



Confined Space Entry *SWP Updates*

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Confined Space Entry SWP Update

- Regulatory requirements have driven Americas Products (AP) to modify the [Confined Space Entry \(CSE\) Safe Work Practice \(SWP\)](#).
- Additional definitions and expectations within the SWP will require the computer-based training (CBT) to be significantly modified. In turn, this will require all assigned personnel to complete the CBT before the next 3-year refresher cycle.
- Significant changes and additions will be discussed; however, please take time to read the entire [CSE SWP](#).
- Provide any content or operational questions to your safety representative.



What's New for Content

- If a door sheet is cut into a tank with a minimum dimension of 4' X 4' and there are no impedances at the opening, the space may be considered a non permit required confined space. Gas testing will still be required.
- The maximum LEL allowed in a confined space is 4%. Initial entry will read 0% LEL.
- Additional gas testing is required for all gasoline and diesel tanks to include total hydrocarbon and benzene if any total hydrocarbon reading is detected.
- At no time will persons be allowed to enter a confined space when there is standing flammable liquid present. This does not include puddles of water with a sheen on top.
- At no time will Oxygen/Acetylene tanks be allowed in a Confined Space. If used, torches must be removed and cylinders isolated whenever entrants leave the space.



What's New for Content: Rescue Services

Whenever work is occurring within a confined space, adequate rescue services need to be identified and confirmed. The Rescue Plan Form will help capture requirements for the Authorized Entrants and level of rescue. Listed below are two examples of common AP CSE activities.

1. Tank cleaning, painting or welding (activities that can alter the environment within the confined space) are occurring

- On site rescue services are required as the space atmosphere could be compromised. The number of rescue technicians will vary depending on the amount of work, whether or not there is work at height, large impedances and abilities of other Authorized Entrants. In many cases, this may be one person. OE/HES Specialists are available to advise.

2. Tank inspection only after the tank has been cleaned and gas testing by a Qualified Gas Tester has determined there are no residual hazards within (e.g.; total hydrocarbon, benzene, ethanol) that could cause the space to be compromised

- If available, off site rescue services can be used. Communication and approval by signature is required before the CSE can occur. OE/HES Specialists can advise.
- This is to comply with regulatory requirements. It is recommended to contact the emergency response agency early to discuss this case and obtain early endorsement. Many jurisdictions have programs in place to address this like Portland, OR and Los Angeles, CA. OE/HES Specialists are available to advise and assist as needed in pre-discussions.
- When a terminal shares a property line with a refinery, the refinery rescue team may be considered “on site.” Involvement with the appropriate “rescue team leader” is still required.



CSE Permit Package

The CSE Permit Package requirements have increased. Additional forms are required to be with the package. Design of these new forms allows ease of use and to facilitate a more efficient process, a [CSE form package](#) has been created and is posted on SharePoint.

The new forms are:

- Confined Space Entry Rescue Plan Form
- Confined Space Entry Contingency Plan Form
- Confined Space Entry Essentials Checklist

Additional forms for Gas Testing for Total Hydrocarbon/Benzene (used after a tank has been cleaned):

- [ESH 513b Tank Cone Roof Gas Test Form](#)
- [ESH 513c Tank Floating Roof Gas Test Form](#)

The minimum forms required for a Permit required Confined Space Entry are:

- Confined Space Entry Form
- Confined Space Entry Rescue Plan Form **NEW!**
- Confined Space Entry Contingency Plan Form **NEW!**
- Confined Space Entry Essentials Checklist **NEW!**



CSE Rescue Plan

- The CSE Rescue Plan must be approved by the CSE Rescue Team Lead.

