

IPS

Industrial Performance Services



ITCS

Industrial Tubular Catalyst Services



CONFINED SPACE PROCEDURE

V:2023.1

Confined Space Procedure

January 2023

PURPOSE

Due to the course and scope of our work activities, the need may arise in which IPS★ITCS employee will be required to perform work activities within a confined space.

Work activities within a client-controlled facility requiring confined space entry, IPS★ITCS shall adopt the clients' written procedures and policy for entry. Sites to which IPS★ITCS are not under client control shall implement the following procedure.

CONFINED SPACE ENTRY PROCEDURE

The purpose of this procedure is to establish a standardized practice for IPS★ITCS employees to enter and work within a confined space. This procedure shall be the minimum acceptable required and shall not be deviated from without the approval of the President.

NOTE: Any inert entries should be made under the guidelines of the IPS★ITCS Inert Entry Operations Procedure. See (HSE.PRO.Inert Entry Operations Procedure.2022).

DEFINITIONS

Acceptable Entry Conditions - the conditions that must exist to allow entry and to ensure that employees, involved with a confined space entry, can safely enter and work within the space.

Attendant - an individual stationed outside the confined space who monitors the authorized entrants and performs the attendant's duties assigned in this procedure.

Authorized Entrant - means an employee who is authorized, by the employer, to enter a permit space.

Confined Space - a space that:

- I. Is large enough and so configured that an employee can bodily enter and perform assigned work.
- II. Has limited or restricted means of entry or exit.
- III. Is not designed for continuous human occupancy.

NOTE: Examples of which are, but not limited to: tanks, vessels, silos, bins, hoppers, vaults, pits, and excavations over 4-feet in depth.

Entry - the action that occurs as soon as any part of the body breaks the plane of an opening into the space.

Entry Permit - the document written to allow and control entry into a confine space and contains the required information as established in this procedure.

Entry Supervisor/Foreman - the person responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry, overseeing entry operations and for terminating entry.

Hazardous Atmosphere - an atmosphere that expose employees to the risk of death, incapacitation, impairment or render the employee unable to perform self-rescue. As established for this procedure hazardous atmospheres shall be considered.

- I. Flammable gases, vapor, or mist in excess of 10% of its Lower Explosive Level (LEL).
- II. Airborne combustible dust at a concentration that meets or exceeds its LEL.
- III. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.
- IV. Atmospheric concentrations of any substance for which a dose or a Permissible Exposure Limit (PEL) is published in Subpart G, Occupational Health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances and which could result in employee exposure in excess its dose or PEL.
- V. Any atmospheric condition that is Immediately Dangerous to Life or Health (IDLH).

Hot Work - any work activity that is capable of providing a source of ignition such as, but not limited to: welding, cutting, burning, and heating).

Immediately Dangerous to Life and Health (IDLH) – Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual’s ability to escape unaided from a confined space.

Inerting - the displacement of atmosphere in a confined space by a non-combustible gas such as Nitrogen or Argon, too such as extent that the resulting atmosphere is non-combustible.

Isolation - the process by which the confined space is completely protected against the release of energy and material into the space.

Rescue Service - the personnel or service designated to rescue employees from a confined space.

Retrieval System - the equipment including lifeline; chest, full harness or body belt; wristlets and if appropriate lifting device utilized for non-entry rescue of persons from a confined space.

Testing - the process by which the hazards that may entrants of a confined space are identified and evaluated. As established in this procedure, the minimum testing shall consist of oxygen, flammability, Carbon Monoxide and Hydrogen Sulfide. All direct reading devices used for testing of the confined space must be properly calibrated before the initial check and thereafter as per manufacturer recommendations.

PROCEDURE

1. Identifying Confined Space

- a. All confined spaces on site shall be deemed and treated as a permit confined space.
- b. Once a confined space has been established through construction or created; the means of access to the confined space shall be blocked to prevent access. A sign or Barricade Tape stating:



DANGER CONFINED SPACE DO NOT ENTER

shall be affixed to the entrance.

