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CS ENERGY PROCEDURE

WORKING IN CONFINED SPACES
CS-PTW-HAZ-03

Responsible Officer: Corporate PTW Administrator
Responsible Manager: Head of Operations Services
Responsible Executive: Chief Executive Officer (CEO)

DOCUMENT HISTORY

Key Changes	Prepared By	Checked By	Approved By	Date
Original Release	PTW Committee	PTW Committee	GMOPS	15/03/2004
Inclusion of process change and reviewed by Committee	PTW Committee	PTW Committee	GM OPS	18/10/2006
Update to process to include OIC Point of Control (POC) locks	PTW Committee	PTW Committee	GM OPS	12/12/2006
Review of procedure structure with site representatives	PTW Committee	PTW Committee	GM OPS	12/01/2007
Form numbers inserted and updated Mick Harts Comments	PTW Committee	PTW Committee	GM OPS	26/03/2007
Alistair Brown's review comments included	D Clarke	PTW Committee	A Brown	10/04/2007
Included provisions from Confined Space Code of Practice 2011 and NEW CSE formatting	D Clarke	PTW Committee	A Brown	21/03/2012
Reviewed and Released as a part of the PTW system changes and harmonisation legislation	D Clarke	PTW Committee	A Brown	31/10/2012
General review for consistency of business process	S Watterston	PTW Committee D Clarke	A Brown	30/01/2018
Includes update of isolation section 6 including addition of risk assessment option. General document tidy up.			A Brown	30/05/2018
Updated table in Training & Competency section to reflect new 3 yearly refresher training	S Sauerwald	PTW Committee HSE Partners	P Matha	26/10/2020
Include Confined Space Reclassification procedure requirements, update to current Codes of Practice 2021	N Seibel	A Cashin L Hartley PTW Committee	P Matha	05/07/2023

CONTENTS

1 PURPOSE

The purpose of this procedure is to provide a mandatory process, guidance and information for planning, managing and maintaining safe entry and work within confined spaces. This procedure is designed to provide clear guidelines for all workers to follow when working in a confined space. Confined spaces are classified as high-risk areas and require specific planning, risk management and implementation of controls in order to minimise risks to acceptable levels before entry for work is authorised.

Entry to confined spaces across all CS Energy sites will be managed in accordance with the CS Energy Permit to Work (PTW) Manual and associated procedures.

2 SCOPE

This procedure is applicable to all personnel requiring entry and working within a confined space at CS Energy owned and/or operated assets. A person is considered to have entered the confined space as per Work Health and Safety Regulation 2011.

This procedure is a component of CS Energy's overarching PTW Management System. For additional information pertaining to the planning, administering and authorisation processes relating to isolations and PTW process, refer to the PTW Manual.

- The identification of, and work carried out in Confined Spaces must be in accordance with:
  1. WHS Regulations 2011 Part 4.3;
  2. Confined Spaces Code of Practice 2021;
  3. Australian Standard 2865:2009; and
  4. The Permit to Work Management System.

- Confined space entry procedures are not applicable nor prevent a person from (pending a risk assessment regarding an immersion in hazardous environment or atmosphere) inserting their hand or arm into a confined space while either testing or evaluating a confined space prior to entry.

3 RESPONSIBILITIES AND ACCOUNTABILITIES

3.1 Permit to Work Officer (PTWO)

PTWO Responsibilities include:

- Confirming the "Hazards" section of the Application for PTW (APTW) has been completed;
- Confirming all confined space nominated openings have been listed on the APTW;
- Opening confined space openings for ventilation and place danger tape across openings;
- Confirming a Confined Space Entry Sign On/Off Sheet and Atmospheric Testing Form are included as part of the documentation;
- Isolating the plant in accordance with the PTW Manual giving special consideration to:
  - Draining;
  - Purging; and
  - Ventilation.
- Confirming that all confined space nominated entry points and nominated ventilation points have been listed on the isolation sheet (if a POC WCD is utilised, that the associated Point of Control (POC) locks and tags are provided to the OIC);

- Ensuring the plant has been isolated for the plant/scope of work requested and that the isolation has been verified as effective in containing the energy source;
- Advising the OIC of any change in conditions associated with plant (including co-joined boilers – refer site specific procedure).;
- Receiving approval from the OIC prior to changing any conditions associated with the confined space

3.2 Officer in Charge (OIC)

Responsibilities include:

- Completing the APTW listing all required confined space openings (may also be submitted by a planner), JSEA, Confined Space Risk Assessment, Emergency Response Plan (in conjunction with the relevant PICW) and, then arranging for review by a competent person;
- Arranging for the provision for a standby person/s;
- Confirming (in conjunction with the relevant PICW) workers are trained and competent to enter a Confined Space;
- Liaising with all relevant personnel associated with the task and managing the risks (i.e. Work Party, specialists, ERT etc.);
- Managing the Task
    - Accept the PTW
    - If required, perform the POC isolations on the required confined space access and ventilation points.
        - Ensuring the OIC and the Second Checker perform their roles as detailed on the POC WCD;
        - Ensuring the white POC lock key/s are stored in the lockable compartment in the PTW board once the POC isolations are applied;
    - Confirm with the Work Party that all nominated entry points and nominated ventilation points are open and locked and tagged (POC locks and tags if relevant).
    - Issue the APTW to the PICW if one is nominated.
- Coordinating (in conjunction with the relevant PICW) any preparatory requirements for personnel retrieval (e.g. Trained Rescue Personnel, Standby Personnel);
- Ensuring all entrances are not obstructed by fittings or other equipment that could impede a rescue;
- Coordinating any required Air Quality Testing for work within the confined space;
- Erecting barricade tape and/or signs to control entry;
- Maintaining the integrity of the access process and ensuring that all Work Party members and others who require entry to the confined space:
    - Sign onto and briefed on JSEA's, PTW Sign On/Off Sheet and Confined Space Entry Sign On/Off sheet;
    - Fit their Personal Site Access card to the access monitoring board.
- Involving the PICW and personnel entering the confined space in discussion and rehearsal of first aid and Emergency Response Plan;
- Ensuring Residual Current Devices (RCD's) are provided for electrical equipment used in the confined space;

