Work at Height Procedure

Purpose

The purpose of this Procedure is to outline Queensland Hydro's key requirements for undertaking work or accessing locations where there is a risk of falling from one level to another.

The term "work at height" is used by Queensland Hydro to define work and work locations where there is a risk of a person or objects falling to another level. The vertical distance between levels and the nature of the environment (i.e. above fluids, sharp objects, unguarded plant etc.) will influence the potential for injury and as such the risk level. The risk must be considered in terms of likelihood of a fall and potential for harm and not the vertical distance between levels.

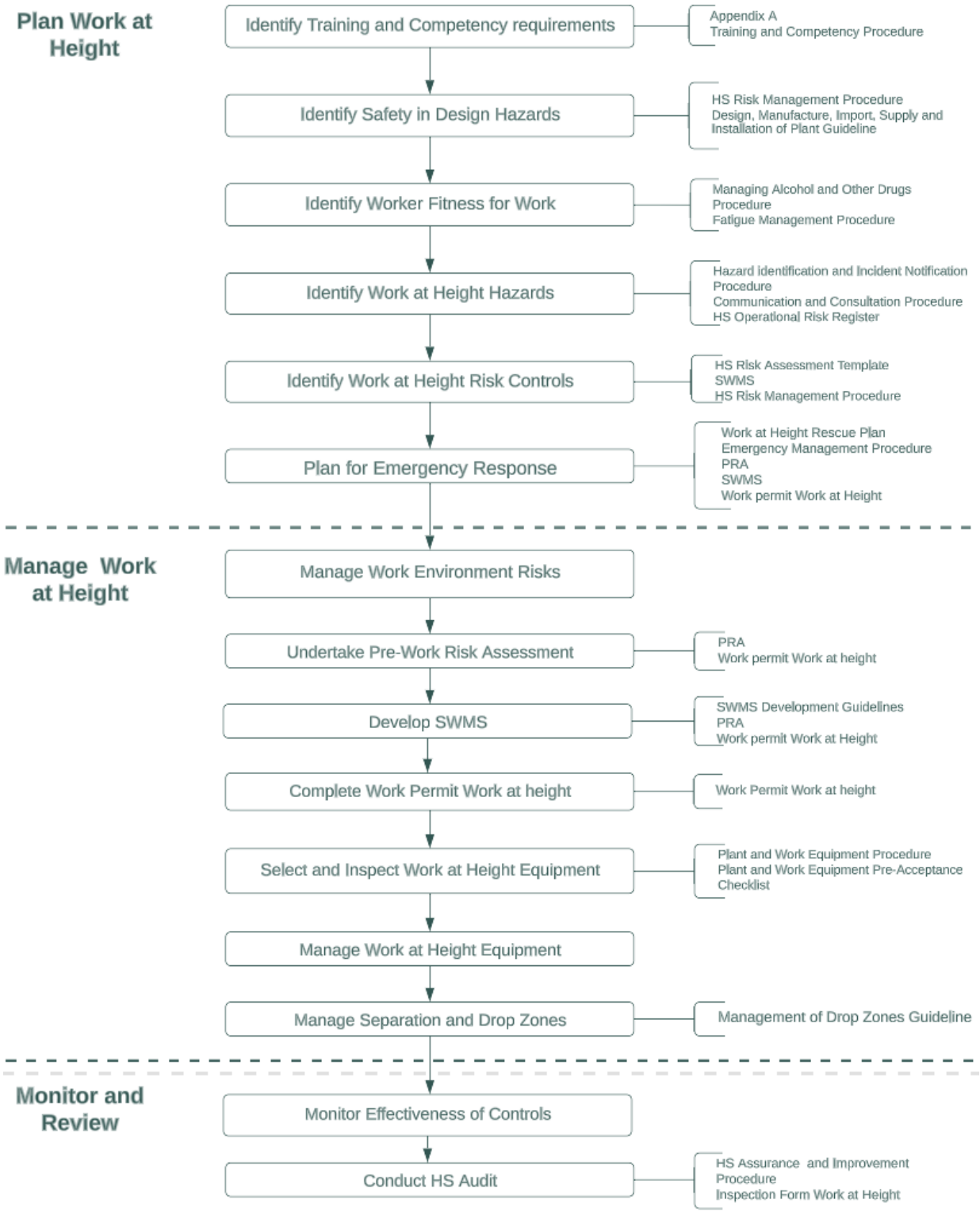
The Queensland *Work Health and Safety Regulation 2011* requires the implementation of specific control measures for managing certain risks associated with working at height, and these have been summarised in this Procedure.

