ConocoPhillips Canada	**CONFINED SPACE ENTRY** ALL-A0A-00-000-HST-0006	**Retention Code:** *CG01 - CA* **Revised:** *May 2020*
Owner: *HSE Operations*	**Approved By:** *Manager, Health & Safety Operations*	**Review Frequency:** *Five years or less*

Document History

Date	Approved by	Change Summary
May 2020	David Reaich	Usability Mapped – Issued for Use

About this Standard

Purpose	The purpose of this standard is to provide Code of Practice (COP) requirements for confined space entry work at ConocoPhillips Canada (CPC) operations.

1. Identify the Space

1.1.Confined or Restricted Space

Confined Space

A confined space is defined as:

- Having poor ventilation
- Having the potential to contain an unsafe atmosphere
- Not intended for continuous human occupancy
- Has restricted, limited, or impeded means of entry/exit.

CAUTION: A confined space may become unsafe as a result of the work done inside them i.e. disturbing sludge, painting, welding, hot work, use or proximity of internal combustion engines.

Restricted Space (AB) / Low Hazard Atmosphere Confined Space (BC)

A restricted space (AB) or) or Low Hazard Atmosphere Confined Space (BC) is defined as:

- An enclosed or partially enclosed space
- Not intended for continuous human occupancy
- Has restricted, limited, or impeded means of entry/exit.

NOTE: Think of a Restricted Space where the only hazard is difficulty getting into or out of the space.

NOTE: In this document, “Restricted Space” in Alberta is equivalent to “Low Hazard Atmosphere Confined Space” in British Columbia.

CAUTION: A Restricted Space could become a confined space if work conditions change.

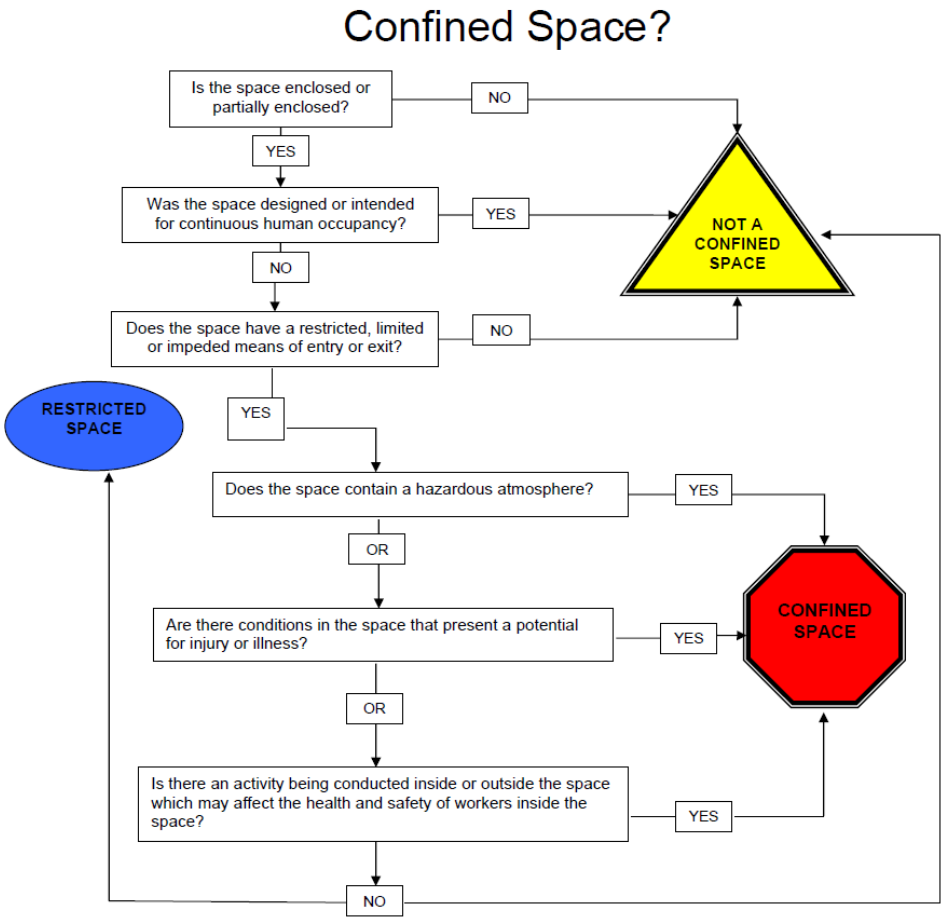
Confined Space and Restricted Space / Low Hazard Atmosphere Confined Space (BC) Examples

