

# Notice of Change to Controlled Documents #207-210 / 30 Oct 2014

## Summary of Changes

NOC#	Ch., Sec., SOP	Summary	Revision#
207	SOP-GEN-007G ALL	Confined Space Entry completely revised- Confined Space permits reintroduced, definitions clarified, non permit-required spaces identified	#11
208	SOP-GEN-012B Sec 2	Confined Space permit must be signed by Master and Chief Engineer	#6
209	Confined Space Permit	Recreated CS permit and reinstated its use. Workers must complete CS computer based training before being allowed to do CS work.	Oct 2014
210	Working at Heights Permit	Now includes a requirement that anyone doing WH work must have completed WH computer based training	Oct 2014

11-10-14 SS SMM TOC web page updated  
11-10-14 SS NOC web page updated  
11-10-14 SS SMM files - each section updated  
11-10-14-SS NOC sent to fleet  
11-10-14-SS NOC pdf posted on CM  
 \_\_\_\_\_ Vessel Acks recorded on fleet tracking  
 \_\_\_\_\_ Office Controlled SMM updated

Approvals	Approvals
<div style="border: 1px solid green; padding: 5px; width: fit-content; margin: auto;"> <p style="text-align: center; color: green;"><u>Approved for Distribution</u></p> <p>Date <u>11-3-2014</u> Initials <u>[Signature]</u></p> <p>Print Name <u>Pete Tatro</u></p> </div>	<div style="border: 1px solid green; padding: 5px; width: fit-content; margin: auto;"> <p style="text-align: center; color: green;"><u>Approved for Distribution</u></p> <p>Date <u>11-4-2014</u> Initials <u>[Signature]</u></p> <p>Print Name <u>Jim Brooks</u></p> </div>

**SAFETY MANAGEMENT MANUAL**



**SOP-GEN-007G  
Confined Space Entry**

Rev # 11

Revision date: 30 Oct 2014

Page 1 of 6

**SOP GEN-007G  
Confined Space Entry**

- 1.0 [Introduction](#)
- 2.0 [Definitions](#)
- 3.0 [Permit-Required Confined Space Register](#)
- 4.0 [Non Permit-Required Confined Space Register](#)
- 5.0 [Reference](#)
- 6.0 [Confined Space Hazards](#)
  - 6.1 [Oxygen-Deficient Atmospheres](#)
  - 6.2 [Flammable Atmospheres](#)
  - 6.3 [Toxic Atmospheres](#)
  - 6.4 [Mechanical and Physical Hazards](#)
- 7.0 [Procedures](#)

**Revision/ Review Log**

Revision Date	Approved by	Reviewed by	Revision Details/ Proposal Notes
11 January 2010 Revision #5	Dr. Jim Brooks	HSE Manager: Sue McDonald	
15 October 2010 Revision #6	Dr. Jim Brooks Dr. Bernie Bernard	HSE Manager: Russell Putt  Capt. Pat Fallwell	Changed to electronic format
10 December 2010 Revision #7	Dr. Jim Brooks Dr. Bernie Bernard	Dr. Jim Brooks Dr. Bernie Bernard	New Special Permit forms- changes suggested by crews and new JSA form added
03 May 2012 Revision #8	Dr. Jim Brooks Dr. Bernie Bernard	Dr. Jim Brooks Capt. Pat Fallwell Dr. Roger Fay	All permits require two signatures to be valid.
06 February 2013 Revision #9	Dr. Jim Brooks	Dr. Jim Brooks Capt. Pat Fallwell Dr. Roger Fay	Entire SOP revised, old definitions removed, confined space permit deleted, entire SOP- GEN-007H deleted.
08 April 2014 Revision #10	Dr. Jim Brooks Mr. Pete Tatro	Dr. Jim Brooks Mr. Pete Tatro	Confined spaces identified on all TDI vessels
30 October 2014 Revision #11	Dr. Jim Brooks Mr. Pete Tatro	Dr. Jim Brooks Mr. Pete Tatro Dr. James Howell	Confined Space permits reintroduced, definitions clarified, non permit-required spaces identified

<b>SAFETY MANAGEMENT MANUAL</b>		
	<b>SOP-GEN-007G</b>	Rev # 11
	<b>Confined Space Entry</b>	Revision date: 30 Oct 2014
		Page 2 of 6

## 1.0 Introduction

The purpose of this SOP is to address the protocols required for the entry of a permit-required confined space. Vessels in the TDI-Brooks fleet are small and have limited opportunities for a confined space entry such as fuel, water, and waste tanks.

