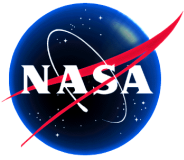


Stennis Space Center

Confined Space Annual Review

Office of Safety & Mission Assurance



Issues Noted During 2016 Review



Stennis Space Center

- Contractors not retaining completed permits for 1 year; NASA SSC req't
- Review of available completed permits - Numerous documentation errors were noted to include
 - Failure to document General data for work to be performed – Sect 1.
 - Failure to complete the pre-entry hazard assessment; w/emphasis on Pre-entry brief, Sect 3
 - Failure to identify Rescue Plan – Section 4 – Attach if unique & coordinate w/SSC Emergency
 - No safety or supervisor signatures – Required on all permits – Sect 5
 - No documentation of training certification date – Add a separate list, if needed - Sect 5, page 2
 - Failure to record entry/exit of entrants – Add a separate list, if needed – Sect 6
 - No meter calibration data – Model/Serial number & calibration due date, Sect 7
 - No atmospheric testing – required on all permits (initial & continuous); Sect 8
 - Failure to cancel/close permit upon completion – Requires Supervisors signature and exit brief; Sect 9
 - Failure to perform Post Entry review of Permit for proper documentation – Sect 10

Confined Space Entry Program at SSC

SCWI-8715-0004

**John Lindsay
S3 Safety**

Training Requirements


All personnel assigned to a permit-required confined space entry at SSC, regardless of their job task, must be trained for confined space entry and authorized by their employer. This includes entrants, attendants, entry supervisors, and rescue personnel. It is the responsibility of the employer to provide proof of training and authorization prior to any entries.

**NO EXCEPTIONS TO THIS
REQUIREMENT!**

What is a Confined Space?

- Confined Space: (must meet all 3 requirements)
 1. Is large enough and so configured that an employee can bodily enter and perform work
 2. Has limited or restricted means of entry or exit
 3. Is not designed for continuous human occupancy
- Examples:
Tanks, Boilers, Silos, Furnaces, Utility Manholes, Sewers, Vaults, Pipes, Tunnels, Ducts, etc.

What is a **Permit Required** Confined Space?

- A **Permit Required** Confined Space is a confined space with one or more of the following:
 - Actual or potential hazardous atmosphere
 - Materials that could engulf entrant
 - Internal shape that could trap entrant
 - Other serious hazards (physical/chemical/biological etc)
- **Permit Required** Confined Spaces must be labeled as such 
- **Permit Required** Confined Spaces require a Confined Space permit (SSC Form 576) and measures to control/eliminate the hazards before entry

What is a **Non-Permit Required** Confined Space?

- A **Non-Permit Required** Confined Space is a confined space with which has no inherent hazards and in which no hazards are introduced during the entry/work operations in the confined space.
 - Examples: Walk in freezer or refrigerator, a bank vault, larger HVAC ducting, area under the raised floors in the Test Control Centers

You & Confined Spaces

- **Do not enter** a confined space without the proper training, documentation and controls.
 - “Entry” – OSHA considers entry as “any body part passing through the plane of the opening”
- If you see a confined space without a sign on it, contact your safety office
- If you find someone “down” in a confined space, **do not** try to rescue them
 - Call 911 (228-688-3636) for a professional rescue team
 - You cannot hold your breath and rescue someone! As noble as it is, many have tried and many have died.



The Confined Space Team

Entry Supervisor

- Employee responsible for coordinating all aspects of confined space entry

Attendant

- The employee who remains outside the space to monitor the entrant(s), guards against unauthorized entry, warns entrants of unusual conditions, and alerts rescue in the event of an emergency

Entrant

- The employee authorized to enter the confined space and perform work

Permit-Required Confined Space Entry Procedure

- Isolate the space
- Ventilate the space
- Conduct a job specific safety meeting prior to entry
- Complete the permit
- Test the atmosphere
- Enter the space

Complete the Permit

- Permit must be correctly and completely filled out prior to entry
- Can only be activated by the **Entry Supervisor's signature to be valid**
- No entry without a valid permit
- Permits are valid for no more than 12 hours
- When work is completed the permit must be forwarded to Safety (copies are okay)
- Cancelled permits are kept on file for 1 year
- Only the **Entry Supervisor's signature can cancel** the permit

Entry Permit Section 1 – General Information

- Date and authorized duration of permit
- Organization
- Location/Description of space to be entered
- Purpose of entry
- Work Description

1. GENERAL INFORMATION		QA Audit (initials/date): _____ <input type="checkbox"/> Corrective Action Required	
Date & Time Issued Date: _____ Time: _____		Date & Time Permit Expires Date: _____ Time: _____	
Organization Performing Entry		Location & Description of Confined Space	
Purpose of Entry		Work Description (Work Authorizing Document/Stennis Work Request/MAXIMO #)	