Examples of Confined and Restricted Spaces are as follows:

Confined Spaces	Restricted Spaces (AB) / Low Hazard Atmosphere Confined Space (BC)
• Tanks • Pits or trenches where flammable and toxic gases can build up • Wells, hoppers, bins • Pipes, tunnels, sewers	• Electrical or communication utility vault • Building crawl space • Trench • Deep excavation requiring a ladder to access

Classification Flow Chart

The following flow chart can assist with determining if a space will be a confined space:



Defenses Required	Defenses are required as necessary to address the following: • hazardous energy • harmful substances • hazardous location • human factors • hazardous atmospheres.
Records of confined spaces	• A list of all confined spaces must be maintained for all assets. • Workers will only enter confined spaces that have had a documented hazard assessment completed.

2. Restricted Space (AB) / Low Hazard Atmosphere Confined Space (BC) Entry

Restricted Space Requirements

The following are required for Restricted Space Entry (AB) or Low Hazard Atmosphere Confined Space Entry (BC):

Requirement	Details
Work Permit & Documentation	• Work permit / Pre-job hazard assessment
Atmospheric Monitoring	• Not required
Emergency Plans	• Confined/Restricted Space Rescue Planning Form
Communications	• Suitable communication plan in place • Safety watch is not required • Workers must be checked on every 20 minutes

CAUTION: A restricted space can become a confined space if atmospheric conditions or work practices change

NOTE: In BC, if the Low Hazard Atmosphere Confined Space requires lockout / tagout procedures to be followed for entry, the space must be managed as a confined space.

3. Confined Space Entry

3.1.Permit and Documentation

Permit and Documentation

The following permit and documentation/tasks list are required for Confined Space Entry:

Activity	Check
Work Permit or Pre-Job hazard assessment	☐
Confined Space Entry Checklist	☐
Confined / Restricted Space Rescue Planning Form	☐
Pre-Entry Atmospheric Testing	☐
Safety Watch in place	☐
Communication Plan and Rescue Personnel in place	☐
Continuous Atmospheric Monitoring	☐
Workers Continuously Monitored	☐

NOTE: All permits and associated checklists must be retained for 2 years as per the COP document retention schedule (HE11).

3.2.Pre-Work

Pre-job / Toolbox meeting

A pre-job / toolbox meeting must be held with all personnel entering or working in or adjacent to the space to review:

- Work planned
- Job requirements and assignments including Confined Space Monitor
- Training required for the assigned roles
- Actual and potential hazards and defenses implemented
- Emergency procedures and rescue plan.

Communications Plan

Develop a communications plan to continually monitor workers in a confined space. When voice contact is not possible, establish an alternative system.

Posting of permit at entrance

The entry permit, hazard assessment, CSE checklist, and rescue planning form must be posted at the confined space entrance.

> **NOTE:** In BC, the entry permit must be posted at each designated entry point or at one designated entry point if the other points include up-to-date information on whether it is safe to enter.

> **NOTE:** Each access point to a Confined Space which is not secured must be identified by signage displaying the hazard and entry by authorized workers only

3.3.Atmospheric Testing

Pre-entry atmospheric testing

Pre-entry atmospheric testing of the entire space should occur no more than 20 minutes before continuous atmospheric monitoring of the space occurs. Conduct testing as follows:

- A qualified gas tester is assigned to do the atmospheric monitoring and clearance for entry
- An aspirated 4-head (H_2S, LEL, CO, O2) gas monitor is used. Ensure the following:
  - O2 (19.5-23%)
  - LEL (<10%)
  - H2S (<10ppm)
  - CO (<25ppm)

> **NOTE:** In British Columbia, the atmosphere within a confined space must be checked not more than 20 minutes before a worker enters the space.

Atmospheric Testing during Entry

Continuous atmospheric testing is required during confined space entry as follows:

- Testing is completed by a competent worker
- Results are recorded on the permit / hazard assessment / Confined Space Entry Checklist
- An aspirated 4-head (H_2S, LEL, CO, O2) gas monitor is used.

NOTE: Personnel in a Confined Space are also required to wear a 4-head personal gas monitor whenever practicable.

Requirements for Re-Testing

Re-testing of the space must occur:

- If there is a break in continuous monitoring
- When site conditions change
- When adjacent work activities may impact the confined space
- Per the re-testing frequency identified on the permit
- If a worker entering the confined space requests an additional test
- If continuous monitoring indicates weak signals
- After rest breaks if new hazards are introduced.