**A permit-required confined space entry would only be made on any vessel at the dockside or in a shipyard after the atmosphere had been tested by a Certified Marine Chemist and declared safe for entry. We do not allow permit-required confined space entry at sea **except in extreme emergency.****

## 2.0 Definitions

Confined spaces are potentially dangerous areas to work in due to associated hazards such as limited space for maneuvering, restricted entry/ exit, oxygen limited atmosphere or hazardous atmosphere.

**Confined spaces** are typically defined by the following criteria:

- An area large enough for someone to bodily enter the space to perform work.
- An area that has limited or restricted means for entry or exit. Openings can be considered to limit entry or exit by either being small in size or difficult to access.
- The space is not designed for continuous employee occupancy. The space may be designed to only store products, enclose materials, equipment and processes. These types of spaces only require occasional employee entry for inspections, maintenance, or repair.

A **Permit-required confined space** has one or more of the following characteristics:

- Contains or has potential to contain a hazardous atmosphere;
- Contains material with the potential to engulf someone who enters the space;
- Has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a downward sloping floor that tapers to a small cross section; and/ or
- Contains any other recognized serious safety or health hazards.

The **Authorized Person** signing the permit is the TDI-Brooks management representative responsible for ensuring that the permitting process and associated safety procedures to be followed meet or exceed the TDI-Brooks requirements.

- In shipyards, at the dock or in the absence of a chief engineer or bridge officer, the Authorized Person is Port Engineer.

**SAFETY MANAGEMENT MANUAL**



**SOP-GEN-007G  
Confined Space Entry**

Rev # 11

Revision date: 30 Oct 2014

Page 3 of 6

**3.0 Permit-Required Confined Spaces Register**

The Port Engineer has conducted an evaluation of each TDI vessel and confirmed the following are the only permit-required confined spaces on TDI vessels. The entrances to these spaces shall be clearly marked with signage or painted to indicate "Confined Space- No Entry".

**BROOKS MCCALL**

**BALLAST TANKS**

- Forepeak
- # 1 port and stbd
- # 2 port and stbd
- # 3 port and stbd

**FUEL OIL**

- # 1 port and stbd
- # 2 port and stbd
- # 3 port and stbd
- # 4 port and stbd

Lube oil tank, hydraulic oil tank, dirty oil tank, potable water tanks and all void spaces

**GEO EXPLORER**

**BALLAS TANKS**

- Forepeak
- # 1 port and stbd
- # 2 port and stbd
- # 3 port and stbd
- Aft peak

**FUEL OIL TANKS**

- # 2 port and stbd
- # 3 port and stbd
- # 4 port and stbd

Lube oil, hydraulic oil, dirty oil, dirty bilge, potable water & drill water, day tanks

**GYRE**

**BALLAST TANKS**

- Forepeak
- # 1 port and stbd
- # 1 centerline
- # 2 port and stbd
- # 3 port and stbd
- # 4 port and stbd
- # 5 centerline
- # 6 port and stbd
- # 7 port and stbd

**FUEL OIL TANKS**

- # 2 port and stbd
- # 3 port and stbd
- # 4 port and stbd
- Day Tanks
- Aftpeak

All lube oil, hydraulic oil, dirty oil tank & potable water tanks

**PROTEUS**

**BALLAST TANKS**

- # 1 centerline
- # 2 centerline
- # 8 port and stbd
- # 12 port and stbd
- # 13 center line

**FUEL OIL**

- # 6 port and stbd
- # 7 port and stbd
- # 11 port only
- Day tanks

<b>SAFETY MANAGEMENT MANUAL</b>		
	<b>SOP-GEN-007G</b>	Rev # 11
	<b>Confined Space Entry</b>	Revision date: 30 Oct 2014
		Page 4 of 6

Lube oil, dirty oil tank, dirty bilge tank, potable water tanks and grey water tank

RYLAN T

**BALLAST TANKS**

Forepeak

# 1 port and stbd

# 2 port and stbd

# 3 port, center & stbd

# 4 port and stbd

**FUEL OIL TANKS**

# 1 port and stbd

# 2 port and stbd

# 3 port and stbd

# 4 port, center & stbd

Liquid mud tanks

# 1 port and stbd

# 2 port and stbd

# 3 port and stbd

Day tanks

Lube oil, hydraulic oil, dirty oil tank, dirty bilge tank, and potable water tanks

#### **4.0 Non-Permit-Required Confined Spaces Register**

The Port Engineer has conducted an evaluation of each TDI vessel and confirmed the following are the non permit-required confined spaces on TDI vessels. While a permit is not required, a hazard analysis in the form of a JSA is required and both the Chief Engineer and bridge Officer of the Watch must be informed.