Entry Permit Section 2 – Pre-Entry Procedures

- Isolation Methods
- Communication Methods
- Ventilation Methods

QA checks moved
to new section 10

2. PRE-ENTRY PROCEDURES (Check Applicable)			QA Audit (initials/date): _____	<input type="checkbox"/> Corrective Action Required
<u>Isolation Methods:</u> <input type="checkbox"/> Blanking or Blocking <input type="checkbox"/> Lockout/Tagout <input type="checkbox"/> Purge & Clean <input type="checkbox"/> Inert <input type="checkbox"/> External Barrier <input type="checkbox"/> Other: _____	<u>Communication Methods:</u> <input type="checkbox"/> Visual <input type="checkbox"/> Voice <input type="checkbox"/> Radio <input type="checkbox"/> Tug Rope <input type="checkbox"/> Other: _____	<u>Ventilation Methods:</u> <input type="checkbox"/> Initial (30 minute minimum) <input type="checkbox"/> General ventilation maintained <input type="checkbox"/> Method: _____		

Entry Permit Section 3 – Entry Hazards Controlled

- List of potential hazards and requirements
- All No answers must be corrected prior to entry

3. ENTRY HAZARDS CONTROLLED (Answer all questions)		
Description of Potential Hazards Requiring Evaluation: (All NO answers must be corrected prior to entry)		
Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	Oxygen levels are between 19.5%-23.5% (continuous monitoring required)
<input type="checkbox"/>	<input type="checkbox"/>	Are asphyxiants blocked/blanked from entering the confined space
<input type="checkbox"/>	<input type="checkbox"/>	There are no flammable gases/vapors and/or combustible dust/fumes in the space: List if found: _____
<input type="checkbox"/>	<input type="checkbox"/>	There are no toxic gases/vapors present. List if found: _____
<input type="checkbox"/>	<input type="checkbox"/>	Atmospheric monitoring is in place (document initial and subsequent readings in section 8.)
<input type="checkbox"/>	<input type="checkbox"/>	There are no corrosive hazards present in the space.
<input type="checkbox"/>	<input type="checkbox"/>	All electrical hazards are eliminated or controlled.
<input type="checkbox"/>	<input type="checkbox"/>	All mechanical hazards/stored energy are eliminated or controlled/isolated.
<input type="checkbox"/>	<input type="checkbox"/>	Noise hazards are eliminated or controlled in the space.
<input type="checkbox"/>	<input type="checkbox"/>	Engulfment hazards are eliminated.
<input type="checkbox"/>	<input type="checkbox"/>	Ventilation (if required) is in place and providing air from a clean source (no exhausts, no contaminants, etc)
<input type="checkbox"/>	<input type="checkbox"/>	Communication means with the entrants and rescue is in place.
<input type="checkbox"/>	<input type="checkbox"/>	Tripod (if required) is in place and entrants are attached to lifelines.
<input type="checkbox"/>	<input type="checkbox"/>	Pedestrian and vehicle barriers/signs (if required) are in place.
<input type="checkbox"/>	<input type="checkbox"/>	Confined Space Entry Permit is maintained at the entrance.
<input type="checkbox"/>	<input type="checkbox"/>	Other hazards (if applicable) are eliminated/controlled. List hazards introduced during entry (hot work, chemicals (painting, cleaning), electrical, wildlife, and/or combustible dust/fumes, etc:
•		Hazard: _____ Elimination/Control Means: _____
•		Hazard: _____ Elimination/Control Means: _____
•		Hazard: _____ Elimination/Control Means: _____
<input type="checkbox"/>	<input type="checkbox"/>	Pre-Entry Briefing was accomplished on the specific hazards, work to be performed, control methods, and rescue plans.

Bolded for emphasis

Entry Permit Section 4 – Emergency Rescue Plans/Procedures

- Complex or unique rescue plans have to be written and attached to the permit.
- If a contractor is providing their own rescue services, the Fire Department shall sign acknowledging Fire Department approval.

4. EMERGENCY RESCUE PLANS/PROCEDURES	QA Audit (initials/date): _____	<input type="checkbox"/> Corrective Action Required
<input type="checkbox"/> Complex/unique rescue – <i>Attached written Rescue Plan to permit</i>		
<input type="checkbox"/> Rescue plan/methods: _____		
.....		
<input type="checkbox"/> Method(s) for contacting Emergency Rescue: <input type="checkbox"/> On-Site/In-Place Rescue <input type="checkbox"/> Radio <input type="checkbox"/> Cell Phone (228-688-3636) <input type="checkbox"/> SSC Land Line (911)		
<input type="checkbox"/> Contractor provided emergency/rescue service coordinated with SSC Fire Department: _____ Date _____		

Entry Permit Section 5 – Team Signatures

- Entry Supervisor approval. ENTRY CANNOT BE MADE WITHOUT ENTRY SUPERVISOR'S SIGNATURE!
- Rescue Team approval
- Safety approval (Safety Critical Procedure)

