# Safe Work in Confined Spaces Procedure

## Brief description

This Procedure describes the criteria for classifying a Confined Space and the minimum requirements for working safely in Confined Spaces at GPC.

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If you require any further information, please contact the Custodian.



The current version of this Procedure is available on GPC's Intranet.

# Contents

# 1 Terms and definitions

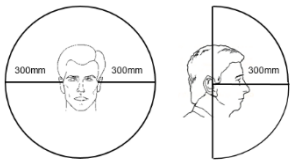
In this Procedure:

"**Airborne Contaminant**" Any Contaminant present in the air that may be harmful to persons.

"**Atmospheric Monitoring**" The continuous measurement of oxygen concentration or airborne atmospheric Contaminants over an uninterrupted period of time.

**"Authorised Isolation Officer"** means a competent person who has been appointed by the GPC to perform specific Isolation Lockout functions as per the Isolation and Lockout Procedure.

"**Breathing Zone**" A hemisphere with a radius of 300mm in front of the face of a person, and drawn from a line bisecting the ears.




**"Confined Space"** means an enclosed or partially enclosed space that:

(a) is not designed or intended primarily to be occupied by a person; and

(b) is, or is designed or intended to be, at normal atmospheric pressure while any person is in the space; and

(c) is or is likely to be a risk to health and safety from:

(i) an atmosphere that does not have a safe oxygen level; or

(ii) Contaminants, including airborne gases, vapours and dusts, that may cause injury from fire or explosion; or

(iii) harmful concentrations of any Airborne Contaminants; or

(iv) Engulfment;

but does not include a mine shaft or the workings of a mine.

**"Contaminant"** means any dust, fume, mist, vapour, biological matter, gas or other substance in liquid or solid form, in which the presence of may be harmful to persons.

**"CSEP"** means confined space Entry permit

"**Engulfment**" means the immersion or envelopment of a person by a liquid or free flowing solid (e.g. in slurry, powder or granular form) that is stored within the Confined Space.

"**Entry (to a Confined Space)**" means the person's head or upper body is in the Confined Space or within the boundary of the Confined Space.

Note: Inserting an arm for the purpose of atmospheric testing is not considered as Entry to a Confined Space.

"**Exposure Standard**" means an airborne concentration of a particular substance in a person's Breathing Zone, exposure to which, according to current knowledge, should not cause adverse health effects or undue discomfort to nearly all persons.

"**Flammable Airborne Contaminant**" means any dust, fume, mist, vapour or gas present in the air at concentrations that can propagate a flame on contact with an ignition source.

**"JSA"** means a job safety analysis as referenced in the GPC Safety Risk Management Procedure.

"**Lower explosive limit** (**LEL**)" means the concentration of a flammable Contaminant in air below which the propagation of a flame does not occur on contact with an ignition source.

"**Hot Work**" includes welding, thermal or oxygen cutting, heating, including fire-producing or spark-producing operations that may increase the risk of fire or explosion.

**"Purge"** means to clear (a container or space, for example) of something unclean or unwanted.

"**Permit Issuer**" The Permit Issuer is responsible for ensuring that all requirements of the Confined Space Entry Permit and Risk Assessment have been identified and implemented prior to issuing.

"**Permit Holder**" The Permit Holder is responsible for ensuring all the requirements of the Confined Space Entry Permit and Risk Assessment are in place and remain current whilst the work is being completed.

"**Person in Charge of Work** (**PICOW**)" means the person that has accepted responsibility for controlling and co-ordinating a workgroup or workgroups.

**"Stand-by Person"** means a competent person assigned to remain on the outside of, and in close proximity to, the Confined Space and capable of being in continuous communication with and, if practical, observing those inside. In addition, where necessary, the competent person may operate and monitor equipment for the safety of personnel in the Confined Space and initiate emergency response.

Terms that are capitalised and not otherwise defined in this Procedure are defined in the GPC Corporate Glossary Instruction (as listed in Appendix 1 – Related documents).

# 2 Introduction

## 2.1 Purpose

This Procedure describes the minimum requirements for working in, on or nearby Confined Spaces at GPC. It describes the systems and controls that are required for Confined Space design, modification and classification as well as the identification and safe management of the risks associated with Confined Space work.

## 2.2 Scope

This Procedure applies to all GPC engaged persons who intend to enter a Confined Space located at a GPC controlled site, or work on or near a Confined Space that may impact on those who are inside the space. It also applies to all persons engaged by GPC to design, install or modify a Confined Space located on GPC controlled sites.

For the purpose of this procedure, a person whose head or upper body (i.e. Breathing Zone) is within a Confined Space is considered to have entered the Confined Space.

Contractors performing work under the direction of GPC must comply with the requirements of this Procedure, including the use of all GPC forms referenced in this Procedure, unless indicated otherwise.

Visitors are not permitted to enter Confined Spaces.

Emergency service workers (e.g. paramedics, fire fighters, police officers and the like) are not required to comply with GPC Procedures if they are rescuing a person from a Confined Space or providing first aid to a person in the space.

## 2.3 Objectives

The objectives of this Procedure are to:

- Describe a system to ensure consistent classification and management of Confined Spaces at GPC in order to effectively manage risks;
- Ensure, so far as is reasonably practicable, that the health and safety of people either in, on or adjacent to a Confined Space, is not put at risk from work carried out as part of the Confined Space activity; and
- Specify a standard of controls that, as a minimum, meets legislative requirements and industry best practice.

# 3 Safe work in Confined Spaces

## 3.1 Design, manufacture, supply and modification of Confined Spaces

Where practicable, plant and equipment installed or modified at GPC sites should be designed and manufactured to remove the need to enter a Confined Space, or at least minimises the need for any person to enter the space to as low as reasonably practicable.

Design features should include:

- Provisions for outlets and facilities for cleaning to eliminate the need for Entry;
- Use of lining materials that are durable, require minimal cleaning and do not react with materials contained in the Confined Space;
- Design of the structure and mechanical parts to provide for safe and easy maintenance to reduce the need for persons to enter;
- Openings for Entry to, and exit from, a Confined Space of adequate size to permit rescue of all persons who may enter the Confined Space.
- The risks to personnel working in the space have been eliminated, or at least minimised (e.g. openings promote natural ventilation); and
- Where in public areas, the Confined Space can be secured to prevent public access.

