



SAFETY POLICY AND PROCEDURE MANUAL

NUMBER 12.0 – CONFINED SPACES

Number: 12.0

Issued: 8/2018

Revised: 1/2024

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1.0 **PURPOSE:**

To prevent injury or death to employees due to asphyxiation (suffocation), engulfment (entrapment), shock, falls, or heat stress while working in a confined space. To comply with OSHA regulations 1910.146 and prevent employees and/or contractors from entering confined spaces without proper training, equipment, authorization, and controls.

2.0 **POLICY:**

Each Signature facility will identify all confined spaces within the facility and surrounding grounds and determine the hazards associated with entering such space. Absolutely no one will enter a confined space without proper training, equipment, and understanding of this procedure.

3.0 **RESPONSIBILITIES:**

- A. It is the responsibility of the **Facility Leader** to ensure compliance with this procedure in its entirety.
- B. It is the responsibility of all **Employees** to follow the requirements of this procedure.
- C. It is the responsibility of the **Facility Leader** to ensure that the Permit Issuer, Entrant Person and Attendant has completed Confined Space Entry Training (by an outside company equivalent to Comprehensive Safety Resources www.csrsafety.com).

4.0 **PROCEDURE:**

- A. A **confined space** is defined as an area which has adequate size and configuration for employee entry, has limited means of access or egress (entrance or exit), and is not designed for continuous employee occupancy.
- B. A **permit required confined space** is a confined space with one or more of the following characteristics: contains a hazardous atmosphere (or has the potential to contain one), contains material that has the potential for engulfing anyone who enters, is constructed in a way that someone inside could be trapped or asphyxiated, or contains any other recognized safety or health hazard.
- C. A **non-permit required confined space** is a confined space that does not contain (or have the potential to contain) any hazards that can cause death or serious physical harm. Examples include: vented vaults, motor control cabinets, dropped ceilings, mechanical closets, and electrical closets
- D. Each facility leader must identify all permit required and non-permit required confined spaces at their facility (see attached Confined Space Hazard Assessment Form). This information shall be recorded on the "Confined Space Inventory" worksheet (see attached). To ensure accuracy, this worksheet shall be updated annually or when the conditions change at the facility.
- E. All employees must be trained on confined spaces each year in conjunction with a weekly safety meeting. All employees must be instructed as to the existence of any confined space and their locations. Employees must be warned of the hazards of being trapped in a confined space.
- F. Inform employees about the presence of permit required confined spaces by posting danger signs (Danger: Permit Required Confined Space – Do Not Enter) and training employees to identify permit required confined spaces and their hazards. Inform employees that the absence of a sign does not mean a hazard does not exist or that a permit is not needed. Employees that have any doubts should seek help in making such determination. Where entry to permit

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required confined spaces can be prevented by placing locks or barriers, these precautions must be taken. Where such barriers cannot be used, appropriate warning signs will be adequate.

- G. All contractors performing work in or near a permit required confined space must be briefed on entry requirements, precautions, and procedures. It is the Facility Leader's responsibility to ensure that the contractor meets or exceeds all requirements of the confined space program.
- H. Permit System – The following must be performed when entering a permit required confined space:
1. The permit must be completed and approved prior to entry (see attached).
 2. A minimum of three (3) employees must be present for a permit required confined space entry.
 - The employee(s) to enter the space.
 - The Supervisor to oversee entry activities (not to enter the space).
 - An entry attendant to monitor entrants during the entry (not to enter the space, cannot be the Supervisor).
 3. All permits must be reviewed and approved by the Facility Leader and the Production Manager prior to the start of the entry.
 4. The following are assigned duties for the authorized entrant, attendant and entry supervisor:
 - The **Authorized Entrant** is required to:
 - Know space hazards, including information on the means of exposure such as inhalation or dermal absorption, signs of symptoms and consequences of the exposure;
 - Use appropriate personal protective equipment properly;
 - Maintain communication with attendants as necessary to enable them to monitor the entrant's status and alert the entrant to evacuate when necessary;
 - Exit from the permit space as soon as possible when:
 - Ordered by the authorized person;
 - He or she recognizes the warning signs or symptoms of exposure;
 - A prohibited condition exists; or
 - An automatic alarm is activated.
 - Alert the attendant when a prohibited condition exists or when warning signs or symptoms of exposure exist.
 - The **Attendant** is required to:
 - Remain outside the permit space during entry operations unless relieved by another authorized attendant;
 - Perform non-entry rescues when specified by the employer's rescue procedure;
 - Know existing and potential hazards, including information on the mode of exposure, signs or symptoms, consequences and physiological effects;
 - Maintain communication with and keep an accurate account of those workers entering the permit space;
 - Order evacuation of the permit space when:
 - A prohibited condition exists;