- Ensuring that the requirements of the PTW for confined space entry are fulfilled;
- Managing entry to the confined space;
- Monitoring and reviewing the JSEA, particularly if new hazards are identified or introduced into the work area and instruct the Work Party of any changes (this may involve the ceasing of work activities and exiting of the Confined Space);
- Coordinating the safety controls as defined within the JSEA
- Cancelling entry permission when the work is complete or when controls detailed in the risk assessment are not being met;
- General lighting must be totally encapsulated in shatterproof housing;
- Ensuring all persons have left the space when work is completed;
- Removing locks and tags and surrendering permit

3.3 Person in Charge of Work (PICW)

Responsibilities include:

- Coordinating and monitoring the controls identified in the JSEA;
- Revising the JSEA if new hazards are identified or introduced into the work area and liaise with the OIC to determine if there are any impacts on the boundaries of isolation;
- Notifying the Work Party and OIC of any changes to scope of work and JSEA controls (this may involve the ceasing of work activities and exiting of the Confined Space);;
- Communicating with Work Party and OIC throughout the work activity;
- Maintaining the integrity of the access process and ensuring that all Work Party members and others who require entry to the confined space:
    - Sign onto and briefed on the JSEA's, PTW Sign On/Off Sheet and Confined Space Entry Sign On/Off sheet;
    - Fit their Personal Site Access card to the access monitoring board.
- Maintaining the status of the PTW Board and documentation;
- Ensuring Work Party members are suitably trained and competent;
- Managing entry to the confined space;
- Coordinating the safety controls as defined within the JSEA
- Cancelling entry permission when the work is complete or when controls detailed in the risk assessment are not being met;
- Ensuring all persons have left the space when work is completed, or the PICW Work Authorisation form is surrendered.

3.4 Work Party

Responsibilities include:

- Seeking authorisation from the OIC to enter the confined space;
- Advising the OIC of the activities, plant, tools, material, chemicals and processes that will be undertaken in the confined space;
- Notifying the OIC of any impairment that may make them unable to safely perform a task in the confined space;

- Ensuring that competency and training currency is maintained for confined space entry;
- Ensuring that all required PPE is correctly utilised;
- Checking that the confined space atmospheric testing has been conducted;
- Ensuring that they review and are signed on the JSEA, PTW Sign On/Off Sheet and Confined Space Entry Sign On/Off sheet; Fit their Personal Site Access card to the access monitoring board when in the confined space;
- Affixing personal locks to PTW board;
- Notifying the Standby Person if there is an issue inside the space;
- Exiting the space if atmospheric monitors indicate an unsafe environment (go into alarm), in the event of an emergency or if instructed by the Standby Person;
- Informing the OIC of new hazards identified or introduced into the work area;
- Following OIC instructions relating to specific work activity requirements and the timing of particular tasks;
- Following the controls identified in the JSEA;
- Following the appropriate work procedures;
- Signing the Confined Space Entry Sign On/Off Sheet each time they enter or exit the Confined Space;
- Exiting the confined space as quickly as possible whenever an order to evacuate has been given or an evacuation alarm sounds;
- Removing locks and tags and sign off on PTW.

3.5 Standby Person

Responsibilities include:

- Identifying and testing method of continuous communication with OIC and persons working in the confined space;
- Ensuring any emergency recovery equipment, monitoring equipment and Emergency Response Plan are in place prior to work commencing;
- Ensuring they remain outside the confined space at all times;
- Ensuring documentation for entry into the confined space is located in proximity to the nominated entry point of the confined space.
- Ceasing work and evacuate people within the confined space if situation arises;
- Initiating the Emergency Rescue Plan (raise the alarm) in a rapid and timely manner;
- Use emergency recovery equipment as defined in the Confined Space Risk Assessment and Emergency Response Plan if competent as a trained rescue person (e.g. attempting non-entry rescue if proper equipment is in place and the rescue attempt will not present further hazards to the casualty);
- Operating and monitoring equipment for the safety of the personnel in the confined space;
- Monitoring ongoing ventilation within the space;
- Maintaining visual contact with personnel within the confined space where possible;
- Not performing any other task other than that of required to be a Standby Person;

- Monitoring the external conditions and activities that may impact on the health and safety associated with personnel working within the confined space;
- Signing on and identifying themselves on the Confined Space Entry Sign On/Off Sheet;
- Controlling entry and egress into the confined space (ensure workers sign on and sign off accordingly);
- Informing the OIC of new hazards identified or introduced into the work area;
- Monitoring the wellbeing of the persons inside on the confined space and to alert them of the need to evacuate the space when conditions warrant;
- In the event of an emergency remaining at the entry of the space and on arrival of the Emergency Response Team communicate the sequence of events, persons in the space and any other relevant information as requested. Do not enter the Confined Space.

3.6 Competent Atmospheric Testing Personnel

Responsibilities include:

- Undertaking Atmospheric Testing for air quality:
  - with calibrated and serviceable equipment;
  - challenging the test equipment prior to use;
  - in accordance with the hazards identified in the JSEA & Confined Space Risk Assessment;
  - in a manner that ensures the entire confined space is assessed; and
  - utilising appropriate personal protective equipment.
- Recording Air Quality Test Results on the Atmospheric Testing form (S1890) at required intervals;
- Not entering a confined space without a PTW;
- Completing a JSEA and identify control measures to conduct atmospheric testing inside a confined space.

3.7 Competent Person (Confined space trained and plant knowledge)

Responsibilities include:

- Reviewing the JSEA, Confined Space Risk Assessment and Emergency Response Plan; and
- Endorsing the A PTW and acknowledging an acceptable review.

4 WHAT IS A CONFINED SPACE?

A confined space means an enclosed or partially enclosed space that:

- Is not designed or intended primarily to be occupied by a person; and
- Is, or is designed or intended to be, at normal atmospheric pressure while any person is in the space; and
- Is or is likely to be a risk to health and safety from:
  - An atmosphere that does not have a safe oxygen level; or
  - Contaminants, including airborne gases, vapours and dusts, that may cause injury from fire or explosion; or
  - Harmful concentrations of any airborne contaminants, or engulfment.