The GPC Work Management Procedure describes the management of engineering design, which includes consideration for reliability, operability, maintainability, constructability, safety and environment.

## 3.2 Confined Space classification and signage

### (a) Confined Space classification

A Confined Space is determined by the structure and a specific set of circumstances. The same structure may or may not be a Confined Space depending on the circumstances when the space is entered. Entry to a Confined Space is considered to have occurred when a person's head or upper body enters the space.

A space may become a Confined Space if work that is to be carried out in the space would generate harmful concentrations of Airborne Contaminants.

Confined Spaces are not:

- Places that are intended for human occupancy and have adequate ventilation, lighting and safe means of Entry and exit, such as offices and workshops.

- Some enclosed or partially enclosed spaces that at particular times have harmful Airborne Contaminants but are designed for a person to occupy, for example abrasive blasting or spray painting booths.

- Enclosed or partially enclosed spaces that are designed to be occasionally occupied by a person if the space has a readily and conveniently accessible means of Entry and exit via a doorway at ground level, for example:

    - A cool store accessed by a LPG forklift to move stock; or

    - A fumigated shipping container with a large ground level opening.

All potential Confined Spaces at GPC must be classified in accordance with the WHS Regulation definition.

**(b) Permanent identification**

At GPC, all known spaces recorded in the Confined Space Register except public accessible Confined Spaces will have signs permanently affixed at each possible Entry point. The signs are either coloured danger signs, or stainless steel laser cut signs if the environmental conditions are too harsh to sustain the coloured version, for example: roadside drains. Examples are provided in Figure 1.


*Figure 1: sample of coloured danger sign and stainless steel laser cut sign.*

**(c) Temporary identification**

Where Confined Spaces are unable to be permanently signed or the space is a created space (e.g. excavation), then as soon as an Entry is created or opened, a sign must be installed. The sign must be coloured danger sign version as indicated in Figure 1.

## 3.3 Planning for Confined Space work

**(a) The need to enter Confined Spaces**

The Planner or PICOW identifying work necessary to be carried out inside a potential Confined Space, must first consider if the work can be conducted without the need for a person to physically enter the space. This must be recorded in 'Part A' of the Confined Space Entry Permit (CSEP).

**(b) Identify if the space is a Confined Space**

If work must take place within a potential Confined Space, the Planner or PICOW must consult the GPC Confined Space Register to identify the Confined Space.

If the space is in the register, then the associated Confined Space Classification Form should be used to assist in planning the work and developing the Job Safety Analysis (JSA) and Emergency Response and Rescue Plan.

If the space is not in the register, then the Planner or PICOW must contact a GPC Safety Specialist to facilitate an assessment to ascertain if the space is a Confined Space. This assessment must involve the area supervisor and be recorded on the Confined Space Classification Form.

The GPC Safety Team is responsible for updating the GPC Confined Space Register with new Confined Spaces.

The area supervisor is responsible for installing permanent signage on the Entry points of the new Confined Space (if required). Signs must be installed as described in sections 3.2(b) and 3.2(c).

If the space is not in the register and deemed not to be a Confined Space through analysis, then work can proceed with the usual safe work methods described in the relevant JSA or similar.

All Confined Spaces subjected to assessment for classification are allocated a unique identification number and the classification outcome is recorded on the Confined Space Classification Form and logged in the site GPC Confined Space Register located on Neptune indicating the space as a Confined Space or otherwise.

The Confined Space Register also houses links to the corresponding CSEP for the space where developed.

**(c) Temporary declassification of a Confined Space**

For a Confined Space to be temporarily declassified as no longer being a Confined Space, it needs to have undergone sufficient changes in structure and use to eliminate all hazards that define a Confined Space. Temporary control measures such as providing temporary ventilation or purging or achieving a satisfactory pre-Entry gas test are not sufficient to allow a Confined Space to be declassified.

If the space is in the register but sufficient changes in structure and use to eliminate all hazards that define a Confined Space have occurred, then the area supervisor may request that the space be temporarily declassified for the proposed scope of work. The Confined Space Temporary Declassification Form must be completed as a record of the assessment of the changes in structure and use that cause it to no longer meet the definition of a Confined Space. The risk assessment must be completed by the relevant area Supervisor and a GPC Safety Specialist.

The completed Temporary Declassification Form should be saved in eDocs and a hyperlink included in the Confined Space Register for future reference by the Safety Specialist.

**All work in a temporarily declassified Confined Space shall still require a JSA for the work and an emergency response and rescue plan.** The Confined Space Emergency Response and Rescue Plan Form shall be used for this purpose. Team members will still be required to have training in Confined Spaces and gas testing where gas testing is required, however a Confined Space standby person will not be required for a declassified space unless the risk assessment deems it necessarily.

**(d) Permanent declassification of a Confined Space**

If a space is approved to be permanently declassified from being a Confined Space, the space must be re-assessed for classification and the outcome recorded in the Confined Space Classification form with appropriate justification for the space no longer meeting the criteria for being a Confined Space.

Any signage indicating the space is a Confined Space must be removed by the area Supervisor and the Confined Space Register must be updated by the GPC Safety Team.

**(e) Job packs and resources**

The Planner or PICOW shall prepare a job pack for the workgroup that contains the following completed documents:

- JSA, or similar documented safe system of work, for the task,
- CSEP, which includes:
  - An inherent risk assessment,
  - a pre-Entry gas test,
  - a list of critical life support equipment,
  - the authority to enter.
- Confined Space Emergency Response and Rescue Plan Form,
- Isolation Permit (if applicable),
- Excavation Permit (if applicable),
- Hot Work Permit (if applicable),
- Permit to remove flooring etc. (if applicable),
- Any other relevant permits or documents to support the work.

