolation Checklist

Blanking or Disconnecting

Mechanical

Electrical

Other

#### **Hazardous Work**

Burning

Welding

Brazing

Open Flame

Other

#### **Potential Hazards**

Corrosive Materials

Hot or Cold Equipment

Flammable Materials

Toxic Materials

Drains

Open Water

Spark Producing Operations/Fires

Spilled Liquids

Pressure Systems/Steam

Engulfment / Entrapment

Lack of Oxygen

Slips, Trips, Falls

Other

#### **Personal Safety**

Ventilation Requirements

Respirators

Gloves

Other

PPE Lifeline and Harness

Lighting (battery or GFCI)

Communications/Radio

Employee Qualified

Barricades

Hard Hat

## 01000S02-CONFINED SPACE ENTRY

Author: Med Center

Dated: 6/95

Applies to: Med Center / Hospital only

University of Kentucky

# 01000S02-CONFINED SPACE ENTRY

Coveralls  
Standby person  
Emergency Egress Procedures  
Other

Atmospheric Gas Tests Instrument calibration \_\_\_\_\_  
Location: \_\_\_\_\_ By: \_\_\_\_\_

| Date/Time | Oxygen<br>19.5 - 23.5% | Flammability<br>< 10% LEL | Other |
|-----------|------------------------|---------------------------|-------|
|-----------|------------------------|---------------------------|-------|

Remarks: \_\_\_\_\_

Atmosphere is hazardous  
Hazard is eliminated  
Hazard cannot be eliminated  
Will Not Enter

Authorizations:

Supervisor: \_\_\_\_\_ Safety Supervisor: \_\_\_\_\_

Entry and Emergency Procedures Understood:

Standby Person: \_\_\_\_\_ Rescue: \_\_\_\_\_ Telephone: \_\_\_\_\_

Permit Expires: \_\_\_\_\_ Classification: \_\_\_\_\_