

Health and Safety Standard

CONFINED SPACE

1 PURPOSE

This standard supports the Hazard/Aspect and Risk Assessment Policy and establishes the requirements for identifying and classifying confined spaces, as well as managing risks associated with entry into confined spaces.

2 SCOPE

This standard governs entry of SaskPower workers and contractors into workspaces identified as Confined Spaces under the definition of Occupational Health and Safety, and as further defined within this document and related additional references.

This standard outlines the minimum requirements that shall be met or exceeded by SaskPower workers and contractors. Failure to comply may result in injuries, damage to equipment and property, environmental harm, performance management or any combination thereof.

The use of the word “shall” within this standard denotes a mandatory action, whereas the use of the word “should” or “may” denotes a recommended action.

3 DEFINITIONS

The following definitions apply to this standard:

Attendant - a worker that remains outside the hazardous confined space and is responsible for monitoring entrants and the space.

Check-in person – a person assigned to maintain communications with entrants working in a non-hazardous confined space.

Confined Space - is an enclosed or partially enclosed space that is not primarily designed or intended for human occupancy, except for the purpose of performing work and has restricted means of entrance/exit.

Entrant – a worker that is authorized to enter a confined space to perform work.

Entry Supervisor – a worker that is leading the confined space entry.

Hazardous Confined Space - a confined space that is or may become hazardous to a worker entering the confined space due to design, construction or atmosphere of the confined space; materials or substances in the confined space; work activities or processes used in the confined space; and/or other conditions relating to the confined space.

Immediately Dangerous to Life and Health (IDLH) Atmosphere – a hazardous atmosphere that poses an immediate threat to life, can cause irreversible adverse health effects, or can impair a person’s ability to escape.

Non-hazardous Confined Space - a confined space that has been assessed and, with controls implemented, is determined to contain no significant hazards to workers.

Rescue Personnel – personnel that enter the confined space to rescue entrants in the event they are unable to self-rescue and assist in the rescue and/or provide first aid/CPR.

4 REQUIREMENTS

4.1 MANAGEMENT OF CONFINED SPACES

4.1.1 TYPES OF CONFINED SPACES

Confined spaces which SaskPower employees and contractors may encounter are listed in the List of Types of Confined Spaces at SaskPower document. This list shall be reviewed at least every 3 years in consultation with appropriate SaskPower Occupational Health Committee(s).

4.1.2 DETERMINATION OF A CONFINED SPACE

All spaces where work is performed shall be evaluated as to whether it is a confined space.

To assist in determining whether a given work space is a confined space, a flowchart has been developed for use > Determination of a Confined Space Flowchart.

4.1.3 WORK SPACE DESIGN OR MODIFICATIONS

When designing workspaces and equipment, either initially or during modifications, the following should be assessed in order:

- Elimination of all possible confined spaces in the design;

- Eliminate the need to enter the confined space through designs that allow maintenance, inspection and cleaning to be performed from the exterior or by self-cleaning systems; or
- Confined spaces requiring entry should be designed to reduce or minimize the risk factors by using engineering controls (e.g. increase the opening size, adding anchorage points, double block and bleed.)

All reasonably practicable steps shall be taken to prevent unauthorized entry into confined spaces such as barriers or signage, either temporary or permanent.

4.1.4 IDENTIFICATION OF HAZARDS

Confined spaces must be assessed by a competent person for hazards both in and around the space, including hazards that might exist in the absence of control measures.

The Confined Space Hazard Identification Worksheet shall be used to assess newly identified confined spaces and should be used when existing spaces are under review.

4.1.5 CLASSIFICATION OF CONFINED SPACE

There are two classifications of confined spaces:

- Non-hazardous confined space;
- Hazardous confined space.

Where the hazard assessment of the confined space does not indicate it to be considered a hazardous confined space, it shall be considered a non-hazardous confined space.

4.1.6 DEVELOPMENT OF ENTRY PLANS FOR CONFINED SPACE

Entry plans are required for hazardous confined spaces.

Entry plans must be developed prior to entry, by a competent person, and in consultation with an appropriate Occupational Health Committee.

The entry plan must be written and include, at a minimum, the following components:

- Hazard identification and control measures;
- Communication methods;
- Atmosphere testing;
- Entry Procedures; and

- Emergency Response.

Emergency response shall include a plan to enable removal of entrants without causing further harm to the entrants or the rescuers. The developed emergency response shall extend beyond calling for support and include rescue plans applicable to the specific nature of the confined space and the work being conducted which may include one or a combination of the following rescue types: self-rescue, non-entry rescue or entry rescue.

