



Confined Space

STD - Standard

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RECORD OF AMENDMENT

REVISION	SECTION	AMENDMENT
3	4	Included the section Monitor, Assure and Review as with all Standards.
3	5	Updated Reference and Compliance table format and list.
3	6	Updated title of section for consistency with other Standards.

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About This Standard

Purpose	This standard specifies INPEX Australia key principles and business rules for managing risks associated with confined space entry (CSE). Implementation of this standard ensures the risks of CSE are reduced to As Low As Reasonably Practicable (ALARP).
Scope	This standard applies to all confined spaces and CSE work onshore and off-shore where INPEX Australia (subsequently referred to as the Company) has: • Prevailing Influence Level 1, • legal responsibility to a Regulator for activities carried out on behalf as the title, permit or license holder, and • signatory responsibilities to any document or plan supplied to a regulatory body. Out of scope of this standard are work activities: • conducted sub-sea or sub-surface related to diving operations, and • in confined spaces that are not atmospheric pressure or contain an inert gas. Work involving these 'out of scope' work locations shall be carried out by specialist contractors.
Intended user	The Intended User of this standard are personnel who are: • working for or on behalf of the Company, • required to plan, manage, or conduct work in confined spaces, • required to undertake emergency response involving confined spaces.

1. Confined Spaces

1.1. INPEX Australia definition

Confined space defined

Confined spaces are defined as:

An enclosed or partially enclosed space which is:

- not designed or intended to be used as a workplace, or to be occupied by a person, and
- designed or intended to be, at normal atmospheric pressure while any person is in the space,

and there is a risk of one or more of the following:

- inadequate ventilation, contaminated atmosphere, or an oxygen level outside the safe oxygen range,
- an airborne contaminant level that may be harmful, cause impairment, and / or loss of consciousness or suffocation,
- a flammable airborne contaminant level including gases, vapours and dusts that may cause injury from fire or explosion,
- a risk of a person being engulfed or overwhelmed by a free flowing solid or rising liquid level causing suffocation or drowning.

Life-Saving Rule

“Confined Space Entry” is considered a High-Risk Activity by INPEX. Confined space entry must comply with IOGPs Life-Saving Rule (LSR) and Life-Saving Actions as detailed in IOGP Report 459 – Life-Saving Rules.

High Risk Work Activity	Icon	Life-Saving Rule (LSR)	Life-Saving Actions	INPEX Standard
Confined Space		Obtain authorisation before entering a confined space	• I confirm energy sources are isolated • I confirm the atmosphere has been tested and is monitored • I check and use my breathing apparatus when required • I confirm there is an attendant standing by • I confirm a rescue plan is in place • I obtain authorisation to enter	Confined Spaces Standard (0000-AH-STD-60021)

2. Business Rules

2.1. Facilities Design and Operation

Principle	All facility and equipment designs shall provide for safe access to/egress from confined spaces. Designs shall comply with legislative / regulatory requirements and applicable industry standards e.g. AS 2865.
Designs shall include	All facility and equipment design and engineering standards shall consider: - the need for confined spaces, and - all reasonably practicable means to eliminate entry by personnel. Confined space designs shall provide for: - safe access / egress, and - the safety of personnel required to work or enter confined spaces e.g., purpose-built systems for safely: - isolating and cleaning, - decontaminating or purging confined spaces, - providing for positive process isolations involving physical disconnection / separation, pressure-rated blinds, etc.
Confined space design risk assessments	Confined space design risk assessments shall consider eliminating risks associated with confined spaces including: - installing cleaning facilities to eliminate or reduce the need for entry, - use of durable lining materials requiring minimal cleaning which do not react with materials contained in the confined space, - design of structure and mechanical parts to provide for safety and easy maintenance to reduce confined space entry, and - use of borescopes or remotely operated vehicles for inspection.
Equipment associated with confined spaces	All fixed or permanent testing, access or emergency response equipment associated with confined spaces shall comply with: - Company procedures, - local legislative / regulatory requirements, and - applicable Australian standards.

2.2. Hazard Identification and Risk Assessment

Principle	Hazards associated with confined spaces shall be identified and risk assessed. Controls reducing the hazard risk level to ALARP shall be specified. Controls shall be communicated to all personnel involved in or affected by confined space entry work.
Confined Space Risk Assessments	Risk assessments shall be conducted by authorised persons and documented in accordance with the HSE Hazard and Risk

[Management Standard](#) prior to CSE work approval and entry commencing.

.Change in risk identified

CSE task-specific risk assessments shall be re-conducted whenever changes could pose a significant risk.

2.3. Authorisation, Training and Competency

.Principle

All personnel involved in confined spaces management and work activities shall be authorised and competent.

