

 CSN Procedure	Facilities Management
Category: Environmental Health and Safety	Effective Date: 6/8/2021
Confined Space Entry	

I. PURPOSE

The purpose of the College of Southern Nevada (CSN) Confined Space Entry Procedure is to protect employees from the hazards of entry into permit-required confined spaces and to comply with the Occupational Safety and Health Administration (OSHA) Confined Space Entry Final Rule, 29 CFR 1910.146.

II. SCOPE

This Procedure covers all Confined Spaces and Permit Required Confined Spaces at all CSN facilities. Examples of confined spaces found at CSN facilities may include sumps, manholes, crawl spaces, electrical vaults, and cooling towers.

III. OVERVIEW

CSN Staff who may enter a confined space must be made aware of hazards and appropriate procedures related to the entry of permit-required confined spaces.

CSN will treat all confined spaces as permit-required spaces until they have been evaluated and are documented to be a non-permit confined space.

IV. DEFINITIONS

Attendant: An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit-required confined space program. The Entry Supervisor can also act as the Attendant during confined space entry work.

Confined Space: A space that: 1) is large enough and so configured that an employee can bodily enter and perform assigned work; 2) has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, vaults and sewers are spaces that may have limited means of entry); and 3) is not designed for continuous employee occupancy.

Entrant: An employee who is authorized by the employer to enter a permit-required confined space.

Entry Permit: The written or printed document provided by the employer to allow and control entry into a permit-required space and contains the information specified in Section V.C of this procedure.

Entry Supervisor: The person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit-required space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this section.

Hazardous Atmosphere: An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

- Flammable gas, vapor, or mist more than 10 percent of its lower flammable limit (LFL).
- Airborne combustible dust at a concentration that meets or exceeds its LFL.
- Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.
- Atmospheric concentration of any substance which may exceed a permissible exposure limit.
- Any other atmospheric condition that is immediately dangerous to life or health.

Non-Permit Confined Space: A confined space that does not contain or, with respect to atmospheric hazards, has the potential to contain any hazard capable of causing death or serious physical harm.

Permit-Required Confined Space (PRCS): A space that: 1) contains or may contain hazardous atmospheres; 2) contains a material that can engulf an entrant; 3) has an internal configuration that can trap or asphyxiate an entrant; 4) has any other serious health or safety hazard.

V. PROCEDURE

A. Responsibilities:

1. CSN Environmental Health and Safety (EH&S)

- Overall review of confined spaces identified by Facilities Management or other departments. Assess if each confined space is permit-required using Appendix A – Confined Space Assessment Form.
- Develop and maintain the Permit-Required Confined Space Entry program. Conduct a review of the program annually.
- Ensure that personal protective equipment and atmospheric testing equipment are available to all CSN employees who enter permit-required confined spaces.

2. CSN Departments

- Identify all confined spaces within the work area and alert EH&S to their existence for inclusion in the Confined Space Entry Program.
- If permit-required confined space work must be conducted, identify and assign individuals to perform permit-required space duties as outlined in this procedure. Ensure Entry Supervisors, Attendants and Entrants are trained by EH&S prior to performing duties.
- Ensure that all CSN employees who work nearby or around confined spaces receive awareness training provided by EH&S.
- Enforce all requirements of the Permit-Required Confined Space Entry Procedure.

3. Entry Supervisor

- Complete Confined Space Entry training.
- Know and understand the hazards associated with the specific permit-required confined space that will be entered and methods that will be used to eliminate or minimize the hazards.
- Notify EH&S that a permit-required entry is planned.
- Prepare the entry permit completely.
- Conduct pre-entry briefing with attendants and entrants to discuss the permit, potential hazards of the space to be entered, protective measures, and the collection of atmospheric test data.
- Verify that all required tests have been conducted and that all conditions for safe entry have been met.
- Terminate the entry and cancel the permit when operations are complete or when a condition not allowed by the permit arises in/near the permit space.
- Remove unauthorized individuals who attempt to enter the permit space.
- Forward the completed and signed entry permit to EH&S upon completion of entry activities.