The job pack containing all the required documents must be located in a prominent position at the most accessible Entry point to the Confined Space and be available for inspection.

The Planner or PICOW shall also ensure that the following resources are made available for the duration of the work:

- Portable signage to be located on or adjacent to any Entry point that is opened or created and in place for the duration that the opening where permanent signage doesn't exist;
- Restricted access barricade tape and signage to be placed across all access points as they are unboxed prior to the CSEP being authorised;
- Atmospheric gas monitor for continuous or periodic monitoring as required by the risk assessment;
- Re-validation of the CSEP every 12 hours, after a break longer than one hour, change in Permit Holder or if conditions of the atmosphere or work scope changes;

- Trained and competent personnel to be Permit Holder, undertake the work and to perform stand-by duties or carry out a rescue if required;

- All necessary equipment to ensure the health and safety of persons inside the space such as ventilation, lighting, scaffold and the like as identified in the risk assessment.

**(f) Personnel selection and training**

Entering and/or working in a Confined Space can be hazardous and may impose extra physiological and psychological demands on the person. Hence, the aptitude and physical competence of persons who are to conduct such Entry or work, as well as those who are to be appointed to stand-by duties must be appropriately evaluated with regard to the tasks envisaged and the type of Confined Space. If the Permit Issuer or Permit Holder for the Confined Space has any doubt of a person's physical or mental capacity to undertake the work, they must refer the individual to the Health and Wellbeing Centre for evaluation.

Persons involved in the Confined Space work must hold the competencies detailed in Table 1.

*Table 1: Roles and required competencies for work associated with Confined Spaces.*

| Competency | Workers in or on the space | Stand-by Person | Gas tester | Permit Issuer | Permit Holder | Rescue person/s |
|---|---|---|---|---|---|---|
| 'National Competency: Enter and work in Confined Spaces – RIIWHS202D' **OR**<br><br>Equivalent superseded version – 'RIIOHS202A' | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| GPC Confined Space | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| GPC personal lock holder | ✓ | ✓ | | | | |
| GPC familiarisation for gas testers | ✓ | ✓ | ✓ | | | |
| GPC familiarisation with rescue equipment | ✓ | ✓ | | | | ✓ |
| GPC responsibilities of a Permit Issuer | | | | ✓ | | |
| GPC responsibilities of a Permit Holder | | | | | ✓ | |

Re-fresher periods are detailed in the GPC Job Specific Mandatory Training matrix available on Neptune.

## 3.4 Preparing the Confined Space Entry Permit (CSEP)

The CSEP Form ('Part A') provides the authority to enter a Confined Space. The Permit Issuer is responsible for preparing the CSEP by providing a brief description of the work scope and providing for all the other requirements listed considering that scope of work, including arranging all associated permits and plans.

The Permit Issuer cannot validate the CSEP unless all the requirements of the associated permits and plans have been completed as described in the following subsections of 3.4.

**(a) Risk assessment and JSA**

The Permit Issuer must complete the Confined Space Risk Assessment and document in 'Part B' of the CSEP form. Inherent hazards associated with the Confined Space will be considered when filling out the CSEP form. Hazards introduced with the task to be undertaken in the space are to be considered in the JSA. When completing the JSA, it is preferable that this is undertaken with a representative from the workgroup, to identify the hazards being introduced into the Confined Space by the proposed work methods and the required controls. Consideration should be given to how hazards may be exacerbated by the Confined Space. The following prompts are provided for in the risk assessment template and must be considered:

- Atmospheric hazards;
  - Harmful Airborne Contaminants – gas, vapour, dust, mist etc. – generated to levels above Exposure Standard or could cause impairment, loss of consciousness or asphyxiation.
  - Harmful Airborne Contaminants – gas, vapour, dust etc. – may cause injury from fire or explosion – above 5% of its LEL.
  - Unsafe oxygen levels – below 19.5% or above 23.5% - may cause impairment or create explosive atmosphere.
  - Engulfment – work method involves the use of a liquid, or solid that could flow like a liquid, of a sufficient volume to cause a person to 'drown'.
- Uncontrolled introduction of substances – may result in drowning, being overcome by fume or other harm;
- Biological hazards – contact with micro-organisms (virus, bacteria, fungi) may result in infection or hypersensitivity;
- Mechanical hazards – entanglement, crushing, cutting, piercing, shearing of parts of a person's body;
- Electrical hazards – electrocution, shocks, burns;
- Skin contact with hazardous substances – burns, irritation or allergic dermatitis;
- Noise – amplified levels in the space – hearing loss, tinnitus, distraction, unable to hear warnings;
- Manual tasks – exacerbation of risk factors. PPE that restricts, movement, grip and mobility;

- Radiation – various health effects;
- Environmental hazards – heat or cold stress, slips, trips and falls, low light;
- Hazards outside the Confined Space – people could fall in, stuck by traffic, fire, explosion or contamination;
- Additional physiological & psychological demands – claustrophobia, distress.

The PICOW is responsible for ensuring a JSA or similar documented safe system of work, is developed to specifically identify how/when/where work performed and the hazards introduced could cause harm and the details on how to apply the identified control measures. Consideration must be given to the hazards and controls identified in the risk assessment when preparing the JSA.

The CSEP cannot be validated without a JSA for the work to be undertaken in the Confined Space.

See also section 3.3 Controls for safe atmosphere and 3.5 Controls for safe equipment for guidance on specific requirements or GPC standards for applying these controls.

**(b) GPC Isolation Permit**

*For the purpose of this procedure, a GPC Isolation Permit is used for the purpose of identifying the points of isolation for services and energy sources (including process and electrical) associated with Confined Space Entry.*

Where the requirement to isolate services and energy sources for Confined Space Entry, the isolation plan shall be documented on an Isolation Permit. All isolation control points for Confined Space Entry shall be locked and managed via a lock box.

The issuing of the Isolation Permit is to be carried out as per the GPC Isolation and Lockout Procedure.

The Permit Issuer must record the Isolation Permit number reference number, lockbox 'ID' and lockbox location (if a lockbox is used) on the CSEP before it can be validated.

