



HSE Hazard and Risk Management

Standard

Document No.: 0000-AH-STD-60003
Security Classification: Unrestricted

Revision	Date	Issue Reason	Prepared By	Checked by	Endorsed	Approved
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0A	12 Dec 2025	Issued for Review	Steve Coull	Jess Mitchell	Steve Coull	Valarie Ee

RECORD OF AMENDMENT

Revision	Section	Amendment
0A	Throughout	Updated throughout to simplify requirements and improve usability. Content revised to remove requirements/detail that is best contained at procedure level and better reflect Operations phase.
1	Throughout	Guiding references at the end of each Business Rule deleted per BMS requirements.
1	Throughout	Definition of a Major Accident Event aligned with Inpex Corporate definition as follows: An event connected with a facility having the potential to cause multiple fatalities of persons at or near the facility, such as: • A fire, explosion or the release of a dangerous substance; • An event involving damage to the facility resulting in a loss of structural integrity and/or stability; or • A vessel or helicopter collision with the facility. There is no material difference between this definition and the previous definition (see Section 1).

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1 About This Standard

Purpose	This HSE Hazard and Risk Management Standard establishes, documents and communicates the business rules for the systematic identification of health, safety and environmental (HSE) hazards and management of associated risks for all facilities operated by INPEX (the "Company") and any other activities such as exploration or drilling undertaken by or on behalf of the Company. A key requirement of Company Policies is the identification of hazards and the management of associated risks to levels that are As Low as Reasonably Practicable (ALARP). This requirement is applicable to all of the Company's existing and planned activities and operations.
Scope	The standard applies to persons and entities working for or on behalf of the Company, in situations where the Company has legal responsibility for activities carried out on its behalf as the title, permit or licence holder, Operator or as a signatory to any document or plan supplied to a legislative body. It is intended to address both Major Hazards (MH) and occupational HSE hazards that may be present at Company operated sites. It applies through all stages of the Inpex Value Assurance System (IVAS) from Identify/Explore, through Appraise/Assess, Select, Define, Execute and Operate.
Intended User	The Intended Users of this standard are persons who are responsible or accountable for: identifying, analysing, evaluating, controlling and accepting the HSE risks associated with Company activities and operations.
Background	HSE risks shall be managed using a comprehensive hazard identification, assessment and risk management process. The principles of HSE hazard and risk management shall remain consistent with the broader approach to risk management implemented across the Company. This approach is in line with ISO 31000:2018 and is summarised in <i>Figure 1</i>. Workforce involvement is an essential part of the hazard and risk management process. Personnel who are or will be involved in undertaking an activity must be involved in the hazard and risk management process for that activity. Implementation of suitable and sufficient control measures to manage HSE risks to ALARP is the primary objective the HSE hazard and risk management process. Ensuring the ongoing effectiveness of these control measures is crucial to ongoing management of HSE risks during activities and operations.