4. Attendant

- Complete Confined Space Entry training.
- Know and understand the hazards associated with the specific permit-required confined space that will be entered and methods that will be used to eliminate or minimize the hazards.
- Monitor atmospheres prior to and during the entire entry into the permit space.
- Remain outside the permit space during entry and prevent unauthorized persons from entering the area.
- Ensure all entrants performing work in the permit-required confined space are listed on the entry permit.
- Monitor the activities of the entrant(s) and maintain constant communication.
- Avoid activities that could interfere or distract from the primary duty of monitoring and protecting the entrants.
- Evacuate entrants from the permit space immediately, via communication or through rescue equipment, if entrants are not responding and/or any of the following occur:
 - The attendant detects a prohibited condition.
 - The attendant detects the behavioral effects of a hazard exposure.
 - The attendant detects a situation outside the permit space that could endanger the entrant(s).

- Atmospheric alarm is activated.
- If needed, summon emergency services by calling UPD at 702-895-3669 or dial 911.
- The attendant may only participate in non-entry rescue operations. At no time shall an attendant enter the permit-required confined space to facilitate a rescue.

5. Entrant

- Complete Confined Space Entry training.
- Use all required equipment and PPE properly.
- Maintain constant communication with the attendant.
- Alert attendant and exit the permit-required confined space as quickly as possible if any of the following situations occur:
 - Warning signs/symptoms of exposure to hazardous environments or atmospheres are detected, such as odors, irritation, dizziness or headaches.
 - Conditions are not in accordance with the entry permit.
 - Instrument alarms are activated.
- Exit the permit space as quickly as possible when instructed to do so by either the entry supervisor or the attendant.

6. CSN Facilities Management – Project and Construction Managers

- Host employer (CSN) must advise contractors of any permit-required confined spaces where contractor or vendor employees may have reason to enter.
- If entry is required, coordinate entry projects with the contractor and notify CSN EH&S prior to entry.
- After entry, provide EH&S with a copy of the signed contractor's entry permit.

7. Contractors/Vendors Performing Work in Permit-Required Confined Spaces at CSN

- Contractors and Vendors who enter permit-required confined spaces shall comply with the requirements of 29 CFR 1910.146.
- Coordinate with CSN personnel on all projects requiring permit-required confined space entry, unless the permit-required confined space is part of a construction site that is under the sole control of the contracting company.
- Maintain a signed copy of the contractor's entry permit onsite during entry operations and provide CSN with a copy after entry.

B. Training

1. CSN Environmental Health & Safety is responsible for ensuring that CSN employees who may be required to enter permit-required confined spaces are trained in: 1) the requirements of the Confined Space Entry Procedure; 2) the use of safety equipment; 3) the proper preparation of a confined space for entry; and 4) emergency procedures.
2. Training must be conducted before an employee is first assigned and/or assigned new or additional duties outlined in the Confined Space Entry Procedure.
3. Re-training shall be provided whenever: 1) there are Confined Space Entry procedure changes; 2) there is a change in permit space operations; 3) there is reason to believe that there are inadequacies in an employee's knowledge or the Confined Space Entry Procedure.
4. Environmental Health & Safety will maintain records of employee training. The records will include the dates of training, subjects covered, names of employees trained, name of the trainer, and signature of the trainer.

C. Confined Space Entry Permit

1. A confined space entry permit must be completed and signed prior to entry into any permit-required confined space (see appendix B). The Entry Supervisor and a representative from Environmental Health & Safety must sign the permit to authorize permit-required confined space entry. In some instances, EH&S may serve as the Entry Supervisor.