Confined spaces are commonly found in vats, tanks, pits, pipes, ducts, flues, chimneys, silos, containers, pressure vessels, underground sewers, wet or dry wells, shafts, trenches, tunnels or other similar enclosed or partially enclosed structures, when these examples meet the definition of a confined space in the **Work Health and Safety Regulation 2011.**

5 CONFINED SPACE IDENTIFICATION

Each site must maintain a register of confined spaces and it must be available to all personnel for reference in regard to the work they are carrying out.

The Site General Manager must delegate responsibility to maintain the confined space register. Any plant or structural modification that occurs where a new confined space is created must be updated into the confined space register. The confined space register must be reviewed every 3 years.

5.1 Confined Space Identification Signage

- A permanently fixed Confined Space Entry sign must be fixed to all openings for each confined space;
- The sign must be legible, displayed in a prominent position and remain visible when the opening is open;
- The sign must comply with the requirements of AS/NZS 2865 Confined spaces;
- All openings must be uniquely identified; and
- Where permanent signage is impractical (e.g. confined space within a confined space or inadvertently created after removing valve seat) they must be identified in the site register or managed appropriately to clearly identify the confined space e.g. signage must be erected to sufficiently notify that the space is not safe to enter.

5.2 Identifying the Confined Space Nominated Entry Point

- In addition to fixed confined space signage, nominated entry point signage must be erected adjacent to the entry point clearly indicating this is the nominated entry point to be used;
- A confined space board (ID tag board designed to allow personal ID tags to be attached indicating personnel are in the confined space) may suffice as nominated entry point signage;
- It is mandatory to hang ID cards when confined space boards are used;
- The nominated open confined space points will be secured open by either;
  - An OIC Point of Control (POC) lock and tag. The tag will be printed from the nominated entry point descriptions nominated by an OIC in the Application for Permit to Work (APTW), or
  - An Operational Work Clearance Document (WCD) red lock and tag. The tag will be printed from the nominated entry point descriptions nominated by an OIC in the APTW.
- The confined space documentation should be adjacent to the nominated confined space entry point.

- Confined space documentation can be held using one of the two options:
  1. The PTW board for the job on the provision that the PTW board is adjacent to the space; or
  2. A confined space board at the entry point with confined space documentation attached.

5.3 Identification of confined space nominated ventilation points

- 'Danger - Do not Enter' barricade tape and signage is to be displayed across ventilation points so people do not inadvertently enter the space. Security devices such as POC white locks or Operational Confined Space WCD red locks are to be installed as required to secure ventilation points open.
- The OIC is to apply an OIC POC lock and tag to every nominated ventilation point if the POC system is nominated.

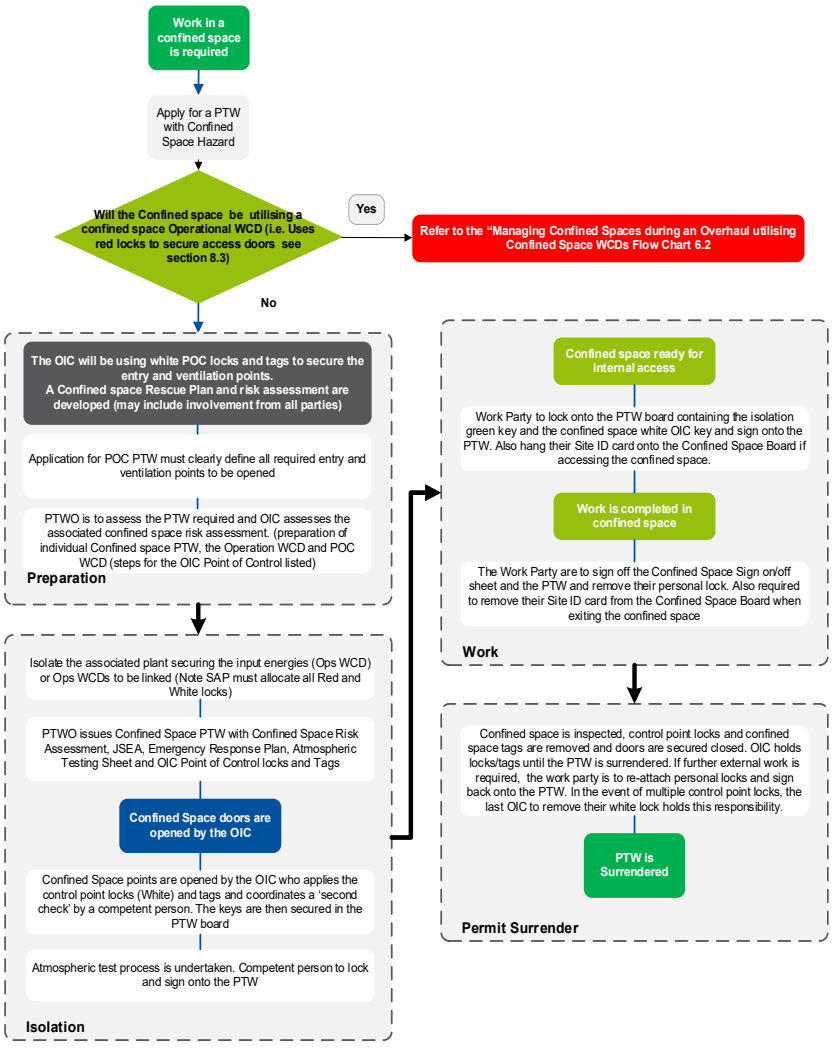
5.4 Confined Space Openings

Where openings are not nominated but are opened (e.g. forced cooling or to facilitate operational processes) and there is risk of inadvertent access, suitable barriers and/or signage is to be erected (e.g. where a risk of fall into the space exists, fixed barriers are to be used in addition to 'Danger – Confined Space' barricade tape.