**Standard of isolation for Confined Space Entry**

Process isolations shall have a physical block in the process flow. Examples of suitable process isolations include:

- Removing a spool, valve or expansion joint leading to the space and blanking or capping the open end of the pipe;
- Inserting a spade or blank in piping between the flanges; or
- Double block and bleed – closing and locking two valves in a pipe leading to a Confined Space and then opening the drain or vent valve between them.

In each option, the valves shall be locked in the required position and tagged with an Isolation Tag to indicate its purpose and each point of isolation listed on the Isolation Permit. The system must be able to be verified for zero energy state.

Electrical isolations shall involve removal of each potentially hazardous energy source. Plant, equipment or devices with stored energy must be verified for zero

energy state and be performed by an Authorised Authorised Isolation Officer. For example:

- Isolating a full load circuit breaker and then voltage testing for isolation by an Authorised Isolation Officer;
- Isolating full load fused isolators and then removing main phases and control fuses and then voltage testing for isolation by an Authorised Isolation Officer;
- Removing fuses by electrician and then voltage testing for isolation by an Authorised Isolation Officer; or
- Racking out or removing switchgear circuit breaker by an Authorised Isolation Officer.

Each electrical point of isolation must be listed on the Isolation Permit along with all other isolation points.

The GPC Isolation and Lockout Procedure provide full details for verification of isolations.

**(c) Excavation Permit**

An Excavation/Penetration Permit will be required where the conditions outlined in the GPC Excavation and Penetration Procedure are met. Additional controls may be required to manage the atmosphere and the risk of collapse / Engulfment if a person is required to enter the excavation as a Confined Space.

The GPC Excavation and Penetration Procedure provides the full details for working in an excavation or trench.

**(d) Hot Work Permit**

All Hot Work conducted in, on or near a Confined Space will require a Hot Work Permit to identify the potential fire or explosion hazards and control measures associated with the Hot Work.

The GPC Hot Work Procedure provides the full details for managing the risks associated with Hot Work. See also section 3.5 Controls for safe atmosphere and 3.6 Controls for safe equipment for specific requirements for managing the atmosphere and ignition sources.

**(e) Floor/Edge Protection Removal Permit**

Where the scope of work associated with the Confined Space Entry involves the temporary removal of flooring, plant or edge protection, then a Floor/Edge Protection Removal Permit is required prior to the removal of the flooring, plant or edge protection.

The GPC Temporary Removal of Flooring and/or Edge Protection Procedure provides full details on the requirements for managing the risk of falls with this permit process.

**(f) Emergency Response and Rescue Plan**

The Permit Issuer must ensure that the Emergency Response and Rescue Plan is complete and available before validating the CSEP. Refer to the GPC Confined Space Emergency Response and Rescue Plan template form.

The PICOW, with at least one representative of the workgroup, is responsible for developing the Emergency Response and Rescue Plan. It is recommended that the Confined Space Identification and Analysis Worksheet (linked in the register) is used as a point of reference when developing the Emergency Response and Rescue Plan to consider the dimensions and characteristics of the space.

If the risk assessment identifies the risk of a person inside a Confined Space being overcome by lack of oxygen or Airborne Contaminants, then the Qld Fire and Emergency Services should be contacted to be involved in the development of the Emergency Response and Rescue Plan.

The Emergency Response and Rescue Plan for Confined Space Entry must also consider if the Workers are wearing a fall arrest harness in a working at height situation. A Work at Heights Rescue Plan may also be required. Refer to the GPC Work at Heights Rescue Plan template form.

The Emergency Response and Rescue Plan must be rehearsed practically or verbally with relevant Workers to ensure it is efficient and effective. The PICOW/Permit Issuer of the workgroup is responsible for arranging the rehearsal.

See section 3.7(e) Emergency Entry requirements for specific details on Entry to effect a rescue.

**(g) Stand-by Person**

The Permit Issuer must ensure that a Stand-by Person is provided at all times while the space is occupied and ensure all persons entering the space understand the risk assessment and controls and have signed in.

If two or more workgroups being supervised by different persons, departments or companies are working in a particular Confined Space such that only one Stand-by Person is required, then the Supervisors may share responsibility for the provision of this person. In such cases only one Stand-by Person need be used at any one time. The specific arrangements must be documented on the CSEP and Emergency Response and Rescue Plan.

The Stand-by Person is responsible for ensuring they are capable of carrying out their duties, including:

- Knowing the name and location of the Confined Space;
- Establishing the communication link with security prior to Entry to the space and maintain the ability to make direct contact in the event of an emergency;
- Testing the communication system and maintain constant communication with persons in the space;
- Preventing unauthorised access to the Confined Space;
- Understanding the nature of the hazards inside the space and be able to recognise the signs and symptoms of distress that Workers in the space may experience;
- Recognising when to suspend work or evacuate the space if conditions change to present a real or potential danger to Workers inside the space;
- Ordering Workers to exit the space if any hazardous situation arises;

- Remaining outside the Confined Space in the stand-by location until relieved by a competent person who can assume the Stand-by Person duties or all persons have exited the Confined Space;
- Not doing other work which may interfere with their primary role of monitoring Workers in the Confined Space;
- Ensuring the entrance/exit remains unobstructed;
- Initiating an emergency response;
- Having all the required rescue equipment on site or immediately available where deemed necessary through the risk assessment process.
- Never entering the space to attempt a rescue.

**Methods of communicating between Stand-by Person and the person's inside**

The Stand-by Person shall remain at the space entrance from which point they can see the person/s working inside.

Where this is not practicable, and the Stand-by Person cannot see those inside, then a communication plan shall be established by a phone or radio system. The communication by phone or radio shall be continuous.

**(h) Critical life support equipment**

Critical life support equipment is any equipment that is identified during the risk assessment process as critical for the occupancy of the Confined Space and without it, life could be threatened. This includes, but is not limited to:

- Ventilation fans;
- Local exhaust fans;
- Air supplied respirators;
- Hatch covers that have been removed for natural ventilation;
- Hatch covers that must remain closed to prevent contamination of the atmosphere;
- Lighting; and
- Residual current devices (RCD's) and power sources associated with this equipment.