- c. If confined space is Inert, Guidelines of IPS★ITCS' Inert Entry Safety Manual apply.
- d. During any of IPS★ITCS' operations, no other contractors shall be allowed inside the confined space.

2. Identify and Evaluate Hazards Once it has been determined that entry is required, a specific evaluation will take place.

- a. All means of hazards shall be isolated from the confined space by means of blinding or removal; this shall include double block and bleed of outside sources, such as compressor fumes, paints, or any other potential source of contamination.
- b. No Confined Space shall be entered unless acceptable entry conditions are present.
- c. No employees shall enter a confined space for rescue.

- i. Atmospheric Sampling shall be obtained by a competent person prior to issuing a permit or at any time requested by entrants or their designated representative. Sampling, indicating a Hazardous Atmosphere, shall prohibit any entry from taking place.

- ii. Sampling of Atmosphere shall be conducted without additional mechanical ventilation on Initial sampling.

- iii. Before an employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order. Any employee who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the pre-entry testing required by this paragraph. Instruments must be calibrated based on manufacturer requirements. All IPS★ITCS employees or sub-contractors shall be afforded the opportunity to participate in/review air sampling results prior to entry or at any time requested.

- d. During entry into an excavation confined space, provisions must be in place to protect the entrants from external hazards cause by pedestrians, vehicles, or other heavy equipment.

3. Permit

- a. A Confined Space Entry Permit shall be obtained BEFORE any person is allowed to enter a confined space for any reason. See **(HSE.FOR.Confined Space Entry Permit.2022)**
- b. The Entry Permit shall be signed by all authorized parties, before confined space entry is allowed, but not until evaluation and testing for Hazardous Conditions have been completed.
- c. All blanks on the permit must be completed or marked N/A (not applicable) for permit to be valid.
- d. All precautions shall be noted on the permit.
- e. The names of all entrants should be listed on the log for the attendant and foreman shall be entered on the permit.
- f. The purpose or reason for entry must be identified on the permit.
- g. The time and date of issuance and expiration shall be completed. No permit shall be valid for more than one (1) shift. A new permit must be issued.
- h. The Entry Permit must be posted at the confined space entrance.

- i. The Entry Permit shall become null and void when conditions change within the confined space, employees demonstrate signs and symptoms of exposure, or a hazardous condition occurs outside the vessel that could affect the entrants.
- j. The permit shall be cancelled and returned after entry operations have been completed.

4. Authorized Entrants

- a. No employee shall enter a confined space until he/she has received Confined Space Entrant level training.
- b. All employees entering a confined space shall wear a full body harness. A lifeline shall be utilized and extend outside the man way, for entry rescue purposes, unless using a lifeline and/or body harness creates a greater danger to the employee.
- c. Any person entering a confined space shall communicate with the attendant as necessary to enable the attendant to monitor the entrant's status.
- d. The entrant shall evacuate the vessel immediately when:
 - i. an ordered evacuation is given by the attendant/supervisor.
 - ii. the employee recognizes any warning signs or symptoms of exposure to dangerous situations.
 - iii. The entrant detects a prohibited condition.

5. Attendants

- a. No person shall be allowed in a confined space unless a qualified Confined Space Attendant is posted immediately outside the entrance. IPS★ITCS shall not allow monitoring of multi-entries by a single attendant.
- b. The Attendant shall ALWAYS remain outside the confined space if employees are within the confined space.
- c. The Attendant shall maintain a continuous and accurate count of entrants by name. See (***HSE.FOR.Confined Space Entry Log.2022***).
- d. The Attendant shall continuously monitor the activities inside and outside the space to determine if conditions for safe entry remain consistent. See (***HSE.FOR.Confined Space Monitoring Log.2022***).
- e. At all times the Attendant shall have contact with entrants. This can be through voice, visual or other satisfactory means of communication.
- f. The Attendant shall evacuate the vessel anytime conditions change that may pose danger to employees or when conditions change from those stated on the permit.
- g. The Attendant shall summon rescue and other emergency services as soon as they determine that the entrants may need assistance to escape from the confined space by sounding the alarm. L-CAN Report format is ideal for radio summons. See (***HSE.PRO.Communication Procedure.2022***).
- h. The Attendant shall not allow any unauthorized employees entrance into the confined space. Authorization can be issued by the job supervisor, superintendent, or management. Under NO CIRCUMSTANCES shall another contractor enter the confined space while IPS★ITCS is performing their assigned tasks.
- i. Should an emergency occur at NO TIME should the attendant enter the confined space to perform Rescue Operations. Non-entry rescue should be attempted by retrieval systems only.
- j. Usually, A single attendant would be used per confined space as this is a best practice.
- k. The use of a single attendant to monitor several confined spaces could occur