NOTE: In BC, a space must be re-checked when workers have vacated the space for more than 20 minutes.

Entry in a hazardous atmosphere

If a confined space cannot be freed of a hazardous atmosphere:

- A harness with an attached lifeline must be worn by workers unless a lifeline is impracticable or unsafe
- SCBA or SABA is required based on the atmospheric limits outlined in PART C of the Confined Space Entry Checklist.

NOTE: Use a full body harness if a lifeline is not practicable.

3.4. Emergency Processes

Rescue Planning Form

A Confined Space / Restricted Space Rescue Planning form or approved contractor equivalent form must be completed and identify:

- Emergency procedures
- Rescue equipment
- Emergency response personnel
- Evacuation process.

Emergency Personnel and equipment

Suitably equipped and trained emergency personnel must:

- Understand their role
- Be readily available
- Be notified of start and end of work
- Not enter a confined space unless there is one other worker outside the space providing assistance.

3.5.Other Hazards and Defenses

Other Confined Space Hazards

Other Hazards related to Confined Space Entry include:

Hazards	Recommendation
Hot Work	• Follow the Hot Work Procedure
Nuclear Gauges	• Perform according to written procedures acceptable to Canadian Nuclear Safety Commission (CNSC) or a person authorized by the CNSC. • Identify and properly retract into respective shields & Lockout. • Dose rate in vessel is measured and recorded on permit • If dose rate is greater than 2.5µSv/hr, Do Not Enter. Contact the Radiation Safety Officer (RSO). • Worker's time in the Confined Space must be recorded on the permit and submitted to RSO.
Use of Electrical Equipment	• Equipment must be protected by ground-fault circuit interrupters (GFCI) • If GFCI not installed, allowance may be made for approved portable in-line GFCI devices • Use explosion proof equipment when required. • Locate plugs and receptacles in non-hazardous location of follow Hot Work processes.
Temporary Heating	• Place heaters outside of the confined space and run hot air through ducts. • Vent heaters per manufacturer's instructions • Do not use direct-fired heaters that discharge gases with the heated air • Follow Hot Work processes as required.
Inerting	• Every worker must use SABA or SCBA • Inerting is only used when it is not practicable to eliminate an explosive or flammable atmosphere through other means. • In BC, the Worker's Compensation Board must be notified in writing with a copy of the proposed work procedures submitted at least 7 days before a worker enters an inerted confined space. No entry is allowed until the Board's response has been received as per BC OHS regulation 9.29.

3.6.Energy Isolation

Positive isolations

When positive isolation is required, refer to the following:

- Process Isolation Standard
- Site specific LOTO procedures

All isolation points related to the confined space entry must be recorded.

NOTE: In BC, a double block and bleed isolation is not permitted if the adjacent piping contains a harmful substance that is a gas, vapor or liquid of sufficient volatility to produce a hazardous concentration of an air contaminant in the discharge of the piping.

4. Roles and Responsibilities

Specific roles

Specific roles for Confined Space Entry are as follows:

Role	Responsibility
Supervisor	• Confirms the hazard assessment is complete • Understands the testing, preparation and precautions of the proposed work • Ensures workers have appropriate training • verifies completion of Confined Space Entry Checklist and Confined / Restricted Space Rescue Planning form
Persons entering restricted or confined spaces	• Comply with permit conditions • Review Confined Space Entry Checklist and / or Confined / Restricted Space Rescue Planning Form as appropriate • Verify required isolations are in place and apply personal lock as required
Safety Watch	• Do not enter confined space for any reason • understands the emergency response process • Verifies all forms have been completed and reviewed • has an effective communication process. • Notifies rescue team when a confined space entry has been initiated and completed • Attends the area until all workers leave the confined space and has no other assigned duties • Tracks the names and number of workers entering and exiting the confined space
HSE Operations	• Administers the confined space entry program which includes. • Ensures a training and competency program is in place for confined space entries • Within BC, ensures that a hazard assessment has been developed by a qualified person assigned by the Area Supervisor for: ○ Each confined space or group of confined spaces which share similar characteristics • Work activity, or group of work activities which present similar hazards to be performed inside a confined space

References

Reference the following documents as required.

Document Name
Alberta OH&S Code, Part 5 Confined Spaces
British Columbia OH&S Code, Part 9 Confined Spaces and Part 23 Oil and Gas
Confined Space Entry Checklist
Confined/Restricted Space Rescue Planning Form
Hot Work Procedure
Energy Isolation Procedures
Respiratory Protection Code of Practice
Radiation Safety Policy and Procedures Manual