.Specific documented competency requirements

Specific documented competency requirements, based on nationally recognized competencies, shall be developed for personnel who:

- plan work involving confined spaces,
- authorize or approve PTW relating to confined spaces, including variations or changes to CSE Certificates,
- purchase, install or maintain equipment used for CSE and rescue,
- undertake testing or monitoring activities during initial preparation or during CSE,
- supervise entry into confined spaces, including compliance with PTW conditions,
- conduct work in confined spaces,
- act as a Standby Person or undertake emergency rescue associated with confined space, and/or
- audit or monitor confined space risk controls.

2.4. Confined Spaces Equipment

.Principle

Equipment used in confined spaces shall:

- be individually identifiable,
- meet all applicable legislative / regulatory and industry standards, and
- be maintained, serviced, calibrated and inspected to Original Equipment Manufacturer (OEM) specifications to ensure ongoing integrity.

.Equipping a flammable atmosphere

All gas detection equipment shall be used by competent persons and comply with AS 60079.29.2.

2.5. Compliance Monitoring

.Principle

Confined space controls shall be monitored to measure compliance.

.Formal programs to monitor compliance

Line management shall implement formal programs to monitor compliance to this standard, associated procedure(s) and Life-Saving Rule requirements.

3. Business Rules: CSE Work Activities

3.1. Safe Systems of Work and Procedures

.Principle	Procedures describing the safe system of work shall be in place for all activities involving CSE.
.Work conducted	Any work conducted involving CSE shall be undertaken in accordance with: • Company procedures, and • applicable legislative / regulatory requirements, and • AS 2865.
.CSE and Permit to Work	CSE shall only be conducted after being planned and authorised through the site / facility Permit to Work (PTW) system developed per Permit to Work Standard.
.Procedure reviews	Procedures shall be reviewed and updated as per the Assurance Standard or following any significant event involving a failure or defect in any associated procedure.

3.2. Emergency Response

.Principle	Effective emergency response capability, including the presence of a competent Standby Person, shall be in place to respond to all potential confined space emergencies. An Emergency Rescue plan specific to each confined space shall be in place.
.Emergency Response capability	Effective emergency response capability shall include: • a competent Standby Person shall be in place to respond to all potential emergencies involving confined space, • an Emergency Rescue plan shall ensure rapid response and mitigate risks to rescue personnel, and • a requirement to keep entry points clear and unobstructed at all times while work is underway to allow for rapid emergency access.
.Emergency response system	An emergency response system shall: • consist of confined space rescue equipment, communications equipment, trained personnel, documented response procedures / plans, etc, • be in place and available to effectively respond whenever work inside the confined space is being conducted, and • shall be regularly tested (e.g. quarterly) through practical emergency drills or exercises to ensure effectiveness.

3.3. Confined Space Access Control

.Principle	Access to confined spaces shall be kept secure and strictly controlled.
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Confined space register	All confined spaces shall be identified and recorded. A confined space register shall: • be maintained by each site / facility using the Company template, • list all identified confined spaces for the facility, and • be consulted during all CSE risk assessments.
Authorisation to enter	No person shall enter a confined space without authorization under an approved entry Permit (including supporting Isolation and CSE certificates) issued under the site / facility PTW system.

3.4. Atmospheric Control

Principle	Potentially hazardous atmospheres and conditions shall be continuously monitored and controlled at all times to allow for safe work. Each confined space entrant shall always carry an approved and calibrated PGM when inside the confined space.
Confined spaces are prepared	Whenever reasonably practicable following isolation, confined spaces shall be prepared for entry by personnel through suitable means such as: • purging, • flushing, • cleaning, • decontaminating, • sludge removal, • ventilating. Pure oxygen or gas mixtures with oxygen in concentrations greater than 21% by volume shall not be used to purge or ventilate a confined space.
Atmospheric limits	Before entry, atmospheric testing and monitoring shall be consistent with the hazards identified and be conducted as per the Gas Testing Standard, Gas Detection, Use and Calibration Equipment Procedure, and AS 2865. Where hazardous process contaminants have been detected, further controls shall be implemented as per Hazardous Process Contaminants Procedure.
Gas testing for entry	Confined spaces shall be tested and deemed safe by an Authorised Gas Tester (AGT) before allowing authorised persons to enter.
Flammable contaminant defined limit	Under no circumstance shall any personnel be allowed inside a confined space if the flammable contaminant concentration reaches or exceeds 5% LEL.

3.5. Work Environment Control: Protective Equipment

Principle	Suitable protective equipment shall be used and other hazards shall be controlled during CSE.
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Equipped with suitable PPE	No person shall be allowed to enter a confined space unless equipped with suitable PPE. All PPE shall comply with the PPE Standard and be used as per the PPE Procedure. All respiratory protective devices e.g., respirators used by personnel in confined spaces shall comply with AS/NZS 1715.
Compressed or liquified gas cylinders	Compressed or liquefied gas cylinders shall not be allowed into a confined space, where reasonably practicable.
Potential for fire or explosion	Where potential for fire or explosion exists, ignition sources shall not be allowed into a confined space.
Simultaneous work controls	Controls shall be in place to ensure that no work or equipment being operated outside of a confined space could impact the safety of personnel inside.