but is not recommended. In the event multiple spaces are being monitored by a single attendant, then the following must be met:

- 1) The attendant must be able to perform all duties required in this circumstance, such as but not limited to:
 - I. Keeping unauthorized personnel from entering multiple spaces.
 - II. Maintain continuous monitoring in multiple spaces
 - III. Logging entrants and maintain accountability of multiple spaces
 - IV. Maintaining constant communication with personnel within multiple spaces.
 - V. Be able to recognize hazards of multiple spaces and recognize the symptoms of potential over-exposure within those spaces
 - VI. In the event of an emergency be able to close all other active spaces until the emergency event is over

6. Entry Supervisor

- a. The Project Manager or his designee will serve as the entry supervisor on all confined space entries.
- b. The supervisor/foreman must be made aware of the hazards present or potentially present within the confined space.
- c. Must verify, by checking, that the conditions stated on the permit are correct, all tests have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit.
- d. The supervisor/foreman shall verify that rescue services are available and that a means of summoning such services is operable prior to allowing his/her employees to enter a confined space.
- e. The supervisor/foreman shall authorize scope of work and entrants to perform this work. Any deviation must have the supervisor/foreman approval prior to commencement.

7. Rescue

- a. In the event of an incident requiring confined space rescue, the supervisor or attendant shall immediately request assistance, and sound the alarm. See **(HSE.FOR.Communication Procedure.2022)**
- b. If rescue services are not provided on site by the facility, then IPS★ITCS utilizes the IPS★ITCS Rescue Team to fulfil these needs unless they decline as appropriate. This must be identified in the contract.
- c. The Local Hospital Emergency Room shall be notified of incident alerting to be on standby status. See **(HSE.FOR.Site Specific Emergency Action Plan.2022)**
- d. Upon arrival of rescue services, the supervisor shall inform of exact situations and of the hazards that may be confronted.
- e. Only trained personnel shall perform Confined Space Rescue. See **(HSE.PRO.Rescue Training Procedure.2022)**
- f. At any time a rescuer is attached to the retrieval line the other end of the line shall be affixed to either a mechanical device or fixed point outside of the space. See **(HSE.PRO.Rescue Operations Procedure.2022)**

8. Personal Protective Equipment

- a. Prior to entry into a confined space, an evaluation shall be made to determine if additional Personal Protective Equipment (PPE) is required.

- b. The minimum PPE established by IPS★ITCS' PPE Program shall be worn by all employees within a confined space at no cost to the employee.
- c. Should additional Personal Protective Clothing be required; it shall be selected for the type Hazard present and meeting approved ANSI or NIOSH Specifications.
- d. If air sampling or work task assignments result in an indication that respiratory equipment is required, equipment shall be selected, used and provided in compliance with IPS★ITCS Respiratory Protection Program.
- e. At any time a rescuer is attached to the retrieval line the other end of the line shall be affixed to either a mechanical device or fixed point outside of the space.

9. Ventilation

- a. Mechanical continuous forced air ventilation systems shall be utilized to eliminate any potential hazards from accumulating.
- b. The Forced Air Ventilation shall be arranged as such to prevent Dead Air Space accumulation of possible toxic vapors.
- c. The air supply for ventilation shall be from a class source of air free of contaminants or possibly toxic gases.
- d. At all times, that employees are within the confined space, Forced Air Ventilation shall be in place.
- e. Sampling of the confined space shall be conducted at initial permit sampling ONLY with all ventilation off. Upon completion of sampling and prior to employee entrance ventilation shall be placed back on.
- f. The valves at the source of energy for ventilation systems shall be tagged in the open position with Danger Do Not Operate.