Scope

This Procedure applies to work at height activities conducted by Queensland Hydro, and Contractors where specified by Contract, and includes:

- Training and competency requirements;
- Risk management and controls for work at height and falling objects;
- Compliance requirements for equipment used in conjunction with work performed at height;
- Development of Safe Work Method Statements (SWMS) for high-risk construction work involving work where there is a risk of a person falling more than 2 metres; and
- Emergency planning and response.

Process Map



Work at Height Procedure

Procedure

1 Identify Training and Competency Requirements

All Workers required to work at height shall undergo appropriate competency-based training that includes familiarisation with the safe work practices to be adopted and the safe use of plant and equipment involved in the activity. Minimum requirements for tasks involving work at height are detailed in the Queensland Hydro Training and Competency Matrix.

Queensland Hydro's **Training and Competency Procedure (HS-PRO-0008)** provides guidance on the process for ensuring task-specific training in Safe Work Procedures is provided to Workers who may be required to perform work at height. Individual Queensland Hydro departments and Projects are responsible for identifying the requirements of these procedures and developing their content.

2 Safety in Design

Work health and safety laws also prescribe requirements for considering the safe design of equipment to minimise work at height risks. Queensland Hydro shall consider the risk of falls when designing plant or structures, with a view to eliminating work at height risks where possible. Where elimination is not reasonably practicable, the design must consider ways to minimise the risk of falls to personnel who may perform future work on the plant or structure. This may include, for example:

- Assembly of structures and/ or equipment at or close as practical to ground level;
- Designing of safe access and egress to the work area, including roofs;
- Providing permanent platforms and guard rails;
- Provision for the use of temporary work platforms and access e.g. scaffolds, elevating work platforms; and
- Integrating fall prevention or work positioning systems into the design.

Queensland Hydro's **Design, Manufacture, Import, Supply and Installation of Plant Guideline (HS-GUI-0007)** contains further guidance about compliance requirements for persons designing plant and structures.

3 Ongoing Risk Management

Before work at height activities can commence, planning must be undertaken to ensure that hazards are identified and risks can be minimised as far as is reasonably practicable, refer to **HS Risk Management Procedure (HS-PRO-0007)**.

3.1 Identify Worker Fitness for Work Requirements

Workers must be fit for work and free from the effects of alcohol, drugs, fatigue, and other medical conditions that may impact their ability to work safely at height (e.g. vertigo). Queensland Hydro's **Managing Alcohol and Other Drugs Procedure (HS-PRO-0021)** and **Fatigue Management Procedure (HS-PRO-0006)** provide further guidance on identifying and managing these issues.

The physical demands of some work at height tasks also require Workers to possess an adequate standard of physical capability to perform them safely. These include harness use, climbing, manual tasks and rescue operations. Personnel may be assessed for physical suitability and capability before being assigned duties involving working at height in accordance with Queensland Hydro's pre-employment medical processes.

Individuals with conditions which increase the risk of a fall to an unacceptable level, or which may impede their ability to be rescued or participate in an effective rescue, shall not be allocated tasks involving work at height. This includes the ability to comply with weight limits set out in *Work Health and Safety Regulations* and Australian Standards for usage of work at height harness systems, ladders and other equipment (although these must be considered on a case-by-case basis and based on a health risk assessment).

3.2 Identify Work at Height Hazards

The primary hazards associated with working at height are unprotected edges, inadequate containment (mechanical failure of flooring/barriers etc.), impact of weather conditions and unstable supporting structures which often arise as subsidiary risks from the performance of tasks associated with constructing and maintaining assets. Such tasks include (but are not limited to):

- Working outdoors (e.g. heat, wind, rain etc.);
- Working in confined spaces; and
- Use of plant and equipment for working at height in the vicinity of electrical equipment.

Other sources of work at height hazards include:

- Construction projects;
- Maintenance of buildings and structures; and
- Loading and unloading operations.