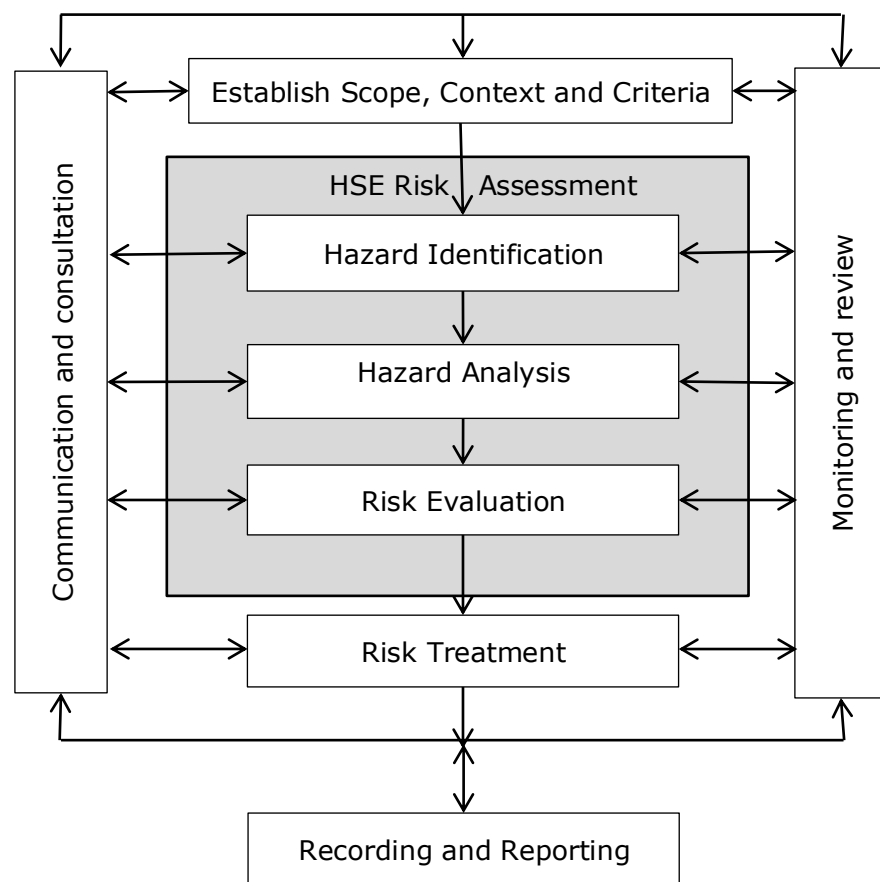


Figure 1: Hazard Risk Management Process

Terminology

In Australia there are differences in the terminology used by onshore and offshore regulators to describe accidental events that can cause serious harm to people or the environment. The Offshore regulator utilises Major Accident Event (MAE) terminology, onshore regulators utilise Major Incident Hazard (MIH) terminology.

Major accident hazards (MAHs) or major incident hazards (MIHs) are those hazards that have the potential to result in major accident events (MAEs) or major incidents (MIs).

- The Company definition of an MAE is an event connected with a facility having the potential to cause multiple fatalities of persons at or near the facility, such as:
 - A fire, explosion or the release of a dangerous substance;
 - An event involving damage to the facility resulting in a loss of structural integrity and/or stability; or
 - A vessel or helicopter collision with the facility.

This definition is broadly in line with the offshore regulator's terminology.

- The onshore regulator definition of a MI is an occurrence:

- a) that results from an uncontrolled event at the major hazard facility involving, or potentially involving, Schedule 15 chemicals; and
- b) exposes a person to a serious risk to health or safety emanating from an immediate or imminent exposure to the occurrence.

An occurrence includes any of the following:

- a) escape, spillage or leakage
- b) implosion, explosion or fire

Since an MI involves (or potentially) involves a Schedule 15 chemical and escape, spillage, leakage, implosion, explosion or fire of such a chemical typically has the potential to cause multiple fatalities then, from a risk management perspective, a potential MI would also be a MAE. Therefore, for the purposes of Company hazard and risk management processes the MAE and MAH terminology shall be utilised as a standard approach.

Where different definitions appear in legislation, the relationship between Company terminology and legislation shall be clearly explained in relevant documentation provided to regulators. Details of how definition gaps are bridged shall be provided when describing the Company approach to HSE risk management.

Major environmental hazards (MEHs) are those hazards with the potential to result in major environmental events (MEEs) which are defined as events connected with a facility, either continuous or discrete, including a natural event, having the potential to cause widespread chronic or acute effects upon the environment resulting in permanent impacts or impacts requiring long term recovery.

Collectively MAHs and MEHs are termed Major Hazards (MHs). MAEs and MEEs are characterised by having a consequence assessment of B or higher on the Company risk matrix.

In Australia there are also differences in the terminology used by onshore and offshore legislation to describe the level to which risks shall be managed. Offshore legislation requires HSE risks to be managed to levels that are 'As Low as Reasonably Practicable' (ALARP) while onshore legislation requires HSE risks to be managed 'So Far As Is Reasonably Practicable' (SFAIRP). The United Kingdom Health and Safety Executive (UK HSE) state that these two terms mean essentially the same thing and at their core is the concept of "reasonably practicable"; this involves weighing a risk against the sacrifice (trouble, time and money) needed to control it.

The Company will use ALARP as core terminology when describing the level to which workplace HSE risks must be controlled.

Regulatory Framework

This Standard forms part of Company compliance with the following legislation:

Federal Legislation and Regulations:

- Environment Protection and Biodiversity Conservation Act 1999;

- Offshore Petroleum and Greenhouse Gas Storage Act 2006 – Schedule 3;
- Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023; and
- Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2024.

Western Australia Legislation and Regulations:

- Environmental Protection Act 1986;
- Environmental Protection Regulations 1987;
- Work Health and Safety Act 2020;
- Work Health and Safety (Petroleum and Geothermal Energy Operations) Regulations 2022;
- Work Health and Safety (General) Regulations 2022; and
- Petroleum (Submerged Lands) Act 1982.

Northern Territory Legislation and Regulations:

- Environment Protection Act 2019;
 - Environment Protection Regulations 2020;
 - Work Health and Safety (National Uniform Legislation) Act 2011;
 - Work Health and Safety (National Unified Legislation) Regulations 2011;
 - Petroleum (Submerged Lands) Act 1982 – Schedule 4;
 - Petroleum (Submerged Lands) (Application of Commonwealth Laws) Regulations 2004;
 - Waste Management and Pollution Control Act 1998; and
 - Waste Management and Pollution Control (Administration) Regulations 1998.
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2 Business Rules

Although the steps of hazard identification and risk management are addressed under separate Business Principles and Rules, it is accepted practice for many of these steps to be undertaken concurrently.