4. Monitor, Assure and Improve

The Vice President of HSEQ Risk and Assurance is accountable for the content and review of this Standard.

Compliance with this Standard shall be monitored in accordance with the Company [Assurance Standard](#). Changes made to this Standard shall be subject to Company management of change processes. Relevant Technical Authority(s) and Subject Matter Expert(s) must be consulted and involved during this process. The review of this document shall be in accordance with the Company [Business Management System Standard](#).

Deviations to the requirements stipulated within this Standard/Procedure are managed by the Company Management of Change process. Relevant Technical Authority(s) and Subject Matter Expert(s) must be consulted and involved during this process.

Refer to the [Management of Change Standard](#) and [Technical Authority Register](#).

5. Reference and Compliance Documents

The documents listed below are relevant to the execution of this Standard:

Reference documents (R) are documents referred to in the course of implementing this Standard.

Compliance documents (C) include all standards, regulatory governance, contracts, business rules or policies applicable to this Standard. Reference the following documents as needed:

Document Name	R	C	Document Number
Policies			
Health, Safety, Security, Environment and Quality Policy		C	0000-AH-POL-70000
Standards			
Assurance Standard	R		0000-A0-STD-60031
Business Management System Standard	R		0000-A0-STD-60015
Fitness For Work Standard	R		0000-AN-STD-60023
Hot Work Standard	R		0000-AH-STD-60036
Gas Testing Standard		C	0000-AH-STD-60027
Confined Space Standard	R	C	0000-AH-STD-60021
HSE Hazard and Risk Management Standard	R	C	0000-AH-PRC-60034
Permit To Work Standard	R	C	0000-AH-STD-60023
Health and Hygiene Standard		C	0000-AH-STD-60018
Barricading and Signage Standard		C	0000-AH-STD-60038
HSE Inspections, Monitoring and Actions Management Standard		C	0000-AH-STD-60054

Integrated Safe System of Work (ISSoW)	R	C	X060-AH-MAN-60004
Isolation Standard	R	C	0000-AH-STD-60026
Prevailing Influence Standard	R		0000-AH-STD-60017
Management of Change Standard	R		0000-A0-STD-60027
Other Documents (e.g. Specifications)			
Gas Detection, Use and Calibration of Equipment Procedure		C	X060-AH-PRC-60018
Hazardous Process Contaminants Procedure		C	X060-AH-PRC-60015
Technical Authority Register	R		0000-A2-LIS-60001

6. Abbreviations and Definitions

Acronym / Term	Definition
AGT	Authorised Gas Tester
ALARP	As Low As Reasonably Practicable Risks are considered to be as low as reasonably practicable if the sacrifice (e.g., cost, time, resources) required to implement further risk reduction is grossly disproportionate to the benefits received.
AS	Australian Standard
AS 1319	Australian Standard AS 1319:1994 Safety signs for the occupational environment
AS 1715	Australian Standard AS 1715:2009 Selection, use and maintenance of respiratory protective equipment
AS 1716	Australian Standard AS 1716:2012 Respiratory protective devices
AS 1891.5	Australian Standard AS 1891.5:2020 Personal equipment for work at height
AS 1891.4	Australian Standard AS 1891.4:2009 Industrial fall-arrest systems and devices – Part 4: Selection, use and maintenance
AS 1892.1	Australian Standard AS 1892.1:2018 Portable ladders
AS 2380	Australian Standard AS 2380.1:1989 Electrical equipment for explosive atmospheres – Explosion-protection techniques
AS 2865	Australian Standard AS 2865: 2009 Confined spaces
AS 3000	Australian Standard AS 3000:2007 Electrical installations (known as the Australian / New Zealand Wiring Rules).
AS 3100	Australian Standard AS 3100:2009 Approval and test specification - General requirements for electrical equipment.
AS3190	Australian Standard AS 3190:2009 Approval and test specification - Residual current devices (current-operated earth-leakage devices).
AS 3191	Australian Standard AS 3191:2008 Approval and test specification - Electric flexible cords.
AS 60079.10	Australian Standard AS 60079.10:2004 Electrical apparatus for explosive gas atmospheres - Classification of hazardous areas.
AS 60079.29.2	Australian Standard AS 60079.29.2:2016. Explosive atmospheres Part 29.2: Gas detectors – Selection, installation, use and maintenance of detectors for flammable gases and oxygen.