2. After the permit is signed, the original copy is posted at the permit-required confined space to be entered until the permit is no longer valid. The Entry Supervisor must retain a duplicate copy of the permit. The CSN employee(s) who entered the permit-required confined space must return the original copy of the permit to the Entry Supervisor when the permit becomes invalid. The Entry Supervisor must match both copies of the permit and send them to the Environmental Health & Safety Department.
3. A confined space entry permit is valid until the end of the entrants' work shift or until the work is completed, whichever occurs first; or until an emergency involving or affecting the permit-required confined space occurs.
4. EH&S will review all confined space entry permits to ensure compliance with the Permit-Required Confined Space Entry Procedure and make recommendations for changes, as necessary. Where possible, departments should notify EH&S of any permitted confined space entry work with as much prior notice to the work occurring.
5. If circumstances cause an interruption in the work or a change in the alarm conditions for which entry was approved, a new Confined Space Entry Permit must be completed.
6. In some cases, permit-required confined spaces may be reclassified as non-permit spaces. To reclassify a permit-required confined space as a non-permit confined space, the space must have no atmospheric hazards, no potential for an atmospheric hazard to arise, and all other hazards must be eliminated. Departments wanting to reclassify a permit-required confined space must contact EH&S and complete Appendix C.

D. Permit-Required Confined Space Entry Procedures

1. When a CSN department has determined that a permit-required confined space must be entered, the Entry Supervisor will initiate and complete a confined space entry permit. Where possible, notification to EH&S will be made with as much notice as possible prior to entry.
2. The department will assign authorized Entrants to enter the permit-required confined space, an Attendant to observe outside the permit-required space when Entrant(s) are inside the permit space, and an Entry Supervisor to oversee the operations.
3. The department or designee will have the confined space prepared for entry. The Entry Supervisor will check that the Entrant(s) have been trained and are equipped with the appropriate safety equipment.
4. EH&S and the Entry Supervisor will sign the entry permit indicating that the entrant(s) are authorized entry into the permit-required confined space.
5. The Entry Supervisor will conduct a pre-entry briefing with Attendant(s) and Entrant(s) to discuss the permit, potential hazards of the space to be entered, protective measures, and the collection of atmospheric test data. Attendant(s) and Entrant(s) must sign the permit prior to entry.
6. All power sources/energy sources will be locked out and tagged out (LOTO), any potential sources of hazardous atmosphere will be eliminated, and any hot work permits will be issued, if required.
7. The original copy of the confined space entry permit must be posted at the permit-required space at all times while employees are working in the space. The Entry Supervisor retains the duplicate copy of the confined space entry permit.
8. Prior to entry, a permit-required space shall be tested to determine whether dangerous air contamination and/or an oxygen deficiency exist using a multi-gas detector. Testing shall be performed by the Entry Supervisor who has successfully completed the gas detector training for the monitor that will be used. The minimum parameters to be monitored are oxygen deficiency, Hydrogen Sulfide (H²S), and Lower Explosive Limits (LEL) concentration. The pre-entry monitoring results shall be entered on the Entry Permit.
9. The Entry Supervisor shall certify in writing (on the Confined Space Entry Permit), based upon the

results of the pre-entry testing, that all hazards have been eliminated. Affected employees shall be able to review the testing results.

10. A permit-required confined space shall be ventilated using a portable blower with flexible ductwork to augment natural circulation, if needed. After a suitable ventilating period, repeat the testing. Entry may not begin until testing has demonstrated that a hazardous atmosphere does not exist.
11. If there are no atmospheric hazards present, and if the pre-entry tests show there are no dangerous air contamination and/or oxygen deficiency within the space, and there is no reason to believe that any is likely to develop, entry into the space may proceed.
12. Continuous testing of the atmosphere in the immediate vicinity of the Entrants shall be accomplished. The entrants shall immediately leave the space when any of the gas monitors alarm for any reason. No Entrants shall re-enter the space until the Entry Supervisor has used a gas detector to evaluate the situation and has determined that it is safe to re-enter.
13. While work is being performed inside the permit-required confined space, the Attendant will stay in contact with the Entrant(s). Communications between Attendant and Entrant(s) shall be maintained throughout entry. Methods of communication that may be specified by the permit include voice, radio, signaling tugs on a rope, and the Attendant's observation that work activities continue normally. The Entry Supervisor can also act as the Attendant, if necessary. The Attendant may not enter the space to rescue an Entrant for any reason.
14. When the work is complete and the involved employees have left the permit-required confined space, all systems will be returned to their original condition. The Entry Supervisor will check the permit-required confined space and authorize that it be put back into service and notify the department of completion.
15. The employees involved in the work will return the permit to the Entry Supervisor. The original copy of the permit will be matched with the duplicate copy and sent to the Environmental Health & Safety Department.

