



Western

Western University

## **CONFINED SPACE ENTRY PROGRAM**

**For Compliance With**

**Ontario Ministry of Labour Regulations**

Revised: August 2012

# **WESTERN UNIVERSITY CONFINED SPACE ENTRY PROGRAM**

Western University has over 700 identified confined spaces that due to their construction or location may cause death or serious injury to individuals who may enter them. A Confined Space Entry Program is developed and established to identify, evaluate, and control such spaces, and more important, to detail procedures and responsibilities for entering and working within confined spaces.

Facilities Management has prepared a “Confined Space Entry Policy” (S-8) to address entry requirements. Adherence to the policy and directives contained in this program is mandatory for all supervisors and employees of Western.

## **DEFINITIONS**

*Confined Space* - A space that:

- Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- Has limited or restricted means for entry or exit; and
- Is not designed for continuous human occupancy.
- Contains, or has a potential to contain a hazardous atmosphere; or
- Contains a material that has the potential for engulfing an entrant; or
- Contains any other recognized serious safety or health hazard.

*Acceptable Entry Conditions* - The conditions that must exist in a confined space to allow entry and to ensure employees can safely enter into and safely work within the confined space.

*Entry* - The action by which a person passes through an opening into a confined space. Entry is considered to occur as soon as any part of the entrant's body breaks the plane of an opening into the space.

*Entry Permit* - The written or printed document provided by Western University to allow and control entry into any confined space.

*Entry Supervisor* - The person 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.

*Hazardous Atmosphere* - An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following conditions:

- Flammable gas, vapor, or mist in excess of 10 percent of its lower explosive limit (LEL);
- Airborne combustible dust at a concentration that meets or exceeds its LEL. (this may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less);
- Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
- Any other atmospheric condition that is immediately dangerous to life or health.

*Prohibited Condition* - Any condition in a confined space that is not allowed by the permit during the time when entry is authorized.

*Testing* - The process by which the hazards are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

## **CONFINED SPACE LOCATIONS**

Service manholes, outdoors and indoors, within the University have been surveyed to identify any confined spaces that may be present. Such locations are updated on the Facilities Management website. .

## **RESPONSIBILITIES**

Employer:

- a. Will evaluate the work place and identify confined spaces at the University.
- b. Inform employees of the existence, location of, and the danger within confined spaces by posting danger signs or by any other equally effective means.
- c. Provide and document training for entrants, attendants, and supervisors of those employees.
- d. Provide all specified equipment required for entry in a confined space as outlined in this program, maintain the equipment, and ensure that employees use that equipment properly.
- e. When acting as host employer for a contractor who may enter any confined space at Western, shall:

1. Inform contractor of confined space entry program and Policy S-8;
2. Apprise contractor of hazards of particular spaces and precautions and procedures implemented for protection of employees in or near these spaces;
3. Coordinate entry operations with contractor when both Western employees and contractor will be working in or near confined spaces and debrief contractor after entries.
4. Obtain information from contractor on their confined space training and program.
5. Debrief contractors of the hazards encountered or created.

Employees:

- a. Will not enter any confined space unless specifically authorized by the University after participating in the required training program.
- b. Attend and complete any scheduled training required by their supervisor and this program.
- c. When selected as an entrant, attendant, perform those duties as outlined in this program.

## PERMIT REQUIRED CONFINED SPACE ENTRY PROGRAM AND PROCEDURES

All confined spaces will be identified by [supervisors, department heads, OHS]. Facilities Management Confined Space Entry Procedure S-8 will be used in this program.

Only trained and qualified employees will be authorized as confined space entrants, and attendants.

No employee shall enter a confined space without having a properly completed entry permit.

Entry permit procedures are as outlined below:

- a. Entrants will obtain an entry permit from the Tools Crib prior to entry of the space.
- b. The entrant will accomplish all pre-permit actions required for entering the space, such as atmospheric testing, hazard control/elimination actions, have all required equipment on hand, provide for attendant and rescue services, etc.
- c. Complete all items on the permit.
- d. The entry will be authorized and the permit will be signed only by an authorized attendant.
- e. Entry may proceed; all rules and conditions as outlined in Confined Space Procedure S-8 must be adhered to at all times.

Testing and Monitoring.