5. CONFINED SPACE TEAM SIGNATURES			
<p>Entry Supervisor: I inspected the confined space work site and provided a Pre-Entry Briefing on the specific hazards, work to be performed, hazard control methods, communication plan, and rescue plan. The entry has been coordinated with Test Operations/Facility Manager (if required) to ensure safe entry (<input type="checkbox"/> N/A). I approve this permit. This permit shall be maintained at the entrance.</p>			
_____ Entry Supervisor Printed Name	_____ Training Expiration Date	_____ Entry Supervisor Signature	
_____ Test Operations/Facility Management		_____ Date	
<p>Emergency Rescue Team: I have reviewed this permit and approve the planned rescue procedures as outlined in Section 4.</p>		<p>Safety: I have reviewed this permit and understand the condition of entry. I approve this permit.</p>	
_____ Signature of Rescue Team Lead	_____ Date	_____ Signature of Safety	_____ Date

Coordination with Test Ops/FM now required, if appropriate

Entry Permit Section 5 – Team Signatures (continued)

- Attendant and Entrant signatures and training verification

Authorized Attendant(s): I reviewed the confined space entry conditions/requirements and understand my Attendant roles & responsibilities.					
Printed Name	Signature	Training Expiration	Printed Name	Signature	Training Expiration
Authorized Entrants: I reviewed the confined space entry permit conditions/requirements and understand my Entrant roles & responsibilities.					
Printed Name	Signature	Training Expiration	Printed Name	Signature	Training Expiration

Entry Permit Section 6 – Authorized Entrant Tracking

All personnel entering the space shall be logged in upon entry and logged out upon exit. No exceptions.

6. AUTHORIZED ENTRANT TRACKING			QA Audit (initials/date): _____ <input type="checkbox"/> Corrective Action Required		
Authorized Entrant	Time In	Time Out	Authorized Entrant	Time In	Time Out

* Sections 5, 6, and 7 may be appended with a continuation sheet.

Entry Permit Section 7 – Atmospheric Testing and Monitoring Equipment

- List both area and personal monitors.
- Include model numbers, serial/ECN numbers, and calibration due dates for the equipment.

7. ATMOSPHERIC TESTING AND MONITORING EQUIPMENT		QA Audit (initials/date): _____	<input type="checkbox"/> Corrective Action Required
Area Monitor/Meter	Model Number	Serial No/ECN	Calibration due date
Personal Monitors			

Entry Permit Section 8 – Atmospheric Testing and Monitoring Record

An initial reading is made before entry, and at least one reading must be recorded during entry

Readings during entry must be recorded at least every two hours

8. ATMOSPHERIC TESTING AND MONITORING RECORD							
						QA Audit (initials/date): _____ <input type="checkbox"/> Corrective Action Required	
Continuous monitoring shall be recorded at least every 2 hours.							
Hazard (acceptable level)	Initial Reading Time: _____	Next Reading Time: _____	Next Reading Time: _____	Next Reading Time: _____	Next Reading Time: _____	Next Reading Time: _____	Next Reading Time: _____
Oxygen (19.5-23.5%)							
Flammable (<10% LEL)							
Carbon Monoxide (<35 ppm)							
Hydrogen Sulfide (H ₂ S, 0 ppm)							
Other Hazard: _____							
Other Hazard: _____							
Testers Initials							

When Should Atmospheric Testing Occur?

- Prior to every entry when the space has been vacant
- On a continuous basis when entrants are in a Permit-Required Confined Space (either remotely by the attendant, or by personal monitor worn by entrant)

Exceeded Atmospheric Limits

Any time an atmospheric limit is exceeded or an atmospheric monitor alarms, no matter what the reason, all personnel shall immediately exit the space, and no other personnel shall enter until atmospheric conditions are returned to safety levels and verified by the Cognizant Safety Office

THERE ARE NO EXCEPTIONS!

When the Job is Completed

- All tools and equipment must be removed from the space
- Ensure all entrants have exited and are logged out
- Close the space
- Cancel the permit (**Entry Supervisor Only**)
- Send cancelled permit to your Safety Office

Entry Permit Section 9 – Permit Cancellation/ Termination

Only the Entry Supervisor can cancel /
terminate the permit.

9. PERMIT CANCELLATION/TERMINATION		QA Audit (initials/date): _____	<input type="checkbox"/> Corrective Action Required
I personally verified all equipment was removed, all persons exited the confined space and conducted a debrief. I certify this permit is cancelled/terminated.			
_____	_____	_____	
Entry Supervisor Printed Name	Entry Supervisor Signature	Date/Time	

Entry Permit Section 10 – Quality Assurance Audit and Corrective Actions

- Sections 1-9 of the SSC-576 have “QA Audit” blocks for documentation of a quality review of the section.
- They must be filled out, discrepancies noted, and corrective action recommendations made.

Post entry audit moved from sections 1-9 to new section 10.

10. POST ENTRY AUDIT & CORRECTIVE ACTION RECOMMENDATIONS FOR SECTIONS 1-9 (initials/date): _____	
The Post Entry audit of this permit noted the following discrepancies (<input type="checkbox"/> N/A). See recommended corrective actions/areas for improvement.	
1. Discrepancy: _____	Recommendation: _____
2. Discrepancy: _____	Recommendation: _____
3. Discrepancy: _____	Recommendation: _____
4. Discrepancy: _____	Recommendation: _____

Questions & Comments

