M&C-M Procedure

PRO-4.5-0001-1-04
Confined Space Entry

Document Owner:	Janelle Shackley	HSE Manager – Midstream, Network Solutions & OMS
Approved By:	Janelle Shackley	HSE Manager – Midstream, Network Solutions & OMS
Prepared By:	Adrian Connolly	HSE Specialist - Control of Work and Contractor Management
Document Status:	Active	Version 5
Approved Date:	15-Dec-23	Review By: 15-Dec-28

Purpose

For Whenever BP conducts construction, maintenance, demolition, remediation and other similar work that are typical of our industry, there is the potential for harm to people and the environment and for damage to equipment.
This procedure sets out a required approach to Confined Space Entry in accordance with the requirements of GDP 4.5-0001 Control of Work, and OMS Group Essentials 3.2.1 and 4.5.1.

Relevant OMS element(s)

OMS 4.5 (Control of Work

Contents

Purpose 1
Relevant OMS element(s) 1
1. Scope 3
2. Training and Competence 3
2.1. Confined Space Entry training 3
2.2. Respiratory protection 3
2.3. Rescue team member 3
3. Confined Space Entry 4
3.1. Risk Assessment 4
3.2. Preparation of the confined space for entry 4
3.3. Gas Testing and Monitoring 5
3.4. Authorisation for entry into a confined space 6
3.5. Entry into and Work inside a Confined Space 6
3.6. Prevention of Unauthorised Entry 7
3.7. Emergency Response and Rescue Plan 7
4. Roles and Responsibilities 8
5. Terms, Definitions and Abbreviations 9
6. Verification Processes associate with this Procedure 9
7. Associated Documents 9
7.1. Documents 9
7.2. Records 10
8. External References 10
9. Version Summary 10
10. Disclaimer 11

List of Tables, Diagrams and Figures

Figure 1: Example of typical Confined Space Entry arrangement 7
Table 1: Roles and Responsibilities 8
Table 2: Terms, Definitions and Abbreviations 9
Table 3: Required References 9
Table 4: Document Version Summary 10

To review changes, refer to the 'Version Summary' at the end of this document.

1. Scope

The requirement specified in this procedure applies equally to BP employees and Contractors engaged in the ANZ M&C-M businesses.

2. Training and Competence

2.1. Confined Space Entry training

Entrants and the **observer** shall have successfully completed Confined Space Entry training within the past three years, as follows:

1. In **Australia**, trained to a National Unit of Competence in Confined Space Entry by a Registered Training Organisation. This is recommended to be *MSMPER205 - Enter confined space*; or RIIWHS202E - *Enter and work in confined spaces*.
2. In **New Zealand** entrants require *Unit Standard 18426 – Demonstrate knowledge of hazards associated with confined space*; and observers *Unit Standard 17596 – Safety Observer.*

2.2. Respiratory protection

For entry which requires the use of respiratory protection:

1. In **Australia**, if the entry is to include the provision of breathing apparatus the Entrants and Observer shall also be trained to a National Unit of Competence in the operation of breathing apparatus by a Registered Training Organisation. This is recommended to be *MSMWHS216 - Operate breathing apparatus.*
2. In **New Zealand**, if the entry is to include the provision of breathing apparatus the Entrants and Observer shall also have successfully completed *Unit Standard 25044 – Wear and operate compressed air breathing apparatus in the workplace.*

2.3. Rescue team member

To be a rescue team member that as part of the confined space rescue plan they are required to enter the space to retrieve an entrant, the person shall have successfully completed:

1. In **Australia**, in addition to entrant training requirements, they must be trained to a National Unit of Competence in confined space rescue. This is recommended to be:
   - *PUAFIR306 Identify, detect and monitor hazardous materials at an incident*,
   - *PUASAR022 Participate in a rescue operation*; and
   - *PUASAR025 Undertake confined space rescue.*

2. In **New Zealand** in addition to entrant training requirements, the following is required:

   - *14562: Perform specialist rescues in confined spaces*

Note: This requirement does not apply to Emergency Services personnel. It applies only to workers defined as rescue team members within the Permit set.

3. Confined Space Entry

3.1. Risk Assessment

1. A Risk Assessment is required for all Confined Space Entries. This must be a BP TRA facilitated by a BP HITRA trained facilitator for:

   a. entry into bulk fuel tanks (above and below ground), and

   b. LPG vessels, and

   c. In Australia, any other entry for which a Senior Permit Officer is required to authorise in accordance with WPCG-PRO-01 Work Authorisation Activity Matrix, and

   d. In New Zealand, any other entry for which the Task Risk Assessment Table used in association with PRO4.5-0001-1-01 Permit to Work (New Zealand) requires a bp TRA.