This equipment must be tagged with an information tag and identified as 'critical life support equipment for Confined Space Entry' to prevent interference and listed on the CSEP.

**(i) Initial atmospheric test**

The Permit Issuer must arrange for a competent person to conduct the initial atmospheric test and record the results in the appropriate section in 'Part C' of the CSEP.

The initial atmospheric test must be performed from outside the space. Inserting a person's arm into the space for the purpose of atmospheric testing is permitted, so long as the persons head or upper body does not enter the space. Depending on the potential residual hazards in the space, it may not be appropriate to even place a

person's Breathing Zone near the opening so an extension probe may be required to sample the atmosphere safely.

If it is necessary to enter the Confined Space to ascertain a fair atmospheric representation, then air supplied respiratory equipment must be worn. Where this is not practicable, seek advice from a Safety Specialist and conduct a risk assessment to identify a method by which the testing can be carried out safely. It may be necessary to ventilate or Purge the space to facilitate a safe atmosphere. See section 3.5 'Controls for safe atmosphere'.

The CSEP cannot be validated if the initial atmospheric test is not within the safe limits specified unless air supplied respiratory equipment is provided if the oxygen levels are below 19.5% or continuous monitoring is provided if the LEL is greater than or equal to 5% but less than 10%. No Entry is allowed if the LEL is greater than 10%.

**(j) Validity of the CSEP**

The Permit Issuer shall identify the overall validity period of the CSEP and record this in Part A of the CSEP Form. Generally the overall validity will be for the anticipated duration of the work.

The Permit Issuer must arrange for the CSEP to be revalidated during this period. A revalidation involves an atmospheric re-test and an inspection of the space and immediate surrounding area to check that conditions and controls identified in the original risk assessment remain current and relevant. This is recorded in 'Part C': CSEP Transfer / Revalidation of the CSEP form.

The maximum allowable period before the space must be reinspected is one shift, or 12 hours. The CSEP must also be revalidated whenever it becomes evident that the duration of the work will involve:

- A change in Permit Holder (does not require an atmospheric test if change is mid-shift and there is no break in work continuity); or
- A significant break in work continuity (i.e. – greater than one hour); or
- A significant change in atmosphere or scope of work to be performed.

## 3.5 Controls for safe atmosphere

Where an unsafe atmosphere is identified or a safe atmosphere is unable to be maintained, additional controls are required. The Permit Issuer is responsible for arranging for the appropriate controls to be implemented according to the following requirements.

**(a) Purging**

The space must be Purged if the risk assessment identifies the potential for the Confined Space to contain an unacceptable level of Airborne Contaminants.

Purging must only be done with natural, fresh air. If other methods or substances need to be used to Purge a Confined Space at GPC, then a management of change is required and must include approval from the Safety Manager.

**(b) Ventilation**

Where ventilation has been identified as the control measure for ensuring the safety of the atmosphere in the Confined Space, then consideration must be given to where the fresh air is drawn from and where the exhaust air is vented to prevent contamination or creating further risks.

Protection of the ventilation system is required. See section 3.4(h) 'Critical life support equipment'.

**(c) Flammable gases and vapours**

If the LEL is equal to or greater than 5%, but less than 10%, then continuous air monitoring is required in the space while it is occupied and potential ignition sources from within or from outside the space, must be identified and managed.

If the LEL is equal to or greater than 10%, the space must be evacuated and not re-entered until the atmospheric conditions have been returned to the acceptable range.

Smoking is not permitted in Confined Spaces.

**(d) Atmospheric Monitoring – continuous**

Continuous monitoring is required if the LEL is greater than or equal to 5% but less than 10%.

Continuous monitoring is also required for all oxyacetylene cutting and welding activities conducted in a Confined Space. The person conducting the welding or oxy cutting must use continuous personal gas monitoring.

The Stand-by Person is responsible for monitoring the gas detector and ensure the space is evacuated in the event that the gas detector goes into alarm.

**Gas Detector alarms**

During atmosphere gas monitoring, if the A1 alarm (5% LEL) is activated;

- The Permit Holder must be contacted to investigate the area to gain a better understanding for the alarm sounding, implement controls and update risk assessments prior to continuing on with work.

During atmosphere gas monitoring, if the A2 alarm (10%) is activated;

- All personnel are required to exit the Confined Space immediately as directed by the Stand-by Person. The Permit Holder must be contacted to assist in determining the cause of the alarm activation. Suitable measures must be taken to ensure the atmosphere is returned to acceptable levels. An atmospheric gas test must be conducted prior to re-Entry to determine if the levels are safe.

**(e) Atmospheric Monitoring – periodic**

The need for, and frequency of, periodic monitoring will be decided after considering the proposed work methods being undertaken in the space using the risk assessment process (JSA).

The periodic tests must be taken by the competent gas tester and the results recorded in 'Part D': 'Record of Periodic Atmospheric Monitoring Results' of the CSEP. If any issues arise with the safety of the atmosphere, the space must be evacuated by the Stand-by Person and the space reassessed to identify the source of the issue.

Prior to testing the atmosphere, a 'fresh air calibration' is required to be done by the competent gas tester. This calibration must be done in a clean atmosphere and away from potential Contaminants.

**(f) Respiratory protective equipment**

If it is not reasonably practicable to ensure the space contains a safe oxygen level (greater than 19.5%), or safe levels of Airborne Contaminants (above the Exposure Standard), then appropriate respiratory protective equipment in the form or either air-supplied or self-contained breathing apparatus shall be worn. Work of this nature is highly specialised and generally not undertaken by GPC Employees. Should this situation arise, guidance must be sought from a GPC Safety Specialist.

## 3.6 Controls for safe equipment

Equipment used in conjunction with a Confined Space shall be:

- appropriate to the work to be conducted;
- maintained in proper working condition; and
- compliant with relevant statutory requirements and Standards where applicable.

