

HS Risk Management Procedure

Purpose

This HS Risk Management Procedure provides a structured, consistent, and practical approach for the effective management of all Health and Safety (HS) risks supporting planning and decision-making by Queensland Hydro.

It reflects the requirements of the **HS Risk Management Standard (HS-STD-0012)** and provides:

- A framework for Queensland Hydro to meet the requirements of the HS Risk Management Standard;
- A process for identifying and understanding the context of HS hazards and risks;
- A process for assessment and evaluation of HS risk;
- A process for identifying and applying controls, as well as what to do when approved controls are not available; and
- The monitoring and review requirements of controls over time.

This HS Risk Management Procedure relates to the identification and management of HS risks, as distinct from HS compliance requirements. There are separate Queensland Hydro Procedures and Standards related to HS compliance requirements. Whilst there may be an overlap between the two types of Procedures and their outputs, both must be carried out. The identification and management of HS risks will not necessarily ensure the proper identification and management of HS compliance requirements, and vice versa.

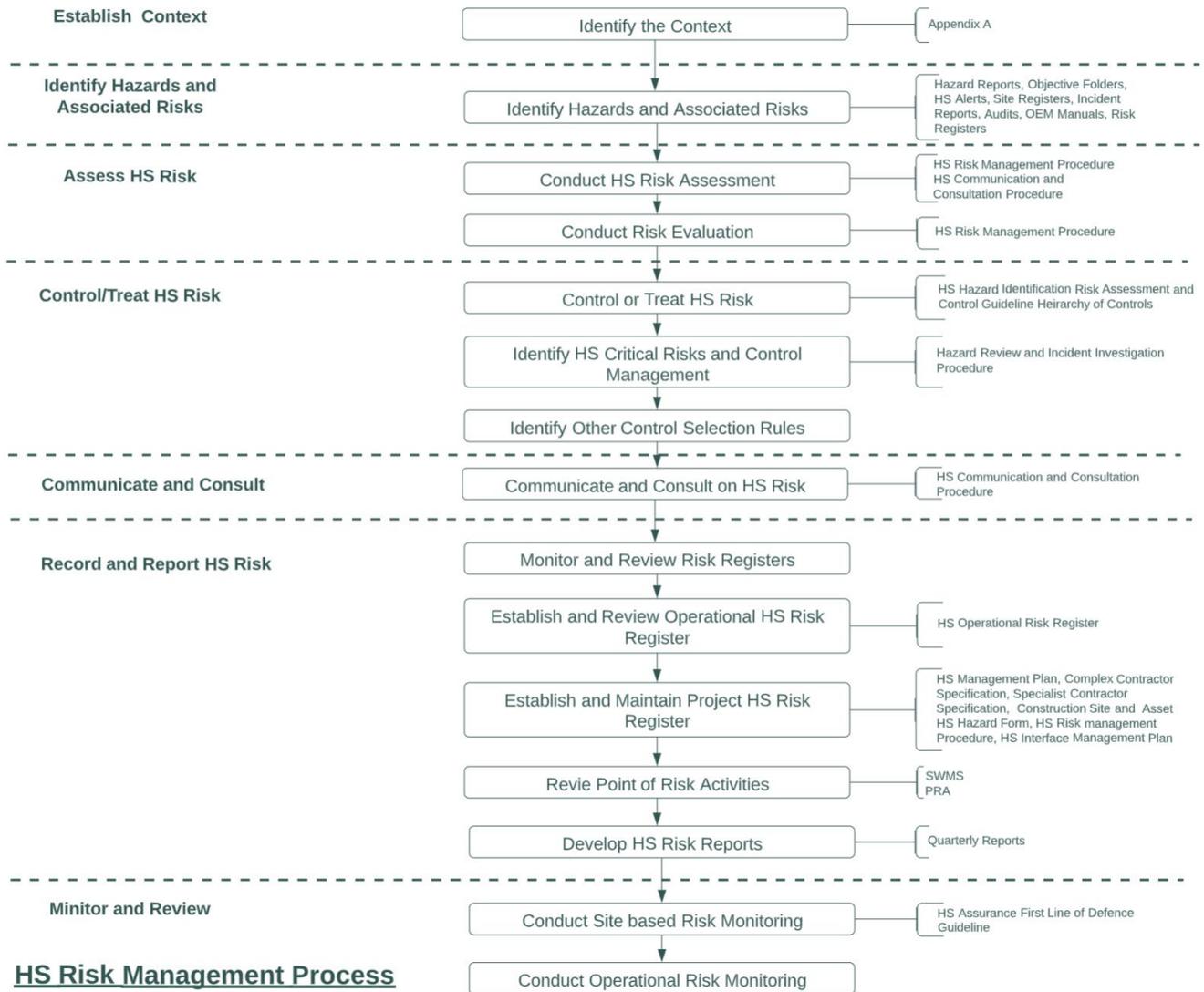
Scope

This Procedure applies to all Queensland Hydro HS Risk Management activities.

This Procedure also applies to Contractors when working under the Queensland Hydro HS Management System or when directed under Contract.

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Process Map



Procedure

1 HS Risk Management Process

Risk management for HS follows a step-by-step process:

1. Establish the context;
2. Identify hazards and associated risks;
3. Assess the HS risk - Analyse and Evaluate the Risk;
4. Control/Treat the HS risk to the Appropriate Standard;
5. Communicate and consult with Workers throughout each stage of the process;
6. Record and Report HS Risk (Risk Register, SWMS, PRA, Take 5 etc.); and
7. Monitor and review the control measures and effectiveness of the broader risk management process.