6 CONFINED SPACE PROCESS

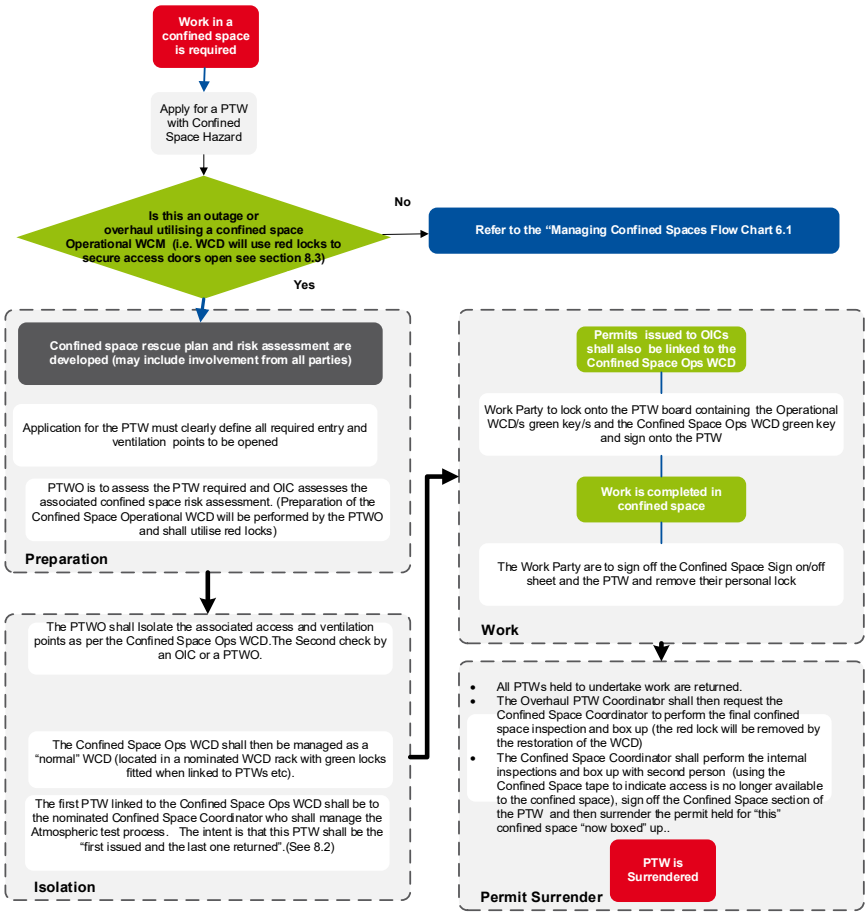
6.1 Managing Confined Spaces Flow Chart

(Each OIC manages their White POC Locks)



6.2 Managing Confined Spaces in Overhauls Flow Chart

(Overhauls etc. with the OIC managing the nominated Confined Space Access and Ventilation Points)



7 CONFINED SPACE ISOLATION

All confined space isolations must be completed in accordance with the CS Energy PTW Manual and associated procedures. These procedures reflect the relevant Legislation, Codes of Practice and Australian Standards.

7.1 Isolation Principles

Confined space isolations must ensure:

1. All potentially hazardous services and relevant plant are isolated prior to any person entering the confined space and for the duration of the work;
2. The isolation/s suitably prevents:
   a) Introduction of contaminants through piping, ducts, vents, drains, conveyors, service pipes and fire protection equipment etc.
   b) The activation or energising of machinery or plant in the confined space.
   c) The activation of plant/services outside the confined space that could adversely affect the space.
   d) The release of any stored or potential energy. and
   e) The inadvertent use / starting / operation of electrical equipment hence preventing injury, electric shock and/or sparking.

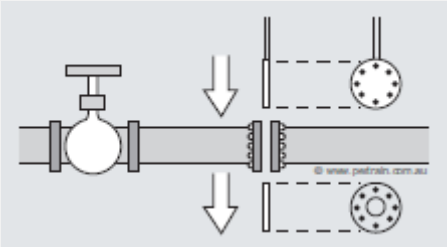
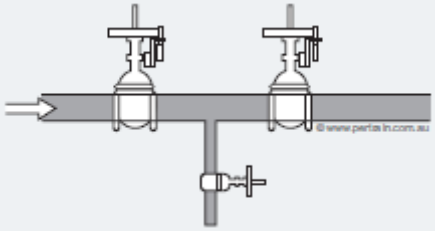
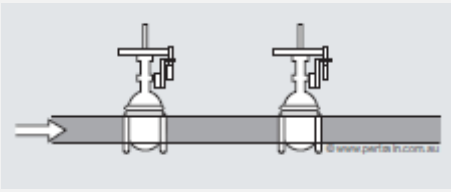
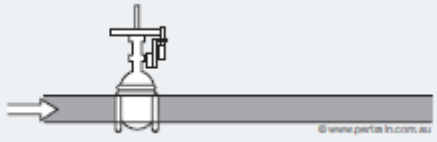
- Point C above refers to any permanent or semi-permanent plant that is identified prior to the isolation being performed and will not be relocated (i.e. fixed or “known” plant). (i.e. A 500KW diesel driven air compressor bolted to the floor adjacent the confined space opening, a coal feeder cleaning belt starting if the confined space access is to a mill, a pneumatic dust transfer vessel with a depressurising vent to atmosphere adjacent to the confined space access point etc.
- Examples of portable generators or pumps etc. introduced post the issue of the PTW will be managed by the OIC and the JSEA.

3. A Positive isolation or a Proven isolation should be used where possible for the control of hazardous services / substances / possible contaminants or gases etc., however, note that:
   a) Where neither of the above isolation methods are achievable, any alternative isolation/s must be risk assessed and must be acceptable only when such results in a controlled risk rating of “Low” which achieves the equivalent level of safety; and
   b) Consideration must be given to implementing a plant modification process to allow for a positive isolation or similar for future isolation purposes.

- Engineering, Health and Safety, Chemical, Maintenance and Operational expertise may be required to undertake the risk assessment process and evaluate the controlled risk ratings. **The risk assessment must be approved at manager level.**

7.2 Hierarchy of common controls for isolation of Liquids, Gases & Vapours

The table below shows common methods to isolate liquids, gases and vapours. The items are ranked in order of the hierarchy of controls, from the highest form of effective isolation to the lowest.