Where the risk assessment has identified the potential for fire or explosion or continuous monitoring for LEL is required, check that the equipment being used inside, outside or near by a Confined Space does not provide a source of ignition.

Where equipment cables, leads, hoses, ducting and the like are required to pass through an access hole, it is preferable to do so through a secondary hole, rather than the main Entry/exit to the space. If a second hole is not possible, then mechanical protection shall be provided to protect this equipment from damage.

The Permit Holder, PICOW of the work group and the Worker are all responsible for ensuring that equipment required to be used in association with the space meets these requirements.

**(a) Atmospheric gas detectors**

Gas detectors used at GPC for Atmospheric Monitoring (as outlined in section 3.5) are to be approved as per AS/NZS 60079.29.1:2017 requirements.

All gas detectors used for Confined Space Entry shall have the following specifications:

- LEL sensor calibrated to Pentane;
- Hydrogen compensated carbon monoxide sensor;
- Hydrogen sulphide sensor;
- Oxygen sensor;
- Carbon dioxide sensor; and
- The ability to data log.

All alarm settings must be set to industry standards.

**Maintenance of gas detectors**

The GPC gas detectors are maintained by the GPC Safety Team and serviced by the manufacturer on a routine basis.

A bump test must be carried out prior to each use by the competent gas tester.

**(b) Electrical equipment**

Electrical equipment connected to an external supply that is to be used in a Confined Space shall comply with AS/NZS 3100:2022 Approval and test specification - General requirements for electrical equipment and shall be installed (where required) in accordance with AS/NZS 3000:2018 Electrical installations.

Where available, double-insulated electrical equipment should be used.

**(c) Portable electrical equipment**

Portable electrical equipment used in a Confined Space should:

- be in compliance with relevant statutory requirements and standards where applicable;
- use flexible heavy duty power supply cable;
- have the power supply cable/s suspended or guarded against damage;
- be protected through a residual current device located outside the space.

**(d) Welding equipment**

When electric welding activities inside the Confined Space are suspended for any period the power source to the equipment shall be de-energised, all electrodes removed from holders, and the holders placed so that accidental contact or arcing shall not occur.

Electric welding supply leads used within a Confined Space shall be fitted with a welding circuit safety switch. The welding machine should be located outside the Confined Space. Earthing shall be immediately adjacent to the welding job.

**(e) Gas cylinders and hoses**

Where practical, no compressed gas cylinders or associated manifolds, other than those used for self-contained breathing apparatus, are to be located inside the Confined Space. Gas cylinders are to be secured at all times.

The compressed gas supply to equipment in the Confined Space shall be turned off at the cylinder valve when not in use.

Hoses shall be inspected for damage prior to use in a Confined Space. A hose supplying gas operated equipment used in a Confined Space shall be located, suspended or otherwise guarded to avoid accidental damage. Where practicable, the torch and hoses shall be removed from and de-pressurised outside the Confined Space.

**(f) Combustion engines**

Combustion engines, such as those used to drive generators and pumps, skid steer loaders and the like, should not be used inside a Confined Space unless adequate control measures are able to be implemented to ensure the safety of the atmosphere of the space.

If combustion engines are needed to be used inside a Confined Space, then continuous Atmospheric Monitoring for carbon monoxide shall be required.

## 3.7 Performing work in a Confined Space

Once the Permit Issuer has authorised the CSEP, it is issued to the Permit Holder who co-signs the authority to confirm receipt. The Permit Issuer and Permit Holder cannot be the same person.

The Permit Holder does not need to be present at the space for the duration of its occupancy, but they do need to be on-site. The Permit Holder could be the Stand-by Person or a Worker if they are suitably trained and nominated by the PICOW.

The CSEP must be prominently displayed at the main Entry point to the Confined Space.

**(a) Permit Holder responsibilities**

Prior to first Entry, the Permit Holder must ensure that all person's entering the space have reviewed, understand and signed onto the:

- CSEP ('Part E);
- JSA for the work;
- Isolation Permit where applicable; and
- Emergency Response and Rescue Plan.

The Permit Holder must also make sure that all person's entering the Confined Space have:

- Reviewed any other permits that have been issued for work associated with the Confined Space (e.g. Hot Work); and
- Hung their personal lock/s in accordance with the Isolation Permit, where isolations are required.

While work is being performed in the Confined Space, the Permit Holder is responsible for making sure that:

- The work scope identified in the initial CSEP is not being varied (scope creep);
- No other condition inside or outside the space could impact on the safety of those inside, on or adjacent to the space; and
- All work is being undertaken as described in the JSA provided and all controls and precautions identified in the JSA, CSEP and other associated permits and plans are being adhered to.

If the Permit Holder identifies any concerns with the above, then they must:

- Stop the job and evacuate all person's from the space;
- *If scope creep:*
  - request the Permit Issuer to review the varied scope with the requirements of the CSEP, including isolation permit (if applicable) to check if still applicable;

- *If changed conditions:*

  – request the Permit Issuer to review the changed conditions with the requirements of the CSEP to check if still applicable;

- *If work not compliant with documented controls:*

  – investigate why controls not being used (e.g. no longer or not practical, effective, achievable, relevant, understood etc.) and request the Permit Issuer to update if required.

**(b) Transfer of Permit Holder**

If the role of Permit Holder is required to change for any reason, a record of transfer of these responsibilities must be made in 'Part C' of the CSEP by both the transferring and receiving Permit Holders.

Triggers for transferring Permit Holders include, change of shift if the work is continuous, or the person is re-assigned to other duties not associated with the Confined Space.

**(c) Responsibilities of persons entering the Confined Space**

Prior to first Entry, all person's entering the space must review, understand and sign onto the:

- CSEP ('Part E');
- JSA for the work;
- Isolation Permit for the space (where one is in place); and
- Emergency Response and Rescue Plan.