   For all other entries it must be a Safe Work Method Statement, as a minimum.

2. The risk assessment for the task should consider alternate means of performing work that does not require entry into a confined space, eliminating the risks associated with entry.
3. The risk assessment for the confined space entry should identify, control and monitor the potential hazards both inside and outside the confined space which may affect the safety of personnel within the confined space.
4. The risk assessment(s) for all tasks to be undertaken in the confined space should consider the ventilation requirements and any additional monitoring of conditions for hazards identified, e.g. lead, welding fumes, etc. as applicable.
5. The risk assessment for the confined space entry should consider the effectiveness of the emergency response plan.

3.2. Preparation of the confined space for entry

1. Planning and co-ordination of entry into and work inside the confined space shall be completed to control and mitigate hazards that may arise during the work. This shall be completed in accordance with the requirements of WPCG-PRO-01 Work Authorisation (Australia) / PRO4.5-0001-1-01 Permit to Work (New Zealand) for all work undertaken inside the confined space.

2. Isolations for confined space entry, records of the isolations required and the status of them shall be conducted and recorded in accordance with PRO-4.5-0001-1-02 Energy Isolation.
3. Monitoring should be established to confirm controls are in place and functioning to establish and maintain adequately ventilation, with the atmosphere remaining within safe limits.
4. Where natural ventilation is insufficient to maintain the atmosphere within safe limits, an appropriate positive ventilation system may be utilised. For example, venturis or fans may be required to remove contaminated air from dead spots in a confined space.

Warning: Fire Risk: *Under no circumstances should the atmosphere in a confined space be 'sweetened' using an oxygen hose, due to the significant additional fire risks arising from oxygen enrichment.*

Inert Gas Risk: *When hydrocarbon systems are shutdown, nitrogen or other inert gas is sometimes introduced in order to prevent formation of a flammable gas / air mixture. The inert gas then has to be displaced by air before safe entry can be made to such a confined space. Because air is 78% nitrogen, it is often not appreciated how hazardous pure nitrogen, and other inert gases, are to life. Incidents have occurred where even a single breath has proved fatal. Other types of inert gas may be used in construction and testing work and any such leak within, or into, a confined space is equally hazardous.*

Note: *When assisted ventilation is provided, the minimum capacity provided should equate to 10 air changes/hour for the whole confined space. Any fumes from task-related hazards may require additional ventilation capacity.*

3.3. Gas Testing and Monitoring

1. A Work Permit set which records the gas testing results for the confined space shall be issued prior to entry, in accordance with WPCG-PRO-01 Work Authorisation (Australia) / PRO4.5-0001-1-01 Permit to Work (New Zealand). To the greatest extent possible, such sampling and testing should be completed without entry to the confined space, using extended probes, etc. However, if some parts of the space cannot be sampled externally, then the initial entry should be carried out wearing BA, testing from the entry point into the confined space, ensuring the atmosphere is safe as they progress further into the confined space and with a rescue team on alert. No other work shall be carried out in the confined space until initial gas testing has been completed and a Work Permit is issued.
2. Continuous gas monitoring is required for all confined space entries. The minimum testing requirement for confined space entry is testing for each of H2S, O2, LEL and CO. Limits for entry are defined in WPCG-PRO-01 Work Authorisation (Australia) / PRO4.5-0001-1-01 Permit to Work (New Zealand) .
3. All gas monitoring, sampling and testing shall be carried out under the same ventilation conditions as planned for the entrant(s) to carry out the task(s).

3.4. Authorisation for entry into a confined space

Prior to entry, a Work Permit to authorise confined space entry shall be issued in accordance with WPCG-PRO-01 Work Authorisation (Australia) / PRO4.5-0001-1-01 Permit to Work (New Zealand). A Work Clearance cannot be used to authorise work in a confined space.

3.5. Entry into and Work inside a Confined Space

Entry into confined spaces possess significant risk. Hazards which may not have high consequences in normal circumstances may be magnified when associated with a confined space and may become life threatening.

1. There shall be the presence of a confined space Observer throughout the duration of the entry to communicate with and monitor the safety of the entrants within the confined space. The Observer shall never enter the space, including attempting a rescue.
2. Prior to and during entry, the Permit Officer and Permit Receiver should give consideration to:
    a. Confirmation that the tank or vessel is positively isolated from other operating equipment in accordance with the requirements of PRO-4.5-0001-1-02 Energy Isolation;
    b. The risk of the confined space being re-contaminated as a result of the introduction of heat and disturbance of equipment;
    c. The risk of the confined space being re-contaminated from external sources of contaminants such as engine exhausts or tank vents;
    d. Contamination of equipment to be worked on, including organic lead (from Avgas or tanks previously in leaded petrol service) and leaded paint;
    e. Ventilation requirements to maintain a safe atmosphere;
    f. Safe access and egress;
    g. Risk of engulfment;
    h. For entry of personnel into excavations deemed to be confined spaces - the risk of collapse.