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- A worker shows signs of physiological effects of hazard exposure;
 - An emergency outside the confined space exists; and
 - The attendant cannot effectively and safely perform required duties.
 - Summon rescue and other services during an emergency;
 - Ensure that unauthorized people stay away from permit spaces or exit immediately if they have entered the permit space;
 - Inform authorized entrants and the entry supervisor if any unauthorized person enters the permit space; and
 - Perform no other duties that interfere with the attendant's primary duties.
 - The **Entry Supervisors** are required to:
 - Know space hazards including information on the mode of exposure, signs or symptoms and consequences;
 - Verify emergency plans and specified entry conditions such as permits, tests, procedures and equipment before allowing entry;
 - Terminate entry and cancel permits when entry operations are completed or if a new condition exists;
 - Verify that rescue services are available and that the means for summoning them are operable;
 - Take appropriate measures to remove unauthorized entrants; and
 - Ensure that entry operations remain consistent with the entry permit and that acceptable entry conditions are maintained.
- I. Permit Entry – The following procedures will be implemented and followed concerning entry to any and all permit-required confined spaces:
1. No employee will be issued a permit to enter a permit required confined space or supervise the entry or another person until he/she has received proper training specific to the confined space that is to be entered.
 2. Portable electrical devices used in these spaces will be fed from low-voltage insulating transformers and be of an approved low voltage type. Ground fault circuit interrupters (GFCI's) shall be used if other than low voltage type electrical devices are to be used inside these spaces. Transformers and GFCI's shall be located outside of the space.
 3. Pipelines to all confined spaces shall be blinded or disconnected and offset. The contents shall be drained off and clean-out doors opened where provided. Note: Double block and bleed is acceptable where it is designed into the system. It must be assured that the bleed is not blocked.
 4. The permit spaces shall be purged by steaming, washing, venting, or other methods for that specific space.
 5. After purging, the space shall be tested by the method shown on the permit for that specific space.

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6. Written permit forms shall be kept by the facility leader. Employees wishing to enter a permit required space shall request them from the facility leader. The completed permit form will be valid until the end of the job (which may extend beyond a shift). An original copy of the permit(s) will be kept at the work site until the job is completed. Completed forms will be kept in a safety notebook for at least one year.

7. A safety harness with life lines attached shall be required for those who enter a permit required confined space unless the use of the life line causes an additional hazard. The Facility Leader is responsible for evaluating and using good judgment in determining whether lifelines will be worn.

8. Voice contact shall be maintained with the person entering the permit required confined space at all times. Where direct visual contact cannot be maintained, two-way radios will be supplied to the entrant and the stand-by. Voice contact shall be maintained and checked at least every thirty seconds.

9. Personnel and equipment will be maintained at an appropriate site near the space before and during entry.

J. Atmospheric testing – The following procedures must be implemented and followed concerning atmosphere testing:

1. Evaluation testing. The atmosphere of any confined space should be analyzed using equipment of sufficient sensitivity and specificity or identify and evaluate any hazardous atmospheres that may exist or arise, so that appropriate permit entry procedures can be developed, and acceptable entry conditions stipulated for that space. Evaluation and interpretation of these data, and development of the entry procedure, should be done by, or reviewed by, a technically qualified professional (e.g., OSHA consultation service, or certified industrial hygienist, registered safety engineer, certified safety professional, certified marine chemist, etc.) based on evaluation of all serious hazards.