All persons entering the space must also:

- Review and understand the controls and precautions highlighted of any other permits that have been issued for work associated with the Confined Space (e.g. Hot Work);
- Hang their personal lock/s in accordance with the isolation permit, where isolations are required;
- Ensure that the work being undertaken are in accordance with the work scope identified in the initial CSEP and is not being varied (scope creep);
- Ensure all work is being undertaken as described in the JSA provided and all controls and precautions identified in the JSA, CSEP and other associated permits and plans are being adhered to;
- Identify if conditions inside or outside the space change in a manner that could impact on the safety of those inside, on or adjacent to the space; and
- Evacuate the space if directed by the Stand-by Person, if the gas monitor alarms or if conditions in, on or near the space become hazardous.

Each time a person enters or exits the Confined Space, they must sign on and off the CSEP ('Part E').

At the completion of work, or at the end of the shift (whichever is sooner), each person is required to remove their personal lock and sign off the isolation permit.

**(d) Withdrawal of CSEP due to hazardous conditions**

If, during the course of work, conditions change to present a real or potential danger to those working in, on or near the space and the space is evacuated, then the Permit Issuer may withdraw the CSEP until such time the space can be made safe. In this instance, the Permit Holder must ensure that:

- All persons have exited the space and signed off the CSEP;
- They sign the CSEP withdrawal section and indicate the reason for withdrawal.

The CSEP shall not be withdrawn or removed if a person who has signed onto the CSEP has not signed off.

Further Entry to the space is prohibited unless a new CSEP issued.

**(e) Emergency Entry requirements**

If a person inside a Confined Space has been overcome by lack of oxygen or Airborne Contaminants (atmospheric gas monitor in alarm), it must be assumed that Entry for rescue is unsafe unless air-supplied respiratory protective equipment is used. See section 3.5(f) 'Respiratory protective equipment'.

Where the atmosphere has safe levels of oxygen and Airborne Contaminants are not detectable (i.e. deemed safe), a designated first aider (not the Stand-by Person) may enter the space to perform first aid, provided they comply with the requirements for Entry as per section 3.7(c) 'Responsibilities of persons entering the space'.

If the Emergency Response and Rescue Plan has been initiated and the atmosphere has been deemed safe, then the responding First Aider is exempt from hanging their personal lock, but they must still review the conditions of the CSEP and the Emergency Response and Rescue Plan prior to Entry.

Emergency service workers (e.g. paramedics, fire fighters, police officers and the like) are not required to comply with this procedure if they are rescuing a person from a Confined Space or providing first aid to a person in the space (in accordance with reg.63 of the WHS Regulation ).

## 3.8 Completion of Confined Space work

On completion of the work in the Confined Space, the Worker is responsible for:

- Removing all tools, equipment, off-cuts and waste from the space; and
- Signing off the CSEP, isolation permit and removing personal lock/s;
- Ensuring the Confined Space has been boxed up after the Permit Holder is satisfied that the space is in a state where it can be boxed up.

On completion of the work in the Confined Space, the Permit Holder is responsible for:

- Ensuring the work scope has been completed as required;
- Ensuring all people, tools, equipment, off-cuts and waste are removed from the space;
- Ensuring all people have signed off the CSEP, isolation permit and removed their personal locks; and
- The space has been returned to a state where it can be boxed up.

The work area external to the Confined Space must also be house kept and returned to a safe and clean state.

Once the Permit Holder is satisfied that the above points are complete, then the CSEP can be returned to the Permit Issuer for withdrawal.

**(a) Withdrawal of the CSEP on completion**

On completion of the work, the Permit Issuer is responsible for checking that:

- The work scope has been completed as required;
- All people, tools, equipment, off-cuts and waste are removed from the space;
- All people have signed off the CSEP, isolation permit and removed their personal locks; and
- The space has been returned to a state where it can be boxed up.

The CSEP shall not be withdrawn or removed if a person who has signed onto the CSEP has not signed off.

Once the Permit Issuer is satisfied that the Confined Space can be returned to service, they must sign the CSEP withdrawal section and indicate the reason for withdrawal. The Permit Issuer may then inform the Authorised Isolation Officer the Isolation Permit associated with the Confined Space can be lifted and the plant/equipment returned to service.

## 3.9 Record keeping

The CSEP must be kept by the Permit Issuer for 28 days and be available for inspection during this time on request (reg.77 of the WHS Regulation*)*.

If an incident occurs in connection with the work to which the completed/withdrawn CSEP relates to, the CSEP and all associated permits and JSA must be attached to the incident record in SAI360.

A CSEP may be saved in eDocs and a link created in the Confined Space Register for future reference.

All records for training and familiarisations are managed by the GPC Training Department.

## 3.10 Managing non-conformances

All incidents or breaches of this Procedure must be reported in SAI360 and investigated as per the GPC Incident Management and Investigation Procedure.

## 3.11 Procedure monitoring and review

This Procedure will be included in the GPC internal audit schedule.

This procedure will be reviewed for currency and effectiveness every three years.

All registered Confined Spaces will be re-evaluated if any changes occur that may affect the nature of the space (e.g. design modification, change in process or materials that may be stored or pass through the space etc.), to confirm their classification status.

# 4 Roles and responsibilities

To assist GPC Representatives to better understand their responsibilities, key responsibilities and accountabilities are summarised below:

| Role | Responsibilities |
|---|---|
| **Executive Leadership Team** | To ensure that GPC complies with its obligations by:<br>• Providing adequate resources to ensure the consistent and effective application of this Procedure across GPC. |
| **Managers** | To ensure that GPC complies with its obligations by:<br>• Ensuring that the requirements of this Procedure are supported, promoted, understood and complied with in their area.<br>• Managing non-conformances to this Procedure. |
| **Superintendents** | To ensure that GPC complies with its obligations by:<br>• Ensuring Confined Spaces in their areas are maintained.<br>• Ensuring that training is provided for all aspects of Confined Space Entry, including rescue.<br>• Ensuring that appropriate investigations are conducted into the non-conformance with this Procedure.<br>• Ensuring the relevant JSA for Confined Space work is being followed, and equipment is being utilised effectively.<br>• Managing non-conformances to this Procedure |
| **Planner or PICOW** | To ensure that GPC complies with its obligations by:<br>• Identifying if the work can be done without the need to enter the Confined Space.<br>• Consulting the Confined Space Register when developing the JSA and Emergency Response and Rescue Plan.<br>• Preparing a job pack for the workgroup entering the space.<br>• Arranging required resources to be provided and documentation to be completed including: signage, gas monitoring, revalidation of CSEP, Permit Holder is nominated, ventilation, lighting, scaffold and so on. |
| **Permit Holder** | To ensure that GPC complies with its obligations by: |