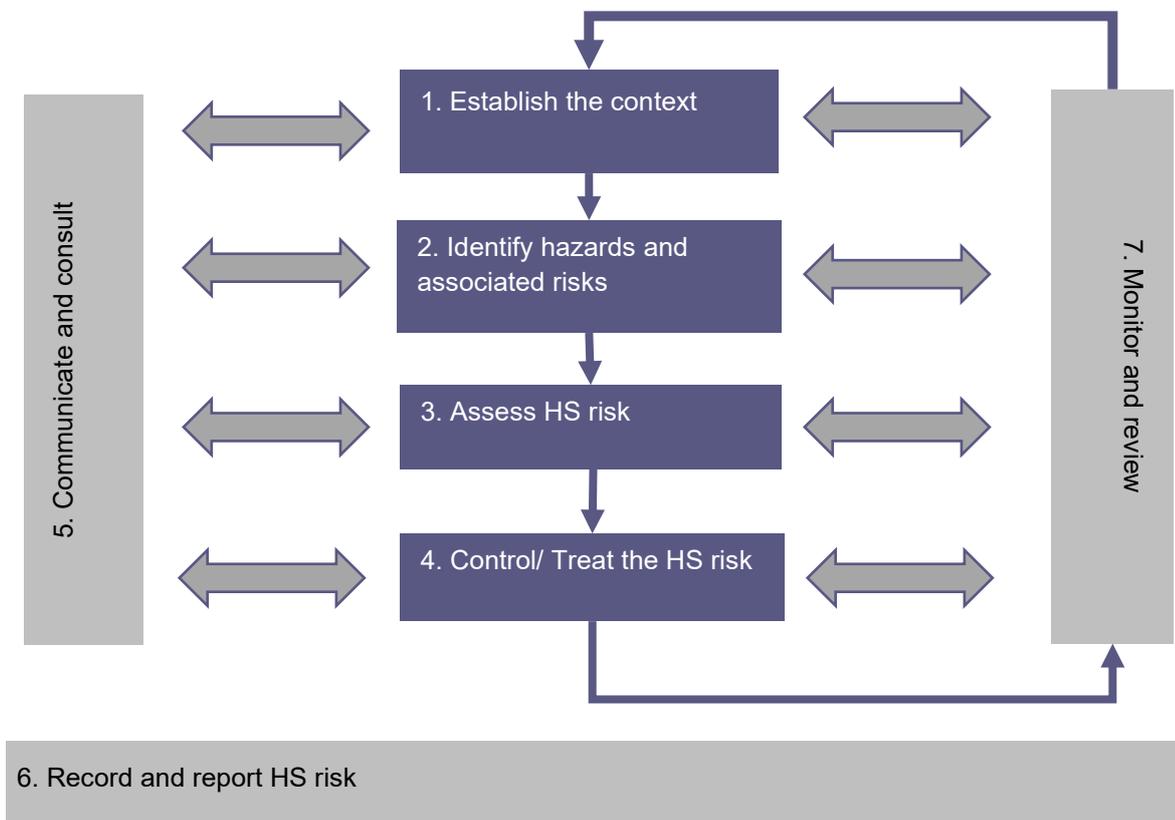


Figure 1 - HS Risk Management Process

2 Establish the Context

2.1 Identify the context

Understanding the context is key to the risk management process and establishes the scope of the assessment. It involves consulting on and understanding:

- The risk context including risk tolerance, risk assessment scope and technique to be applied;
- The tasks, activities, work area, plant/equipment/materials etc. to which the risk management process will be applied;

- Credible risk scenarios;
- Roles and competency of people involved in the task or activity;
- Persons or roles that should be consulted and receive communications; and
- Any other relevant conditions and constraints that influence decision making in relation to a HS risk.

A HS risk assessment must be conducted when the business is undertaking new, changed, or unique activities involving the management of HS risk for example:

- Planning – including project and other work planning as well as system level planning;
- Performing hazardous work;
- Procurement of goods, materials and services including hazardous chemicals and other materials;
- Managing change;
- Supporting asset management decisions;
- Planning for and managing interfaces (e.g. simultaneous operations); and
- Commissioning and use of plant and equipment.

Where, a risk has previously been assessed, there is no need to re-evaluate the HS risk unless new information has been provided which changes the context. If the risk has been previously assessed (recorded and approved), determine if the risk context is the same and implement associated controls.

Section 2.2 identifies possible sources of existing risk information for existing activities and the **QLD Hydro Health & Safety Risk Register** can be used for identification of existing controls.

Appendix B provides a quick reference guide for common HS risk assessments and activities, including against elements of the asset lifecycle.

2.2 Identify hazards and associated HS risks

Hazard and HS risk identification is an ongoing and continual process across the business and occurs at a frequency and level appropriate to needs of the business and relevant to the specific HS risk being managed.

Hazards and associated HS risk/s must be identified, documented and communicated to all relevant parties. It is important to note here that Queensland Hydro defines the term 'Hazard' to include something that can have an adverse effect on persons or assets.

Hazards will be identified through a combination of the following methods/techniques:

- Observation, inspections and audits;
- Formal planning, including asset or project lifecycle activities;
- Incident and hazard reports, including investigations and trend analysis;
- Consulting with workers, representatives, technical specialists, and other duty holders;
- Testing, measuring, and sampling, including exposure monitoring and health monitoring;
- Industry incident data/ history;
- Safety Data Sheets and other published or supplied information, including information from suppliers or manufacturers;
- Brainstorming, change initiated reviews and other formal and informal techniques; and
- Risk workshops or other assessments.

2.2.1 Hazard Report

Workers on a Queensland Hydro site are responsible for identifying, responding to, and reporting hazards as they become apparent. Workers should do that which is within their scope of authority and ability to manage the hazard then report the matter to their supervisor. A hazard report is then fed into the Incident Management system.

The level of risk should be noted in the system, along with measures to be applied to manage the risk. The supervisor is responsible for escalating the situation to the relevant Manager if they do not have the resources to effectively eliminate or minimise the risk to an acceptable level.

The Hazard Report should be reviewed with other personnel on site as soon as practical.

Queensland Hydro manages its HS risk and hazard information in several different locations. The following list identifies some of the locations where information on hazards both static and transient may be recorded. Information from these locations should be reviewed and considered as part of a HS risk assessment:

- SharePoint Sites Folders;
- Site drawings;
- HS Alerts;
- Site signage;
- Spatial data;
- Asset maintenance manuals;
- HS Risk Register and QLD Hydro **HS Compliance Register**; and
- Asbestos, confined space, radiation, and other hazard specific registers.

2.3 Assess the HS Risk (Analyse risk)

2.3.1 Risk Assessment

A Risk Assessment is used to determine the hazards and level of risk associated with a situation or thing. The risk assessment should also document how risk is controlled to an acceptable level.

Hazard Reports may trigger the need to conduct a Risk Assessment. For example, physical hazards such as noise or dust may be identified and require more in-depth analysis. In addition the Risk Assessment is used when planning confined space work, introducing hazardous substances, and processing certain changes.

The **HS Risk Assessment Template (HS-FRM-0006)** should be used to document and record the process. The process is to be completed in consultation with personnel likely to be affected. The names of those involved should be recorded on the form.