Hierarchy of Control	Method	Description
1 Most Effective	**Positive Isolation: Removal/Blanking** 	Remove a section of piping or a conductor to create a break or gap. Apply a Danger tag to the removed section. Apply a lock and Danger tag to the blank of the isolation and to the isolated valves where possible. Blanking is the fixing of a device to piping to prevent product or energy flow. Blanking may be combined with the closure of a single valve.
2	**Proven Isolation Double Block and Bleed** 	Close two valves in series and open a valve or remove a plug to remove by bleeding the material contained in the piping between the two valves. Ideally the two block valves are located relatively close together. Ensure that the bleed vents to a safe location and is visible and accessible to confirm an effective isolation. Apply a lock and danger tag to the vent and isolated valves. Assess the integrity of this isolation by checking whether any process material is leaking from the bleed valve.
3	**Double Block** 	Double block isolation involves closing two valves in series between the process and the equipment/plant to be isolated. The two valves should be as close together as possible. Apply a lock and Danger tag to both valves.
4 Least Effective	**Single Valve** 	Single valve isolation closing a single valve between the process and the equipment/plant being isolated. Lock and secure the valve to prevent a change of status. If a single valve is the dependent isolation, perform a risk assessment to determine the integrity of the valve during the isolation process.

- While pipe work and valves are shown above, the same principles apply for duct work, dampers and vent or manhole openings.

7.3 Confined Space Isolations and Work under one PTW

In addition to the details required for any PTW application, the PTW Applicant will also nominate:

- That the POC lock and tag process is required;
- An OIC who holds the POC OIC Authorisation;
- All required entry points and ventilation points.

Confined space nominated entry points and nominated ventilation points must only be opened by the POC OIC who:

- Has the authorisation to utilise the POC process for the work;
- Holds an appropriate PTW for that piece of plant;
- Has the nominated points listed on their issued isolation POC sheet; and
- Has the appropriate OIC POC lock/s and POC tag/s;

The white keys must be secured in their PTW board prior to the Work Party signing onto the PTW and work commencing.

- The Confined space PTW may also be linked to Operational WCD/s if there is a requirement to isolate plant and equipment with red locks and tags. Hence the PTW will be linked to a POC WCD and an Operational WCD. (In overhaul or outage periods, there may be a number of Operation's WCDs and the one POC WCD linked to the Confined Space PTW)

7.4 Confined Space Isolations during Overhaul or Outage Conditions

7.4.1 Management of Confined Spaces

During overhaul or outage conditions, a number of confined space work areas may be accessed under numerous PTWs, often at the same time. While the conventional method of managing a confined space by the use of the OIC White POC locks and tags is acceptable (as detailed in the Flow Chart 6.1), an alternate method of securing the confined space entry points and ventilation points may be applied by the use of a Confined Space WCD (as detailed in the Flow Chart 6.2).

When multiple work parties are working simultaneously in the same confined space or where work in an individual confined space may have an impact on an adjacent confined space (e.g. work activities in the economiser may impact air quality in the air heater space), the OIC must manage the task.

Confined space access point isolations must be managed by either:

1. A confined space operational Work Clearance Document (WCD) utilising red locks.

a) All confined space ventilation points and confined space access points are isolated by an Operational WCD that secures only the ventilation points and confined space access points with red locks and danger tags.

b) These WCD's must be linked to each PTW allowing access (as done with any linked WCD).

c) The OIC must be issued the "first issued and the last returned" PTW linked to the Confined Space WCD hence effectively, the Confined Space Co-ordinator controls the Confined Space Isolation.

i. This Confined Space Co-ordinator's PTW must carry the Work Details: To co-ordinate the Confined Space WCD, air quality testing and perform the final Confined Space Box up.

ii. No other work can occur under this issued PTW. (Note: This may be altered if there is a requirement to enter the confined space to conduct the initial air quality testing!)
iii. The Confined Space Co-ordinator is required to develop the confined space risk assessment and rescue plan based on the air quality testing and final confined space box up
iv. The Confined Space Co-ordinator co-ordinates the atmospheric testing to meet each OIC's risk assessment. Each OIC may rely on this testing to satisfy the air quality testing requirements associated with their permit.

OR

2. Each OIC must manage access for their PTW by fitting their own POC locks and tags to the nominated confined space ventilation points and access points. The white keys must be secured in their PTW board.

7.4.2 Reclassifying Confined Spaces during Overhaul or Outage Conditions

A confined space can only be reclassified to a restricted space whilst a unit is offline and isolated during planned overhauls.

The steps to reclassify a confined space include;

1. Identify the confined space that will change (e.g. boxed open or have access doors cut) during overhaul or outage;

2. Risk assess the confined space to determine whether the confined space hazards and associated isolations can be controlled to a low or negligent risk;

3. The Overhaul or Outage team is to review and approve the control measures with advice from the site H&S Business Partner as appropriate;

4. Operations to apply a positive isolation to the energy inputs and verify;

5. Operations to ensure all associated PTW's are linked correctly;

6. PTW issued to OIC with a copy of the Confined Space Reclassification form attached. OIC to manage PTW work;

7. Any changes that have the potential to affect atmosphere or engulfment in the space will require a review of the initial risk assessment and PTW.

When working in a reclassified confined space, ensure the following:

- Prior to first entry of the workspace, an air quality test is to be done to confirm safe atmospheric conditions;
- A buddy system must be in place no person to work alone in a reclassified space;
- A rescue plan should be developed for a reclassified space:
  - Existing confined space signs at the entrance to confined space will need to be covered with signs showing they have been reclassified;
- OIC and work party are to control all hazards relating to the work using a JSEA for the job;
- OIC is to ensure work party understand they are working in a reclassified confined space and aware of the confined space risk reclassification controls in place;
- Use the Confined Space Entry Sign on/Sign off sheet to track who is working on the PTW and in the space;
- It is the responsibility of all workers and the OIC to check that every worker is signed on and off the Confined Space Entry Sign on/Sign off sheet at the start and end of the shift;

- Any change to the environment within the confined space brought about due to any work practices is to be risk assessed and covered by the JSEA (e.g. introduction of carbon monoxide source from diesel generator sets or mobile plant);
- Any change to the conditions of the reclassified confined space will require a review of the initial confined space risk assessment and PTW; and
- All confined space signs are to be uncovered upon surrendering the PTW with the reclassified confined space form attached. This returns the space back to confined space status.