2. Verification testing. The atmosphere of a permit space which may contain a hazardous atmosphere should be tested for residues of all contaminants identified by evaluation testing using permit specified equipment to determine that residual concentrations at the time of testing and entry are within the range of acceptable entry conditions. Results of testing (i.e. actual concentration, etc.) should be recorded on the permit in the space provided adjacent to the stipulated acceptable entry condition.

3. Duration of testing. Measurement of values for each atmospheric parameter should be made for at least the minimum response time for the test instrument specified by the manufacturer.

4. Testing stratified atmospheres. When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope should be tested a distance of approximately four (4) feet in advance of the direction of travel and to each side. If a sampling probe is used, then entrant's rate of progress should be slowed to accommodate the sampling speed and detector response.

5. Order of testing. A test for oxygen is performed first because most combustible gas meters are oxygen dependent and will not provide reliable readings in an oxygen deficient atmosphere. Combustible gases are tested for next because the threat of fire or explosion is both more immediate and more life threatening, in most cases, than exposure to toxic gases and vapors. Tests for toxic gases and vapors are performed last.



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- K. Employees failing to comply with this procedure will be disciplined in accordance with normal progressive disciplinary procedures for the facility.

5.0 ATTACHMENT / FORMS:

- A. Confined Space Inventory
- B. Confined Space Training Agenda and Log
- C. Confined Space Entry Permit
- D. Confined Space Hazard Assessment Form

6.0 PROCEDURE HISTORY

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Revised – 1/2024



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ATTACHMENT A – CONFINED SPACE INVENTORY

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FACILITY: _____

YEAR: _____

PERMIT REQUIRED:

The following areas at the facility have been defined as a permit required area (be very specific):

1. _____
2. _____
3. _____
4. _____
5. _____

NON-PERMIT REQUIRED:

The following areas at the facility have been defined as a non-permit required area (be very specific):

1. _____
2. _____
3. _____
4. _____
5. _____

This form is to be updated annually or when conditions at the plant change.

The above information has been reviewed:

Facility Leader (Print Name)

Facility Leader Signature

Date



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ATTACHMENT B – CONFINED SPACE TRAINING AGENDA AND LOG

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FACILITY: _____

DATE: _____

Attendees: _____

Purpose of Program: _____

Confined Space Locations / Hazards: _____

General Awareness: _____

Duties of Entrant: _____

Duties of Attendant: _____

Duties of Supervisor: _____

Comments: _____

I certify that, to the best of my knowledge, all attendees listed on the attendance form have been thoroughly trained in the various duties associated with confined space entry and have demonstrated their knowledge.

Trainer (Print Name)

Trainer Signature

Date



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ATTACHMENT C – CONFINED SPACE ENTRY PERMIT

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ISSUED:

DATE: _____

TIME: _____

EXPIRES:

DATE: _____

TIME: _____

LOCATION: _____

EQUIPMENT: _____

Work to be performed: _____

Stand-by Personnel:

1. _____ Supervisor

2. _____

3. _____

Authorized Entrants:

Method to be used to PURGE Space: _____

Method for TESTING BEFORE entry: _____

Method for TESTING DURING entry: _____

Personal Protective Equipment required to be worn by all entrants: _____

Atmosphere testing:

Test to be Taken	Permissible Entry Level	Initial Results	Continuous Results
Percent Oxygen	19.5% to 23.5%	_____	_____
Lower Flammable Limit	Under 10%	_____	_____
Carbon Monoxide	Under 17 PPM	_____	_____
Organic Vapors	Under 5 PPM	_____	_____
Ammonia	Under 17 PPM	_____	_____
Chlorine	Under .25 PPM	_____	_____

	YES	NO
» Are the entrants trained to enter and perform the work?	<input type="checkbox"/>	<input type="checkbox"/>
» Have the employees in the immediate area of the permit required confined space been notified of the entry?	<input type="checkbox"/>	<input type="checkbox"/>
» Has the space been evaluated for potential hazards (chemical, mechanical, and physical)?	<input type="checkbox"/>	<input type="checkbox"/>
» Have hoses, pipes, or other openings which may convey flammable, injurious, or incapacitating substances into the space been disconnected or blocked-off?	<input type="checkbox"/>	<input type="checkbox"/>
» Is there assurance that inadvertent re-connection of hoses, pipes, or other openings are effectively prevented?	<input type="checkbox"/>	<input type="checkbox"/>
» Is the space emptied, flushed, or purged of flammable, injurious, or incapacitating substances to levels that are safe for entry through forced air ventilation?	<input type="checkbox"/>	<input type="checkbox"/>



