
Confined Space Rescue Drill - Standard Operating Procedure

1.0 Objective & Intent

The objective of this Standard Operating Procedure (SOP) is to establish a clear, repeatable, and safe methodology for conducting a confined space rescue drill within the cabinet and millwork manufacturing facility. This procedure is designed to ensure that all personnel involved in confined space entry and rescue operations are adequately trained, equipped, and prepared to respond effectively to an emergency. Compliance with WorkSafeBC's Occupational Health and Safety Regulation (OHSR) Part 9 – Confined Spaces is mandatory. The primary risk mitigated by this SOP is the potential for serious injury or fatality due to atmospheric hazards, entrapment, or inadequate rescue response during a confined space incident.

2.0 Operational Scope

This procedure applies to all confined spaces identified within the facility, including but not limited to: storage tanks, silos, pits, ducts, and any other enclosed or partially enclosed spaces that are not designed for continuous human occupancy and have limited means of entry and exit. This SOP is mandatory for all personnel designated as entrants, attendants, entry supervisors, and rescue team members. It covers the planning, execution, and debriefing phases of a rescue drill. This procedure does not apply to routine confined space entry for inspection or maintenance tasks, which are covered under a separate SOP.

3.0 Hazard Identification & Mandatory PPE

- Atmospheric Hazards: Oxygen deficiency/enrichment, flammable gases/vapors, toxic contaminants (e.g., carbon monoxide, hydrogen sulfide).
- Physical Hazards: Engulfment, entrapment, falls from height, electrical shock, moving machinery, extreme temperatures.
- Biological Hazards: Mold, bacteria, or other organic contaminants.
- Mandatory PPE: CSA-approved hard hat, safety glasses with side shields, hearing protection (if noise levels exceed 85 dBA), flame-resistant coveralls, steel-toed boots with slip-resistant soles, and appropriate gloves (leather for general handling, chemical-resistant if contaminants present).
- Additional PPE for Rescue: Full-body harness with D-ring, self-contained breathing apparatus (SCBA) or supplied air respirator (SAR) with escape bottle, rescue retrieval line, and a personal fall arrest system (if working at height).

4.0 Required Safety Equipment & Tools

- Lockout/Tagout (LOTO) Kit: Personal locks, hasps, tags, and a group lock box for isolating energy sources.
- Atmospheric Monitor: Multi-gas detector capable of measuring oxygen (O₂), lower explosive limit (LEL), carbon monoxide (CO), and hydrogen sulfide (H₂S), with calibration and bump test records.
- Rescue Tripod or Davit Arm: Rated for the load and height of the confined space opening.
- Mechanical Winch or Hoist: With a rated capacity exceeding the maximum load (entrant + equipment), equipped with a brake and a manual override.
- Rescue Retrieval Lines: Two separate lines – one primary retrieval line attached to the entrant's harness D-ring, and one safety line for the rescuer.
- SCBA or SAR: Fully charged and inspected, with a minimum 30-minute air supply for each rescuer.
- Communication Equipment: Two-way radios or a hard-wired communication system, with a backup method (e.g., hand signals, tug lines).

- First Aid Kit: Trauma kit with tourniquets, bandages, and CPR mask.
- Emergency Lighting: Portable, explosion-proof lighting if the space is dark.
- Fire Extinguisher: Appropriate for the potential fire class (e.g., ABC dry chemical).

5.0 Step-by-Step Safety Procedure

1. **Pre-Drill Briefing:** The entry supervisor conducts a tailgate safety meeting with all drill participants. Review the confined space rescue plan, assign roles (entrant, attendant, rescue team, entry supervisor), confirm communication protocols, and verify that all participants are fit for duty and free from impairment.
2. **Isolate and Lockout:** The entry supervisor verifies that all energy sources (electrical, mechanical, pneumatic, hydraulic) connected to the confined space are isolated. Each participant applies their personal lock to the group lock box. The attendant confirms zero energy state by attempting to operate the equipment.
3. **Atmospheric Testing:** Using a calibrated multi-gas detector, the attendant tests the atmosphere inside the confined space in the following order: oxygen content, flammable gases, and toxic gases. Testing is performed at multiple depths (top, middle, bottom) and documented. Results must be within acceptable limits (19.5-23.5% O₂, <10% LEL, <10 ppm CO, <1 ppm H₂S) before entry.
4. **Setup Rescue Equipment:** The rescue team positions the tripod or davit arm over the confined space opening, ensuring it is stable and on a level surface. The winch is attached and tested with a static load equal to the entrant's weight. Retrieval lines are connected to the entrant's harness and the winch hook. All lines are inspected for wear or damage.
5. **Don PPE and SCBA:** All rescuers and the entrant don their full PPE, including SCBA or SAR. Perform a positive and negative pressure test on the facepiece. Verify that the air supply is turned on and that the cylinder pressure is at least 90% of rated capacity. The attendant records the start time of air usage.
6. **Simulate Emergency and Initiate Rescue:** The drill scenario is announced (e.g., entrant collapses due to simulated atmospheric hazard). The attendant immediately calls a mayday over the radio and initiates the rescue plan. The rescue team (minimum two persons) dons SCBA and enters the space using the retrieval line as a guide. One rescuer assesses the entrant, while the other prepares for extraction.
7. **Extract the Entrant:** The rescuers attach a secondary retrieval line to the entrant's harness. Using hand signals or radio communication, they coordinate with the winch operator to hoist the entrant out. The rescuers remain with the entrant during extraction, providing manual assistance if needed. The entrant is removed smoothly and without jerking.
8. **Post-Extraction Assessment:** Once the entrant is clear of the confined space, the rescue team removes their SCBA and assesses the entrant's condition. First aid is administered if simulated injuries are part of the drill. The attendant calls for emergency medical services (EMS) if the scenario dictates. The entry supervisor documents the time of extraction and any observations.
9. **Debrief and Document:** The entry supervisor leads a debriefing session with all participants. Discuss what went well, what could be improved, and any safety concerns. Complete the confined space rescue drill report, including times, participant names, equipment used, and lessons learned. Submit the report to the safety manager for review and filing.
10. **Restore Equipment and Area:** All rescue equipment is cleaned, inspected for damage, and returned to its designated storage location. The confined space is secured (e.g., cover replaced, lock removed only after all personnel are accounted for). LOTO locks are removed by the respective owners. The area is returned to normal operating condition.

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