All Queensland Hydro HS risk assessments should be undertaken in accordance with this procedure and where appropriate using the consequence criteria, likelihood criteria and risk matrix in Appendix A.

Assessing HS risk involves:

- Determining the consequences and likelihood associated with a HS risk;
- Analysing and determining the level of risk to HS;
- Evaluating the risk to determine if risk level is tolerable; and
- Informing controls to be implemented to treat or control the risk to the Appropriate Standard.

Workers or their representatives and other relevant stakeholders must be involved or otherwise consulted in the HS risk assessment process, refer to **Communication and Consultation Procedure (HS-PRO-0002)**.

HS risk assessments shall consider existing and proposed controls and the effectiveness and efficiency of those controls.

A HS risk may have multiple consequence types. In these circumstances, the highest consequence type will become the governing consequence in determining the risk level, e.g. generally safety or health.

2.4 Conduct Risk Evaluation

Queensland Hydro is accountable for ensuring that managed HS risks are tolerable. A risk is tolerable where it has been minimised to an Appropriate Standard and determined to be a tolerable risk by the owner of the risk within the areas of the business affected. A risk that is assessed as an Extreme or Catastrophic Risk or represents a non-compliance with a legal obligation cannot be determined to be a tolerable risk.

Risk evaluation enables decisions about what further treatments are required in the short, medium, and long term, and to make decisions about the priority, type and nature of additional controls to be applied.

Persons performing a risk assessment must ensure that approval for work is obtained from the relevant owner of the risk in the areas of the business effected and undertaken according to the Risk Level (**Table 2** provides additional HS guidance in alignment with the 5X5 HS Risk Assessment Matrix).

Table 1 - Risk Level

Risk Level	Description	Additional HS Risk Guidance / Action Required	Authority/ Risk Owner
Critical	Critical Risk	The associated activity / project must be suspended / terminated immediately until the risk is reduced to a tolerable level	CEO
High	High Risk	Risk may be tolerable where minimised to the Appropriate Standard and requires formal justification. Consider further review and re-design	EGM
Significant	Significant Risk	Risk may be tolerable if risk minimised to the Appropriate Standard – risk owner to determine additional actions required	Project Director
Moderate	Moderate Risk	Risk may be tolerable if risk minimised to the Appropriate Standard – risk owner to determine additional actions required	Manager
Low	Low Risk	No further action required - Effectiveness of controls is maintained by active monitoring and review	Work Supervisor

For risks assessed as intolerable and that cannot be immediately mitigated, risks must be escalated and notified in accordance with the risk assessment matrix.

2.5 Control/Treat the HS Risk

The decision-maker determines whether the risk is managed to the Appropriate Standard by consulting a Subject Matter Expert (SME) and other affected business areas. When undertaking the Appropriate Standard determination, the decision-maker must consider whether the hazard can be eliminated, and ensure justification why not, before other methods of control can be considered.

If it is not reasonably practicable to eliminate the risk, the risk must be minimised by assigning controls in accordance with the order prescribed in the Hierarchy of Control (HoC). The risk may be minimised by reducing the consequences, the likelihood or both. The figure below illustrates the hierarchical order in which the control options are to be implemented to treat HS risks.

The risk control measure selected must be the most reliable control and highest possible option in the hierarchy. In many cases, it will be necessary to apply more than one control method.

Personal Protective Equipment (PPE) must only be used as a last resort or to complement other control measures implemented. Refer to **PPE Procedure (HS-PRO-0001)**.

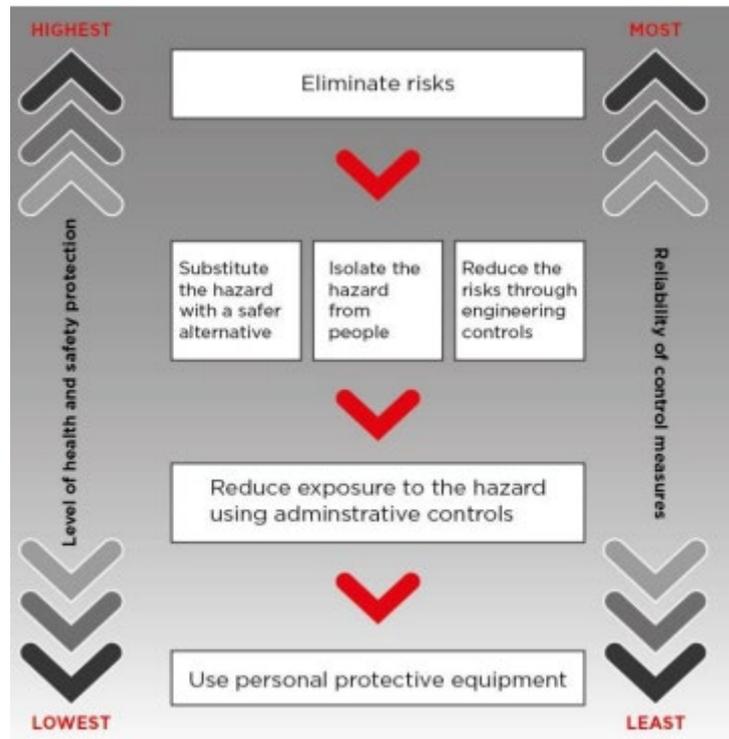


Figure 2 - Hierarchy of Controls Source: How to Manage Work Health and Safety Risks Code of Practice 2011

The most effective control measure involves **eliminating the hazard and associated risk**. The best way to do this is by, firstly, not introducing the hazard into the workplace. For example, you could eliminate the risk of a fall from height by doing the work at ground level.

If it is not reasonably practicable to eliminate the hazards and associated risks, you should minimise the risks using one or more of the following approaches:

- **Substitute the hazard with something safer** - For instance, replace solvent-based paints with water-based ones.
- **Isolate the hazard from people or the environment** - This involves physically separating the source of harm from people by distance or using barriers. For example, you could install guard rails around exposed edges and holes in floors.
- **Use engineering controls** - An engineering control is a control measure that is physical in nature, including a mechanical device or process. For example, you could use mechanical devices such as trolleys or hoists to move heavy loads; place guards around moving parts of machinery.
- **Use administrative controls** - Administrative controls are work methods or procedures that are designed to minimise exposure to a hazard.
- **Use Personal Protective Equipment (PPE)** - Examples of PPE include ear muffs, respirators, face masks, hard hats, gloves, aprons and protective eyewear. PPE limits exposure to the harmful effects of a hazard but only if workers wear and use the PPE correctly.

