



TARONG ENERGY CORPORATION LIMITED
OCCUPATIONAL HEALTH & SAFETY PROCEDURE FOR

SAFE WORKING WITH HEIGHTS

OHS-PROC-100

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1. Purpose:

The objective of this procedure is to ensure that all persons working at Tarong Energy Sites are protected from the hazards of falls from height or being affected by falling objects.

This procedure applies to all personnel employed at Tarong Energy sites, including contractors and visitors.

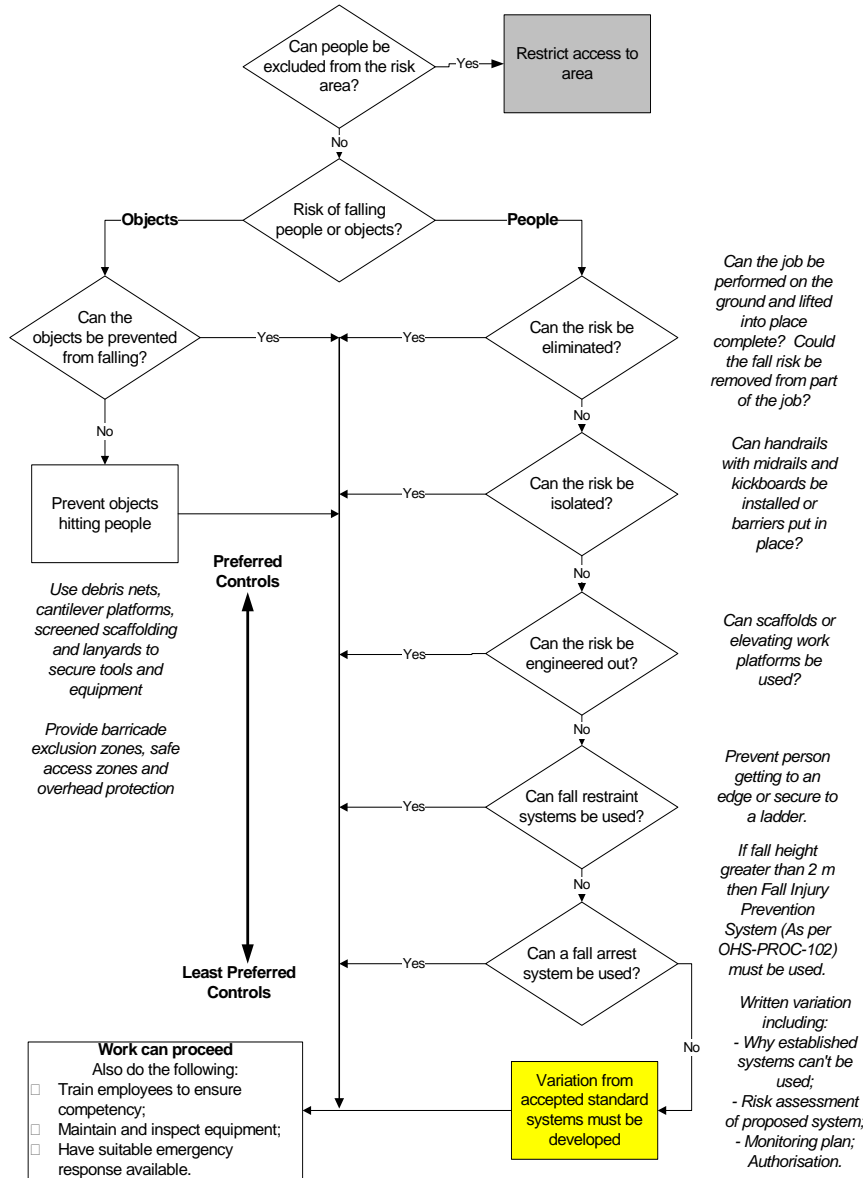
2. Scope

This document applies to all Tarong Energy sites and covers requirements for:

- Designing, constructing, using, inspecting, servicing and disposing of work platforms (e.g. fixed platforms, scaffolds and mobile access platforms) and access equipment (e.g. ladder and ropes);
- JSEA/risk assessment for all work done at height;
- Control measures using the hierarchy of controls; and
- Fall prevention, fall-restraint and fall-arrest equipment.