BROOKS MCCALL- Chain locker

GEO EXPLORER- Chain locker

GYRE- Chain locker

PROTEUS- Chain locker

RYLAN T- Chain locker

#### **5.0 Reference**

OSHA 29 CFR 1915 Subpart B “Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment”

#### **6.0 Confined Space Hazards**

Once an area has been identified as a confined space area, then the potential hazards associated with that space must be identified. Confined space hazards may be categorized as oxygen deficient atmospheres, flammable atmospheres, toxic atmospheres and mechanical/physical hazards.

<b>SAFETY MANAGEMENT MANUAL</b>		
	<b>SOP-GEN-007G</b>	Rev # 11
	<b>Confined Space Entry</b>	Revision date: 30 Oct 2014
		Page 5 of 6

For this reason, any person entering a confined space must be trained in recognizing these hazards. **At a minimum, they must have completed the Confined Space Training course on the Computer Based Training.**

### 6.1 Oxygen-Deficient Atmospheres

Our normal breathing atmosphere contains 21% oxygen and any atmospheres containing less than 19.5% oxygen will be considered oxygen-deficient. The oxygen in an atmosphere can be reduced by either consumption or replacement. Oxygen may be consumed by the combustion process (fire) of flammable materials or by bacteria, such as fermentation. Certain types of chemical reactions can also consume oxygen. For example the formation of rust is an oxygen consuming process. Also, the oxygen in a confined space can be depleted through too many employees or employees staying too long in an area that does not get its oxygen replaced readily. Oxygen levels can also be reduced as the result of oxygen displacement by other gases.

### 6.2 Flammable Atmospheres

Flammable atmospheres are generally the result of flammable gases, vapors, dust mixed in certain concentrations with air, or an oxygen-enriched atmosphere. Oxygen-enriched atmospheres are those atmospheres that contain an oxygen concentration greater than 22%. An oxygen-enriched atmosphere will cause flammable materials such as clothing and hair to burn violently when ignited. Combustible gases or vapors can accumulate within a confined space when there is inadequate ventilation. Gases that are heavier than air will accumulate in the lower levels of a confined space. **Therefore, it is especially important that atmospheric tests be conducted near the bottom of all confined spaces.**

Also consider that the type of work to be conducted may generate a flammable atmosphere such as spray painting, use of flammable solvents, and welding or cutting with an oxygen/acetylene device. Small holes in oxygen and acetylene hoses may also generate explosive atmospheres.

### 6.3 Toxic Atmospheres

Toxic atmospheres may be present within a confined space as the result of a product stored in the confined space which may remain in the atmosphere due to out gassing or be absorbed by the walls or other items in the space and give off a toxic vapor when cleaned. Also toxic atmospheres may be generated as a result of the work being conducted such as cleaning (many solvents produce toxic vapors), painting, welding, etc.

<b>SAFETY MANAGEMENT MANUAL</b>		
	<b>SOP-GEN-007G</b>	Rev # 11
	<b>Confined Space Entry</b>	Revision date: 30 Oct 2014
		Page 6 of 6

## 6.4 Mechanical and Physical Hazards

Mechanical and physical hazards should be evaluated prior to undertaking a confined space entry. The space should be examined for moving mechanical parts and other energy sources such as electricity, hydraulics, etc. All such sources of stored energy should be marked and isolated. Additionally, physical factors including temperature extremes, noise, and vibration must also be evaluated. Many potential hazards are listed on the permit.

## 7.0 Procedures

Before anyone may enter a permit-required confined space on a TDI-Brooks vessel for any reason, **a certified Marine Chemist or equally authorized person** must have tested the atmosphere and posted a certificate outside the space stating it is safe for entry. The entrant will inspect the certificate before entering to ensure it is still current and valid.

**Before entry into any confined space, a risk assessment will be conducted in the form of a Job Safety Analysis, which is integrated into the permit. Then the confined space permit ~~and~~ must be approved and signed by both Chief Engineer and the bridge Officer of the Watch.**

**If both employees and contractors will be entering the space,** a joint JSA shall be conducted by both parties and signed by all entrants.