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	YES	NO
» Will there be forced air ventilation during entry operations to retain a safe atmosphere?	<input type="checkbox"/>	<input type="checkbox"/>
» Are all energy sources that could create a hazard adequately locked out?	<input type="checkbox"/>	<input type="checkbox"/>
» Is there use of approved air monitoring equipment to test the atmosphere of the space for oxygen, carbon monoxide, flammability/exposures, and other hazards that may be present in the space?	<input type="checkbox"/>	<input type="checkbox"/>

We have reviewed the work authorized by this permit and the information contained herein. Written instructions and safety procedures have been received and are understood. Entry cannot be approved if any squares are marked in the "NO" column. This permit is not valid unless all appropriate items are completed, and this form is approved in advance of the entry.

	Printed Name	Signature	Date
Prepared by	_____	_____	_____
	(Supervisor)		
Approved by	_____	_____	_____
	(Facility Manager or Authorized Representative)		

***** All permits to be kept on file for at least one year from date of entry *****

This permit (when completed) must be posted at the point of entry of the confined space while there is entry to that space.



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ATTACHMENT D – CONFINED SPACE ASSESSMENT

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Decision: Permit Required OR Non-Permit (circle one)

Building:
Confined Space Location:
Date of Assessment:
Assessment Conducted By:

Purpose of Entry:

SECTION 1: To determine if the space listed above is a confined space, answer the following questions:

	YES	NO
The space is large enough and is so configured that an employee can enter and perform work.		
The space has limited or restricted means of entry or exit. (i.e. tanks, vaults, vessels, silos, storage bins, hoppers, pits, diked areas)		
The space is not designed for continuous employee occupancy.		

If any of the above three(3) items were answered **YES**, the area being evaluated is a **CONFINED SPACE**. (Continue to Section 2 to determine if it is a "PERMIT-REQUIRED" confined space). If **ANY** of the above statements were answered **NO**, check the following box and proceed no further. ☐ The area does not qualify as a "confined space."

SECTION 2 Use the following section to determine if it is a "permit-required" confined space.

	YES	NO
1. The space contains, or has the potential to contain a "hazardous atmosphere" (Check all that apply)		
Flammable gas / vapor / mist (Fuel supply locked out/disconnected)		
Oxygen conc. below 19.5% or above 23.5%		
Airborne combustible dust conc. > or = its LFL. Dust obscures vision @ 5 feet or less		
Atmospheric concentration exceeding the PEL or dose for any substance published in subpart G or Z		
Any other atmospheric condition that is IDLH. (i.e. poor ventilation, migrating vapors / gases)		
Other: (inerting gases, etc)		
2. The space contains a material that has the potential for engulfing an entrant (i.e. fill or plug respiratory tract, cause death by crushing, constriction or strangulation)		
3. The space has an internal configuration such that an entrant could become trapped or asphyxiated (Check all that apply)		
Converging walls / downward sloping floors		
Constriction / taper to a smaller cross-section		
Difficult to exit / inadequate access / obstacles		
Other:		
4. The space contains other recognized serious safety or health hazards (Check all that apply)		
Poor or difficult communication		
Noise / vibration		
Hot or cold contact / extremes		
Electrical shock Water? Lights?		
Release of stored and hazardous energy		
Flooding / avalanche of materials / engulfment		
Toxic chemicals		
Corrosive materials		
Inadequate light / poor visibility		
Equipment startup / mechanical hazard		
Slip and trip surfaces, fall from heights		
Sharp objects / falling objects		
Unknown contents / sludge / residue		
Radiation		
Atmospheric contaminant		
Chemical reactivity		

If any of the above four (4) items in Section 2 were answered **YES**, the area being evaluated is a **PERMIT REQUIRED CONFINED SPACE**.