3. Flow Chart:

Hierarchy of Risk Control Measures for Work at Height



4. Procedure:

This Procedure **INCLUDES REQUIREMENTS** to ensure that:

- JSEA/risk assessments shall be conducted before the commencement of work performed at any height where there is the potential for fall or to sustain an injury and at any time the scope of work changes or the risk of a fall increases.
- The need to work where there is the risk of a fall is eliminated or reduced to acceptable levels by use of the hierarchy of control selection process.
- The JSEA system will be used to identify, assess and control work at heights. The Working at Heights Guide (T-1100) can be used to assist in the control of work at heights hazards. The Unprotected Edge Risk Control Authorisation (T-1237) will be used when work being performed creates an unprotected edge.
- All working with heights equipment shall comply with the requirements of relevant Australian Standards and be fit for purpose.
- All equipment shall be “pre-use” checked prior to every use and after every use.
- Comprehensive inspections of the equipment shall be undertaken and documented at six (6) monthly intervals or as required or determined by the site or the manufacturer’s recommendations.
- All equipment shall be registered and tagged to indicate compliance with inspection requirements.
- Barricades and signage are placed to restrict/prevent access to an area that falling objects may land in if dropped from upper levels.
- The personnel using tools and equipment at heights shall implement controls to prevent them from falling from height. (eg. tool lanyards)
- All forms of fixed, portable and moveable work platforms and suspended work cages shall conform to legislative requirements and relevant Australian Standards.
- All persons erecting scaffolding or operating elevating work platforms or cages shall be trained, competent and where necessary be certified for the equipment they are using.
- All persons tasked to work at heights are physically and psychologically suitable for such work.
- All persons engaged to work at heights are competently trained and assessed at regular intervals as defined by TEC.
- Adequate supervision is provided for tasks involving work at heights.



Note: This procedure **does not** apply to rope rescue situations that are regarded as specialist functions. This shall be covered in the site rescue procedures.

4.1. Assessment process:

Before any task is undertaken where a person is required to work at heights a JSEA shall be completed and appropriate control measures implemented to:

- Eliminate the risk of a fall; and/or
- Remove the risk of equipment and tools falling from one level to another.

4.2. Control selection:

Wherever practical, a safe working area shall be provided by means of work platforms or scaffolds complete with floors, guardrails, kickboards, and a safe method of access/egress.

Should a safe permanent or temporary work platform not be practicable then the JSEA/risk assessment shall determine, via the hierarchy of control, the most practicable and effective controls required.

4.3. Fixed Platforms and Access ways:

A fixed platform or access/egress way is the preferred option when working with heights. A fixed platform or access/egress way shall be the first consideration in controlling the risk if working with height is required. Refer to Fixed Platforms OHS-PROC-103 for the specific requirements.

4.4. Mobile/Temporary Platform and Access Equipment:

Mobile/Temporary platforms and access equipment include but are not limited to:

- Mobile stairways/platforms;
- Scaffolding;
- Portable stands;
- Elevated work platforms; and
- Portable ladders.

The safe operation and use of the above types of equipment is effected by a wide variety of factors. To establish a safe system of work for each piece of equipment the following factors shall be considered when conducting a JSEA / risk assessment for task completion:

- Equipment design;
- Equipment use applications;
- Equipment failure characteristics;
- Nature of the task;
- Height, where work is to be performed;
- Environmental limitations (slopes, unstable ground, electrical hazards, wind speed, weather conditions etc);
- Weight of equipment/ SWL /WLL; and
- Competency of operators.

4.5. Inspection and Servicing of Mobile/Temporary Platforms and Access Equipment:

Mobile/Temporary Platform and Access Equipment shall be inspected to confirm as adequate:

- Before the first use;
- At intervals determined by the operating conditions and as specified in the specific procedures;
- As soon as practicable and prior to further use following an occurrence that could have affected the stability or adequacy of the work platforms or access equipment (eg. fire, collision, cyclone, overloading);
- Prior to use following repairs and modifications;

4.6. Inspection and Servicing of Scaffolds

Scaffolds shall be inspected prior to first use and at intervals not exceeding 30 days. Shorter inspection intervals may occur as determined by JSEA / risk assessment by a licensed and authorised scaffolder (eg scaffolding supervisor). Refer to Scaffolding OHS-PROC-105.

4.7. Portable Ladders:

Portable ladders include:

- Platform ladders
- Single ladders
- Extension ladders
- Step ladders

Portable ladders shall comply with **AS1892 parts 1 & 2**. Refer to Working with Ladders OHS-PROC-107 for full details.

4.8. Working Without a Work Platform:

Where persons are to work in an area that has no work platform (fixed or temporary) and the JSEA / risk assessment has deemed it to be impracticable to install such, fall injury prevention systems shall be employed to prevent falls and falling objects.

Fall injury prevention systems include:

- Restrainers;
- Personal fall arrest equipment;
- Catch platforms.