Due to the intricacies of the work and variability of the work environment consultation with Workers in the planning stages is critical and must be undertaken in accordance with the **Communication and Consultation Procedure (HS-PRO-0002).**

Queensland Hydro's Risk Register provides a reference for such hazards and controls associated with Queensland Hydro's operations, and should be consulted in the first instance to establish whether the hazard has been previously identified and controls developed.

3.3 Develop Work at Height Risk Controls

Controls to manage work at height risks must be developed and documented in a risk assessment in accordance with this Procedure, mandatory controls from the Risk Register (where a work at height hazard has been newly identified, it must be added to the register along with the mandatory controls) and reflect the relevant legal requirements[1].

The risk assessment may be documented in the form of a Safe Work Method Statement (e.g. SWMS Template **HS-FRM-0033)** or other appropriate Queensland Hydro risk assessment tool (e.g. **HS Risk Assessment Template [HS-FRM-0006]). NOTE:** Safe Work Method Statements (SWMS) must be used for high-risk construction work involving work where there is a risk of a person falling more than 2 metres

Additionally, controls for managing the risk of falls must be considered in order of a specific hierarchy as detailed below. A combination of these methods may be required to minimise the risk. Refer to the **HS Risk Management Procedure** for further guidance on elimination of risk and application of the hierarchy of controls.

3.3.1 Work From the Ground

Eliminate the risk by performing the work from ground level.

3.3.2 Work On a Solid Surface

Eliminate the risk by working on solid structures that can support the work, have adequate barriers, an even and readily negotiable surface and a safe means of entry and exit.

Examples - EWPs (cherry pickers and EWPs), scaffold, mobile scaffold, workboxes.

3.3.3 Use Fall Prevention Systems

Eliminate the risks by use of devices that prevent Workers from falling through openings.

Examples - secure fencing, edge protection, working platforms, covers.

[1] Work Health and Safety Regulation 2011 (s54 – 55 and s 306A – 306Q) ; and
Managing the risk of falls at workplaces Code of Practice 2021

3.3.4 Use Work Positioning Systems

Manage the risks by use of systems that restrict Workers' ability to reach areas where they could fall.

Examples - Industrial rope access systems, static line systems.

3.3.5 Use Fall-Arrest Systems

Manage the risks by reducing the potential for injury in the event of a fall.

Examples - Individual fall-arrest systems, anchorage lines or rails, catch platforms, industrial safety nets.

3.3.6 Admin Controls

Manage the risks by providing Workers with information and training.

Examples - signing of 'No Go' areas, formal authorisation (e.g. work permit systems), training of Workers in Safe Work Procedures (e.g. development and induction into a SWMS for working at height).

3.4 Plan For Emergency Response

A task-specific Work at Height Rescue Plan shall be in place and communicated to all Workers prior to any work at height commencing. This must detail the response actions required to rescue/recover a person in an emergency (e.g. suspended in a harness after falling, or due to mechanical failure of an EWP or workbox).

The Work at Height Rescue Plan must include the following minimum information:

- The competency requirements for persons providing rescue support in the event of an incident;
- The selection and setup of the chosen rescue equipment and system;
- Safe methods of retrieval (including but not limited to the requirement for self or work group rescue capability); and
- An assessment that rescue personnel hold the necessary competency requirements to successfully effect a rescue.

The Work at Height Rescue Plan must be documented in a format that ensures it addresses the above requirements and has been communicated effectively to Workers. It is acceptable to achieve this by inclusion of the emergency response procedures in the SWMS. Alternatively the Work at Height Rescue Plan template can be used **(HS-FRM-0037)** and attached to the SWMS or **Pre-Work Risk Assessment (PRA) (HS-FRM-0003).**

Competency assessment for conducting work at height rescues shall be undertaken not more than every 12 monthly in accordance with the competency requirements outlined in the HS Training Matrix.

4 Manage Work at Height

4.1 Manage Work Environment Risks

4.1.1 Complete Pre-Work Risk Assessment (PRA)

A Queensland Hydro PRA must be completed for all work jobs. Where the scope of the work changes or a change in conditions has occurred, a review of the PRA must be carried out to identify new hazards and agree controls to be implemented. A PRA does not replace the requirement to complete a SWMS for high-risk construction work or to complete a **Work at Height Permit (HS-FRM-0012)** where required.