Where the space no longer complies, the space is to be reclassified as a confined space and the normal confined space entry conditions are to apply.

8 CONFINED SPACE ENTRY

The need to enter a Confined Space will be identified through the completion of a JSEA, which identifies the requirement for a:

- A PTW with the SAP hazard 'Confined Space';
- Confined Space Risk Assessment (refer to S1891);
- Emergency Rescue Plan (refer to S1889); and
- Atmospheric Testing (refer to S1890).

Every confined space entry will require:

- A JSEA and Confined Space Risk Assessment to be completed;

- If a PICW is to be utilised, this activity should be performed jointly with the PICW and OIC. Note also that the OIC must present the Task JSEA to the PTWO to be issued with the PTW.

- Unobstructed entry and exit openings large enough to allow for emergency access;
- A standby person must be assigned and is responsible for:
  - continually monitoring the controls in place and wellbeing of those inside the space;
  - Maintaining the below communication process with the work party and others (e.g. duty Emergency Rescue Team (ERT)) while the work is being carried out; and
  - Initiating appropriate emergency response procedures according to the Emergency Rescue Plan when necessary.
- A communication system to enable communications between inside/outside the confined space at all times to assist in an emergency.
- An Emergency Rescue Plan coordinated/developed by the OIC in consultation with the workers and the ERT involved.
- A rehearsal of the Emergency Rescue Plan as determined by the risk presented in performing the rescue. The rehearsal should occur prior to entering the confined space.

- It is acceptable to perform 'desktop' Rehearsals for low risk rescues. This will be at the discretion of either the OIC or ERT in lieu of an actual rehearsal on the actual plant. Particular attention must be given to the ability of the rescue Team to access the work area.

- Specific retrieval equipment (if required) and a competent user/s located at the entrance to the confined space.
- Initial atmospheric testing should:
  - normally be performed by the Tester remaining “outside” of the Confined Space by inserting a sample probe at appropriately selected access holes, nozzles and openings (top, middle and bottom should be tested). Ongoing testing requirements should be included in the risk assessment. Monitoring results (S1890) must be attached to the PTW.
  - In the event that internal access into the confined space is required to perform the testing, the Tester will be required to perform the work under a PTW and be directed which control measures to undertake pending the JSEA associated with the task (i.e. Use of a BA)
- The Confined Space Entry Sign on / Sign off sheet, PTW Board Lock on / off and the confined space board.

- CS Energy Emergency Response Teams (ERT) are trained in confined space rescue and are aware of the risks involved in confined space entry for the purposes of rescue.

8.1 Confined Space Openings and Nominated Entries

There may be a number of reasons that require the opening of access and ventilation points (i.e. to access for work, to allow ventilation, assist the Operations Team in force cooling etc). The reason for such will dictate which actions are to be taken.

The OIC will nominate all required entry points and ventilation points on the APTW.

Confined space nominated entry points and nominated ventilation points can only be opened:

1. By a POC OIC who:
   - Nominates the points on the application;
   - Holds an appropriate PTW for that piece of plant; and
   - Has the nominated points listed on their issued isolation POC sheet; and
   - Has the appropriate OIC POC lock/s and POC tag/s.
2. By a PTWO for a Confined Space Operational WCD
   - As per the Operational Confined Space WCD and fitted with a red lock and tag. Signage and tape must be fitted to prevent unauthorised access into the area (which can be removed by the OIC when or if required).
3. By a PTWO for an operational reason:
   - If it is designed and safe to be opened to meet operational requirements however signage and tape must be fitted to prevent unauthorised access into the area.

- If an opening it is not to be used as a nominated entry point or nominated ventilation point and requires the opening to assist with work (i.e. lighting, scaffold), it is to be barricaded and signed to prevent personnel accidentally entering the space via this point.

8.1.1 Confined Space Nominated Entry Point (without the potential to cause entrapment)

Where a confined space has a nominated entry point that has no potential to cause entrapment (e.g. open pits or drains where the entry or exit cannot be locked, or access or exit cannot be compromised) additional signage must be fitted to clearly show the nominated entry point. No locking or tagging is required.

8.1.2 Confined Space Nominated Entry Point (potential to cause entrapment)

Where a confined space has a nominated entry point that can be closed to cause entrapment (e.g. doors, lids, hatches, manhole covers) it is to be considered as a 'Control Point' and is required to have:

- An additional sign erected at the entry point nominating it as an entry point; and
- Either a POC lock and control point tag or an Operational Red Lock and Danger Tag securing the doors / hatches etc. open.

8.2 Multiple Workgroups Operating Simultaneously in the Same Confined Space

8.2.1 OIC

The primary role of the OIC is to assist with the management of work and access to confined spaces.

An OIC must be nominated or appointed when:

- There are two or more PTW work parties conducting work inside a common confined space, or
- Work occurring in a confined space that may impact the atmosphere of another adjacent or downstream confined space (i.e. work in the Superheater area effecting the air quality in the Air Heater space).

8.3 Confined space within a confined space

The PTW will be issued allowing entry to the confined space. Every nominated entry point and nominated ventilation point to be opened must be identified on the WCD isolation sheet or POC Isolation Sheet and be allocated its own Red lock or OIC POC lock and warning - Point of Control (POC) tag.

A confined space within a confined space must be managed to ensure entrapment will not occur within either space. This will require the inner confined space to be treated as an independent confined space. The JSEA should reflect the hazards identified for the inner confined space (e.g. JSEA will incorporate an additional stand-by person and atmospheric testing requirements for the inner confined space). The use of a second confined space board at the inner access point is not mandatory as the Workers Personal Site Access Card will be fitted to the outer Confined Space board. This does not remove the authority of the OIC to implement a control that documents workers entering the inner confined space.