2.1 Documented Process

Business Principle	Documented processes shall be in place to systematically identify HSE hazards, assess the associated risks and implement controls to manage these risks to tolerable and ALARP levels.
Business Rules	a) Procedures shall be developed and implemented for the identification, assessment and management of hazards caused by Company activities and operations. b) Procedures shall be customised and proportionate to the nature and inherent HSE risk associated with Company activities and operations. c) Appropriate procedures shall be systematically integrated into all Company activities and operations and applied at all stages in the IVAS. d) Procedures shall meet the requirements of this Standard and any additional regulatory requirements specific to the jurisdiction where activities/operations are planned to take place. e) Procedures shall clearly define the roles, responsibilities and accountabilities of key personnel involved. f) Procedures shall be clearly communicated and understood by those required to follow them. g) Where HSE hazard and risk management is undertaken by a Contractor on behalf of the Company it's procedures shall meet the requirements of this standard. h) The effectiveness of processes and procedures used to manage HSE risk shall be regularly evaluated and subject to continuous improvement.

2.2 Competency

Business Principle	All personnel involved in identifying and assessing HSE hazards and implementing controls to manage associated risks shall be competent to perform their role.
Business Rules	a) Positions (persons) responsible for authorising Company activities/operations and accepting the associated HSE risks

shall understand the associated hazards, risks and implemented controls.

- b) Personnel involved in hazard identification and risk assessment shall be suitably competent and experienced in the activity/operation under review.
- c) Competencies required for delivery of the planned HSE risk management activities implemented during IVAS shall be clearly defined.
- d) All personnel exposed to Company generated hazards shall have a core understanding of the nature of the hazards and the controls implemented to manage them.

2.3 Planning

Business Principle HSE hazard and risk management requirements shall be planned for within each stage of IVAS.

Business Rules

- a) Hazard identification and risk management requirements shall be defined within execution plans for each IVAS stage.
- b) Plans shall specifically address how Asset Integrity / Process Safety risks and major accident hazards will be addressed.
- c) Plans shall reflect and be commensurate with the scope and level of detail available at each IVAS stage.
- d) Plans shall be approved by those accountable for managing HSE risk and shall identify positions (persons) responsible for ensuring requirements are met.
- e) Plans shall be revised when significant changes occur to activity scopes or objectives.

Business Principle HSE hazard and risk management processes shall be included during the planning phase for each site operation, activity or task.

Business Rules

- a) HSE Hazard and risk management activities shall be commensurate with the nature of the risks associated with each operation, activity or task.
- b) Planning for non-routine tasks or tasks where there is significant risk exposure shall include appropriate scope/task specific hazard identification and risk assessments.
- c) Planning for routine activities where risks and controls are well understood shall include, at a minimum, pre-task safety awareness and monitoring / review activities.

2.4 Communication and Consultation

Business Principle	Communication and consultation with stakeholders shall take place in all stages of the HSE hazard and risk management process.
Business Rules	a) Relevant workforce representatives shall be involved in HSE hazard and risk management processes including the development of suitable control measures. b) The nature of major hazards associated with site operations shall be communicated to all site personnel. c) The critical controls used to manage major hazard risks shall be communicated to all site personnel. d) Communication protocols shall be established to ensure personnel involved in maintaining critical controls clearly understand the importance of their role. e) All personnel shall be aware of the specific hazards, risks and controls associated with operations, activities or tasks they are involved in. f) Hazard and risk information shall be provided in a form that can be easily understood by the workforce. g) The workforce and stakeholders shall be regularly consulted on the effectiveness of the risk assessment process and the controls implemented to manage hazards.

2.5 Scope and Context

Business Principle	The scope, boundaries and approach to HSE risk assessments shall be clearly defined to ensure intended outcomes are achieved.
Business Rules	a) The scope and boundaries of each HSE risk assessment shall be clearly defined. b) The HSE risk assessment methodology shall be commensurate with the nature, complexity and inherent risk associated with the operation, activities or task. c) HSE risk management objectives may be satisfied by qualitative, semi-quantitative or quantitative assessment depending on the nature of the hazards being assessed. d) For well understood hazards, experience and judgement by competent personnel may be considered adequate i.e. qualitative risk assessment. For more complex technical risks (e.g. MHs), a range of approaches, including semi-quantitative and quantitative analysis may be required.