4.1.2 Develop Safe Work Method Statement (SWMS)

A SWMS must be developed for all high-risk construction work that is performed where there is a risk of a person falling more than 2 metres.

Where a SWMS is developed and the only control measures to be implemented will be administrative controls or personal protective equipment (PPE), the SWMS must state the control measures from the hierarchy (re *Figure 1*) that were considered in deciding how to manage the risk of a person falling, and why they were deemed not reasonably practicable.

4.1.3 Complete Work at Height Permit

A **Work at Height Permit** must be completed prior to performing tasks at height where:

- There is a risk of a person being injured in a fall from any height; and
- The task is non-routine, and a SWMS or other Safe Work Procedure has not been prepared to detail the specific work at height controls; and
- Persons performing the task cannot demonstrate they have received training in that Safe Work Procedure or SWMS; or
- Signage indicates a Work at Height Permit is required.

The Work at Height Permit can also be used optionally for documenting a risk assessment in other circumstances (e.g. deviation required from a normal work procedure, when assessing the suitability of fixed attachment points on legacy structures etc.).

NOTE: A Work at Height Permit does not replace the requirement to complete a SWMS for high-risk construction work, or to complete a PRA.

5 Manage Work at Height Equipment

5.1.1 Select, Maintain and Inspect Work at Height Equipment

Only approved climbing and work at height equipment shall be used by Queensland Hydro employees. Equipment must be selected, acquired, maintained, and used in accordance with applicable requirements of Queensland Hydro's **Plant and Work Equipment Procedure (HS-PRO-0019), PPE Management Procedure (HS-PRO-0001)** and any requirements of the manufacturer's instructions.

These procedures also include the requirements for conducting pre-use inspections and site-based **Plant and Work Equipment Pre-Acceptance Checklist (HS-FRM-0030).**

5.1.2 Manage Work at Height Equipment Compliance

There are specific compliance requirements and performance standards associated with most equipment used for working at heights, and these are detailed in **Appendix A.**

6 Monitor and Review

6.1 Monitor effectiveness of controls

Monitoring the effectiveness of control measures must be managed by:

- The provision of adequate Worker supervision to ensure controls are properly implemented;
- Consultation with Workers to ensure controls are understood, appropriate and effective; and
- Reporting of hazards and incidents associated with work at height activities to ensure corrective action is taken where necessary.

6.2 Conduct HS Audit

Queensland Hydro's HS Audit Program shall be used to monitor implementation of and compliance with this procedure, and to review it for effectiveness and continual improvement in accordance with **Assurance and Improvement Procedure (HS-PRO-0004).**

Responsibilities

Who	What
Executive General Managers	• Ensure assurance and improvement processes are in place to evaluate integration and ensure ongoing effectiveness of this procedure.
HS Team/ Health and Wellbeing Manager	• Provide support for compliance assurance programs.
Manager / Supervisor	• Ensure that (when the requirement to work where there is a risk of a fall cannot be eliminated), the work shall not be undertaken without there being adequate fall prevention or fall protection measures in place; • Ensure risk assessments are conducted by competent personnel before the commencement of work and appropriate control measures are selected when there is a requirement to work at height; • Ensure that work practices reflect the requirements of Safe Work Procedures; • Ensure Workers are provided with suitable training as required to maintain an appropriate level of competency; • Ensure Workers are fit for work; • Provide and maintain a safe work environment; • Provide Workers with adequate information and training; and • Provide proper supervision of work.
Workers	• Work in accordance with this Procedure; • Participate in the risk management process; • Only use equipment for which they are competent and authorised; • Assess and review work activity and work environment prior to starting and when circumstances change (Take 5); • Use only approved height safety systems, equipment and plant as instructed; • Perform pre-use inspections of equipment and/or operating plant for use at height; and • Maintain competencies and authorisation associated with climbing and work at height.

Defined Terms

Terms	Definition
Competent Person	A person who has acquired, through training, qualification or experience, the knowledge and skills to carry out the task specified or relevant to the subject matter and can provide assessment, advice and analysis of the task using the relevant codes of practice, standards, methods or literature.
High Risk Construction Work	Has the meaning given to that term in the *Work Health and Safety Regulations (Qld)*.
Elevating Work Platform (EWP)	Any self-propelled or truck mounted device that is designed to raise or lower personnel, tools, and equipment such as boom lifts, knuckle booms cherry pickers and scissor lifts.
Fall Arrest System	Any system or device that limits the distance a person can fall and supports a person who has fallen from height to prevent striking the ground or a lower level structure.