- a. Test the space as necessary to determine if acceptable entry conditions exist before beginning entry operations. Initial testing of the atmosphere must be done from outside the confined space prior to any entry. If isolation of the space is infeasible because the space is large or part of a continuous system (such as a sewer), entry conditions will be continuously monitored where entrants are working.
- b. Test or monitor the confined space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations.
- c. When testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors. Parameters for non-hazardous atmospheres are:

- (1) Oxygen between 19.5 and 23.5 percent;

(2) Flammability less than ten percent of the lower explosive limit (LEL).

(3) Toxicity less than the permissible exposure limit (PEL).

An authorized attendant must be present and monitoring the entry at all times. The attendant will not be assigned any other duties that may interfere with his attendant duties. Attendant duties are outlined below.

Equipment required for confined space entry includes the equipment required for testing and monitoring; ventilating; communications between the entrant and attendant, and for summoning rescue; personal protection; lighting; barriers/shields for openings; means of ingress and egress; retrieval system; and any other equipment necessary for safe entry and rescue.

Rescue and emergency services:

- a. Non-entry rescue is the preferred method for rescue of personnel from any confined space. **It is absolutely unacceptable for any Western employees to enter a confined space for rescue. In this situation, the attendant must contact Campus Community Police Services (CCPS) to initiate the rescue operations.**
- b. To facilitate non-entry rescue, retrieval systems or methods shall be used whenever an authorized entrant enter a confined space. Retrieval system requirements are:
  1. Each entrant shall use a chest or full body harness, with a retrieval line attached at the center of the back near shoulder level, or other appropriate point.
  2. Other end of retrieval line shall be attached to a mechanical device or fixed point outside of permit space enabling immediate use. A mechanical device will be used to retrieve personnel from vertical type confined spaces.
  3. If injured entrant is exposed to any chemical substance, a Material Safety Data Sheet (MSDS), or similar document, shall be made available to the medical facility treating entrant.
- c. If rescue should become necessary, the attendant will:
  1. Immediately notify CCPS to summon the London Fire Department (LFD) rescue team/service;
  2. Attempt non-entry rescue procedures to the extent possible by the circumstances; ie. retrieval system

3. Monitor the situation and be ready to give rescuers information on the victim and their status, what hazards, chemical types, concentrations, etc. may be present.
- d. Only designated personnel from the LFD will enter permit spaces for rescue purposes.

Permits will be cancelled by the attendant upon completion of the work, or when any prohibited condition arises.

Program Review: All entry permits will be retained on file for at least one year. The Confined Space Program will be reviewed each year to revise the program as necessary to ensure employees are protected from confined space hazards. A single review covering all entries in the preceding year may be conducted.

## **DUTIES OF THE ENTRANT, AND ATTENDANT**

### **Entrant**

- a. Know the hazards that may be faced, including the mode, signs or symptoms, and consequences of the exposure;
- b. Properly use equipment as required;
- c. Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to alert the entrant of the need to evacuate the space.
- d. Alert the attendant whenever the entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or detects a prohibited condition.
- e. Exit from the confined space as quickly as possible whenever:
  - (1) An order to evacuate is given by the attendant, or monitoring equipment alarm is activated.
  - (2) The entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or detects a prohibited condition.

### **Attendant**

- a. Know the hazards that may be faced during the entry, including the mode, signs or symptoms, and consequences of the exposure.
- b. Is aware of possible behavioral affects of hazard exposure.

- c. Remain outside the permit space during entry operations until relieved by another qualified attendant
- d. Communicate with entrant as necessary to monitor entrant status and to alert entrant of the need to evacuate.
- e. Monitor activities inside and outside space to determine if safe for entrant to remain in space and orders evacuation when necessary.
- f. Summon rescue and emergency services when assistance for emergency exit from confined space is necessary.
- g. Secure work area and keep unauthorized persons from approaching confined space; FM Work Area Protection Procedure WP-41 must be utilized.
- h. Perform non-entry rescues as specified by Confined Space Entry procedure.
- i. Perform no duties that might interfere with their primary duty to monitor and protect the authorized entrant.

## **TRAINING**

Only trained and qualified employees may be authorized as entrants or attendants. The training will establish proficiency in the duties required by this program so that the employee acquires the understanding, knowledge, and skill necessary for the safe performance of their duties.