Business Principle	HSE risk assessments shall be aligned with the internal and external context of the Company operating environment.
Business Rules	a) HSE hazard identification and management of associated risks shall be aligned with Company policies. b) Relevant stakeholder requirements, regulations and standards for HSE risk management shall be addressed in risk management plans. c) Regulatory requirements dictating specific risk assessment methodologies shall be completed. These shall be considered in addition to the requirements outlined in this Standard.
Business Principle	Control measures identified in HSE risk assessments shall be implemented when reasonably practicable to do so.
Business Rules	a) The HSE risk assessment process shall facilitate the identification of existing (and additional) controls required to manage associated risks to tolerable and ALARP levels. b) Additional controls identified in HSE risk assessments shall be assessed to determine if they are reasonable and practicable to implement. c) Additional controls that are assessed as reasonable and practicable to implement shall be implemented. d) Processes shall be in place to ensure control measures implemented to reduce HSE risks to ALARP are managed and remain effective.

2.6 Risk Assessment - Hazard Identification

Business Principle	All HSE hazards associated with Company operations and activities shall be systematically identified.
Business Rules	a) The technique used for hazard identification shall be selected based on the operation, activity or task being risk assessed and its associated risks. b) During project phases hazard identification for operational phase HSE risks shall be commensurate with the level of detail available at the time of assessment. c) Major hazards shall be clearly identified early in project phases and subject to detailed hazard analysis. d) HAZOP shall be completed for all process facilities. For new facilities HAZOP shall be completed during project Front End Engineering Design and Execute stages and validated during the Operations stage.

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- e) Lessons learned from events that have occurred both inside and outside the Company shall be considered during hazard identification.
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2.7 Risk Assessment - Hazard Analysis

Business Principle	All HSE hazards shall be analysed, the depth of analysis shall be commensurate with the nature of the hazard and its inherent risk.
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Business Rules	a) All hazards shall be analysed based on: i) Causes; ii) Consequences; iii) Existing Controls; and iv) Likelihood. b) Consequence and likelihood analysis shall be based on the definitions contained within the Company Risk Matrix. c) Risks shall be characterised based on their plotted location on the Company Risk Matrix. d) Well understood occupational hazards associated with routine activities (or tasks) with well-defined standard controls in place do not require repeated detailed analysis. e) Occupational hazards associated with all non-standard / non-routine activities (or tasks) shall be analysed taking into account the activity specifics and the surrounding environment. f) Major hazards shall be subject to formal safety /environmental assessment to provide a clear understanding of the associated risk and target implementation of effective control measures. g) Formal safety/environmental assessment shall inform the identification of critical engineering and administrative controls and their associated performance requirements. h) Bowtie diagrams shall be prepared for MH risks to clearly identify critical control measures in prevent causes and mitigate consequences of a MAE. i) Process hazards identified during HAZOP with Significant or greater safety or environmental consequences shall be analysed using Layers of Protection Analysis (LOPA) to ensure implementation of appropriate safeguarding.
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2.8 Risk Assessment - Risk Evaluation

Business Principle	HSE risk acceptance criteria shall be established consistently applied.
	a) unacceptable and broadly acceptable HSE risk limits. b) HSE risks within the range bounded by unacceptable and broadly acceptable limits shall only be considered acceptable if they are As Low As Reasonably Practicable (ALARP). c) Broadly acceptable HSE risk is characterised by an assessment of low risk where adequate controls are in place and no extra controls besides ongoing continuous improvement processes are needed. d) Operations, activity and task based risks shall be assessed based on criteria established within Company Risk Matrix. e) Semi-quantitative and quantitative risk assessment criteria shall be established based on the Company Risk Matrix, regulatory guidance and industry practice
Business Principle	All activities / operations shall use a consistent approach for the evaluation of HSE risks.
Business Rules	a) All HSE risks related to Company operations or activities shall be evaluated based on the risk levels defined within the Company Risk Matrix. b) Current HSE risks shall be evaluated based on existing controls being in place. c) The response implications of the different HSE risk levels defined within the Company Risk Matrix are as follows: i) Critical HSE risks are in general unacceptable. Immediate attention shall be given to minimise personnel exposure, event likelihood and/or consequences. Additional or alternative risk treatment measures shall be investigated and any reasonably practicable measures to reduce risk shall be implemented as a matter of high priority. Activities with HSE risks in this region may only proceed under extenuating circumstances if: - o The activity is essential to the business; - o Practicable alternatives cannot be found; - o Senior management (President Director / Project Managing Director) have been briefed in respect to the HSE risks involved and have provided written approval to proceed; and - o Exposed individuals are fully aware of the risks involved and accept the risks voluntarily.