Fall Prevention System	Strategies and tools to define and measure falls identify risks and target prevention strategies.
Safe Work Method Statement (SWMS)	A document that provides information regarding specific hazards associated with High Risk Construction Work and risks associated with those hazards describes the measures to be implemented to control the risks and describes how the risk control measures are to be implemented, monitored, and reviewed.
Solid Construction	An environment where the likelihood of a fall may be eliminated by: • Having the required structural capabilities, barriers prevent a fall from edges or openings, • An even & accessible surface and gradient, and • A safe means of entry and exit.
Workbox	A workbox is an approved, engineered designed and constructed cage, which is suspended from a crane for the purpose of conducting work.
Work at Height	There is a risk of a person being injured in a fall from any height (includes work performed within 2 metres of an unprotected edge) **NOTE:** All work above 2 metres must be conducted under a Work Permit Work at Height in accordance with a SWMS.

References

Document Code	Document Title
HS-GUI-0007	Design, Manufacture, Import, Supply and Installation of Plant Guideline
HS-FRM-0031	Elevating Work Platform Checklist
HS-PRO-0006	Fatigue Management Procedure
HS-PRO-0004	Assurance and Improvement Procedure
HS-PRO-0002	Communication and Consultation Procedure
HS-PRO-0026	Hazard Identification and Incident Notification Procedure
HS-FRM-0006	HS Risk Assessment Template
HS-PRO-0007	HS Risk Management Procedure
HS-PRO-0008	Training and Competency Procedure
HS-PRO-0018	Lifting Procedure
HS-PRO-0021	Managing Alcohol and Other Drugs Procedure
HS-FRM-0030	Plant and Work Equipment Pre-Acceptance Checklist
HS-PRO-0021	Plant and Work Equipment Procedure
HS-PRO-0001	PPE Management Procedure
HS-FRM-0003	Pre-Work Risk Assessment Form

HS-GUI-0008	Scaffold Guideline
HS-FRM-0033	Safe Work Method Statement Template
HS-FRM-0029	Supplementary Checklist Mobile Cranes
HS-FRM-0037	Work at Height Rescue Plan
HS-FRM-0012	Work at Height Permit
Code of Practice 2021 (Qld)	Managing the risk of falls at workplaces
AS/NZS 1891	*Industrial Fall Arrest Systems and Devices (Series)*
AS 2550.10	*Cranes - Safe Use – Elevating Work Platforms*
AS 1418.17	*Cranes (including hoists and winches) - Design and construction of workboxes*
AS 1892.5	*Portable Ladder Selection Safe Use and Care*

Appendix A - Work at Height Equipment Compliance Requirements

Edge protection requirements

Edge protection is a method of preventing falls by installing barriers that stop persons falling from a raised edge. It is useful as a control as it provides protection for multiple Workers. It must meet the relevant requirements of *AS/NZS 4994 (Series) – Temporary Edge Protection*, including the following requirements with respect to the height of top and bottom rails, toe boards, mid rails, and mesh:

- The top rail must be at least 900mm higher than the surface;
- Bottom rails and toe boards must be at least 150mm high;
- There must not be over 450mm between any vertical gap; and
- Infills must be used to control falling objects (e.g. mesh).

Fall protection cover requirements

Fall protection covers are a method of preventing falls by covering gaps and voids to stop persons falling through them. They are useful as a control as they provide protection for multiple Workers. Fall protection covers must be:

- Able to withstand and contain the impact of a fall by a person; and
- Securely fixed into place to prevent accidental or intentional movement.

Fall arrest platform requirements

Fall arrest platforms do not prevent falls but limit the distance that a person can fall. Fall arrest platforms must:

- Be able to withstand and contain the impact of a fall by a person;
- Provide an unobstructed landing area that is at least 675mm wide for the entire length of the platform;
- Not be over 1 metre lower than the work surface where any slope is 26° or less;
- Not be over 300mm lower than the work surface where any slope is over 26°; and
- Have edge protection that meets the requirements of this procedure installed along the outer edge of the length of the fall arresting platform, and along the edge of each end of the fall arresting platform.