**SAFETY MANAGEMENT MANUAL**
**SOP-GEN-012B**  
**Permit to Work System**

Rev # 5

Revision date: 30 Oct 2014

Page 1 of 6


**SOP GEN-012B**  
**Permit to Work System**

- 1.0 [Introduction](#)
- 2.0 [Definitions](#)
- 3.0 [References](#)
- 4.0 [Procedures](#)
  - 4.1 [How to document planned or unplanned work](#)
  - 4.2 [How to complete a permit](#)
- 5.0 [How to Conduct a Job Safety Analysis](#)
  - 5.1 [Job Safety Analysis \(JSA\)](#)
  - 5.2 [Permits and JSAs during change of shift](#)
- 6.0 [Flowchart for Documenting Work](#)

**Revision/ Review Log**

Revision Date	Approved by	Reviewed by	Revision Details/ Proposal Notes
24 October 2012 Revision #1	Dr. Jim Brooks	Dr. Jim Brooks	New SOP Created to describe Permit to Work and JSA process
13 March 2013 Revision #2	Dr. Jim Brooks Dr. Bernie Bernard	Dr. Jim Brooks Dr. Bernie Bernard Dr. Roger Fay Capt. Pat Fallwell	Change of shift permit and JSA procedures added. Working at Heights definition revised, references added
05 April 2013 Revision #3	Dr. Jim Brooks Dr. Bernie Bernard	Dr. Jim Brooks Dr. Bernie Bernard	Working at Heights definition modified. References added.
05 July 2013 Revision #4	Dr. Jim Brooks Dr. Bernie Bernard	Dr. Jim Brooks Dr. Bernie Bernard	Working at heights definition height corrected to current practice, definitions reordered alphabetically
01 May 2014 Revision #5	Dr. Jim Brooks Mr. Pete Tatro	Dr. Jim Brooks Mr. Pete Tatro	Reference to confined space deleted
30 October 2014 Revision #6	Dr. Jim Brooks Mr. Pete Tatro	Dr. Jim Brooks Mr. Pete Tatro Dr. James Howell	Confined space permit must be signed by both Chief Engineer and Master



<b>SAFETY MANAGEMENT MANUAL</b>		
	<b>SOP-GEN-012B</b>	Rev # 5
	<b>Permit to Work System</b>	Revision date: 30 Oct 2014
		Page 2 of 6

## 1.0 Introduction

A permit-to-work system is a formal written system used to control certain types of potentially hazardous work. A permit is a document that describes the work to be done and the precautions to be taken. All permits must be signed by at least two persons, one of whom must be an Authorized Person.

Permits-to-work form an essential part of safe systems of work for many maintenance activities. They allow work to start only after safe procedures have been defined and they provide a clear record that all foreseeable hazards have been considered.

A permit is needed when maintenance work can only be carried out if normal safeguards are dropped or when new hazards are introduced by the work. Examples of permits used on TDI-Brooks vessels are: **confined space**, energy isolation (lockout/tagout), hot work and working at heights.

## 2.0 Definitions


Attendant-- An individual stationed outside one or more permit spaces who monitors the authorized entrants.

Authorized Person-- Someone empowered by TDI-Brooks to approve a specific type of permit. The only authorized persons on TDI Vessels are the Master, the 1<sup>st</sup> Mate, the 2<sup>nd</sup> Mate and the Chief Engineer. In the absence of any of these crewmen, for example in a shipyard, the Port Engineer becomes an Authorized Person to sign any permit.

**Confined Space Permit—29 CFR 1915 Subpart B addresses the requirements for a confined space permit. This procedure is detailed in SOP-GEN-007G.**

Energy Isolation Permit (formerly Lockout/ Tagout)— 29 CFR 1915.89 addresses the required procedures for locking or tagging out a piece of equipment to prevent activation of the equipment or the release of stored energy that could harm an employee. This procedure is detailed in SOP-GEN-007I.

Fire Watch Policy-- 29 CFR 1915.504(a) requires that, "The employer must create and keep a written policy that specifies the following requirements for employees performing fire watch in the workplace." The policy must include the training employees are to be given, the duties they are expected to perform, the equipment and PPE that must be provided and worn. A fire watch is required under specific conditions outlined in 29 CFR 1915.504(b).

<b>SAFETY MANAGEMENT MANUAL</b>		
	<b>SOP-GEN-012B</b>	Rev # 5
	<b>Permit to Work System</b>	Revision date: 30 Oct 2014
		Page 3 of 6

Fire Watchman—A trained employee assigned to the duty of fire watch while hot work is in progress and authorized to stop work if necessary to restore safe conditions within the hot work area. Per 29 CFR 1915.504(c)(1), this person cannot perform any other duties while on fire watch. The person performing the hot work cannot be their own fire watch. Per 29 CFR 1910.252(a)(2)(iii)(B), fire watchers shall have fire extinguishing equipment readily available and be trained in its use.