Administrative controls and PPE do not control the hazard at the source. They rely on human behaviour and supervision, and used on their own, are least effective in minimising risks. They should only be used when there are no other practical control measures available (as a last resort), as an interim measure until a more effective way of controlling the risk can be used and to supplement higher level control measures (redundant controls).

2.6 Identify HS Critical Risks and Critical Control Management (Key Control)

HS Critical Risks are risks that can have serious consequences in terms of injury and unwanted material events.

Queensland Hydro will ensure all HS Critical Risks are identified, causation pathways and consequence pathways formally modelled with Bow Tie Analysis or similar technique and risk controls identified. Each Critical HS Risk should be controlled by HS Critical Controls, in addition to other risk controls/ barriers to prevent a risk or mitigate extreme and catastrophic HS consequences.

Each identified HS Critical Control must include higher order risk controls (level 2 and above) and ensure:

- Performance requirements are defined;
- The ways in which a Critical control can fail are identified and subsequent controls identified;
- Monitoring and assurance requirement defined; and
- Reporting and response processes established where a Critical control is outside its performance requirement.

Any failure or breach of a Critical Control must be formally investigated in accordance with the **Incident Management Procedure (HS-PRO-0026)**. Ownership for the application and assurance of part or all of a critical control will be allocated to an Executive General Manager or above.

2.7 Identify other Control Selection Rules

The following control selection rules should be applied and can assist in demonstrating risk mitigation to an Appropriate Standard argument:

- Always immediately eliminate the hazard if it is possible and you have the appropriate authority and competence to do so. Stop, report, and seek instruction if you do not;
- If an approved control/s or rule/s has been defined under the HSMS and the risk context is the same, implement it;
- If there is a treatment/ control prescribed under a Regulation, when applied in isolation minimises the risks in accordance with this procedure, then apply it;
- If there is a prescribed Code of Practice that identifies controls that minimises the HS risk, apply it or use an alternative methodology where you can demonstrate a better level of risk control; and
- If there is a relevant Industry, International or Australian Standard that minimises the risks then apply it.

3 Communicate and Consult

Communication and consultation should occur across each stage of the HS risk management process. HS risk communication and consultation shall be performed in accordance with the **Communication and Consultation Procedure (HS-PRO-0002)**.

All new or changed HS risks or risk controls must be communicated to Workers and other affected parties. Workers (or their representatives) who are, or could be, directly affected by a HS risk should be consulted to enable effective identification, assessment, and control of HS risks.

Queensland Hydro will consult with Workers when:

- Identifying hazards and assessing HS risks applicable to the work;
- Responding to hazard reports and other HS issues;
- Making decisions about ways to eliminate or minimise HS risks; and
- Monitoring and reviewing HS risk controls.

This consultation will determine which HS duties are shared and what each person needs to do to co-operate and co-ordinate activities with each other to comply with their HS duty and legislative requirements.

The following are key stakeholder consultation touchpoints to consider when undertaking a HS risk assessment:

- Subject Matter Experts (SMEs) – these representatives should have a thorough knowledge of the topic;
- Lifecycle interfaces – these can involve a different risk perspective across the lifecycle of an asset;
- End users – as they will have a different perspective of the outcome and can add value in the control discussion;
- Impacted groups – any groups who may be impacted by the outcome of the assessment should be involved, including relevant third parties or other duty holders;
- Contractors – where Queensland Hydro is undertaking a risk assessment relating to works to be undertaken by a contractor.

4 Record and Report HS risk

4.1 Establish and Review the HS Risk Register

The Head of HS must ensure that Queensland Hydro establishes a Health & Safety Risk Register and that this register is maintained for operations across Queensland Hydro.

The HS Risk Register is not intended to record readily actioned hazards that are identified and managed as part of day to day operations (e.g. broken tiles).

As a minimum, HS Risk Register will include the following:

- Hazard/ Risk title;
- Risk description;
- Inherent risk level;
- Current control measures, including their hierarchy, effectiveness and criticality;
- Current managed risk rating (likelihood, consequence, overall);
- Other assurance or requirement information;
- Residual risk rating (likelihood, consequence, overall); and
- Responsibility for risk controls.

Any additional treatment actions will be allocated in Project Controls and the responsible Manager must ensure risk treatment actions are completed in accordance with assigned timeframes and outcomes are recorded.

The HS Risk Register must be reviewed annually or in the event of an operational change, legislation change serious incident or trending assurance findings.

4.2 Establish and maintain a Project HS Risk Register

For construction projects, Project Managers must ensure that HS risk information appropriate to the scope of the project is available.

The responsible Project Manager must ensure any risk treatments are completed in accordance with assigned timeframes and outcomes are recorded.

4.2.1 Internally Delivered Project

Internally delivered projects should consider known risks and controls in in the HS Risk Register.

Any additional controls required based on a change to the risk from interface and scheduling, site/asset specific hazards, new or unique activities must also be determined, recorded and applied.

Where the project involves construction work and the project value is greater than \$250,000, Queensland Hydro will need to develop a Health and Safety Management Plan for the project and supporting SWMS for the activities identified as High Risk Work in the *Work Health and Safety Act (Qld) (WHS Act)*.

4.2.2 Externally Delivered Project

Where a Principal Contractor (PC) has been appointed for a construction project, the PC will have the responsibility for developing a Project risk assessment in line with the requirements of the **Independent Contractor HS Specification (HS-SPC-0001)**.

Queensland Hydro will be required to supply known asset hazards and supporting information to the PC in order for these to be adequately assessed during the risk assessment.

5 Interface Management and Third Parties

Queensland Hydro often relies on third parties to ensure HS risk controls are implemented and maintained. This includes via customers, formal Contracts and Contractors, partners, or other arrangements.

Contractors and third parties must implement HS risk controls in accordance with hierarchy of controls and ensure HS risks are treated or controlled to the Appropriate Standard. Contractors performing work under the management and control of Queensland Hydro, must manage the HS risk in accordance with this Procedure.

Where third party activities (such as PC project or a client activities) can impact or influence Queensland Hydro's HS profile (or vice versa), an Interface Management Plan shall be established, implemented, and maintained for the duration of the interface.