- g. Air movers preferably will be placed blowing into space. Many factors should be assessed prior to execution.

10. Electrical

- a. All lighting utilized within a confined space shall meet the requirement of Class 1, Division 1 or Class 1, Division 2, Zone 0
- b. All lighting utilized within a confined space shall be explosion proof and have adequate globe and bulb protection.
- c. All electrical tools, lights or appliances within a confined space shall be powered by a 12-volt electrical service or 120 volts AC if protected by a Ground Fault Circuit Interrupter (GFCI) at the source of energy.
- d. All ventilation exhaust blowers or systems shall be electrically bonded to prevent static electricity discharge.

TRAINING

1. Each affected employee will receive training upon initial assignments. Prior to a change in assigned duties, a new hazard has been created or special deviations have occurred.

2. Upon completion of training, employees will be provided with certification showing Employee name, Trainer Signature, Dates of Training with training certification placed in employee personnel file or for their authorized representative.
3. Entrants
 - a. Prior to any employee entering a confined space, they will be trained in
 - b. Client/IPS★ITCS' Confined Space Procedure
 - c. Recognition of Hazards of a Confined Space
 - d. The mode, signs or symptoms and consequences of exposure
 - e. The emergency procedures
 - f. Responsibility of Communication with Attendant
 - g. IPS★ITCS' Inert Entry procedures found in Inert Entry Safety Manual.
4. Attendant
 - a. Prior to any employee being assigned as a confined space attendant he/she must be trained in
 - b. Client's Confined Space Entry Procedure.
 - c. Recognition of hazards associated with Confined Space Entry.
 - d. Recognition of mode, signs or symptoms and consequences of employee exposure. See (**Applicable SDS**). **IPS★ITCS App > Resources > SDS's**
 - e. Awareness of possible behavioral effects of hazard exposure to employees working within a confined space.
 - f. Importance of maintaining accurate head count records of employees within a confined space.
 - g. Non-Entry Rescue Techniques.
 - h. Evacuation and Response Procedures
 - i. How, when, and where to summon rescue or other
5. Rescue Personnel
 - a. Prior to any employee being assigned as a confined space Rescue they must be trained in:
 - b. Employees shall be trained as authorized entrants and to safely perform rescue duties assigned to them.
 - c. Recognition of hazards associated with Confined Space Entry.
 - d. Recognition of mode, signs or symptoms and consequences of employee exposure.
 - e. Awareness of possible behavioral effects of hazard exposure to employees working within a confined space.
 - f. Rescuers must have First Aid/ CPR/AED training, and at least one member of the team must have a current First Aid/CPR/AED certification.
 - g. Non-Entry, Confined Space Entry and Self Rescue Techniques.
 - h. Evacuation and Response Procedures
 - i. Members of the confined space rescue team must conduct drills at least once every 12-months
 1. The simulation drills must include spaces like actual spaces in which the rescues would be performed.
 2. Rescue Personnel should be familiar with conducting sampling of environment and use of specialized monitoring equipment

DEVIATIONS

This policy shall not be deviated from without written approval from the HSEQT Manager.

REEVALUATION

1. At any time an incident/near miss occurs involving a Confined Space Entry a review of the policy and procedure shall be performed to evaluate the effectiveness of this program.
2. A review of this program will be performed annually or as necessary to protect employees from confined space hazards by the HSEQT Manager.