Note: A Safety Case revision is likely to be required if a facility plans to operate with a residual critical risk.

- ii) **High HSE risks** require investigation of risk treatment measures. Measures identified as reasonably practicable shall be implemented as a matter of high priority. High risks can only be considered tolerable if they are demonstrated to be as low as reasonably practicable.
- iii) **Medium HSE risks** require investigation of risk treatment measures. Measures identified as reasonably practicable shall be implemented as part of continual improvement processes. Medium risks shall only be considered tolerable if they are as low as reasonably practicable.
- iv) **Low HSE risks** require regular review and monitoring to ensure risk remains low. Events that are assessed to have negligible risk level by virtue of negligible consequences can be screened from further consideration.
- d) Defined levels of authority for acceptance of HSE risks shall be established.
- e) Where residual risks are to be transferred from a Contractor to the Company or require ongoing management by the Company, those risks shall be evaluated and presented in accordance with the Company Risk Matrix definitions.

Business Principle

Cumulative risk for facilities with MAHs shall be evaluated using quantitative risk metrics.

Business Rules

- a) Where quantitative risk criteria are defined within legislative requirements for the operational location, these shall apply to Company facilities.
- b) The maximum tolerable Individual Risk Per Annum (IRPA) for any worker exposed to MAH risk from Company operations shall be 1 in 1000 years. IRPA levels of less than 1 in 10,000 years shall be targeted.
- c) IRPA levels below 1 in 1,000,000 years are considered broadly acceptable.
- d) Risks evaluated as falling between maximum tolerable and broadly acceptable limits shall only be accepted if risks are demonstrated to have been reduced to ALARP levels.
- e) For onshore MAH facilities Location Specific Risk (LSR) contours shall be prepared for the site and surrounding area.
- f) Where the 1 in 100,000 year LSR contour extends over land that may be subject to future development, the Company shall retain control of land-use planning for these areas.

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- g) Use of other quantitative risk metrics shall be agreed with the Company Technical Safety Authority TA1.
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2.9 Risk Treatment (Control)

Business Principle Suitable and sufficient control measures shall be implemented, using the hierarchy of controls, to reduce all HSE risks to tolerable and ALARP levels.

- Business Rules**
- a) HSE risks shall be considered to be ALARP if the sacrifice (cost, time, resources) required to implement additional controls to reduce risk is grossly disproportionate to the risk reduction achieved.
 - b) A control measure shall be considered practicable if it is technically feasible and realistic to implement, it is considered reasonable if the sacrifice (cost, time resources) of implementation is **not** grossly disproportionate to the risk benefit achieved.
 - c) Reverse ALARP arguments shall not be accepted as justification of not implementing control measures that are consistent with industry practice.
 - d) Decisions relating to implementation (or not) of potential controls to meet an ALARP position shall be clearly documented.
 - e) The hazard management hierarchy of controls shall be used to identify preferred HSE risk control options:
 - i. **Elimination:** removal of the hazard or people at risk.
 - ii. **Substitution:** replacement of high hazard materials / system designs with less hazardous materials / system designs and design simplification.
 - iii. **Engineering:**
 - 1. **Prevention** - design measures that reduce the likelihood of a hazardous event occurring;
 - 2. **Detection** - design measures that facilitate early detection of a hazardous event;
 - 3. **Control** - design measures that limit the extent/escalation potential of a hazardous event;
 - 4. **Mitigation** - design measures that protect people and the environment should a hazardous event occur; and
 - 5. **Emergency Response** - design measures or safeguards that enable people to reach a place of safety should a hazardous event occur or enable clean up and mitigation of an environmental event.
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- iv. **Procedures and Administration:** management systems and work instructions used to prevent or mitigate personnel and environmental exposure to hazards.
- v. **Personal Protective Equipment (PPE):** the lowest level within the hazard management hierarchy which should only be considered when all higher controls in the hierarchy have been exhausted. Over-reliance on procedures and PPE without consideration of other controls shall not be considered acceptable.
- f) Engineering measures which improve the inherent safety of an operation or activity shall be preferred.
- g) Passive engineering controls shall be preferred over active controls. Passive controls are those which do not require action to initiate a response and are always present.
- h) Where procedural controls are identified and relied upon they shall be clearly documented and communicated.
- i) Control measures required to manage HSE risks shall be in place prior to exposing personnel to hazards.

Business Principle

Control measures critical to the prevention or mitigation of MAEs shall be identified and their performance requirements clearly established.