Travel restraint requirements

Travel restraints control a Worker's movement by preventing their access to an unprotected edge where a fall is possible. Travel restraint systems consist of anchorage point/s, a static line (or restraint line) and a harness, and must:

- Be used with a fall arrest harness system that meets the requirements of this Procedure;
- Be fitted with anchorage points with a capacity to withstand any load that could be exerted on them in the normal operation of the system, including any relevant requirements of *AS/NZS 5532 Manufacturing requirements for single-point anchor devices used for harness-based work at height*;
- Comply with *AS 1891 for installation of static lines;*
- Be Installed by a competent person and formally inspected every six months (with records kept for at least four years); and
- Only be used by persons who have been trained in their safe and correct use. A travel restraint system should also consider the following points:
  - The slope of the surface;
  - Integrity of supporting structures;
  - The nature of the surface;
  - Anchorage points;
  - Safe access and egress; and
  - Pole straps.

Fall arrest harness requirements

Fall arrest harness systems are designed to stop (arrest) a Worker falling an uncontrolled distance, and limit forces on the Worker's body as the fall is halted. Fall arrest harness systems must only be attached to a suitable anchorage point; if no suitable anchorage is accessible, work must cease until alternative adequate arrangements can be made. Fall arrest harness systems must:

- Meet the requirements of *AS/NZS 1891 (Series) Industrial fall-arrest systems and devices*;
- Be used with anchorage points that:
  - Meet the requirements of *AS/NZS 5532 Manufacturing requirements for single-point anchor devices used for harness-based work at height;*
  - Are designed by an engineer – improvised anchor points shall only be considered when there are no designated anchor points in a safe or practical working position. Substation insulators, pipework less than 50mm diameter and bushings must not be used as anchorage points.
- Be used only for the intended purpose of their design;
- Be inspected and approved by a competent person before the anchorage point is first used by any person;
- Have a capacity of at least 12kN if only one person is using the anchorage point and the person could have a limited free fall (i.e. a fall distance of not more than 600mm after which the system starts to take loading);
- Have a capacity of at least 15kN if only one person is using the anchorage point and the person could have a free fall (i.e. a fall distance of more than 600mm but not more than 2m, after which the system starts to take loading);
- Have a capacity of 21kN if two persons are using the anchorage point;
- Be located so that a lanyard of the system can be attached before a person using the system moves into a position where they could fall;
- Be taken out of service and prevented from being used if a competent person considers they are worn or that their load-bearing capacity may be impaired. This includes corrosion of grade 3 and above, which shall deem the anchor point defective; and
- Wherever possible, are mounted overhead to reduce swing and fall distance in the event of a fall;
- Be formally inspected at least once every 6 months by a competent person (other than each anchorage point) and a written record of the inspection is kept for at least four years;
- Be used with a lanyard for connecting between the harness and the anchor point via double latch self-locking snap hooks or karabiner. The lanyard shall incorporate a shock absorber which is designed to arrest a fall not exposing a person to a force greater than 6 kN;
- Be installed and maintained in accordance with the instructions of the manufacturer, an engineer or competent person;
- Limit free-fall to a maximum of 2 metres - fall clearances must be checked to ensure that there is adequate clearance between the point of fall and collision with the next level, or from pendulum effect;
- Provide sufficient distance for a person using the system to fall without hitting an object, the ground or another surface (other than a vertical surface), taking into account:
  - Be prevented from coming into contact with anything that could affect the safe use of the system (e.g. the edge of a platform or beam over which a lanyard would tighten if a fall were to happen; part of an anchorage point that is not adequately padded);
  - Only be used by persons who have been trained in their safe and correct use;
  - Not be used where there is evidence of wear or weakness of any component to an extent that may affect the system's safety;
  - Not be used until an emergency rescue plan, specific to the type of fall arrest system being used, has been developed;
  - An individual fall arrest system includes a combination of, or all of, the following:
    - Fixed anchorages;
    - Static lines;
    - Inertia reels;
    - Lanyards with decelerator attachment (shock absorber);
    - Harness;
    - Rope grabs;
    - Karabiners or snap hooks; and
    - Rescue/recovery equipment (i.e. GOTCHA kit or similar).