| | |
|---|---|
| | • Ensuring that all persons entering the space are made aware of the CSEP, JSA and associated permits prior to first Entry.<br>• Ensuring the relevant JSA is being followed by persons in the Confined Space.<br>• Transferring details of status of the Confined Space to another Permit Holder as required.<br>*NOTE: The Permit Holder may also be the PICOW, but they cannot be the Permit Issuer.* |
| **Permit Issuer** | To ensure that GPC complies with its obligations by:<br>• Evaluating and risk assessing the Confined Space environment and identifying requirements for safe Entry to the Confined Space.<br>• Authorising Entry by Confined Space Entry permit.<br>• Performing a combined risk assessment where there are multiple work groups in a particular space.<br>*NOTE: The Permit Issuer cannot also be the Permit Holder.* |
| **GPC Safety Manager** | To ensure that GPC complies with its obligations by:<br>• Approving the use of alternative methods or substances to Purge a Confined Space if the use of natural, fresh air is not sufficient to create a safe atmosphere for Entry. |
| **GPC Safety Specialist (Safety Team)** | To ensure that GPC complies with its obligations by:<br>• Classifying Confined Spaces according to this Procedure and maintaining the Confined Space Register.<br>• Providing advice in managing the risk associated with Confined Space work, such as selection of appropriate respiratory protective equipment and determining the cause for gas monitor alarms.<br>• Monitoring compliance to this Procedure.<br>• Supporting interested parties in the interpretation and application of this Procedure.<br>• Maintaining current knowledge of legislative requirements relating to working in Confined Spaces. |
| **GPC Employees, Contractors and Workers** | To ensure that GPC complies with its obligations by: |

| | |
|---|---|
| | • Attaining and maintaining training and competency for entering Confined Spaces and any associated rescue equipment to be used.<br>• Reporting any issues identified with the Confined Space work to the PICOW or Permit Holder.<br>• Comply with the requirements of the CSEP and associated JSA for the Confined Space work.<br>• Taking reasonable care for their own safety; and<br>• Complying with this Procedure. |

# 5 Appendices

## 5.1 Appendix 1 – Related documents

### (a) Legislation and regulation

Key relevant legislation and regulation, as amended from time to time, includes but is not limited to:

| Type | Legislation/regulation |
|---|---|
| State Acts | *Work Health and Safety Act 2011* (Qld)<br><br>*Work Health and Safety Regulation 2011* (Qld) |
| Other | Confined Spaces Code of Practice<br><br>AS/NZS 2865:2009 Confined Spaces<br><br>AS/NZS 3000:2018 Electrical installations.<br><br>AS/NZS 3100:2022 Approval and test specification - General requirements for electrical equipment<br><br>AS/NZS 60079.29.1:2017 Explosive atmospheres Gas detectors - Performance requirements of detectors for flammable gases |

### (b) Gladstone Ports Corporation documents

The following documents relate to this Procedure:

| Type | Document number and title |
|---|---|
| **Tier 1:** Policy | #365624 Safety Policy<br><br># 1412364 Enterprise Risk and Resilience Policy |
| **Tier 2:** Standard/Strategy | #854303 Safety Management Framework Standard |

| Type | Document number and title |
|---|---|
| | #829152 Enterprise Risk Management Standard<br><br>#995910 Contractors and Port Users Safety, Environment and Security Standard |
| **Tier 3:** Specification/ Procedure/Plan | #697854 Safety Management System Plan<br><br>#1075526 Incident Management & Investigation Procedure<br><br>#1774581 Isolation and Lockout Procedure<br><br>#1204873 Excavation and Penetration Procedure<br><br>#154111 Hot Work Procedure<br><br>#123483 Work at Height Procedure<br><br>#1268891 Temporary Removal of Flooring and/or Edge Protection<br><br>#1150029 Work Management Procedure |
| **Tier 4:** Instruction/Form/ Template/Checklist | #374102 Confined Space Classification Form<br><br>#1407031 Confined Space Entry Permit Form<br><br>#1272933 Confined Space Declassification Form<br><br>#1416465 Confined Space Emergency Response and Rescue Plan Form<br><br>#1216441 – Permit to Dig / Excavate Form<br><br>#154108 Hot Work Permit Form<br><br>#1281584 Floor / Edge Protection Removal Permit Form<br><br>#1260121 Work at Heights Rescue Plan Form<br><br>#1621179 GPC Corporate Glossary Instruction |
| **Other** | #844911 Confined Space Register |

## 5.2 Appendix 2 – Revision history

| Revision date | Revision description | Author | Endorsed by | Approved by |
|---|---|---|---|---|
| 29/08/2018 | Initial document creation. | Rebecca Devine – Safety Specialist – Systems & Projects | Tony Young, Safety Manager | Rowen Winsor – PCS GM |
| 19/10/2020 | HSF legal review. Confined Space Standard combined into Procedure as per GPC Governance Documentation Framework. No material changes to intent or requirements. | Kirsty Iszlaub – Acting Safety & Training Specialist - Systems | Tony Young, Safety & Training Manager | Rowen Winsor – PCS GM |
| 24/05/2021 | Section 3.3. (c) Temporary declassification requirements - change from 'and/or' to 'and' as required in Code of Practice. | Kirsty Iszlaub – Acting Safety & Training Specialist - Systems | Tony Young, Safety & Training Manager | Tony Young, Safety & Training Manager |
| 01/09/2023 | Desktop currency review. No material changes. | Kirsty Iszlaub, Safety & Environment Systems Lead | Tony Young, Safety Manager | Richard Haward, EGM Safety & ESG |