Business Rules

- a) MAE controls include: hardware, procedures and personnel competency. The key performance requirements for controls considered critical for MAE risk management shall be clearly defined.
- b) Performance requirements for administrative controls (processes, procedures, competency etc) utilized to manage MAE risk shall be clearly defined within the company management system.
- c) A critical hardware control shall be termed a Safety Critical Element (SCE) and shall be defined as: any part of a facility and its plant (including computer programmes) or any part thereof;
 - i. the failure of which could cause or contribute substantially to a major accident event, or
 - ii. a purpose of which is to prevent or limit the effect of a major accident event
- d) SCE performance requirements (and associated assurance requirements) shall be defined in terms of:
 - i. Functionality;
 - ii. Reliability/availability; and
 - iii. Survivability.

- e) SCE performance requirements shall be established during design and delivered during the execute stage of IVAS.
- f) SCE performance requirements shall be maintained during operations.
- g) Nominated custodian shall be responsible for ensuring that SCE performance requirements and associated assurance tasks are fit for purpose.
- h) SCEs shall be verified as in place and functioning in accordance with performance standard requirements prior to initial start-up of operating facilities.
- i) Risk owners are responsible for ensuring SCE performance requirements are met and maintained.
- j) Bowtie diagrams shall be used to clearly communicate critical control measures implemented to manage the MAE risk.

2.10 Recording and Reporting

Business Principle

HSE risk assessments and associated outcomes shall be recorded and reported to those authorised to accept activity risks on behalf of the Company.

Business Rules

- a) Risk assessments shall be clearly documented and records maintained.
- b) Formal safety assessments shall be clearly documented.
- c) A register of identified hazards and associated control measures shall be maintained at each operational site. The register shall contain the following information for each identified hazard:
 - i) Hazard description;
 - ii) Potential initiating causes;
 - iii) Consequences if the hazard is realised;
 - iv) In place preventive controls;
 - v) In place mitigative controls; and
 - vi) Escalation controls (if applicable).

Hazard registers shall show linkage between initiating causes and preventative controls.
- d) Major Hazards shall be clearly identified within hazard registers, associated records shall include clear linkage to the associated formal safety assessment, bowties and SCEs.
- e) HSE risk assessment records (including hazard registers) shall be updated to reflect significant changes in site operations or risk management approaches if/when they occur.

Business Principle Each operational site shall have a process in place for identifying and managing its Top Asset Integrity (AI) risks.

- Business Rules**
- a) Processes shall be in place to identifying issues which present significant increased levels of AI risk.
 - b) A register of issues which present significantly elevated AI risk (above baseline risk levels) shall be maintained and managed.
 - c) A valid risk assessment shall be in place for each Top AI risk.
 - d) The register shall include the status of temporary controls in place to manage each issue and the progress toward its planned permanent resolution.
 - e) The Top AI register shall be regularly reviewed.
 - f) Top AI risks and associated temporary and permanent controls shall be regularly reported to the Company board.
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2.11 Change

Business Principle All planned changes with HSE implications shall be subject to risk assessment and control measures implemented to ensure associated risks are tolerable and ALARP.

- Business Rules**
- a) Processes shall be in place to ensure that risks are assessed for planned changes (temporary or permanent) before implementation.
 - b) The level of risk assessment required for planned changes shall be commensurate with the nature, complexity and inherent risk associated with the change.
 - c) Risk assessment process for planned change shall ensure identification of existing (and additional) controls required to reduce the associated risk to ALARP.
 - d) Risk assessments (and any associated control changes) for planned permanent changes shall be reflected in facility hazard registers.
 - e) Planned permanent changes that impact management of major hazard risks shall be evaluated to determine if the formal safety assessment/safety case should be revisited.
 - f) All planned changes (temporary or permanent) to process system hardware or operational modes that could result in operation outside current design and/or safe operating limits shall be subject to subject to HAZOP and LOPA.
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Business Principle All unplanned changes with HSE impact, such as degradation or impairment of safety critical controls (SCE) shall be subject to risk assessment as soon as is practicable.

Business Rules

- a) An SCE is considered to be degraded where an element of the performance criteria is not achieved, however the overall functionality is achieved or adequate redundancy/capacity remains.
- b) An SCE is considered to be impaired where the SCE functionality and redundancy criteria as defined in the availability section of the performance standard are not met
- c) Where an SCE degradation or impairment is identified risk owners shall determine if it is safe to continue to operate.
- d) The impact of the SCE degradation or impairment shall be risk assessed and appropriate actions shall be taken to mitigate the elevated risks.
- e) Pre-approved contingency plans shall be prepared to provide guidance on appropriate actions to be taken for foreseeable SCE impairments and degradations.

2.12 Monitoring and Review**Business Principle**

Operating sites shall monitor the status of control measures implemented to manage HSE risks.