- Lanyards are not to be used to wrap around beams for anchoring unless specifically designed to do so.

A Risk assessment should consider written advice from designer relating to hazards associated with the design of structure prior to undertaking work.

Rope access systems

- Where rope access systems are used, meet any applicable requirements of *AS/NZS 4488.1Industrial rope access systems – Specifications* and *AS/NZS ISO 22846.2Personal equipment for protection against falls – Rope access systems*; and
- Transformers with cylindrical/dome tops shall not be accessed via rope systems.

Industrial safety net requirements

Industrial safety nets must be:

- Designed by an engineer or competent person;
- Made of materials with energy absorbing characteristics designed to minimise injury and shock to a person falling into the net;
- Installed so that a person falling into the net will not hit anything below the net, and as close as possible below the surface from which the person is working (or otherwise in accordance with the manufacturer's or a competent person's instructions);
- Used only for the intended purpose of their design; and
- Inspected and maintained in accordance with the instruction of the manufacturer or another competent person.

Scaffolding requirements

Scaffolding must be:

- Erected by a person who holds the correct class of High Risk Work Licence, and in accordance with Queensland Hydro's Scaffold Guideline;
- Erected to meet the requirements of the Scaffolding Code of Practice 2009 and *AS/NZS 4576Guidelines for scaffolding* and *AS/NZS 1576 Scaffolding Series;*
- Erected and dismantled to ensure compliance requirements are met, including ensuring certification by a competent person before use and after any repairs;
- Not used with mixed components from different systems;
- Erected with controls in place to manage risks of falls during construction and dismantling (e.g. by using fall arrest systems);
- Erected in accordance with a documented scaffold plan, using visual indicators of scaffold status (e.g. use of ScaffTag system);
- Inspected by a competent persons at least every 30 days; and
- Used with reference to the Scaffold Guideline.

Ladder Requirements

Ladders should only be used for accessing different levels where a Worker is dismounting to a solid work area (excluding horizontal/hook ladders used in line works). They must:

- Be designed and selected with respect to applicable compliance requirements including *AS/NZS 1892 (Series) Portable ladders* and *AS/NZS 1657fixed platforms, walkways, stairways and ladders – design, construction and installation;*
- Have a load rating of at least 120kg and not be used to support a weight greater than that for which they are designed;
- Be manufactured for industrial use;
- Only be used for the purpose of their design, and not used to support platforms;

- Be manufactured of material appropriate for the work being undertaken (e.g. non-conductive material such as fibreglass for work involving electrical risks);
- Be no longer than
- 6.1m for a single ladder;
- 9.2m for an extension ladder used to do electrical work; or
- 7.5m for any other extension ladder;
- Be used primarily for access, with the bottom of the ladder on a stable surface, the rungs of the ladder approximately even, and the ladder secured at the top or bottom to prevent it moving;
- Not be used to perform work from as far as practicable, unless:
- Their design incorporates an adequate work platform; or
- Permitted by the WHS Regulation, and:
- The weight size or shape of any equipment being carried is not likely to impact the person's balance, or ability to climb or descend the ladder;
- The person's trunk is approximately centred on the ladder at all times; and
- Any equipment being used can be operated using 1 hand (unless a control measure such as a pole strap and harness is being used to support the person's body);
- Be used with three points of bodily contact on the ladder (or with one or both hands on a suitable stable object e.g. guttering), or alternatively:
- With a fall prevention system, such as a pole strap; or
- With a fall arrest harness that is not attached to the ladder;
- Not be climbed with items such as tools and equipment carried by hand. Provisions should be made to use equipment such as cranes, material hoist, gin wheel, enclosed tool bags etc. in accordance with the falling objects guidance further on in this procedure;
- Be used at an angle of 70 – 80° between the ladder and the horizontal;
- Be used so that the ladder extends 1m above the surface, where the ladders is being used as a temporary means of access to or from a surface (unless the work is being done from a surface attached to a pole and the Worker is attached to a fall arrest harness);
- Where used against a pole, be used with a steel rope or hoop (or other suitable device) to ensure the ladder's stability; and
- For platform or trestle ladders, be secured and have adequate surface space and edge protection.
- Non-conductive ladders shall be used in all circumstances while performing work at Queensland Hydro, with an exception for hook ladders used under access conditions during dead transmission line work.
- Be stored in a suitable environment to protect against damage and deterioration
- Be regularly inspected for damage or deterioration.