An Interface Management Plan should capture all relevant parties and include (but not limited to):

- A documented HS Risk Assessment record that considers the specific interfaces and simultaneous operations;
- Agreed safe systems of work (as applicable);
- Clearly defined HS roles, responsibilities and accountabilities in relation managing interface HS risks;
- Agreed HS communication and consultation arrangements;
- Agreed HS monitoring, review and assurance measures; and
- Emergency protocols and response relationships between all parties.

Each Interface Management Plan should be endorsed by the Risk Owner from each relevant party.

5.1 Review Point of Risk Activities

5.1.1 Review Safe Work Method Statement

The *WHS Legislation* identifies a number of activities classified as High Risk Construction Work. Where Queensland Hydro workers are undertaking High Risk Construction Work as outlined in the *WHS Regulation 2011* a Safe Work Method Statement (SWMS) must be prepared.

SWMS are to be developed using Where a new or unique activity requires the development of a specific SWMS refer to **Safe Work Method Statement Form (HS-FRM-0033)**.

5.1.2 Conduct Site Based Risk Assessment

A **Pre-Work Risk Assessment (HS-FRM-0003)** (PRA) is to be undertaken prior to the commencement of works. A copy of the PRA shall be attached to the **Authority to Work form (HS-FRM-0015)**.

All work group personnel shall participate in completing a documented PRA:

- before commencing any work; or
- where activities have been assessed to have high or moderate risk as identified in risk assessments carried out previously, e.g. during the earlier planning stages of the job.

All personnel at the worksite must participate in or review the PRA. This includes people who arrive at the site after the PRA has been completed. The PRA can also be used as the site-specific induction, as it introduces people at the site to the hazards and control measures to be used at that site.

Activities assessed to have a low risk e.g. deskwork, do not require a PRA. However these activities must be monitored and controlled through other means, e.g. regular inspections in accordance with the **Assurance and Improvement Procedure (HS-PRO-0004)**.

A PRA must be done on all new jobs, and where the scope of the work changes significantly. The Take 5 and JSA processes are designed to supplement the PRA as a means of monitoring performance and fine tuning the controls included in the PRA. Significant identified gaps in risk control should prompt a review and update of the PRA.

The PRA must be reviewed periodically to ensure it is maintained up to date and includes all updates that have been identified in the previous period.

Completed PRA records are kept by the relevant supervisor or manager for 12 months in the work area, prior to final archiving. This retention period enables scheduled system auditing to occur.

Where an injury or incident occurs, the PRA record should be retained with the investigation records, which is to be forwarded to the HS Team where it will be archived along with other PRA records for 7 years.

5.1.2.1 Sites under the Control of a Principal Contractor

Where Queensland Hydro employees are required to work on construction sites that are under the control of a nominated Principal Contractor, they may sign onto that contractor's risk assessment document in lieu of completing their own Pre-Work Risk Assessment form.

5.1.3 Take 5

Prior to commencing a task where there is increased potential for harm to people or assets, Workers should undertake a Take 5 using **Take 5 Template (HS-FRM-0016)**.

A Take 5 is an on-the-job tool, which prompts people to stop and tune into their work environment and activity on a personal level and consider how risk is managed across several criteria. If unmanaged risk is identified the Worker shall discuss the situation with their supervisor and review existing SWMS or SOPs. Where SOPs or SWMS do not exist for the activity, a JSA shall be completed.

Where work conditions (personnel, weather, tooling, new hazards, chemicals, work processes) change each worker shall complete a Take 5, even if they had completed one at the start of the job. **NOTE:** a pre-work risk assessment **does not** remove the requirement for people to complete a Take 5 before starting a new task or when circumstances change.

Completed Take 5's should be retained on site for two (2) months before being destroyed. Take 5's associated with a task where an incident has occurred should be considered as part of the investigation and should be attached to the Incident Report.

5.1.4 Job Safety Analysis (JSA)

A JSA sets the scope of works, the context in which it will be conducted, task elements, skills required as well as the risk controls to be used at each step of a task.

A Take 5 may trigger the need to undertake a JSA if the task risk is not adequately managed and further risk analysis is required.

A JSA should:

- describe how work is to be carried out; and
- be developed in consultation with people involved in the work

The supervisor must ensure that:

- there is a JSA for all work activities which have been identified as having unacceptable safety or health risks and for which an adequate SOP or SWMS does not exist;
- those undertaking the work activity are consulted when developing the JSA;
- JSA's are only authorised for use until the specific activity they are developed for has been completed;
- they are reissued when they are updated;
- work is carried out in accordance with the JSA;
- if a change occurs, all related JSAs are reviewed and amended as necessary to ensure they remain valid and suitable for use.

The **JSA Template (HS-FRM-0005)** is to be used. Records of JSAs shall be maintained.

5.2 Develop HS Risk Reports

The HS Manager must prepare a quarterly Risk Report for the Executive on the HS risk profile, including:

- Summary risk profile of overall Queensland Hydro's HS risk (based on the HS Risk Register);
- Risk movements into or out of the High or Critical-risk category;
- Any significant new and emerging HS risks; and

- Metrics on effectiveness of critical controls, drawing on findings from control assurance activities.

Each Queensland Hydro Project or Department must establish and implement their own processes to feed data and information into the quarterly HS Risk Report.

6 Monitor and Review

6.1 Conduct Site based Risk Monitoring

All Workers are responsible for monitoring risk control measures during work activities to ensure:

- Chosen control measures reduce risk levels to the Appropriate Standard;
- Chosen control measures have been implemented correctly and as planned;
- Control measures achieve the level of risk reduction as intended and remain effective; and
- Control measures have not introduced new hazards or impaired existing controls or risks.

6.2 Conduct Operational Risk Monitoring

In addition, the business will periodically monitor and review the effectiveness of implemented controls through a range of scheduled and unscheduled activities, including but not limited to:

- HS assurance activities e.g. audits and inspections;
- Workplace monitoring where necessary (noise or airborne contaminants); and
- A review of incidents, hazards, and trend information.
- Reasonable oversight is to be applied to ensure controls are implemented within the approved timeframes and control effectiveness is achieved and maintained.
- HS risks and any measures adopted to control the risk must be reviewed as scheduled and:
 - When the control measure is not effective in controlling the HS risk;
 - An incident occurs, including external incidents involving same or similar characteristics;
 - Before a workplace change that may give rise to new or different uncontrolled HS risk/s;
 - If a new hazard or HS risk is identified;
 - Receipt of new knowledge on hazards and/or effectiveness of controls; and
 - Consultation indicates it necessary, including if a HSR requests it.