To assist in the development of entry plans, two entry plan templates have been created: Entry Plan Template – Long Duration (for confined space work lasting multiple days) and Entry Plan Template – Short Duration.

Entry plans shall be reviewed when configuration of the space or processes within the space change. At a minimum entry plans should be reviewed at least every 3 years.

Applicable entry plans shall be available to all employees working with confined spaces.

4.1.7 TRAINING

Appropriate confined space training shall be provided for workers involved in confined space management or entry. The components of the confined space training will vary depending on the roles and tasks of workers.

4.2 ENTRY OF CONFINED SPACES

There are various roles and activities required to be fulfilled on the day work is to take place within a confined space as outlined in this section.

4.2.1 ROLES & RESPONSIBILITIES

Depending on the classification of the confined space the following roles may be involved: entry supervisor, entrant, attendant, check-in person, and rescue personnel.

No worker shall be assigned or undertake a role for which they are not competent.

Multiple roles may be performed by the same worker, with the exception that the attendant or check-in person cannot be an entrant.

The **entry supervisor** shall ensure requirements of the confined space entry procedures are followed, ensuring all entrants and attendants are trained and competent. Their responsibilities include authorizing entry and overseeing the entry operations.

The responsibilities of all **entrants** are to be aware of identified and changing hazards in the space, follow appropriate entry procedures and controls, communicate with the attendant or check-in person and evacuate the space if instructed to do so, or if unacceptable conditions develop.

The **attendant** must remain within the vicinity of the hazardous confined space entrance while entrants are in the space. The attendant is responsible to maintain two-way communications with the entrants, monitor for changing hazards outside and inside the space, keep unauthorized personnel out of the space and initiate the pre-determined rescue plan as necessary. The attendant shall be equipped with a means to summon assistance and record entrants. An attendant may monitor more than one entrance provided they can adequately perform their duties and are positioned to keep all entrances they are managing visible.

An attendant may also monitor the confined space atmosphere, monitor the ventilation equipment or assist the entrants from outside of the space with such items as breathing air supply systems, attending to lifelines, and passing of tools given these additional tasks can be performed within the vicinity of the hazardous confined space and do not interfere with their primary responsibilities.

A **check-in person** is not required to be located at the entrance to the non-hazardous confined space. The check-in person is responsible to communicate with the entrant at the pre-arranged intervals and initiate rescue if the entrant calls for assistance or fails to respond to the communication.

The **attendant** and the **check-in person** are not to enter the confined space, even to assist in rescue, unless this role is assigned to another worker.

Rescue personnel shall be accessible as per the rescue plan and are responsible for conducting rescue and first aid if necessary.

4.2.2 GENERAL REQUIREMENTS

A worker is considered to have “entered” a confined space when his or her breathing zone crosses the plane of the confined space access.

Atmospheric testing shall be conducted for hazardous confined spaces and should be performed for non-hazardous confined spaces.

A competent person may determine that testing of the atmosphere is not required for trenches, excavations, attics, and above-grade crawl spaces given:

- The space is determined to be non-hazardous;
- The space is adequately ventilated to atmosphere; and

- There are no known or potential atmospheric hazards within the vicinity, considering contaminants can accumulate over time from the soil or nearby facilities.

Atmospheric testing is required for all other non-hazardous confined spaces.

When atmospheric testing is conducted, it shall be performed and recorded by a competent person using a properly calibrated test device to determine air quality. The measurements shall be taken from outside of the confined space before authorizing entry. The air should be tested throughout the confined space (side to side and top to bottom – at various locations).

Prior to entry controls shall be implemented to mitigate hazards.

Before initial entry, the entry supervisor shall lead a hazard aspect and risk assessment (HARA) discussion with the workers, assign roles, initiate the implementation of controls, including atmospheric testing (where required), ensure documentation is complete and verify that entry conditions are acceptable.

Before authorizing entry, the entry supervisor shall review the rescue plan with those assigned to perform the rescue, confirm that the rescue equipment is available, inspected and ready for use and verify that the means for summoning the rescuers is operable.

Re-entry of an unoccupied confined space after initial entry shall only be authorized after:

- Verifying that all controls previously implemented are still in effect;
- Conducting atmospheric testing (where required); and
- Assessing that identified hazards have not changed and no new hazards have developed.

