



# Confined Space Entry Standard

**MSW Process – Contractor Communication**

**Thailand Profit Center  
March, 2009**



# Purpose, Objectives and Scope

## ■ Purpose

The purpose of this standard is to ensure that confined space entries are performed in a safe and controlled manner.

## ■ Objective

This standard establishes requirements for performing confined space entries.

**NOTE:** Each Global Upstream strategic business unit (SBU) or location may have additional regulatory and or site specific requirements.

## ■ Scope

This Confined Space Entry Safe Work Practice standard covers work performed by Chevron employees and their delegates and contractors within Chevron Global Upstream Exploration and Production (GU) operational control.

# Requirements

1. Use the definition of confined space to identify confined spaces at any location.
2. Consider all viable alternatives to performing an entry, such as the use of mechanical tools to perform tank cleaning from outside the confined space before performing confined space entry.
3. Hazards associated with confined spaces shall be identified and mitigated prior to beginning work.
4. Gas testing for entry into a confined space must be performed by a qualified gas tester.
5. A rescue plan must be in place before any confined space entry.

**Critical:** Never attempt to enter a confined space, even in an emergency, until help has arrived. Don't try to lift a person out of a hole without help.



# Requirements

6. Rescue personnel must be trained and competent and have the ability to perform their responsibilities. Rescue personnel must also have the correct rescue equipment at the work location.
7. An Entry Watch must be onsite at all times when personnel are in the confined space. The Entry Watch must maintain an entry log which includes the name of the entrants and the time(s) they entered and exited the confined space. The Entry Watch may not leave his or her position unless a qualified replacement Entry Watch is in place.
8. The confined space must be secured and any flammable gas sources must be removed whenever the confined space is left unattended for any period of time.

# Terms and 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; for example, tanks, vessels, silos, storage bins, hoppers, vaults and pits are spaces that may have limited means of entry, and
  - Is not designed for continuous employee occupancy



## Examples of a Confined Space

- Any type of vessel
- Any type of steam generator, boiler, heat exchanger or furnace
- Stationary and portable tanks
- Sumps or pits
- External floating roofs that are not at their maximum height
- Access to the top of an internal floating roof
- Excavations
- Pipeline (large enough to allow a person to place his or her head inside)
- Barge compartments



## Terms and Definitions

**Entry Watch** – The person stationed at the entry point of a permitted confined space whose only duties are to control the entry and exit of personnel, to monitor the acceptable entry conditions both in and outside the confined space, to maintain communication with the entrants and to raise an alarm if any problem should occur.

**Qualified Gas Tester** – A person who is trained and has been tested in the use of portable gas-testing equipment and has successfully demonstrated use of the equipment in the field. This person must also be trained to recognize hazards inherent in hot work and confined space entry.

**Rescue Personnel** – Personnel who meet certain competency requirements and who are on call to rescue confined space entrants.

# Terms and Definitions

**Hazardous Atmosphere** – An atmosphere that exposes personnel to the risk of death, incapacitation, impaired ability to self-rescue, injury, or acute or chronic illness that may be caused by any of the following:

- An atmospheric concentration of any substance in excess of the permissible exposure limit (PEL) that could result in employee exposure; for example, to benzene or hydrogen sulfide
- Flammable gas, vapor or mist in excess **of 10 %** of its lower explosive limit (LEL)
- An atmospheric oxygen concentration less than **19.5 %** or **above 23 %**
- Any other atmospheric condition that is immediately dangerous to life or health (**IDLH**)



## Roles and Responsibilities

Roles must be clearly defined, and personnel must meet the training and competency requirements of this standard prior to starting work.

A single individual may fulfill more than one role as long as he or she meets the competency requirements and is able to fully meet multiple responsibilities.

The following roles and responsibilities are specific to confined space entry and are further defined in the [GU – Training Requirements Tool](#):

- Authorized Entrant
- Entry Supervisor
- Entry Watch
- Qualified Gas Tester
- Rescue Personnel



# Assessing and Managing Hazards

Confined space entry requires hazard analysis that must include at least the following. Other potential hazards may need to be considered depending on the type of work to be done:

- The nature of the work that will be done in the confined space
- The potential hazards including:
  - The identity and nature of the substance last contained in the confined space
  - Chemical: gases & vapors (benzene, carbon monoxide, steam, etc.), liquids (hydrocarbons, sulfuric acids, etc.), solids (dust, welding fumes, etc.)
  - Physical: electrocution risk, heat stress, oxygen deficiency, noise, naturally-occurring radioactive materials (NORM).
  - Other: engulfment, entrapment, fall potential, etc.
  - Pyrophoric Scale – Iron sulfide

# Assessing and Managing Hazards

- The types of personal protective equipment required
- The types of engineering controls (such as ventilation) required
- An arrangement for rescue, first aid and resuscitation
- The number of persons occupying the space
- The number of persons required outside the space to maintain equipment, to ensure adequate communication with observation of persons within the confined space, and to properly initiate a rescue
- The structural integrity of the structure
- The need for illumination
- The state of health, fitness and training of the authorized entrants
- Any areas that could trap and later release product or vapor
- Any hazardous energy requiring isolation

# Emergency Rescue

**A rescue plan shall be in place for each entry based on;**

- Rescue Need
- Response Time
- Availability of the Rescue Team
- Willingness to rescue on company
- Availability of adequate communications
- Rescue Equipment
- Space entry and Elevated rescue
- Necessary skills
- Necessary Equipment



## Emergency Rescue

A rescue plan and the rescue personnel and equipment for each confined space entry must be in place to rescue personnel who may be in difficulty.

**Rescue need** – Determine how quickly a rescue team must be able to respond.



## Emergency Rescue

**Response time** – This is the time it takes for the rescue team or service to receive notification, arrive at the scene, set up equipment, and be ready for entry.

## Emergency Rescue

**Rescue equipment** – For rescues into spaces that may pose significant atmospheric hazards and from which rescue entry, patient packaging and retrieval cannot be safely accomplished in a relatively short time (15 to 20 minutes), consider using air supplying respirators (with escape cylinders) for the rescuers and supplying rescue air to the patient.

# What Leaders Can Do to Support Confined Space Entry SWP?



- Ensure personnel are trained and competent in the role they play, e.g., entrant, rescuer
- Implement new Confined Space Entry Specialized Permit
- Complete Entry Log
- Ensure rescue plan, equipment and competent personnel are available
- Conduct site audit