Training must be completed before an employee is assigned duties under this program, before there is a change in assigned duties and, whenever a supervisor has reason to believe either that there are deviations from confined space entry procedures or inadequacies in the employee's knowledge or use of this program.

The Facilities Safety Coordinator will certify that this training has been accomplished. The certification will contain the employee's name, signatures or initials of the trainers, and the dates of training. The certification will be kept on file electronically and in hard copy.

## **WRITTEN PERMIT**

The following information must be included in the written permit. The permit must be the standardized Western format for each entry.

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.
5. The personnel, by name, currently serving as attendants.
6. The hazards of the permit space to be entered.
7. The measure used to isolate the permit space and to eliminate or control hazards before entry.
8. The acceptable entry conditions.
9. The results of initial and periodic tests, with the names or initials of the testers and when the tests were done.
10. The rescue and emergency services that can be summoned and the means for summoning them.
11. The communications procedures used by authorized entrants and attendants to maintain contact during the entry.
12. Any other information whose inclusion is necessary in order to ensure employee safety.

Any additional permits, such as for hot work, that have been issued for work in the permit space must be attached to entry permit.

**ENTRY PERMIT**

Date & Time Issued \_\_\_ - \_\_\_ - \_\_\_ / \_\_\_\_\_ Date & Time Expires \_\_\_ - \_\_\_ - \_\_\_ / \_\_\_\_\_

Permit Space ID: \_\_\_\_\_ Purpose Of Entry \_\_\_\_\_

Entrants' Names/Team ID: \_\_\_\_\_

Attendant(s): \_\_\_\_\_ Entry Supervisor \_\_\_\_\_

**All Entrants, Attendant(s), & Entry Supervisor Verified Trained For Duties.** \_\_\_\_\_

Hazard(s) of Space: Atmospheric \_\_\_\_\_ Engulfment \_\_\_\_\_ Electrical \_\_\_\_\_  
Mechanical \_\_\_\_\_ Other \_\_\_\_\_

Method to Eliminate/Ventilation	DATE	TIME	N/A
Control Hazard(s)	_____	_____	_____
Completed: Lockout/Tagout	_____	_____	_____
Line(s) Broken-Capped-Blanked	_____	_____	_____
Purge-Flush-Vent	_____	_____	_____
Other _____	_____	_____	_____

Equipment Available:	N/A	YES	NO	N/A	YES	NO
Calibrated Gas Monitor	( )	( )	( )	Protective Clothing	( )	( )
Safety Harnesses & Lifeline	( )	( )	( )	Ventilation	( )	( )
Emergency Retrieval Line	( )	( )	( )	Communication	( )	( )
Hoisting Equipment	( )	( )	( )	Explosion-Proof	( )	( )
Breathing Apparatus	( )	( )	( )	Lights & Tools	( )	( )

Communication Procedures - Entrant <> Attendant: \_\_\_\_\_

Rescue: Non-Entry Retrieval Means of Summoning: \_\_\_\_\_

TESTING & MONITORING:	Periodic	Continuous	N/A		
	Pre-entry	Others			
Percent of Oxygen: 19.5% - 23.5%	_____	_____	_____	_____	_____
Flammability: <10% LFL (_____)	_____	_____	_____	_____	_____
Concentrations: < PEL (_____)	_____	_____	_____	_____	_____
Tester's Initials	_____	_____	_____	_____	_____

Additional Work Permits (Hot-work, etc) Attached: Yes \_\_\_\_\_ No \_\_\_\_\_ N/A \_\_\_\_\_

**Entry cannot be approved if any entries are marked in the "No" column. This permit is not valid unless all items are completed.**

All entry conditions have been met. Entry is authorized. \_\_\_\_\_  
(Entry Supervisor)

**-OR-**

Alternate Entry Procedures: I certify that all pre-entry measures required by this program have been completed and that the space identified above is safe for entry following Alternate Entry Procedures.

\_\_\_\_\_  
(Entry Supervisor)

**-OR-**

Reclassification To Non-Permit Space. I certify that all hazards have been eliminated from the space identified above and that the space is reclassified as a non-permit space.

\_\_\_\_\_  
(Entry Supervisor)