CONFINED SPACE ENTRY (CSE) RESCUE PLAN FORM		
Confined Space Business Unit/Plant:	Equipment #:	Date:
Confined Space is under gas purge or inert blanket: Y/N		Type of Gas:
Confined space rescue will be provided by: (check all that apply)		
<input type="checkbox"/> Fire Dept. Rescue Services: _____ <input type="checkbox"/> Contract Company rescue: _____		
Rescue Considerations: <input type="checkbox"/> Vertical Entry <input type="checkbox"/> Horizontal Entry Retrieval: <input type="checkbox"/> External <input type="checkbox"/> Internal <input type="checkbox"/> Congested ←		
Adequate Fixed Anchors?: (beam, stairwell, support strut, piping) Yes No If No, are temporary anchors in place? Yes No Pre-Rigging required? Yes No Location _____		
On Site Rescue Equipment <input type="checkbox"/> Required <input type="checkbox"/> Not Required if required supplied by: _____ ←		
<input type="checkbox"/> Stokes Basket: (w/packaging equip) _____ ← <input type="checkbox"/> Hauling Systems: _____ <input type="checkbox"/> Carabineers: _____ <input type="checkbox"/> Pulleys: _____ <input type="checkbox"/> Rescue Ropes: _____ <input type="checkbox"/> Anchor Straps: _____ <input type="checkbox"/> Webbing: _____ <input type="checkbox"/> Prussic/Ascenders: _____ <input type="checkbox"/> Body Harnesses: _____ <input type="checkbox"/> SCBA <input type="checkbox"/> Other _____		
Rescue Equipment Rescue Equipment Staged (location) _____ <input type="checkbox"/> N/A Identified rescue equipment inspections validated by: _____		
Medical Equipment Requirements <input type="checkbox"/> Oxygen <input type="checkbox"/> AED <input type="checkbox"/> BLS Kit <input type="checkbox"/> None		
Harness, Lifeline and Retrieval Requirements Harness: <input type="checkbox"/> Required <input type="checkbox"/> Not Required ← Life Line Required: <input type="checkbox"/> at all times <input type="checkbox"/> When moving vertically <input type="checkbox"/> Not Required Retrieval Device: <input type="checkbox"/> Required <input type="checkbox"/> Not Required		
Exempt Due to: <input type="checkbox"/> Multiple workers <input type="checkbox"/> Congestion/Entanglement <input type="checkbox"/> Does Not Contribute to Rescue Harness/Lifeline Exemption Authorized Rescue Supervisor Name/Signature: _____ ←		
OTHER RESCUE CONSIDERATIONS _____ ← _____ ← _____ ← _____ ← _____ ←		
Rescue Plan Prepared by Signature and Name _____ ←		

If vertical entry, retrieval will be external
Consult Rescue Team Lead for anchors, and pre-rigging

Many CSE's will not require this

Regulations require an entrant to wear a harness and be tethered on a retrieval line. This can be waived by a qualified rescue team lead, (due to impedances and multiple workers the retrieval line can be waived however, the harness will likely be mandated.