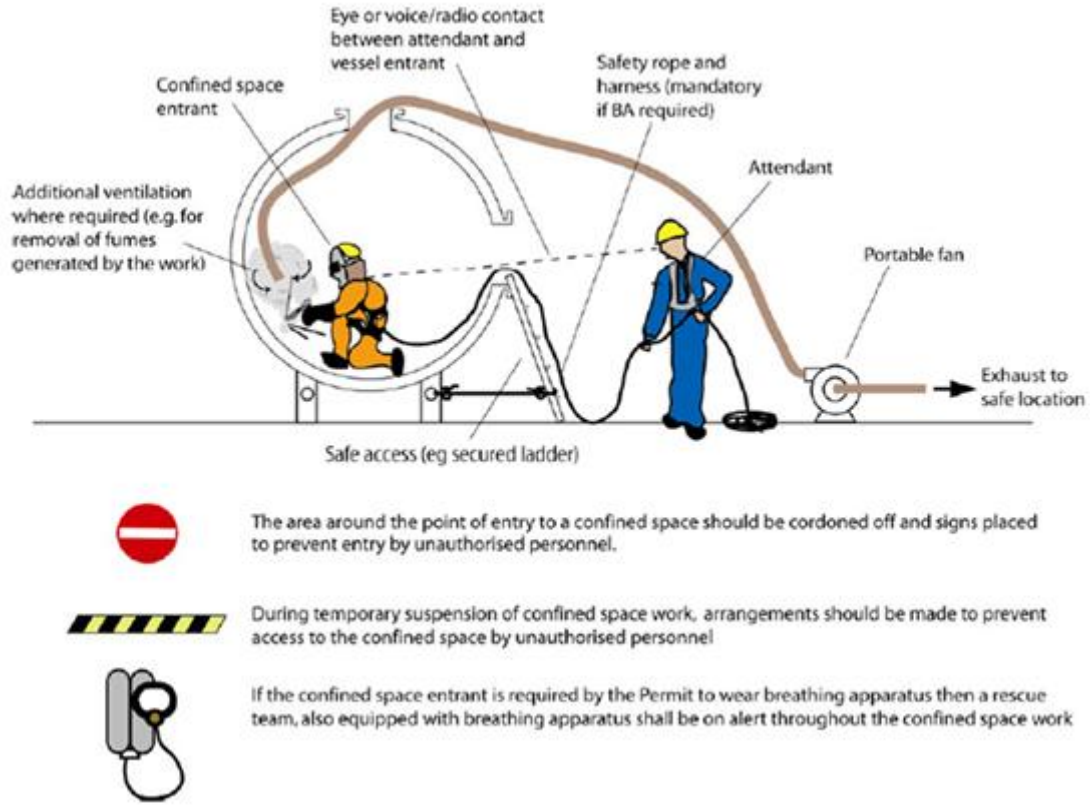


Figure 1: Example of typical Confined Space Entry arrangement

3.6. Prevention of Unauthorised Entry

A physical barrier with a written warning of the confined space hazard shall be in place at the confined space entry and exit points when:

1. All employees have exited the confined space.
2. Work has stopped.
3. The work site is unattended.
4. Required by local regulations.

3.7. Emergency Response and Rescue Plan

Reliable emergency and rescue arrangements shall be documented. All required rescue equipment (e.g. safety harnesses, lifting equipment, a lifeline) specified in the plan as necessary shall be immediately available. All specialised rescue equipment on standby shall be tested and certified in accordance with manufacturer's specifications and local regulatory requirements. Required personnel and equipment to affect rescue as documented in the plan shall be available prior to and for the duration of entry.

4. Roles and Responsibilities

The roles and responsibilities associated with this procedure are listed in the following table.