Business Rules

- a) Processes shall be in place to identify changes in circumstances which may result in changes to HSE risk.
- b) The status and effectiveness of control measures implemented to manage HSE risks shall be regularly monitored.
- c) Where HSE risk controls are found to be deficient, the deficiencies shall be communicated and action take to resolve them.

Business Principle

The status of critical controls used to manage MAE risk at each operating site shall be visible to site management on a day to day basis.

Business Rules

- a) The functional status of SCEs at each operational site shall be monitored and visible to site management on a day to day basis.
- b) The status of SCEs shall inform day to day activity planning and cumulative risk evaluation.
- c) Systems shall be in place to prioritise corrective maintenance required to ensure SCEs remain functional.

Business Principle

HSE risks shall be reviewed at regular intervals to ensure risk assessments are current and implemented control measures are effective.

Business Rules

- a) HSE risk assessments and the effectiveness of relied upon controls shall be reviewed at agreed intervals. The defined intervals shall be commensurate with the level of risk exposure.
 - b) Relevant HSE risk assessments and relied upon controls shall be reviewed following significant HSE/PS incidents or near misses.
 - c) Major accident hazard identification and formal safety assessments shall be formally reviewed at 5 yearly intervals (minimum) to facilitate Safety Case revisions.
 - d) The effectiveness of operating facility SCEs shall be reviewed at regular intervals to ensure they continue to meet performance standard requirements. Review findings shall be elevated to risk owners and communicated to senior management/board.
 - e) Agreed actions to resolve deficiencies in SCE effectiveness shall be agreed, prioritised and implemented.
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3 Monitor, Audit and Review

Business Principle	Processes shall be in place to ensure compliance with the HSE Hazard and Risk Management Standard.
Business Rules	• Compliance with this Standard shall be monitored in accordance with the Company Assurance Standard. • The Vice President HSEQ is accountable for the content, performance monitoring and review of this standard.

4 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 completing this Standard. Compliance documents (C) include all standards, regulatory governance, contracts, business rules or policies applicable to this Standard.

Document Name	R	C	Document Number
Policies			
Health Safety Security Environment and Quality Policy		C	0000-AH-POL-70000
Standards			
Asset Integrity Process Safety (AIPS) in Projects		C	0000-AH-STD-70002
Asset Integrity Process Safety (AIPS) in Operations		C	0000-AH-STD-70003
HSE Plan Development Standard		C	0000-AH-STD-60003
Inpex Value Assurance System (IVAS) Australia Standard		C	0000-A0-STD-60032
Management of Change Standard		C	0000-A0-STD-60027
Risk Management Standard		C	0000-A0-STD-60020
INPEX Risk Matrix Template	R	C	0000-A0-TPL-60003
Occupational Health and Hygiene Standard			0000-AH-STD-60061
Environmental Health Standard			0000-AH-STD-60019
Procedures			
Job Hazard Analysis Procedure			0000-AH-PRC-60011
Hazard Identification (HAZID) Workshops Procedure			0000-AH-PRC-60012
Operational Risk Assessment			0000-AH-PRC-70008
ISSOW Risk Assessment Guideline			X060-A1-GLN-70053
HAZARD and OPERABILITY (HAZOP) Studies			0000-AH-PRC-70001
Safety Integrity Level (SIL) Studies			0000-AH-PRC-70002

Management of Change – HSE Risk Assessment Guideline		0000-AH-GLN-60032
ALARP Demonstration Guideline		0000-AH-GLN-60021
MANUAL		
CPF Safety Critical Equipment (SCE) Contingency Matrix		B060-A1-MAN-60001
FPSO Safety Critical Equipment Contingency Matrix		S060-A1-MAN-60001
Onshore Safety Critical Equipment Contingency Matrix		L060-A1-MAN-60001

5 Abbreviations and Definitions

Abbreviation / Term	Definition
As Low as Reasonably Practicable (ALARP)	Risks are considered to be as low as reasonably practicable if the sacrifice (cost, time, resources) required to implement further risk reduction is grossly disproportionate to the benefits received.
Associated operations/activities	Activities or operations that are directly associated with a facility. This could include activities conducted from a vessel or vessels adjacent to the facility for which the Operations Safety Case has been prepared.
Awareness	A good understanding of what is involved in an area of expertise and its relevance to the business.
Bow-tie diagram	A representation of all causes and consequences of an event. At the centre of the diagram is the top event, the left contains what could cause the top event to occur from initiating events (including threats and preventative controls) and the right contains potential consequences and mitigation controls.
Cause (or threat)	A factor that has the potential to directly lead to a hazardous event.
CDS	Controlled document system.
The Company	Any operation or business under the control of INPEX Executive Management in Australia, whether located in Australia or another location (as a branch office), is deemed to be the Company.
Control measure (or barrier)	A system, procedure, process, device or other means of eliminating, preventing, reducing or mitigating the risk of hazardous events at or near a facility.
Degraded SCE	A SCE is considered to be degraded where an element of the performance criteria is not achieved, however the overall functionality is achieved or adequate redundancy/capacity remains.
ECE	Environment Critical Element Any part of a facility and its plant (including computer programmes), or any part thereof, the failure of which could cause or contribute substantially to a major environmental event, or the purpose of which is to prevent or limit the effect of a major environmental event.
ENVID	Environmental Hazard Identification.
Facility	A facility may be onshore or offshore and fixed or floating: the primary purpose of a facility is the recovery, processing, storage and offloading of hydrocarbons. The subsea trees, infrastructure and pipelines are also part of a facility. A licensed pipeline maybe regarded as a separate facility.
FSA	Formal Safety Assessment (studies).