E. Emergency Procedures

1. In the event of an emergency or Entrant injury, the Attendant or Entry Supervisor shall not attempt to enter the space to assist the employee. Assistance to the injured entrant(s) should be done through non-entry means such as a retrieval line and harness. If other employees are in the vicinity of the confined space, their assistance may be requested.
2. If the Entrant is unable to exit the confined space and the Attendant is unable to extract them using non-entry means, the Attendant shall immediately contact University Police Services at 702-895-3669 or dial 911 for emergency assistance.

Appendix A – Confined Space Assessment Form

Confined Space No. _____

Location: _____

Description: _____

Confined Space Criteria

If the answer is YES to EACH question below, the space is considered a confined space. Continue to the next section to determine if the space requires an Entry Permit to enter.

Criteria	Yes	No
Is the space large enough and configured to enter and perform work?		
Has the space limited or restricted means for entry and/or exit?		
Is the space not designed for continuous occupancy?		

Permit-Required Confined Space Criteria

If the answer is YES to ANY of the following questions, the space is considered a Permit-Required Confined Space. An Entry Permit must be obtained before entering the space.

Criteria	Yes	No
Does the space contain or have the potential to contain a hazardous atmosphere?		
Does the space contain a material that has the potential for engulfment?		
Does the space have inwardly sloping walls or a floor that slopes downward?		
Does the space contain any other recognized serious safety or health hazard?		

Additional Comments:

Assessment Completed By: _____ **Date:** _____

Appendix B – Confined Space Entry Permit



CSN CONFINED SPACE ENTRY PERMIT

DATE:

WORK ORDER NO:

NOTE: **IN THE EVENT OF AN EMERGENCY, CALL UPD AT 702-895-3669 OR DIAL 911**

NOTE: NEVER ENTER A CONFINED SPACE TO ATTEMPT A RESCUE.

NOTE: IF THE CONDITIONS OR PROCEDURES SPECIFIED ON THIS PERMIT CHANGE, STOP WORK IMMEDIATELY AND NOTIFY EH&S.

PART A. HAZARD ASSESSMENT (To be filled out by Entry Supervisor)

CONFINED SPACE NO. AND DESCRIPTION:

LOCATION OF CONFINED SPACE:

DESCRIPTION OF WORK PERFORMED:

ENTRY SUPERVISOR:

ATTENDANT:

ENTRANT(S):

MATERIALS OR CHEMICALS LOCATED IN OR BROUGHT INTO THE CONFINED SPACE:
(SDS must be obtained and available)

EQUIPMENT LOCATED IN OR BROUGHT INTO THE CONFINED SPACE:

POTENTIAL HAZARDS: (Check all that apply)