8.3.1 Standby Persons

- It is a requirement at CS Energy that all confined space entries have a standby person for every confined space entry;
- It is permissible, where plant configuration permits (e.g. two entry points side by side, etc.), a confined space standby person can fulfil the role for multiple confined space entry points;

- Work Health and Safety Regulation 2011 Regulation 69 states:
  A person conducting a business or undertaking must ensure that a worker does not enter a confined space to carry out work unless the person provides a system of work that includes: -
  a) Continuous communication with the worker from outside the space; and
  b) Monitoring of conditions within the space by a standby person who is in the vicinity of the space and, if practicable, observing the work being carried out.

8.4 Equipment / Materials Used in Confined Spaces

- All portable electrical equipment must be connected to, individually or collectively to a safety switch Residual Current Device (RCD), with the device located outside the confined space.
- Ignition sources should not be introduced into a confined space (from outside the space). If there is a possibility of introducing an ignition source (e.g. welding and grinding) the potential of causing a fire or explosion in the space is now present, particularly in a flammable atmosphere. A risk assessment directly identifying and controlling the risk must be completed and must incorporate the Hot Work Procedure.
- No cylinder of compressed or liquefied gas, other than those used for self-contained breathing apparatus, is to be taken into the confined space. The gas supply must be turned off at the cylinder valve when not in use. The gas cylinders must be secured. Hoses supplying gas operated equipment, must be inspected and tested prior to installation, and guarded to avoid accidental damage.
- The introduction of chemicals and paints etc. into a confined space that may create a flammable or hazardous environment must also be risk assessed.
- All temporary lighting (including emergency lighting) must be protected against damage.

8.5 Risk Assessing Confined Spaces

Prior to entry into a confined space a competent person must complete a JSEA, Confined Space Risk Assessment and Emergency Response Plan specific to the work required to be undertaken.

The JSEA must take into account the following:

- The work required to be done, including the need to enter the confined space;
- The range of methods by which the work can be done;
- The hazards involved and associated risks involved with the actual method selected and equipment proposed to be used;
- The competence of the persons to undertake the work;
- Impacts on or from works in adjacent areas;
- The hierarchy of control methods;
- The first aid and emergency response requirements; and
- The requirements for entry/exit and ventilation of the confined space.

The Confined Space Risk Assessment must take into account the following:

- The nature of the hazards of that confined space and impacts from works in adjacent areas;
- The hazards involved and associated risks involved with the actual method selected and equipment proposed to be used;
- Atmospheric hazards and additional required atmospheric testing; and

- Stand-by and emergency response requirements.

The Emergency Response Confined Space Rescue Plan (S1889) must take into the account the following:

- Emergency response requirements;
- Emergency equipment requirements;
- Trained Rescue Personnel required;
- Rescue plan and rehearsal;
- First aid procedures; and
- Assessed by the site Emergency Response Team.

The JSEA, Confined Space Risk Assessment and Emergency Response Plan must be reviewed:

- Each time a confined space is made available for entry (prior to entry occurring);
- When additional or new hazards have been introduced into the confined space;
- When scope of work changes;
- Any time the conditions change inside the confined space;
- Whenever there is evidence that the initial assessment in no longer valid;
- For impacts from works in adjacent areas.

8.6 Atmospheric Testing for Air Quality

Atmospheric testing must be conducted prior to any entry or work inside a confined space. Initial atmospheric testing should be done outside the Confined Space by inserting a sample probe at appropriately selected access holes, nozzles and openings (top, middle and bottom should be tested). Ongoing testing requirements should be included in the risk assessment. Monitoring results (S1890) must be attached to the PTW.

Testing must be undertaken in a manner that encompasses all possible atmospheric related hazards as specified on the Confined Space Risk Assessment of that particular confined space.

The Atmospheric Tester must be competent, authorised and have locked and signed onto the Permit that allows entry to the confined space to conduct an air quality test. This task must be included on the relevant Confined Space Risk Assessment assessing all the associated risks.

Prior to the entry of the work party, the atmosphere of a confined space must meet the following minimum requirements, analysed as required by the risk assessment:

- The concentration of any flammable gas, vapour or mist in the atmosphere of the space is less than 5% of its LEL (lower explosive level) if this is not reasonably practicable that when it is equal to or greater than 5% but less than 10% of its LEL that continuous monitoring is established, or workers are immediately removed from the space. If it is equal or greater than 10% of its LEL then all workers must be removed from the space.
- The atmosphere contains an Oxygen (O2) concentration of no less than 19.5% and no greater than 23.5% by volume.
- The concentration of any other atmospheric contaminant (for example, ammonia, carbon monoxide, chlorine, oil, carbon dioxide etc.) is no greater than the documented threshold limits.
- All results from air quality tests must be recorded timely and accurately on the atmospheric testing sheet documentation.

- The Confined Space Risk Assessment must nominate the frequency or intervals for air quality testing. Where air quality conditions are modified or changed in a confined space (e.g. release of airborne contaminants) a risk assessment must be completed to identify the need for retesting or continuous monitoring of the air quality.

8.7 Purge and Cleaning

Purging (ventilation) and cleaning (e.g. hose-down) of a confined space prior to entry is an effective control measure.

Purging should be completed using an adequate ventilation device consistent. with the Confined Space Risk Assessment requirements. At no stage is pure Oxygen to be used for the purging process as it may lead to an Oxygen enriched environment, which holds the potential to develop into an explosive environment.

Cleaning must be performed from outside of the confined space where possible. If cleaning is required to be performed from within a confined space controls will need to be implemented to minimise risk. Thorough cleaning must also be performed at the completion of every job inside a confined space where all foreign materials and equipment are removed from that confined space.

8.8 Confined Space Rescue and Retrieval

All personnel involved with the rescue from a confined space, should be aware and have rehearsed the rescue procedure. (*See note Section 8 Confined Space Entry regarding Rehearsals*)

It is mandatory for the personnel in control of the confined space (*normally the OIC or both the OIC and the PICW)* to develop an **Emergency Rescue Plan** (S1889 – Confined Space Rescue Plan) for each confined space PTW. The Work party must be made aware of this plan prior to commencing work.