Abbreviation / Term	Definition
Hazard	A physical situation with the potential to cause harm to people, damage to property, damage to the environment or damage to reputation.
Hazardous Event	Incident that occurs when a hazard is realised.
HAZID	Hazard Identification (study).
HAZOP	Hazard and Operability (study).
HRA	Health Risk Assessment.
HSE Hazard	Health, safety, environmental or integrity hazard(s) are situations or circumstances which harm or have the potential to harm people's health or safety or result in environmental harm.
HSE&Q	Health, Safety, Environment and Quality.
Impaired SCE	A SCE is considered to be impaired where the SCE functionality and redundancy criteria as defined in the availability section of the performance standard are not met
IRPA	Individual risk per annum.
ISSOW	Integrated Safe System of Work.
IVAS	Inpex Value Assurance System.
LOPA	Layers of Protection Analysis.
MAE	Major Accident Event - An event connected with a facility , having the potential to cause multiple fatalities of persons at or near the facility such as: • A fire, explosion or the release of a dangerous substance; • An event involving damage to the facility resulting in a loss of structural integrity and/or stability; or • A vessel or helicopter collision with the facility.
MAH	Major Accident Hazard - A hazard that, if realised, has the potential to result in a MAE.

Abbreviation / Term	Definition
MI	Major Incident - Defined in NT Regulations as: (1) a major incident at a major hazard facility is an occurrence that: (a) results from an uncontrolled event at the major hazard facility involving, or potentially involving, Schedule 15 chemicals; and (b) exposes a person to a serious risk to health or safety emanating from an immediate or imminent exposure to the occurrence. (2) Without limiting sub-regulation (1), an occurrence includes any of the following: (a) escape, spillage or leakage; (b) implosion, explosion or fire.
MIH	Major Incident Hazard - A hazard that could cause, or contribute to causing, a major incident.
MoC	Management of Change.
OHSE	Occupational health, safety and environment.
ORA	Operational Risk Assessment.
Performance Standard	A standard of the performance required of a system, item of equipment, person or procedure (i.e. a Control Measure) which is used as a basis for managing the risk of a major accident event.
SCE	Safety Critical Element - Any part of a facility and its plant (including computer programmes) or any part thereof; the failure of which could cause or contribute substantially to a major accident event, or a purpose of which is to prevent or limit the effect of a major accident event.
Schedule 15 chemicals	Chemicals included in " <i>Schedule 15: Hazardous chemicals at major hazard facilities (and their threshold quantity)</i> " of the Northern Territory Work Health and Safety (National Uniform Legislation) Regulations
SFAIRP	So Far as is Reasonably Practicable.
SIL	Safety Integrity Level.
Site	Any location (project, office, yard, platform, facility, vessel) where the Company has HSE Prevailing Influence Level 1 as defined in the Company HSE Prevailing Influence procedure.
Stakeholder	Any organisation, government agency, group or person that has an interest in, or may be affected by, project or by the activities or decisions of the Company.
UK HSE	United Kingdom Health and Safety Executive.

Document Endorsement and Approvals

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Document Identification

Document Number	Revision	Security Classification	Date
0000-AH-STD-60003	1	Unrestricted	25/03/26 08:00

Document Revision History

Revision	Date and Time	Issue Reason
0A	13/03/26 08:00	For Review

Delegation of Authority

From Name	To Name	Date and Time	Action

Name	Title

Electronic Endorsement and Approval

Electronic approval of this document complies with the issued INPEX Electronic Approval Standard (0000-A9-STD-60011) and records evidence that the applicable person has either endorsed and/or approved the content contained within this document. The reviewers of this document are recorded in the CDS.

Name	Title	Date and Time	Action
Steve Coull	Process Safety Manager	24/03/26 09:37	Endorser
Valarie Ee	Vice President HSEQ	25/03/26 15:47	Approver