Standard Operating Procedure

SOP #	45699.1
Revision #	#1
Implementation Date	Pending
SOP Owner	Safety
Approved By	
Diagram or Manual Reference	EnclosedSpaceEntry - 45741.01

Purpose

Outline the approved procedures for accessing an "Enclosed Space" which has been approved for entry under the SEAPRO Confined Space Entry Policy.

Scope

All employees, workers and contractors performing work under the direction of SEAPRO and governed by SEAPRO policies.

Prerequisites

Prior to entry, an Enclosed Entry Log record must be created with all pre-entry fields being completed and within the safe to enter limits, and all requirements outlined in the Confined Space Entry Policy met.

Responsibilities

The acting Operations Manager approval must approve the entry request before work can begin.

Tools

Tools as outlined in the Preventative or Corrective Maintenance work order, or work assignment instructions. Blower/exhaust fan and air monitor for environmental hazard mitigation prior to entry. Enclosed Space Entry Log App. Barricades and signs. Rescue strap and harness. PPE level adequate for work being performed.

Step-by-Step Procedure

A minimum crew of two (2) personnel must be present during any enclosed space entry.

1. Pre-entry checklist
    a. Complete the checklist in the SEAPRO Enclosed Space Entry Application.
    b. Ensure all work party participants have the proper PPE.
2. Site Inspection
    a. Conduct a visual inspection of the work site and risk assessment based on the checklist.
    b. Identify any hazards.
        i. Atmospheric (toxic gases, oxygen deficiency, flammable gases).
        ii. Physical (risk of engulfment, falls, slips and restricted movement)
        iii. Energy sources (electrical, hydraulic, mechanical)
        iv. Temperature and lighting (extreme temperature, poor visibility)
3. Controls
    a. Implement Controls
        i. Ventilation

ii. LockoutTagout (LOTO)
iii. PPE
iv. Barriers and signage

4. Log entry
    a. Complete the event log entry in the SEAPRO Enclosed Space Entry App.
    b. Complete a personnel briefing
        i. Atmospheric testing results
        ii. Emergency procedures
        iii. Scope of work to be performed
        iv. Communication protocols
        v. Assign roles and responsibilities
            1. Entrant(s)
                a. Perform assigned tasks inside space
                b. Follow safety protocols, wear PPE, maintain communication
                c. Exit space if hazard arises or instructed to evacuate.
            2. Attendant(s)
                a. Remain outside space, monitor condition and entrants
                b. Maintain communication with entrants and alert them to any dangers
                c. Authorize the entry and record the event completion in the log
        vi. Rescue services contact information
5. Isolate the space
    a. Erect barriers
    b. Post signage on parameters
    c. Prepare rescue equipment
6. Ventilate the space
    a. Use fan or blower to remove hazardous atmospheres and improve oxygen levels
7. Test the atmosphere
    a. Apply three (3) level testing, top, middle, bottom
    b. Continue monitoring during work procedures
8. Enter space and complete assignment(s)
9. Complete post-entry procedures
10. Record any incidents, injuries, accidents, or near misses in the SEAPRO Accident Report Application.

Controls

Space ventilation, atmospheric testing, barriers and signs, attendant present at all times during occupancy, personal protective equipment, authorization only if all pre-entry safety checklist items are met, assigned tasks cannot be completed without entry.

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Field Level Risk Assessment

Entry point is unrestricted at all times during work procedures. Atmospheric testing results (pre-entry) are below action levels:

Oxygen – minimum 19.5%, maximum 22.5%
Hydrogen sulfide – 10ppm
Carbon monoxide – 10ppm
VOC – 35ppm
LEL – 10%

Emergency services are available. Attendant presence uninterrupted. Continuous ventilation and air monitoring throughout the entire time of occupation.

Checklist

- Tools essential for the tasks are at hand.
- Pre-entry checklist has been completed.
- All work party members are properly trained and have adequate level of PPE.
- Atmospheric testing has been completed and all readings are below action levels.
- Site inspection is completed and all hazards have been eliminated or mitigated.
- Space has been ventilated and continuous ventilation is in place and active.
- LOTO is in place, if applicable.
- Entry Log has been completed.
- Safety and work briefing has been performed.
- Space has been adequately isolated.
- Work is completed and space is properly secure.
- Incident reports have been completed, if required.

References to JSA Analysis

This is entered by Safety after the SOP is written.

Process Flow Diagram

Include a process flow chart.