In the event that a number of OICs working in the confined Space, no one OIC can be in control of the confined space and each OIC must prepare a rescue plan specific to their PTW and in consultation with the Confined Space Co-ordinator. This rescue plan can be generic or specific to a high-risk activity/work. The rescue plan is to be assessed by the site ERT.

Specific confined space Emergency Rescue Plans will be managed at each CS Energy site as per their sites processes and resources. This will be consistent with CS Energy Emergency Response Team procedures and their current organisational arrangements.

- The Standby Person/s must not enter a confined space. Their responsibility is to initiate the confined space emergency response plan.

9 CONTRACTOR MANAGEMENT

Where contractors that may be unfamiliar with CS Energy procedures are procured to undertake Confined Space activities on site, relevant site specific information is to be communicated during pre-contract consultation, the site induction process and pre-work Supervisor/Contract Owner/OIC communication. The following is to be communicated:

- Details regarding site specific rules and access restrictions;
- Details regarding site specific hazardous areas and the need to adopt signage requirements; and
- Details about the specific confined space work to be performed and any site-specific hazards.

Prior to contractors being procured and confirmed to undertake work on site, information such as the following is to be verified as part of contractor management processes and pre-work consultation:

- Work experience, training and competency evidence to verify that contractors are capable of performing the work and conversant with industry hazards;
- Work procedures or work method statements that identify key high-risk tasks, hazards, and controls to be implemented; and
- Details listing the plant and equipment to be brought onto site with respect to Australian Standard compliance, inspection and maintenance details (i.e. inspection records, logs, etc.)

10 TRAINING AND COMPETENCY

Persons who are required to undertake entry or work within a confined space must be competent in the tasks that they are required to perform and compliant in CS Energy procedures relating to confined space entry.

To be 'competent' in Confined Space Entry, a person must have successfully completed relevant approved training in the role they are undertaking in confined space work.

Refer to CS-PTW-SOP-02 Training and Authorisation in the PTW System for additional information.

11 DESIGN CONSIDERATIONS

Other CS Energy processes and procedures manage Confined Space design, procurement and construction requirements. As a general rule - specific Australian Standards, Advisory Standards, Codes of Practice provide the minimum requirements (refer to the reference documentation).

12 CONFINED SPACE DOCUMENTATION

Documentation relating to confined space work must be maintained, recorded and should be made available to relevant personnel on request. Records include:

- Training records;
- Completed Permit to Work, Confined Space forms;
- All risk assessments and JSEA's conducted for confined space work;
- The site confined space register/s;
- Inspection, calibration and maintenance activities;
- Testing and monitoring activities.

13 PTW AUDITING AND REVIEW PROCESS

Compliance with the CS Energy's CS-PTW-HAZ-03 Working in Confined Spaces procedure will be reviewed as outlined in the PTW Manual.

14 DEFINITIONS

Term	Definition
APTW	Application for Permit to Work
Confined Space Opening	An opening for entry or exit from a confined space must be of adequate size to permit rescue of all persons who may enter the confined space. The opening may have an access cover and/or confined space sign to prevent unauthorised or unintentional entry to the confined space.
Confined Space	A confined space means an enclosed or partially enclosed space that: • Is not designed or intended primarily to be occupied by a person; and • Is, or is designed or intended to be, at normal atmospheric pressure while any person is in the space; and • Is or is likely to be a risk to health and safety from: o An atmosphere that does not have a safe oxygen level; or o Contaminants, including airborne gases, vapours and dusts, that may cause injury from fire or explosion; or o Harmful concentrations of any airborne contaminants, or engulfment.
Nominated Entry Point	A confined space opening nominated by the OIC as the point in which personnel will enter and exit the confined space. The entry point is nominated by erecting signage or a confined space board. The entry is to have the confined space documentation available to sign into the space and check atmospheric testing. Note: there may be more than one nominated entry point for large confined spaces (e.g. boiler furnace)
Nominated Ventilation Point	A confined space opening not used for entry and exit but open for purging or ventilation and required to stay open for the duration of the PTW.
Point of Control (POC)	A nominated entry or ventilation point that is secured by an OIC applied white POC lock.
LEL	Lower Explosive Level of flammable substance as indicated on Material Safety Data Sheet
WCD	Work Clearance Document

15 REFERENCES

Reference No	Reference Title	Author
AS 2865:2009	Standard - Confined Spaces	Standards Aust
Web Link	Work Health and Safety Regulation 2011	QLD Govt
Web Link	Code of Practice - Confined Spaces 2021	OIR
B/D/11/36151	Form - S1833 - Confined Space Entry - Sign On / Sign Off Sheet	CS Energy
B/D/11/36157	Form - S1891 - Confined Space - Part 1 - Risk Assessment	CS Energy
B/D/11/36154	Form - S1889 - Confined Space - Part 2 - Rescue Plan	CS Energy
B/D/11/36155	Form - S1890 - Confined Space - Part 3 - Atmospheric Testing	CS Energy
B/D/11/19579	CS-PTW-02 Permit to Work (PTW) Definitions	CS Energy
B/D/11/19582	CS-PTW—01 Permit to Work (PTW) Manual	CS Energy
B/D/11/19583	CS-PTW-SOP-02 Training for Roles in the PTW System	CS Energy
C/D/09/1499	Register - CSEP - Confined Space - Callide A, B and C Station	CS Energy
K/D/11/3538	Register – Confined Space – Kogan Creek Power Station	CS Energy

16 RECORDS MANAGEMENT

In order to maintain continual improvement, suitability, safety and effectiveness of the organisation, registered documents will be reviewed on a two-yearly basis or at intervals specified by legislative or regulatory requirements. Review of controlled documents should occur where it has been identified that there are changes in technology, legislation, standards, regulation or where experience identifies the need for alteration to the content. Registered documents should also be reviewed following an incident, change management process, modification or where directed as part of a risk assessment process. A 'review' can simply mean that it has been identified, confirmed and appropriately recorded that no changes are required and that the existing process remains the same.

Government Owned Corporations must ensure that records are retained according to accountability, legal, administrative, financial, commercial and operational requirements and expectations. In compliance with records retention and disposal, all documentation created in relation to business must be retained in line with minimum retention periods as detailed in legal retention and disposal schedules.