A safe entrance to and exit from, as well as the structural integrity of the confined space, must be established before permitting work in the confined space.

Consideration should be given to placing appropriate signage at the entry to the confined space, identifying it as such, and stating restricted access. Warnings and barricades shall be employed where there is potential for a person to fall into an opening of a confined space. Such warnings and barricades shall not interfere with ventilation or egress from the confined space.

4.2.3 NON-HAZARDOUS CONFINED SPACE ENTRY

Where the hazard assessment of the confined space determines it to be a non-hazardous confined space, entry shall adhere to 4.2.2 General Requirements and this section.

Air quality shall be maintained while entrants occupy the space through ventilation, either natural or mechanical.

Prior to initial entry into a non-hazardous confined space the following shall be determined:

- Check-in person;
- Method of communications to be used between the entrant and the check-in person;
- Check-in intervals; and
- Rescue plan.

For non-hazardous confined spaces record all hazard identification and controls information on the HARA. The atmospheric testing results (where applicable), names of entrants and check-in person as well as the communication means, and the rescue plan shall be documented; the HARA may be used to record this information. If recorded separately it shall be attached to the HARA.

4.2.4 HAZARDOUS CONFINED SPACE ENTRY

When the hazard assessment of the confined space determines it to be a hazardous confined space, entry shall adhere to section 4.2.2 General Requirements and this section.

The HARA shall list confined space as a hazard and reference the appropriate entry plan as the control. The Hazardous Confined Space Entry Plan shall be used to record all the hazard identification and controls information related to the entry.

Prior to initial entry into a hazardous confined space the following shall be completed:

- Review the written Hazardous Confined Space Entry Plan and record on it any changes identified at the time of entry; changes may be related to hazards, controls, rescue plan, etc.;
- Assign attendant and record on entry plan;
- Decide and record method of two-way communications to be used between the attendant and entrants; and

- Determine and record frequency of atmospheric testing to be implemented while the space is occupied.

The entry procedure identified in the applicable Hazardous Confined Space Entry Plan shall be followed by all entrants. If new hazards are identified or conditions change while the entrants are inside the space; stop work, exit the confined space, reassess the hazards and controls, communicate and document any changes.

While entrants occupy the hazardous confined space the air quality shall be maintained within safe atmospheric conditions through ventilation, natural or mechanical, and purging, if necessary. When purging and ventilating cannot achieve or maintain safe atmospheric conditions the additional requirements in section 4.2.4.1 Hazardous Confined Space containing IDLH Atmosphere shall be followed if work is to be carried out in the space.

The Hazardous Confined Space Entry Plan will become the record of entry therefore all entry and atmospheric logs shall be attached to the entry plan after the work is complete. Entry plan records shall be retained as per the process determined by the specific business area.

4.2.4.1 HAZARDOUS CONFINED SPACE CONTAINING IDLH ATMOSPHERE

When air quality testing determines that safe atmospheric conditions are not achievable reassess whether entry of the hazardous confined space is required to carry out the work. Approval by an appropriate manager must be granted prior to work proceeding in a hazardous confined space with an IDLH atmosphere.

If entry is necessary:

- The atmosphere in the hazardous confined space shall be continuously monitored by a competent person;
- All entrants shall wear appropriate respiratory protective devices;
- Rescue personnel shall be stationed outside the space and ready to initiate the rescue plan; and
- Equipment necessary to rescue workers is located either at the entrance or inside the space and is fully inspected and ready for use.

Additionally, when the hazardous confined space containing IDLH atmosphere uses top entry access all entrants shall use a full body harness and when possible be attached to a lifeline.

5 IMPLEMENTATION

The requirements of this version of the standard are to be met by August 8, 2022, at which time the previous version will be superseded.

6 RESOURCES

6.1 INTERNAL RESOURCES

Related Policies:	Hazard/Aspect and Risk Assessment Policy
References:	SaskPower Types of Confined Spaces Determination of a Confined Space Flowchart Confined Space Hazard Identification Worksheet Entry Plan and Record – Long Duration Template Entry Plan and Record – Short Duration Template
Related Standards:	Hazard/Aspect and Risk Assessment Standard
Additional Information:	Safety and Environment Rulebook

6.2 EXTERNAL RESOURCES

Related Legislation:	<i>The Occupational Health and Safety Regulations, 2020, Part 18 Confined Space Entry</i>
Related Standards:	CSA Z1006-16 “Management of work in confined spaces”

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