Formal review timeframes shall be established as an output of HS risk assessments. For active HS risks (e.g. part of an Operational or Project HS risk profile), the minimum review schedule applicable within Queensland Hydro is based on assessed managed risk level.

6.3 Monitor and Review Risk Registers

A Risk Register is a common means of recording HS risks within Queensland Hydro, transferring risks between lifecycles and risk owners, and is used to monitor and review HS risks. It is a live document that may change due to the dynamic nature of external and internal influences and new information, including adequacy of existing controls. It provides management with visibility of reasonably foreseeable hazards, risks and opportunities based on a robust risk assessment.

The effectiveness of HS risk controls must be verified by the Risk Treatment Owner and evaluated on a regular basis commensurate with the risk level.

7 Training Requirements

Supervisors and line management must undertake training and awareness in the application of Queensland Hydro’s HS risk management process, application of relevant tools and effective assessment and control of HS risks.

Personnel facilitating risk modelling and advanced risk assessment techniques must be able to demonstrate formal competency in the use and application of the technique or method and in facilitating risk assessment processes.

Responsibilities

Who	What
Worker	<p>Workers must follow all reasonable directions given by Queensland Hydro to manage HS risks that might arise out of their works. This includes the following activities:</p> <ul style="list-style-type: none"> • Reporting hazards when identified; • Participating in the risk management processes when required; and • Complying with all procedures and policies that have been established to minimise risk.
HS Team	<p>The HS Team is responsible to support implementation and maintenance of the HSMS. The HS Team has an advisory function in relation to the HS Risk Management process at Queensland Hydro, including</p> <ul style="list-style-type: none"> • Provision of support, guidance, and training to assist workers with HS risk assessments, selection of appropriate HS risk controls, the maintenance of various HS Risk Registers and assessments, and supporting HS risk reporting processes; • Consulting with stakeholders to ensure the HS Risk Management process is meeting the needs of the Queensland Hydro business; • Supporting critical HS risk review with the Executive Committee for HS; • Provision of advice and support to HS Risk Owners and HS Risk Treatment Owners; • Ensuring HS risk information and assessments are handed over at end of each stage of the asset lifecycle; • Ensuring HS risks are controlled and treated to the Appropriate Standard and provide assurance of HS risk mitigations; and • Maintaining the HS Risk Management Procedure across Queensland Hydro.
Risk Treatment Owner	<p>Responsible for the management and completion of the relevant HS risk action and any subordinate actions, including:</p> <ul style="list-style-type: none"> • Acceptance of the HS risk action; • Managing and reporting of the HS risk action; • Completing the HS risk action; • Maintaining effectiveness of the HS risk treatment/ action; and • Reporting to a HS Risk Owner on HS risk control effectiveness (including impaired controls) or an escalating risk rating/ level.
Head of HS	<p>Specific responsibilities include:</p> <ul style="list-style-type: none"> • Ensuring the organisation wide HS Risk Register is established and maintained, including annual review; • Preparing a quarterly report to the executive in the form of an HS Risk Scorecard; • Ensuring HS risk assurance activities are established and implemented; and • Providing suitable resources to support HS risk management processes throughout the organisation.

Executive GM - Corporate	<p>Specific responsibilities include:</p> <ul style="list-style-type: none"> Ensuring HS Risk Management processes are implemented in relation to work; Ensuring the organisation wide HS Risk Register is established and maintained, including reviews; and Ensuring an effective HS Risk Management Program is established, implemented, and maintained for work and workplaces within their Division.
Manager/ Supervisor	<p>Specific responsibilities include:</p> <ul style="list-style-type: none"> Ensuring a HS Risk Management process is implemented in relation to work; Ensure HS risks and risk controls associated with work are monitored and reviewed; Reviewing and updating (as needed) Safe Work Method Statements (SWMS); and Ensuring HS risks assessed are escalated to relevant Risk Owners (as applicable) for acceptance.
Risk Owner	<p>Person or entity with the responsibility and authority to manage an individual HS risk within their area of the business. This also includes:</p> <ul style="list-style-type: none"> Recommendations on the need for additional / enhanced controls required to manage the HS risk; and Actively monitoring and reviewing the HS risk.

Defined Terms

Terms	Definition
Appropriate Standard	<p>The Appropriate Standard for treating or controlling a risk. Whilst the Appropriate Standard may vary depending on the context of the risk, it generally requires taking all measures that are reasonably and practically available to treat or control that risk in the circumstances. For example:</p> <ul style="list-style-type: none"> In the context of a safety risk, the Appropriate Standard is to eliminate, or otherwise minimise, the risk "so far as is reasonably practicable"
Consequence	<p>The outcome resulting from a risk being realised. The consequence is usually categorised in terms of its severity.</p>
Control	<p>A measure that is modifying risk and includes any policy, process, practice, device, people, or other actions. Control types include:</p> <ul style="list-style-type: none"> Preventative controls: used to manage the causes of risk; Detective controls: used to detect that a preventative control has failed, or an unwanted event has occurred; and Mitigating controls: used to reduce the impacts that would otherwise flow from the event.
Control Effectiveness	<p>A relative assessment of actual level of control that is currently present and effective compared with that which is reasonably achievable for a particular risk. A key metric in risk analysis and a major consideration in risk evaluation.</p>
Critical Control (Key Control)	<p>A control or group of controls that are believed to be maintaining an otherwise intolerable risk at a tolerable level. It may also be a Control that operates in isolation or addresses multiple causes / consequences</p>
Critical Risk	<p>Also known as Key Risks, are risks that have material consequences across the business and includes those with either a Strategic or Operational focus and represent the Queensland Hydro risk profile:</p>