Hot Work Permit—29 CFR 1915.11 defines hot work as “...any activity involving riveting, welding, burning, the use of powder-actuated tools or similar fire-producing operations.” (includes production of sparks) A hot work permit is required for any task that meets that definition. 29 CFR 1910.252(a)(2)(iv), “Before cutting or welding is permitted, the area shall be inspected by the individual responsible for authorizing cutting and welding operations. He shall designate precautions to be followed in granting authorization to proceed preferably in the form of a written permit.” This procedure

JSA Meeting-- A meeting by all persons involved in performing a task for the purpose of creating or reviewing a Job Safety Analysis for that task. A copy of the written JSA is to be signed by all participants and filed on the bridge.

Job Safety Analysis (JSA)– A written risk analysis that breaks the task down into steps, evaluates the risks in each step and assigns mitigations, usually PPE or a procedure, to minimize the risks.

Working at Heights Permit-- TDI Policy is that a permit is required for any task that requires working 6 feet or more from the surface of the deck and when working over dangerous equipment and machinery. Fall protection must be worn unless it is determined that the fall protection system would create a greater hazard.

### 3.0 References

Hot Work – 29 CFR 1915.11, 1915.14


Fire Watch – 29 CFR 1915.504, 1910.252

**Confined Space Entry (maritime environment)- 29 CFR 1915 Subpart B**

Energy Isolation (Lockout/ Tagout) – 29 CFR 1910.147, 1910.269(d) and 1915.89

Working at Heights – 29 CFR 1915- Shipyard Employment, 1917 Marine Terminal, 1918 Longshoring. For most TDI activities at the dock side or in a shipyard, the 1918 Longshoring rule applies.

### 4.0 Procedures

<b>SAFETY MANAGEMENT MANUAL</b>		
	<b>SOP-GEN-012B</b>	Rev # 5
	<b>Permit to Work System</b>	Revision date: 30 Oct 2014
		Page 4 of 6

#### 4.1 How to document planned or unplanned work

- **Step 1:** All work starts with someone realizing a task needs to be done. This can be a standard job from NS5 or an unplanned job.
- **Step 2:** **Create a single work order in NS5** describing the task to be done and link it to the equipment if possible.
- **Step 3:** Conduct a Job Safety Analysis (JSA). A JSA simply breaks the job down into steps, lists any hazards associated with that step and describes how the hazards will be mitigated. Those performing the work – INCLUDING CONTRACTORS-- must participate in the JSA and sign it. **State in the WO that a JSA was completed and filed on the bridge.**
- **Step 5:** Determine if the task will require any special permits. If not, complete the task, document the work order with details of the repair/ work and complete the work order. If the task DOES require special permits, then proceed to the next section.

#### 4.2 How to issue a permit

Once it has been determined that a special permit is required for a task, there are several steps that need to be completed. If more than one permit is needed, these steps must be followed for each permit.


**\*\*\*\* If one or more permits are required for a task, the title of the work order in NS5 must follow the naming protocol to indicate it includes a permit.**

Each WO title must start with an abbreviation of the permit type (WH- for Working at Heights, HW- for Hot Work and EI- for Energy Isolation, CS- for Confined Space) followed by a short description of the work. If more than one permit is required, **you only need one work order**, but mention all permits in the notes and include both prefixes in the title.

Ex: "HW-WH-WELD NEW LADDER RUNG ON TOP OF STERN A-FRAME"

The notes in the WO should say, "HOT WORK AND WORKING AT HEIGHTS PERMITS COMPLETED AND FILED ON BRIDGE. RUNG REPLACED."

- **Step 6:** Complete all sections of a paper permit and get the persons doing the work and the Authorized Person to sign it. The Chief Engineer is the only Authorized Person to sign Hot Work and Energy Isolation permits. The Master or Mate may serve as the Authorized Person for Working at Heights permits. **A Confined Space permit must be signed by both the Chief Engineer and the Master.**
- **Step 7:** Post a copy of the permit at the work site and file the original on the bridge.
- **Step 8:** Notify affected persons and departments

<b>SAFETY MANAGEMENT MANUAL</b>		
	<b>SOP-GEN-012B</b>	Rev # 5
	<b>Permit to Work System</b>	Revision date: 30 Oct 2014
		Page 5 of 6

- **Step 9:** Complete the task and have the persons doing the work and the Authorized Person sign the paper permit to close it. File the signed copy on the bridge.
- **Step 10:** Document the work order with details of the repair/ work and complete the work order.

## 5.0 How to conduct a Job Safety Analysis (JSA)

**A JSA meeting is held with all personnel participating in the work (including contractors) to evaluate the hazards of the job.** The steps for evaluating the hazards are listed below. TDI has developed a standard format JSA for non-permitted work, which may be found on the ship web pages, SMM Forms Only page. JSAs for Permitted work are included as part of the permits.