Table 1: Roles and Responsibilities

Planner	The person responsible for planning the Confined Space Entry shall be accountable for ensuring that the Permit Receiver is communicated the requirements of this procedure as part of the planning process prior to work, and that planning for the work includes authorisation of entry in accordance with WPCG-PRO-01 Work Authorisation (Australia) / PRO4.5-0001-1-01 Permit to Work (New Zealand)
Permit Officer	WPCG-PRO-01 Work Authorisation (Australia) / PRO4.5-0001-1-01 Permit to Work (New Zealand) documents the responsibilities of the Permit Officer for all work permits associated with Confined Space Entry activities. The Permit Officer is also responsible for ensuring that if a bp Task Risk Assessment is required then it is conducted prior to authorisation of the Permit.
Permit Receiver	WPCG-PRO-01 Work Authorisation (Australia) / PRO4.5-0001-1-01 Permit to Work (New Zealand) document responsibilities of the Permit Receiver for work permits associated with the Confined Space Entry activities. They are responsible for ensuring that only personnel who meet the training requirements within this procedure fulfil roles during the entry. They are also responsible for preparing and resourcing reliable emergency response and rescue arrangements for the Confined Space Entry.
Site Representative	The Site Representative shall be the Site Manager or delegate, or if the site is unmanned it may be the Permit Officer. The Site Representative is responsible for the overall safety of the site. The Site Representative shall be aware of all other work or planned site operations that may interact with the Confined Space Entry (i.e. SIMOPs) and shall communicate to the Permit Officer any other works or site operations that may impact upon the proposed Confined Space Entry. They are responsible for ensuring that other parties on site that may be affected by the Confined Space Entry are informed. No entry shall be undertaken before the Site Representative countersigns the Permit for Confined Space Entry.
Observer	The Observer is responsible for: a) Maintaining a log recording the details of all personnel who enter and leave the space, including logging when they enter and leave. b) Understanding the nature of the hazards inside the particular confined space and recognising signs and symptoms that workers in the confined space may experience. c) Remaining outside the confined space and do no other work which may interfere with their primary role of monitoring the workers inside the space d) In the event of an emergency, initiating the emergency plan and having the means of summoning help in an emergency. e) Refusing entry to unauthorised persons attempting to enter the confined space. f) Ordering workers to exit the space if a hazardous situation arises.

5. Terms, Definitions and Abbreviations

Table 2: Terms, Definitions and Abbreviations

Breathing Apparatus (BA)	A form of respiratory protection that provides compressed breathing quality air to the wearer. The air may be supplied by airline or may be carried in cylinders. The air may be supplied to the user through a full face mask or a helmet.
CSE	Confined Space Entry.
Confined Space	As defined in local regulations.
Entry (to a confined space)	The action by which a person or their breathing zone enters an opening into a confined space.
Observer	An individual stationed outside one or more confined space entry points who monitors the authorized entrants and who performs all observer duties assigned this procedure.
Oxygen deficient atmosphere	Sometime also referred to as sentry or attendant.
Oxygen enriched atmosphere	An atmosphere containing less than 19.5 percent oxygen by volume.

6. Verification Processes associate with this Procedure

The key process steps outlined in this procedure are included in a Self-Verification Programme.

7. Associated Documents

7.1. Documents

BP Permit to Work templates are issued in Australia by WPCG and within New Zealand is through the BP NZ HSSE Manager or delegate.

The following associated documents:

- Have been referenced in this procedure.
- Should be considered in understanding and applying the instructions provided in this procedure.

Table 3: Required References

Document Name	Document No
Group Defined Practice - Control of Work	GDP 4.5-0001
Control of Work	PRO-4.5-0001-0-01
Permit to Work	PRO-4.5-0001-1-01
Energy Isolation	PRO-4.5-0001-1-02
WPCG Work Authorisation	WPCG-PRO-01

7.2. Records

Work Permits and Risk Assessments shall be retained in accordance with WPCG-PRO-01 Work Authorisation (Australia) / PRO4.5-0001-1-01 Permit to Work (New Zealand).

8. External References

This procedure was prepared with reference to relevant legislation/regulations including but not limited to, relevant Acts, Regulations, Australian/New Zealand Standards and industry codes and best practices.

Details of current legislation/regulations can be provided by the HSSE Team on request.

9. Version Summary

The table below provides a summary of version history of this procedure.

Table 4: Document Version Summary

Version	Prepared by	Description of Change	Date	MoC
1	Adrian Connolly	Document created - Initial document	14 Nov 2014	
2	Adrian Connolly	Minor update to improve formatting, readability and clarity of document. Removal of duplication. Minimal material change to requirements, i.e. addition course option for confined space entrant and observer in Australia. Extension of training currency for observers and entrants to be 3 years (previously 2 years.	11 May 2016	11233
3	Adrian Connolly	Update to implement WPCG-PRO-01 Work Authorisation and moved to current template.	22 Aug 2018	11449
4	Adrian Connolly	Minor update post bp reinvent, and to implement IOGP Life Saving Rules and minor simplifications.	3 Aug 2023	11836

10. Disclaimer

Copyright © 2020 BP p.l.c. All rights reserved.

This document and any data or information generated from its use, are classified, as a minimum, BP Internal. Distribution is intended for BP authorized recipients only. The information contained in this document is subject to the terms and conditions of the agreement or contract under which this document was supplied to the recipient's organisation. None of the information contained in this document shall be disclosed outside the recipient's own organisation, unless the terms of such agreement or contract expressly allow, or unless disclosure is required by law

End of Document