Elevating work platform (EWP) requirements

When using elevating work platforms:

- The requirements of *AS 2550.10Cranes, hoists and winches – Safe use: Mobile elevating work platforms* must be met;
- For boom-type EWPs, a fall-arrest harness system that meets the requirements of this procedure must be used;
- For scissor-type EWPs, a fall arrest harness is not required unless the manufacturer has specified its use and has fitted a compliant anchor point, or a risk assessment has determined that the use of fall arrest equipment is required as a control;
- A Safety Observer shall be used when there is a possibility that the EWP could come within the exclusion zones of live electrical apparatus;
- Personnel can only exit the platform in the raised position when an approved and documented Safe Work Procedure for access and egress has been established and implemented; and

Workbox Requirements

All workboxes used for lifting persons must be fitted with a compliance plate showing compliance with *AS 1418.17- 1996 Cranes (including hoists and winches) – Design and construction of workboxes.*

Workboxes shall only be used where it is not practicable to use alternative fall prevention methods such as scaffolding or EWPs. The use of workboxes, including the selection of appropriate lifting equipment for their use shall be in accordance with the **Lifting Procedure (HS-PRO-0018)**. Where persons are being lifted, plant specifically designed to lift a person must be used as far as reasonably practicable. If it is not reasonably practicable, the plant must not cause a greater risk to health and safety than if specifically designed plant were used.

In all cases persons being lifted in workboxes must:

- Be lifted or suspended in a workbox that is securely attached to the plant;
- Remain substantially within the work box while they are being lifted or suspended;
- Wear a harness if there is a risk of a falling from a height or as otherwise required by the SWMS for the work; and
- Be provided with a safe means of exit and/or rescue in the event of a failure in plant's normal operation. Where workboxes are lifted by forklifts:
- The forklift must be equipped with flow restrictors or similar i.e. the valves in the hydraulic lines to prevent free fall in the event of a hose failure;
- The forklift must be compliant for use with a work box, and fitted with a load capacity data plate that says which attachments may be used;
- The forklift must be stabilised at all times while lifting people and only used on a solid, level surface;
- The forklift must have the parking brake set, the vehicle drive controls in neutral, the mast vertical and hydraulic controls off except lift and lower, prior to a person entering the workbox;
- Workers must be trained in the use of workboxes, including emergency procedures for rescue in the event of an incident;
- Workers must stand on the floor of the workbox, not on a ladder or other object;
- They should not be used to transport people if possible, i.e. Workers should be lowered and dismount from the workbox prior to the forklift repositioning;
- The operator of the forklift must stay at the controls at all times;
- The workbox safety gate should be self-locking and kept shut when in the raised position; and
- Fall arrest anchorage points must meet the requirements of *AS 1418.17-1996 Cranes (including hoists and winches) – Design and construction of workboxes.*

Where persons are performing work at height from a work box lifted by a **crane**, either the **Supplementary Checklist Mobile Cranes (HS-FRM-0029)** or a **Complex Lift Plan (HS-FRM-0027)** must be completed and attached to a SWMS for the task.

Falling object protection requirements

Equipment used when working at height must be secured where possible to eliminate the potential for it to fall and injure persons below. Where the potential risk of falling objects cannot be eliminated due to the nature of the task (e.g. erecting scaffolding, installing of bolts and nuts etc.) then restricted access areas must be established through the use of delineation and signage; the extent of restricted access areas also needs to consider the potential for falling objects to ricochet from structures.

As a general rule, equipment used when working at height should always be attached and any fall from that attachment should not create other risks (e.g. pendulum affect into a live exposed part). The following methods for securing tools and equipment should be considered:

- Provision of suitable storage containers for tools and equipment;
- Placement of equipment on dedicated tool mats on work platforms and scaffold landings;
- Installing toe boards on scaffold landings and work platforms;
- Keeping hand tools secured in tool belts or kit bags;
- Tethering tools to a lanyard (lanyard attachments must still allow the tool to be used effectively);
- Providing infill screens, such as mesh guards or meshing to stop equipment passing through gaps between handrails; and
- The use of overhead protection (e.g. gantries).