### 5.1 Job Safety Analysis (JSA)

- Identify the task to be accomplished.
- Break down the task into a series of steps and list each step of the process.
- Describe the risks associated with each step and list mitigation measures to minimize those risks.
- Identify any additional personnel or operations that may be affected.
- Notify all affected personnel of the planned work.
- List the PPE to be used.
- Determine if there is a need for any other special permits such as working at heights, hot work or energy isolation.
  1. If permits are needed, follow all steps for completing the permits.
- Establish clear methods of communication for those participating in the work.

Once the JSA has been conducted, participating personnel must sign the JSA and that JSA must be filed on the bridge.

### 5.2 Permits and JSA's during change of shift

If there is a change of shift and new workers will continue work on a permitted task, **they must create and sign a new permit.** However, there is no need to create a new JSA.

Under the "Special Permits" section of the new permit, check the **Yes** box for "Continued work from a previous permit?" and record the work order number from the previous permit. Once the oncoming crew has reviewed the original JSA, they may check the **Yes** box for "Has the JSA been reviewed by all new workers?" sign the new permit and continue work.

**SAFETY MANAGEMENT MANUAL**

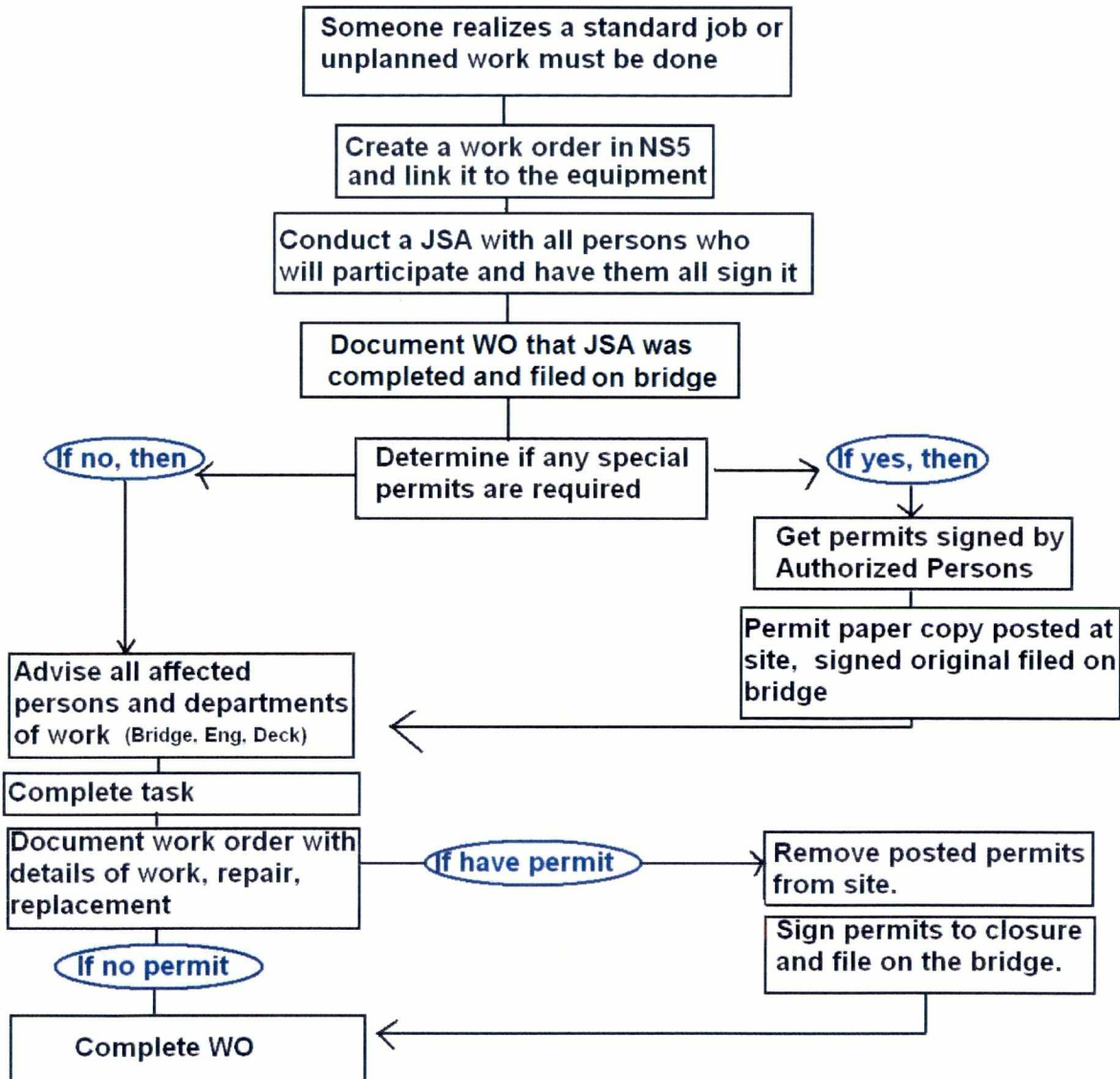


**SOP-GEN-012B  
Permit to Work System**

Rev # 5  
Revision date: 30 Oct 2014  
Page 6 of 6

**6.0 Flowchart for Documenting Work**

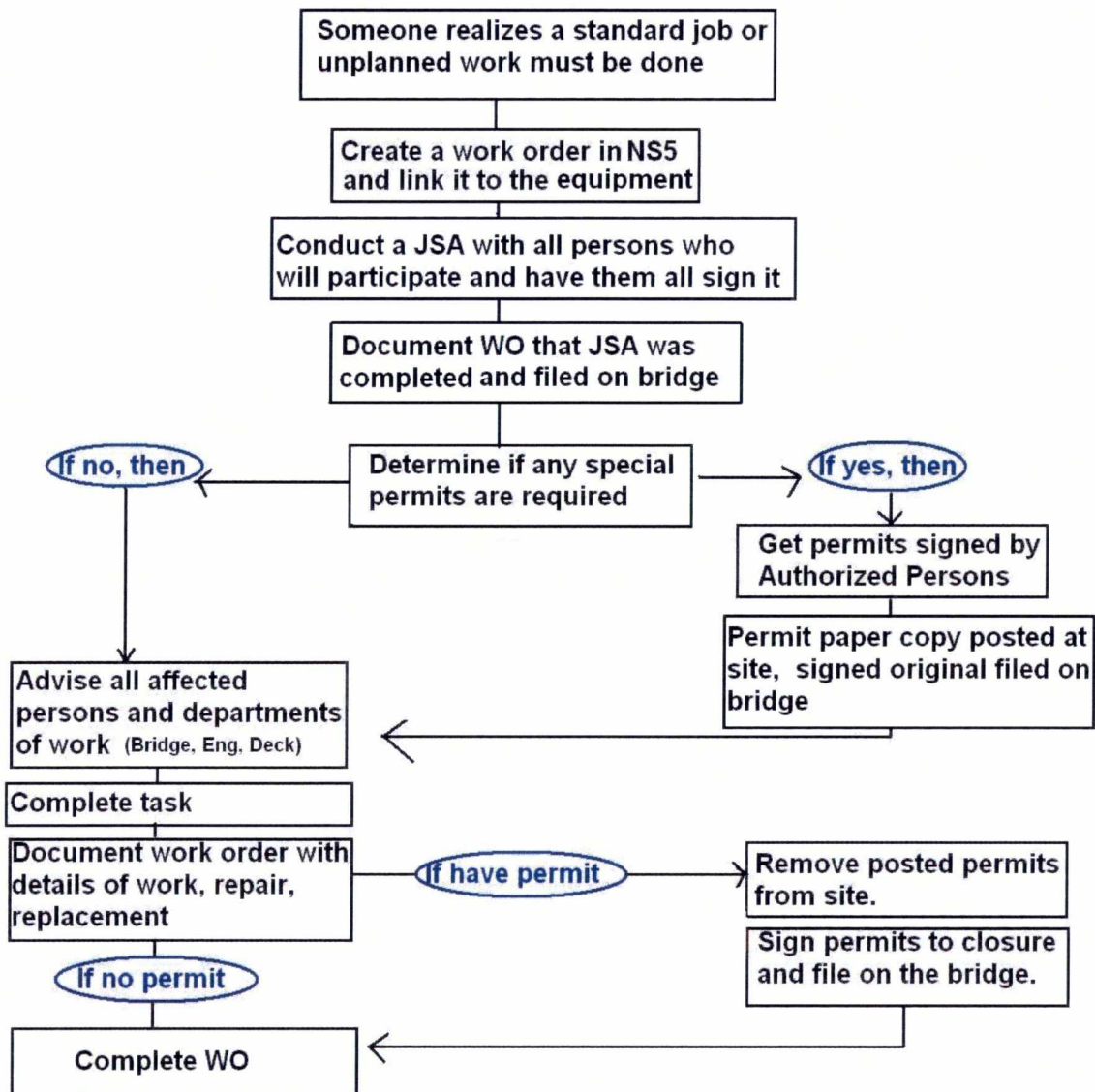
**Procedures for documenting work:  
planned, unplanned, with or without permit**



## Directions for Completing a Confined Space Permit

The TDI-Brooks Permit to Work System is described in detail in SOP-GEN-012B of the Safety Management Manual (SMM).  
The procedures for conducting a Confined Space task are detailed in SOP-GEN-007G.