	<ul style="list-style-type: none"> Strategic focused risk impacts on achievement of long-term objectives and direction of Queensland Hydro; and Operational focused risk impacts on the planning and implementation of Queensland Hydro's key BAU activities and operations.
HS Hazard	Something with the potential to cause harm to a person or property.
HS Risk Profile	Collective HS risks applicable to the business, a business unit, a project, or a lifecycle stage, usually documented in a register or visually represented.
Inherent Risk	Level of risk assuming no controls are in place or those that are in place are totally ineffective (a theoretical concept).
Likelihood	The chance or probability of a risk being realised.
Residual Risk	Level of assessed risk following controls.
Risk	The potential occurrence of an adverse effect on human life or health because of exposure to a hazard.
Risk Analysis	Process to comprehend the nature of risk and to determine the level of risk. Risk analysis provides the basis for risk evaluation and decisions about risk treatment. Risk analysis includes determining risk rating.
Risk Assessment	Overall process of risk identification, risk analysis and risk evaluation. A process to assess the hazards, the likelihood of risk and the consequences of risk associated with a work activity and to determine the measures to treat or control the risk to the Appropriate Standard.
Risk Assessment Matrix	The Queensland Hydro 5 X 5 Risk Assessment Matrix is to be used during consequence / likelihood-based risk assessments to determine various levels of risk and assist in decision making.
Risk Evaluation	<p>Process of comparing the results of risk assessment results against the risk evaluation criteria. Risk evaluation:</p> <ul style="list-style-type: none"> Determines whether a risk is treated or controlled to the Appropriate Standard; and Assists in the decision about the type of risk treatment to be applied and acceptance.
Risk Identification	Process of finding, recognising and describing risks. Risk identification involves the identification of contributing factors, events, and their potential consequences.
Risk Level	The level of risk determined by considering the consequence and likelihood of a risk.
Risk Register	A record containing risks identified (relevant to context), assessed risk levels, controls to treat risks, risk ownership, Appropriate Standard justification summaries.
So Far as is Reasonably Practicable	<p>That which is, or was at a particular time, reasonably able to be done in relation to ensuring health and safety, considering and weighing up all relevant matters including—</p> <ol style="list-style-type: none"> The likelihood of the hazard or the risk concerned occurring; and The degree of harm that might result from the hazard or the risk; and What the person concerned knows, or ought reasonably to know, about: <ol style="list-style-type: none"> The hazard or the risk; and Ways of eliminating or minimising the risk; and The availability and suitability of ways to eliminate or minimise the risk; and After assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk."
Static HS risks	HS risks generated from an ongoing source or activity,
Transient HS risks	Temporary or short-term HS risk usually eliminated as part of ongoing maintenance activities

References

Document Reference	Document Title
HS-STD-0002	Confined Space Standard
HS-PRO-0010	Hazardous Manual Tasks Procedure
HS-PLN-0001	Queensland Hydro WHS Management Plan
HS-PRO-0004	Assurance and Improvement Procedure
HS-PRO-0002	Communication and Consultation Procedure
HS-PRO-0026	Incident Management Procedure
HS-FRM-0011	Plant and Work Equipment Risk Assessment Evaluation Form
HS-FRM-0006	HS Risk Assessment Template
HS-STD-0012	HS Risk Management Standard
HS-FRM-0033	Safe Work Method Statement Template
HS-FRM-0005	Job Safety Analysis Template
HS-FRM-0016	Take 5 Template
HS-STD-0014	Safe Design Standard
HS-FRM-0003	Pre-Work Risk Assessment Template

Appendix A – Risk Matrix

Level	Consequence Description
5. Extreme	Fatality or multiple fatalities Near misses with potential Level 5 consequences
4. Major	Injuries/illness which are life threatening or resulting in permanent significant disability (i.e. loss of limb, crush injuries, significant burns, brain injury, long term chronic health effects etc). Near misses with potential Level 4 consequences
3. Moderate	Injuries requiring immediate medical treatment (in patient in hospital) Lost Time Injury (LTI) Injuries/ illness resulting in temporary disability or partial permanent disability (e.g loss of finger) Life Saving Rules breaches Near misses with potential Level 3 consequences
2. Minor	Injuries requiring medical treatment e.g. out patient, stitches Injuries that require ongoing medical treatment (e.g. physiotherapy) and/or restrictions of normal duties Near misses with potential Level 2 consequences
1. Insignificant	Minor injury/illness requiring no treatment or first aid only treatment Transitory health effect Near misses with potential Level 1 consequences

LIKELIHOOD TABLE		
Rating	Frequency - non-project	Frequency - program/project
A Almost Certain	Consequences are expected to occur several times in the next 12 months.	Consequences are almost certain to occur during the program / project duration.
B Likely	Consequences will occur at least once in next 12 months.	Consequences are likely to occur during the program / project duration.
C Possible	Consequences might occur at some time in next 1 to 10 years.	Consequences may occur during the program / project duration.
D Unlikely	Consequences could occur in next 10 to 50 years.	Consequences are not likely to occur during the program / project duration.
E Rare	Consequences are expected to be less frequent than once in 50 years.	Consequences will only occur in exceptional circumstances during the program / project duration.

RISK LEVEL MATRIX					
	1	2	3	4	5
A	11 - MODERATE	16 - SIGNIFICANT	20 - HIGH	23 - CRITICAL	25 - CRITICAL
B	7 - MODERATE	12 - MODERATE	17 - HIGH	21 - HIGH	24 - CRITICAL
C	4 - LOW	8 - MODERATE	13 - SIGNIFICANT	18 - HIGH	22 - HIGH
D	2 - LOW	5 - LOW	9 - MODERATE	14 - SIGNIFICANT	19 - HIGH
E	1 - LOW	3 - LOW	6 - MODERATE	10 - MODERATE	15 - SIGNIFICANT

Appendix B – HS Risk Assessment Management Guidance

To ensure a systematic approach and enable effective planning and delivery, Queensland Hydro will seek to identify and manage HS risks throughout all phases of the asset lifecycle (consistent with the Asset Management Framework).

The risk management process applies to each lifecycle, the extent of the risk management approaches, and risk assessment techniques differ across the asset lifecycle and between lifecycle phases, however a common output is a risk register which is used as a primary means to transfer risk information and ensure effective communication of residual HS risks applicable to work in each lifecycle phase and handover to new risk owners and risk treatment owners (as applicable).

HS risks associated with each lifecycle phase should be identified as early as possible during planning, procurement, and design activities (the table below provides examples). This better enables application of Level 1 and 2 controls, supports inherently safer design, construction and operation and a more efficient management of HS risks.