Legible name and signature of Rescue Supervisor

Additional comments as needed

Signature and legible printed name of person preparing document

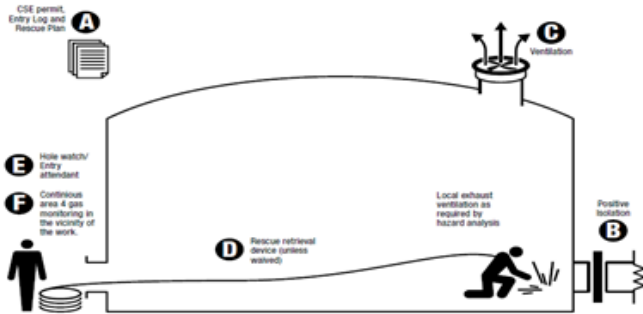


Contingency Plan

CSE CONTINGENCY PLAN	
<ul style="list-style-type: none"> • Plant Emergencies • Fire/hazardous release/ emergency/ alarms in adjoining process area(s). 	<p>Actions taken in response to emergencies:</p> <ul style="list-style-type: none"> • Evacuate Space and account for entrants before standby attendant leaves. • Shut down equipment if feasible. • Evacuate all personnel to primary or secondary muster point based on wind direction. (Always go cross or upwind).
<p>Confined Space Emergencies</p> <p>1. Gas Alarm (personal or continuous) sounds</p> <hr/> <p>2. Entrants shows signs or symptoms of overexposure but can self-evacuate</p> <hr/> <p>3. Entrant(s) appear or are unconscious</p> <hr/> <p>4. Loss of contact with Entrants</p> <hr/> <p>5. Differences between Entry Attendant's Log and Actual Headcount shows unaccounted for personnel.</p> <hr/> <p>6. Portable Radio fails</p> <p style="text-align: center;"><u>Additional Considerations</u></p> <p>7. _____</p> <p>8. _____</p> <p>9. _____</p> <p>10. _____</p> <p>11. _____</p> <p>12. _____</p>	<p>Actions taken in response to emergencies</p> <p>1. Evacuate Space and account for personnel. Shut down equipment. Notify Entry Supervisor.</p> <hr/> <p>2. Assist evacuation of space and account for personnel. Shut down equipment. Call for help and notify Entry Supervisor.</p> <hr/> <p>3. Summon Emergency Rescue. Summon help from the surrounding area. Attempt non-entry rescue using retrieval lines. Provide First Aid/ CPR if certified to do so. Notify Entry Supervisor.</p> <hr/> <p>4. Summon emergency Rescue. Summon help from surrounding area. Attempt non-entry rescue using retrieval lines. Provide First Aid CPR if certified to do so. Notify Entry Supervisor.</p> <hr/> <p>5. Evacuate Space and account for personnel. If personnel are still unaccounted for, summon Emergency Rescue. Summon aid from surrounding area. Attempt non-entry rescue using retrieval lines. Notify Entry Supervisor.</p> <hr/> <p>6. Stop the work until an operable radio is on hand.</p> <p style="text-align: center;"><u>Mitigations</u></p> <p>7. _____</p> <p>8. _____</p> <p>9. _____</p> <p>10. _____</p> <p>11. _____</p> <p>12. _____</p>

- This form has been pre-populated and does not require additional completion.





Confined Space Entry Essentials Checklist

Downstream and Chemicals
(Non Inert Spaces)

TASK TYPE DEPENDENT ON ENTRY ACTIVITY

ID#: EC-CSE-D1
Applies to confined spaces with special hazardous characteristic that are properly isolated per BHE standard.

Each work group will fill out a new checklist each shift for every permit to work in a confined space. (Exceptions may apply for turnarounds or projects per site policy)

Date: _____

CSE Permit/Certificate #: _____

Work Permit #: _____

Equipment Name/Number: _____

Standard equipment:

- Area continuous 4-gas monitor (O₂, LEL, CO, H₂S)
- PPE and respiratory protection per hazard analysis



Version 1, Sept., 2015

Do it for LIFE!

Completed by Permit Holder

Ventilation Setup

No ventilation required

OR

Verify ventilation inlet is configured in a manner to prevent pulling unwanted gases and vapors into the space

Verify ventilation is exhausting to a safe location

Lighting

No additional lighting

GFCI/ELR or equivalent protection

STEP 2: EMERGENCY COMMUNICATIONS

Completed by Permit Holder and Hole Watch/Entry Attendant

Confirm hole watch/entry attendant understands the rescue and evacuation notification requirements.

Define communication method to/from entrants.

Radio Verbal Air Horn

Other _____

Define communication method to/from rescue.

Radio Verbal Other _____

CSE Permit, Entry Log and Rescue Plan

CSE permit with entry log must be with hole watch/entry attendant. Rescue plan specific for space must be posted at entry. **A**

Tripod/or high point required for vertical entries (>5 feet - unless waived on rescue plan).

Confirmed by Permit Issuer and Permit Holder

1. Verify required isolation points are in place and secure. **B**
2. Verify initial gas test was conducted by a qualified gas tester; results are within range and are documented on permit.
Note: If space is not occupied and no area continuous gas monitoring is in place beyond site limits – **STOP!** A new gas test must be performed by a qualified gas tester.
3. If ventilation is required, then verify proper ventilation is in place and functioning. **C** N/A
4. All entrants are wearing a rescue harness and retrieval device. **D**
 Rescue harness waived on the rescue plan
 Retrieval lanyard waived on the rescue plan
5. Verify a trained and qualified hole watch/entry attendant is assigned to each entry point. **E**
6. Confirm hole watch/entry attendant has an area continuous 4 gas monitor and understands alarm response requirements. **F**

	Before permit		During work Site Checker (Initial)
	Permit Holder (Initial)	Permit Issuer (Initial)	
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____

STEP 4: PRINT AND SIGN BEFORE BEGINNING WORK

Permit Issuer
Print Name _____ Signature _____ Date _____

Permit Holder
Print Name _____ Signature _____ Date _____

STEP 5: SAFEGUARD VERIFICATION DURING WORK – FOR JOBS LASTING MORE THAN HALF A SHIFT.