Acronym / Term	Definition
Company	Any operation or business activity under the control of INPEX Executive Management in Australia, whether located in Australia or another location (as a branch office).
Competent person	A person who has acquired, through training, qualification or experience or a combination of those things, the knowledge and skills required to do that thing competently.
Confined space	An enclosed or partially enclosed space that is not intended or designed to be used as a workplace or to be occupied by a person, is designed or intended to be at normal atmospheric pressure while any person is in the space; within which there is a risk of one or more of the following: • Inadequate ventilation, a contaminated atmosphere, or an oxygen concentration outside the safe oxygen range. • A concentration of airborne contaminants that may be harmful, cause impairment, loss of consciousness or asphyxiation. • A concentration of flammable airborne contaminant, including gases, vapours, and dusts, that may cause injury from fire or explosion. • Is of a nature, or is likely to be of a nature, that could contribute to a person in the space being engulfed or overwhelmed by a free-flowing solid or a rising level of liquid that may cause suffocation or drowning.
Confined space risks	The risks of working in confined spaces, included but not limited to: • loss of consciousness, impairment, injury or death due to the immediate effects of airborne contaminants (e.g. noxious or toxic gases / fumes / dust, etc.), • fire or explosion from the ignition of flammable contaminants, • difficulty rescuing and treating an injured or unconscious person due to confined nature of work area or restricted access, • asphyxiation resulting from oxygen deficiency, exposure to inert gases or immersion in a free-flowing material, such as liquids, grain, sand, fertiliser, mud, slimes or water, • exposure to oxygen-enriched atmospheres which increases fire / explosion risk, • contact with uncontrolled energy sources (hydraulic, mechanical, spring energy, electrical, etc.), and • Other work-related hazards which have increased risk due to confinement and adverse working environment (e.g. falls from height, noise, vibration, etc.).
Confined spaces risk controls	The risk controls for effectively managing work associated with confined spaces, including: • design of facilities for safe CSE, • work planning,

Acronym / Term	Definition
	• identification of confined spaces and associated hazards, • selection, maintenance and inspection of confined spaces entry equipment, • training and competency, • safe systems of work, • emergency response to confined spaces incidents, and • monitoring and auditing.
CSE	Confined Space Entry
HAZID	Hazard Identification Study. Set of methods to identify potential hazards and mitigation measures.
HAZOP	Hazard and Operability Study. Systematic inspection of P&IDs to identify possible deviations from normal operation conditions, consequences of each deviation on the safety and operability of installations and the health and safety of the personnel, causes of the deviations, when necessary.
HLRA	A High-Level Risk Assessment required by ISSoW to be attended and reviewed by the respective Site Authority.
HSE	Health, Safety, and Environment
ISSoW	Integrated Safe System of Work. The Permit to Work system used by INPEX Operations Division.
JHA	Job Hazard Analysis. A team-based technique that focuses on job tasks as a way to identify hazards before they occur. The JHA process focuses on the relationship between the worker, the task, the tools, and the environment, in order to eliminate or reduce hazards to an acceptable level of risk.
LEL	Lower Explosive Limit The concentration of a flammable contaminant in air below which the propagation of a flame does not occur on contact with an ignition source. <u>NOTE:</u> the term 'Lower Flammability Limit' (LFL) is also often used.
OEM	Original Equipment Manufacturer
Portable confined spaces equipment	Equipment that is portable and can be moved (rolled, wheeled, carried etc.) from location to location and is used in the preparation of, or during CSE e.g. portable ladders, platform ladders, gas detectors / monitors, breathing apparatus, respiratory protection, portable electrical equipment, safety harnesses and lines, etc.
PPE	Personal Protective Equipment

Acronym / Term	Definition
Prevailing Influence	The mode, degree or level of HSE management control associated with Company activities.
Reasonably practicable	Something which is reasonably able to be done taking into account and weighing up all relevant matters including: - the likelihood of associated hazards or risks occurring. - the degree of harm that might result from the hazard or risk. - what is known, or ought reasonably to be known, about the hazard or risk, and ways of eliminating or minimising the risk - the availability and suitability of ways to eliminate or mitigate the risk - after assessing the extent of risk and available ways of eliminating or minimising the risk, the cost associated with eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.
Restricted means of entry and exit	Openings or access ways used as a means of entry to and exit from a space that are not of a number, size or located in a way that allows ease of access or rescue.
PTW	Permit to Work The system in place to manage work activities as described in the Permit to Work Standard and Procedures.
Safe oxygen range	A concentration of oxygen in the atmosphere having a minimum of 19.5% by volume and a maximum of 23.5% by volume, under normal atmospheric conditions.
Significant risk	Risks that are assessed as having a "Significant" or higher (i.e. Major or Catastrophic") severity using the Company Risk Matrix.
Standby Person	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 to observe those inside, (if practicable). In addition, where necessary, the Standby Person will initiate rescue procedures and operate and monitor equipment used to ensure safety during entry and work in the confined space.