Hazardous Atmosphere:		Physical Hazards:	
<input type="checkbox"/>	None	<input type="checkbox"/>	None
<input type="checkbox"/>	Flammable	<input type="checkbox"/>	Temperature
<input type="checkbox"/>	Toxic	<input type="checkbox"/>	Chemical Absorption
<input type="checkbox"/>	Irritant	<input type="checkbox"/>	Noise
<input type="checkbox"/>	Corrosive	<input type="checkbox"/>	Entrapment
<input type="checkbox"/>	Oxygen-Deficient (<19.5%)	<input type="checkbox"/>	Vibration
<input type="checkbox"/>	Oxygen-Enriched (>23.5%)	<input type="checkbox"/>	Electrical
<input type="checkbox"/>	Other:	<input type="checkbox"/>	Mechanical
<input type="checkbox"/>		<input type="checkbox"/>	Spark-Producing Operations
<input type="checkbox"/>		<input type="checkbox"/>	Spilled Liquids
<input type="checkbox"/>		<input type="checkbox"/>	Engulfment
<input type="checkbox"/>		<input type="checkbox"/>	Limited Entry & Exit
<input type="checkbox"/>		<input type="checkbox"/>	Wet Surfaces:
<input type="checkbox"/>		<input type="checkbox"/>	Other:
<input type="checkbox"/>		<input type="checkbox"/>	Other:
<input type="checkbox"/>		<input type="checkbox"/>	Other:

PART B. HAZARD CONTROLS (To be filled out by Entry Supervisor)

YES	NO	N/A	
			Is Lockout/Tagout Required? If yes, list isolation point(s):
			Are GFCI's required on electrical equipment?
			Is explosion-proof equipment required?
			Are barriers required?
			Is communication equipment required?
			Are a telephone or two-way radio for summoning rescue available?
			Is a fire extinguisher required? Type:
			Is an emergency shower/eye wash required?
			Is a full-body harness and retrieval line required?
			Is a tripod and winch required? (for greater than 5 foot vertical depth)
			Are SDS's for all materials located in or brought into the confined space available?
			Have entrants and attendant been trained?
			Has attendant personnel been informed to remain continuously posted outside confined space?

LIST ANY SPECIAL ENTRY AND/OR WORK PROCEDURES:

LIST REQUIRED PERSONEL PROTECTIVE EQUIPMENT AND NON-ENTRY RESCUE EQUIPMENT:

DESCRIBE MEANS OF COMMUNICATION BETWEEN ATTENDANT AND ENTRANT(S):

PART C. PERMIT REVIEW (To be filled out by EH&S Representative)

YES	NO	N/A	
			Has appropriate air monitoring been identified?
			Are hazard controls, PPE, and rescue plans appropriate and adequate?
			Are entry procedures adequate to ensure safety?
			Will continuous ventilation be available?

PERMIT APPROVAL:

EH&S Approval Name: _____ Phone: _____

Signature: _____ Date: _____

PART D. AIR SAMPLING RESULTS (To be filled out by Entry Supervisor)

Model	Serial No.	Date Calibrated	User's Name

AIR MONITORING RESULTS (Record every 30 minutes throughout entry)

Time	Location(s)	Oxygen % (19.5-23.5%)	Combustibles (0-10% LEL)	H2S (<10ppm)	CO (<25 ppm)	Toxic Chemical
Pre-Entry						

PART F. CERTIFICATION

I certify that the requirements of this permit have been met:

Entry Supervisor Name: _____ Phone: _____

Signature: _____ Date: _____

I certify that I have reviewed and understand the requirements of this permit:

Attendant Name : _____

Signature: _____ Date: _____

Entrant Name: _____

Signature: _____ Date: _____

Entry Time START: _____ to STOP: _____

Appendix C – Permit-Required Confined Space Reclassification Form

A permit-required confined space may be reclassified as a non-permit confined space if:

1. The space does not contain actual or potential atmospheric hazards; and
2. All hazards can be eliminated without entry into the space.

The reclassification is valid only for as long as all the hazards remain eliminated. If a hazard arises during the course of entry, the space must be evacuated immediately and reevaluated.

Note: Controlling atmospheric hazards through forced air ventilation does not eliminate the hazard.

Confined Space No. _____

Location: _____

Description: _____

Hazard Originally Existing in the Space	Method of Eliminating the Hazard	Verified By

Additional Comments:

Certifying EH&S Employee: _____ **Date:** _____