Trigger	The context	Responsibility to undertake	Who	When	Tools	Information Sources	Outcome Communication
Change to standard design drawings or Queensland Hydro Standards	Changes to Queensland Hydro design standards has the potential to expose field workers and contractors to variation of existing risks or new risks.	Design Standards	<ul style="list-style-type: none"> Designers Field representatives HS Team 	Prior to the change being implemented	HS-STD-0014 Safe Design Standard SiD Report	<ul style="list-style-type: none"> RPEQ advice Australian and New Zealand Standards Research outcomes 	<ul style="list-style-type: none"> Impacted field groups Impacted design groups
Design activity	The design of an asset or object where varied from a standard design or incorporated into an existing design has the potential to expose field workers and contractors to variation of existing risks or new risks.	Design Coordination	<ul style="list-style-type: none"> Designers Field representatives Construction Advisor Project Managers HS Team 	Once design is sufficiently completed for a review but prior to design being completed. Ideally at a point where changes can still be made.	HS-STD-0014 Safe Design Standard SiD Report	<ul style="list-style-type: none"> Existing site information/visits RPEQ advice Internal Design Standards Sustainable design standards 	<ul style="list-style-type: none"> Project teams Field Teams working on the process Contractors if undertaking construction
Project scope development	The most economical time to consider elimination of hazards is early in the project scoping phase. A project scope should consider existing hazards and risks with a view to eliminating them during major works.	Asset Strategies/ Sponsor	<ul style="list-style-type: none"> Project Sponsors Project Managers Field Representatives HS SMEs 	As part of early scope development ideally during options analysis	QLD Hydro Health & Safety Risk Register	<ul style="list-style-type: none"> Existing site information/visits Hazard reports (temporary/fixed); Objective Sites Folders; Site drawings / Site signage; 	<ul style="list-style-type: none"> Impacted field groups Impacted design groups Project manager Project Scope Report/ Detailed Scope document

						<ul style="list-style-type: none"> • HS Alerts • Asbestos, confined space, radiation and other hazard specific registers; • Incident investigations; • Audit actions; • Asset maintenance manuals; • QLD Hydro Health & Safety Risk Register • QLD Hydro HS Legal Register • Asset specific registers (e.g. confined space register, asbestos register) • permits/approvals/exemptions 	
<p>Prior to Contractor engagement</p>	<p>Queensland Hydro has a duty under the WHS Act to provide hazard information relating to an asset which, the organisation would be reasonably expected to know, when engaging a contractor as a Principal Contractor.</p> <p>Queensland Hydro also has a duty to provide contractors with any permit/authority conditions and requirements that they must be aware of or manage as part of the contractor's scope of works</p>	Project Manager	<ul style="list-style-type: none"> • Designers; • Field representatives; • Construction Advisor; • Project Managers; • HS Team 	As part of the planning for engagement of a principal contractor		<ul style="list-style-type: none"> • Existing site information/visits • Hazard reports (temporary/fixed); • Objective Sites Folders; • Site drawings; • HS Alerts; • Site signage; • Asbestos, confined space, radiation and other hazard specific registers; • Incident investigations; • Audit actions; • Asset maintenance manuals; 	•

						<ul style="list-style-type: none"> • QLD Hydro Health & Safety Risk Register • QLD Hydro HS Legal Register • REPQ advice • Internal Design Standards • SiD report • Project Scope • Applicable permits, approvals, exemptions, etc. 	
Queensland Hydro as PC	When Queensland Hydro undertakes a construction project activity interface can cause new or variations of existing risks which need to be managed.	Works Control Manager	<ul style="list-style-type: none"> • WCMs; • Field representatives; • Designers; • Contractors (if engaged) • HS Team 	Prior to work occurring onsite.	QLD Hydro Health & Safety Risk Register	<ul style="list-style-type: none"> • Existing site information/visits • SAP • Static Hazard Register • Transient Hazard Register • REPQ advice • Internal Design Standards • SiD report • Project Scope 	Project Risk register
High Risk Construction Work (SWMS development)	SWMS are a documented output of a risk assessment or can be drafted as a risk assessment of a particular task. These should be review regularly or as part of a post incident review activity	Works Control Manager	<ul style="list-style-type: none"> • WCMs; • Field representatives 	New controls or risks have been identified, Post incidents or audit; Regular review cycle	HS-FRM-0004 SWMS Review Form	<ul style="list-style-type: none"> • Existing work practices • Industry consultation • RPEQ advice • Incident records 	<ul style="list-style-type: none"> • Impacted field teams
Regular HS Risk Register Review	The HS Risk Register is a documented output of a risk assessment. This document should be reviewed as part of a regular cycle or when control effectiveness has been	Risk Owners	<ul style="list-style-type: none"> • Representative from other duty holders teams; • Field representatives 	When new controls have been identified, Post incidents;	QLD Hydro Health & Safety Risk Register	<ul style="list-style-type: none"> • Incident records • Audit records • Work practices • Industry consultation 	<ul style="list-style-type: none"> • Impacted groups • Update to operational documents

	questioned as part of an incident or audit		<ul style="list-style-type: none"> • HS Team 	Regular review cycle			
Onsite prior to works	SWMS and Queensland Hydro standard controls need to be validated in the context of site condition on the day.	Site supervisor	<ul style="list-style-type: none"> • Field representatives 	When start a new task or activity. These must be review if site conditions or activity change during work	HS-FRM-0003 Prework Risk Assessment Work Permit	<ul style="list-style-type: none"> • Site condition • SWMS • Work Instructions 	<ul style="list-style-type: none"> • Work Group
Purchase of Chemicals	Purchasing of new chemicals can introduce new and different risks	Purchaser	<ul style="list-style-type: none"> • End users; • Designers/purchasers; • HS Team 	Prior to purchasing new or variations of existing equipment	HS-FRM-0035 Chemical Risk and Control Identification Form	<ul style="list-style-type: none"> • Existing equipment • End user feedback 	<ul style="list-style-type: none"> • End users • Updated to chemwatch
Purchasing of equipment	Purchasing of new equipment can introduce new and different risks	Purchaser	<ul style="list-style-type: none"> • End users; • Designers • Purchasers; • HS Team 	Prior to purchasing new or variations of existing equipment	HS-FRM-0011 Plant and Work Equipment Risk Assessment Form	<ul style="list-style-type: none"> • Existing equipment • RPEQ Advice • End user feedback 	<ul style="list-style-type: none"> • End users • Updated to QLD Hydro Health & Safety Risk Register
Assessment of a space as a confined space	Under the WHS Act all spaces considered as potentially confirmed require a confined space risk assessment	Muiltple	<ul style="list-style-type: none"> • HS Team • External consulting (if required) • Field representatives 	As part of the identification of confined spaces	Confined Space Asset Register	<ul style="list-style-type: none"> • Specialist Support • Worker feedback • Work practices 	<ul style="list-style-type: none"> • Confined Space Asset Register