### Procedures for documenting work: planned, unplanned, with or without permit



## Directions for Completing Confined Space Permit

### Work Description

The name of the permit user is the name of the person who will be doing the actual work.

The Confined Space Permit must be signed by both the Master and **Chief Engineer**. In their absence, the **Port Engineer becomes the Authorized person**.

Briefly describe work to be done: Example: "Patch rust holes in Tank #4"

Location on vessel: physical location of work, tank number or chain locker, etc.

Affected equipment and ops: Will the work in this area prevent other departments from completing their work?

**Example-** you cannot conduct hot work in a tank during fueling operations of any kind

**SIMOPS** evaluation required: If permitted work could impede or delay work in another area, cooperate with the other parties to agree on a schedule.

Required Notification: Always notify Bridge; notify other departments as needed.

### JSA and NS5-

A Job Safety Analysis that includes Risk Assessment must be conducted prior to any permitted work. The team that will be doing the work needs to create the JSA together and sign it- EVEN IF PART OF THE TEAM CONSISTS OF CONTRACTORS. The JSA has been included as a part of this permit and may reveal the need for additional permits.

In NS5, create a **single** work order to document this task, all permits and JSAs. The title should be "CS-" followed by equipment and a short work description. Example: "CS-BALLAST TANK- PATCH HOLES".

Include a statement in the work order that the JSA and permit were conducted and are filed on the bridge. Include the NS5 Work Order number in the permit.

### Hazards-

Check all physical and chemical hazards that may apply to this task. List any potential risks for environmental spill, such as fuel, oil or hydraulic fluid going into the water. If none, check N/A.

### Controls-

Post the CS permit next to the Marine Chemist declaration that the space is safe for entry/ work. Check all other PPE required for the task.

**IN THE JSA:** Assess the risk. Will your activities change the atmosphere or condition of the space? (hot work, painting, grinding) Who will be monitoring you? How will you notify others if you need assistance? if you get stuck or injured, who will help you out? **(Address rescue plan in the JSA)**

When work is complete, clear the area of tools and clutter, remove copy of permit, sign original permit to closure and file on bridge. Notify bridge that work is complete.

**Final Checks before Starting-** Verify these final steps are completed and checked before starting work.

**After Task Completion-** When work is complete, make sure all these steps are completed and checked. **STAPLE THE CHEMIST CERT TO THE PERMIT--SIGN PERMIT TO CLOSURE AND FILE ON BRIDGE.**

### Authorizations-

The Confined Space permit must be authorized and **signed by both the Chief Engineer and the Master**. The **Port Engineer** may authorize and sign permits in their absence. (dockside, shipyard)





<b>Hazards</b>	<b>Physical</b>	<b>Check all that may apply:</b>			
		<input type="checkbox"/> N/A	<input type="checkbox"/> Noise	<input type="checkbox"/> Heat	<input type="checkbox"/> Cold
		<input type="checkbox"/> Other -List			
<b>Environmental</b>	<b>Describe any potential risks for an environmental spill as well as materials that could be released.</b>				
	<input type="checkbox"/> N/A				

<b>Controls</b>	<b>Final Checks Before Starting</b>	Marine Chemist cert checked for validity and posted with copy of permit at work site?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		Original permit filed on bridge?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		One person designated as monitor to stand outside the space and keep in contact with workers inside?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		Clear method of communication established between monitor, entrants and bridge?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		Bridge, Engineering and any other affected areas notified?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<b>After Task Completion</b>	Permit signed by all parties and filed on bridge?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		Permit copy removed from site?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		Work area cleared of tools and equipment?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		Bridge, Engineering and any other affected areas notified?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		NS5 work order includes notes about the job and is completed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

<b>Authorization</b>	<b>Open</b>		<b>Print name</b>	<b>Signature</b>	<b>Date</b>
		Permit user	0		1/0/00
		Master	0		1/0/00
	Chief Engineer	0		1/0/00	
	<b>Close</b>		<b>Print name</b>	<b>Signature</b>	<b>Date</b>
		Permit user	0		
Master		0			
Chief Engineer	0				

<b>Workers' Signatures</b>	<b>Printed names of additional workers</b>	<b>Signatures of additional workers</b>