

# Confined Space Safety Training for FPSO Personnel

## Introduction

Confined spaces on FPSOs include tanks, pump rooms, void spaces, and enclosed compartments. These areas pose significant hazards such as oxygen deficiency, toxic gases, flammable atmospheres, and restricted access. Proper training and adherence to procedures are essential to prevent fatalities and injuries.

## What is a Confined Space?

A confined space is any area that: large enough for a person to enter and perform work, has limited or restricted means of entry or exit, and is not designed for continuous occupancy. Examples include cargo tanks, ballast tanks, pump rooms, cofferdams, engine rooms during shutdown.

## Hazards in Confined Spaces

Atmospheric hazards: oxygen deficiency (<19.5%), oxygen enrichment (>23.5%), toxic gases (H<sub>2</sub>S, CO, VOCs), flammable vapors. Physical hazards: heat stress, noise, slips, trips, and falls. Operational hazards: moving machinery, residual hydrocarbons, electrical hazards.

## Roles and Responsibilities

Entry Supervisor: ensures permit is issued and conditions are safe. Authorized Entrant: follows procedures, wears PPE, and communicates. Attendant: monitors entrants, maintains communication, initiates rescue if needed. Rescue Team: trained and equipped for confined space rescue.

## Confined Space Entry Procedures

Step 1: Pre-Entry Preparation (identify hazards, risk assessment, isolate energy sources, ventilate). Step 2: Atmospheric Testing (oxygen, flammable gases, toxic gases). Step 3: Permit-to-Work (verify isolation, gas testing, rescue plan). Step 4: PPE and Equipment (helmet, gloves, coveralls, SCBA if needed). Step 5: Entry and Monitoring (sign in, maintain communication, continuous monitoring). Step 6: Exit and Close-Out (sign out, cancel permit, restore equipment).

## Emergency Response

Rescue plan must be in place before entry. Never attempt unplanned rescue without PPE. Use trained rescue team with SCBA and retrieval systems. Notify control room immediately.

## Best Practices

Never bypass gas testing. Always ventilate before and during entry. Keep rescue equipment ready. Conduct toolbox talks before entry. Stop work if conditions change.

## References

OSHA 29 CFR 1910.146 – Permit-Required Confined Spaces, IMO Guidelines for FPSO Safety, Internal HSE Procedures.

Checklist Item	Status
Gas Testing Completed	Yes
Permit Issued	Yes
Rescue Plan Ready	Yes