Job Hazard/Safety Analysis (JH/SA)

Work Category: Maintenance

Work Location: Vessel **Date:** 2025-03-12

Task Description: Enclosed Space Entry **JHA No.: 45741.**01

Sequence of Job Steps	Identified Hazards and Critical Behaviors	Recommended Procedures
1. Isolate work area	• Free travel restrictions/obstructions, trip hazards, slippery surfaces, open hatches	• Secure area, remove obstacles and trip hazards. Place barriers around work area and openings. • Ensure adequate traction on slippery surfaces. • Restrict non-essential personnel from site access.
2. Pre-entry Preparation	• Lack of proper authorization and training • Failure to identify and control atmospheric hazards • Inadequate communication	• Ensure all personnel are trained and authorized for confined space entry. • Conduct air monitoring for oxygen levels, toxic gases, and flammable vapors. • Establish a communication system between entrant, attendant, and supervisor.
3. Ventilation and Atmospheric Testing	• Poor air quality leading to asphyxiation or toxicity • Explosion or fire risk	• Use forced-air ventilation; continuously monitor atmospheric conditions. • Eliminate ignition sources, monitor for flammable gases.
4. Entry and Work Inside the Enclosed Space	• Entrapment or engulfment • Falls due to slippery surfaces	• Ensure proper barriers and rescue plans are in place.

	• Struck-by hazards from tools or debris	• Use non-slip mats and appropriate footwear. • Secure tools, wear PPE (helmets, gloves, goggles, etc.).
5. Emergency Response and Exit	• Inability to evacuate in an emergency • Lack of first aid or medical response	• Establish an emergency retrieval system and rescue team. • Have trained first aid personnel and emergency medical services on standby.

Enclosed Space Entry Safety Risk Map

Safety Hazard Identification	Safety Risk Assessment			Safety Risk Mitigation		
Risk Factor	**Severity**	**Probability**	**Risk Level**	**Corrective Action**	**Preventive Action**	**Responsible Party**
Planning & Briefing	1	0	2	Conduct an immediate safety briefing with all personnel to review procedures.	Implement mandatory pre-job planning meetings before every confined space entry.	Operation Lead
Work Environment	5	3	5	Remove unnecessary obstructions, secure entry points, and improve lighting.	Conduct routine inspections of confined spaces to ensure safe entry conditions.	Operation Lead
Atmospheric Hazards	8	4	8	Increase ventilation, monitor gas levels continuously, and evacuate if unsafe.	Develop a standard protocol for atmospheric testing, including frequency and safe thresholds.	Safety Lead
Personnel Factors	2	0	2	Ensure only trained and authorized personnel enter; remove unqualified workers.	Provide regular training and certification renewals for all confined space workers.	Training Lead
Equipment Condition	4	1	4	Inspect, repair, or replace faulty equipment before entry.	Implement a scheduled maintenance program for all confined space tools and safety gear.	Operations Lead
Emergency Preparedness	2	1	2	Conduct an immediate emergency drill to verify rescue procedures.	Establish a formal rescue plan with assigned roles and conduct quarterly rescue training.	Operations & Safety Lead
Overall Fatigue/Stress	3	1	3	Rotate workers more frequently and provide adequate breaks.	Monitor workload and implement shift scheduling to prevent excessive fatigue.	Operations Lead
Total GAR Score - 26						

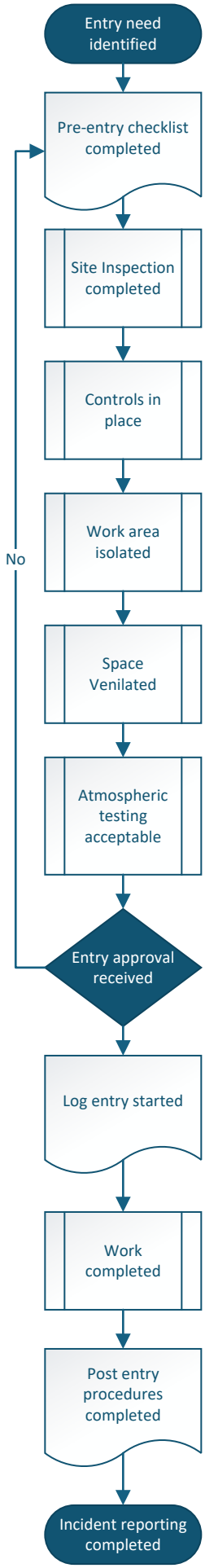
Risk Factor Low (1-3) Medium (4-6) High (7-10) Score

Personal Protective Equipment Required for this Task:

Level D	Hard Hat, Gloves, Safety Glasses, Re-enforced Toe/Shank Boots, Coveralls

Safety Equipment Required to do this Job: Half or full-face air purifying respirator may be required if ventilation is inadequate to negate inhalation hazards.

☒ Fire Extinguisher	☐ PFD	☒ Chemical Protective Clothing	☐ Cork Boots
☐ Confined Space Permit	☐ Hot Work Permit	☐ Hearing Protection	


Entry need identified
Pre-entry checklist completed
Site Inspection completed
Controls in place
Work area isolated
Space Venilated
Atmospheric testing acceptable
Entry approval received
No
Log entry started
Work completed
Post entry procedures completed
Incident reporting completed