Revision History

Rev	Rev Date	Rev By	Approved By	Description
1.0	1.3.2022	Shayne Torrans	Shayne Torrans	Initial Procedure Document
1.1	11.23.2022	Shayne Torrans	Shayne Torrans	Format Revision

Approvals:

Procedure Owner

Competency Assessment

No.	Questionnaire	C/NYC
Q1		
A1		
Q2		
A2		
Q3		
A3		
Q4		
A4		
Q5		
A5		

Enclosed Attachments	
Risk Assessment	<input checked="" type="checkbox"/>
Environmental Aspect and Impact	<input checked="" type="checkbox"/>
Training and Competency	<input checked="" type="checkbox"/>
Measure and Evaluation Tools	<input checked="" type="checkbox"/>

Competency Checklist

To be filled out by Trainer and signed by Employee, Assessor and Supervisor before being returned to the HSEQT Manager for recording purposes.

Procedure	Competency	Date	Competent YES / NO	Employee Signature

(Please tick appropriate box)

This employee is competent in performing the job.

This employee has not attained the competency level.

*

***** *If the employee has not attained all competency levels, the General Manager must assess the action to be taken, provide an extension of training or alternative action as listed below.*

Alternate action to be taken: _____

Signed By	Employee:	_____	Date:	_____
	Trainer:	_____	Date:	_____
	Assessor:	_____	Date:	_____

Regional Manager:

Date:

Environmental Aspects and Impacts

Identified Environmental Aspects and Impacts

The following table is a summary of the likely environmental aspects and impacts that may be identified during site inspections. The significance of each impact needs to be assessed using the Risk Assessment Model.

Activity	Aspect	Impact
Purchasing & Administrative Work	Consumption of goods	Conservation of natural resources
	Consumption of energy (eg. Electrical equipment and facilities)	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of waste (eg. Paper)	Consumption of space for waste disposal; Habitat loss
Climate Control	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of noise	Disturbance to community; Habitat loss
Cleaning of – offices / vehicles	Storage, use and release of chemicals	Contamination of air, water or soil; Risk to human health
Transport (Fleet vehicles / staff travel)	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Loss of habitat at all stages of generation; Light pollution
	Consumption of goods (eg. Oil)	Consumption of natural resources; Generation of waste; Habitat loss; Biodiversity impacts
	Generation of waste (eg. Oil)	Consumption of space for waste disposal; Potential contamination of water or soil; Habitat loss
	Exhaust emission	Release of greenhouse gases and atmospheric pollution
	Use of dangerous goods (eg. Batteries)	Potential contamination of air, water or soil; Risk to human health
	Generation of noise	Disturbance to community; Habitat degradation
Operations		

Sample only.
To be filled in

Activity	Aspect	Impact

Risk Assessment



Risk Assessment // insert name here

<p>Step No: Logical sequence</p>	<p>Sequence of Basic Job Steps documented in the Procedure, Work Instruction and project plans. Break down Job into steps.</p> <p>Each step should be logical and accomplish a major task.</p>	<p>Potential Safety & Environmental Hazards/Impacts at the site of the Job</p> <p>Identify the actual and potential health and safety hazards and the environmental impacts associated with each step of the job.</p>	<p>Risk Rating</p> <p>Refer to the risk matrix or HSEQT.PRO. Risk Mgt</p>	<p>Recommended Corrective Action or Procedure</p> <p><i>Determine the corrective actions necessary to reduce the risk to as low as reasonably practical (ALARP) refer to HSEQ.PRO.Risk Mgt. The risk must be reduced or controlled to ALARP before work commences.</i></p> <p>Document who is responsible for implementing the controls to manage each hazard identified.</p>	<p>Risk Rating refer to the risk matrix or HSEQT.PRO.Risk Mgt</p>
1.					
2.					
3.					
4.					
5.					

Audit



Process: insert// Procedure: Insert //		Date:	Audited by:	
		Location of Audit:	Area Mgr/Supervisor:	
Item	Question	Evidence Sited	Comments	Conformance Score 0,3,5
1.				
2.				
3.				
4.				
5.				
6.				
7.				
AUDITOR'S SIGNATURE:		CONFORMANCE SCORE: / 25		0 – Non-Conformance 3 – Continuous Improvement Opportunity 5 – Total Conformance
SAFETY REP'S SIGNATURE:		CONFORMANCE %:		