Site Checker
Review
Print Name _____ Signature _____ Date _____

Essentials Checklist

- This form is to be initiated (validated/verified and revised as necessary) whenever conditions change within the CSE (e.g., cleaning, welding, painting, inspection)



Example of a Gas Testing & Visual Inspection Form

After the space has been cleaned and all known chemical hazards have been removed, this form must be completed by a Qualified Gas Tester before respiratory protection equipment (RPE) can be reduced or eliminated.

Appendix E: Cone Roof Tank & Underground Storage Tank Gas Testing and Visual Inspection Form

This form must be completed to verify levels of hazardous gases and ensure proper PPE is determined. Gas testing must be conducted by a Qualified Gas Tester.

- Gas tests must be drawn and recorded as follows: % oxygen, % lower explosive limit, ppm hydrogen sulfide, and ppm carbon monoxide. Additionally, ppm total hydrocarbon and ppm benzene must be sampled in each space. Hydrocarbon and benzene analysis can be representative for each space.
- Visual inspection records: what is seen (For example: liquid, hydrocarbon sludge, debris, dirt, clean)

Notes:

- If there is potential for product under floor of tank, contact Safety Specialist to determine options for evaluating and mitigating risk. ESH 534 Tank Cleaning, Repairing, Dismantling provides guidance.
- If total hydrocarbon or benzene levels exceed PEL, consult with Safety Specialist to determine if organic vapor cartridge respiratory protection is adequate.
- All spaces require benzene test unless specified by Safety Specialist.
- Benzene testing equipment must be capable of reading to 0.10 ppm.

Table 7. Gas Testing Equipment Used

Manufacturer	Model	S/N	Calibration Date	Fresh Air Zero?	Ancillary Equip inspected for defects

- [ESH 513b Tank Cone Roof Gas Test Form](#)
- [ESH 513c Tank Floating Roof Gas Test Form](#)

Table 8. AST – Provide Results for Tank Space

Location	O ₂	% LEL	H ₂ S	CO	*HC	*Benzene	Visual Inspection
Top							
Middle							
Bottom							
Poles, Legs, Pipes, Floating Suction							

Additional Notes:

Table 9. UST – Provide Response for Tank Space

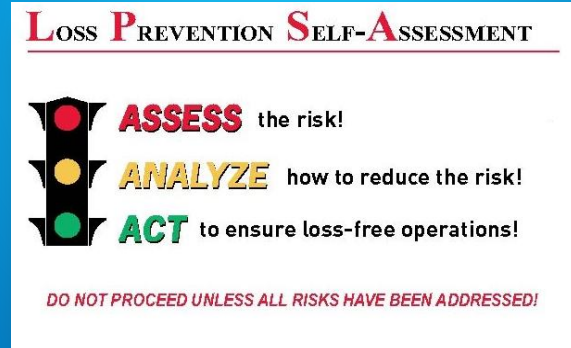
	O ₂	% LEL	H ₂ S	CO	*HC	*Benzene	Visual Inspection
Sump Space							
12" inside the UST							
Bottom of UST							



Before Performing a Confined Space Entry Check the Following

- The space has been properly isolated
- The hazards been identified and mitigations in place
- Proper ventilation for the type of work is in place
- The Rescue Plan has been reviewed and signed by the Qualified Rescue Team Leader
- Required Gas Testing by a Qualified Gas Tester has been performed

Prior to each and every step – **assess, analyze and act!**



Prevent Injury

- Know the hazards and dangers of the job to be done.
- Plan your work activities. Remember to refer to the ***Preventing Serious Injury and Fatalities Field Guide*** when planning work.
- Use LPSA and JLAs. What's the worst thing that can happen? Mitigate or eliminate as many hazards as possible before starting work.

Questions? Contact your local HES Specialist (TESH/RESH) or Safety Specialist.