A fall injury prevention system shall be used where a person could fall **2 metres** (*Ref Workplace Health and Safety Regulation 1997-Construction*) or more from an edge at the workplace unless edge protection complying with Workplace Health and Safety Regulation (1997) Section 216 is used. The risk assessment /JSEA will determine if controls are required where the fall risk is under 2 metres.

The following key requirements shall be considered with the use of fall injury prevention systems:

- The systems chosen shall be the most appropriate and reasonably practicable as determined by the JSEA / risk assessment and reduces the risk to an acceptable level.

- The system and anchorages shall be designed, manufactured, constructed, and installed so as to be capable of withstanding the forces applied to them as a result of a person or object falling.
- In every case, preventing a person or object from falling (fall restraint) shall be employed before considering a system to arrest/catch after a fall has occurred.
- All persons using the system shall remain attached to an appropriate anchor point at all times while at risk of a fall occurring, including times when movement around obstacles is required.
- Any fall arrest equipment shall not be used after it has arrested a fall until it has been inspected and certified as operational and safe for use by a qualified competent person.
- Where total free-fall fall arrest systems are to be used, the appropriately trained and appointed Supervisor in charge of the work area shall adequately supervise and authorise the work via a signed JSEA.

Where a personal fall arrest system is employed, consideration of the potential for an emergency rescue shall be made during the JSEA / risk assessment process. This contingency planning shall consider:

- Competence to perform the rescue;
- Response time;
- Access to a potential victim;
- Recovery;
- Equipment requirements;
- Impact consequences considering suspension trauma.

Refer to Fall Injury Prevention Systems OHS-PROC-102 for details on fall injury prevention systems.

4.9. Working on Roofs:

Any work on roofs above 2 metres or with a slope > 26° requires an authorised JSEA and persons certified and approved to Tarong Energy's working at heights training.

Prior to working on or accessing any roof a JSEA / risk assessment shall be conducted to determine the soundness of the roof to support the intended load.

Appropriate control measures determined by the JSEA / risk assessment shall be implemented to eliminate the risk of falls and falling objects.

Refer to Safe Working on Roofs OHS-PROC-106.

4.10. Working in Ceiling Spaces:

Prior to working in or accessing any ceiling space a JSEA / risk assessment is to be conducted.

Appropriate control measures determined by the JSEA / risk assessment shall be identified and implemented.

4.11. Barricades and signs:

Where required by a JSEA / risk assessment, appropriate signage and suitable barricades shall be installed to protect both those working at height and persons working below.

Any signage used shall comply with AS1319. Signage may be used to alert persons of a danger of overhead work or of an incomplete platform (eg: scaffold).

Barricades shall be used to prevent persons from entering an area where working at heights is being conducted or where a fall from heights would be possible. Barricading installed should be appropriate for the task (e.g. traffic barricades will be required to keep traffic out of a working at height area). Where barricades are required to prevent persons from falling (e.g. through an open hole) a JSEA / risk assessment shall occur to ensure that the barricade method is appropriate. Any barricades installed shall be in accordance with Barricades OHS-PROC-113.

4.12. Open Holes:

Before an open hole / unprotected edge is created an authorisation to cause an opening is required to be completed in accordance with procedure Unprotected Edge Risk Control OHS-PROC-104.

4.13. Mobile Equipment:

Work shall not to be undertaken on mobile equipment where there is the risk of falling or falling objects without adequate fall prevention measures in place as identified by the JSEA / risk assessment.

Access to the operators cabin (and where practicable to other areas of the mobile equipment that shall be serviced regularly) shall be by means of a safe access ladder/stair/platform.

When accessing the operator's cabin, three points of contact shall be maintained at all times.

Platforms used for access to mobile equipment may be used for direct access from the ladder/stairway to the cabin without the requirement to use fall prevention or fall protection equipment.

When any work carried out on the platform or around the equipment could result in a fall, fall prevention or fall protection measures shall be employed as identified by the JSEA/risk assessment.



Note: All equipment, materials and tools required at the work area should be lifted and lowered using a safe method as identified by the JSEA / risk assessment.

4.14. Training and Competency:

TEC training levels are: Level 1 – Introduction (does not permit work at heights); Level 2 – Work at Heights Awareness; Level 3 – Work at Heights.

All persons responsible for work carried out where there is a risk of falling or falling objects shall be competent in the correct application of the Tarong Energy Corporation management systems for the prevention of falls and falling objects.

Competence shall be assessed and confirmed by completion of suitable training approved by Tarong Energy.

Persons who are exposed to the risk of falling shall:

- Participate in the JSEA / risk assessment of the work.
- Know and understand the control measures for falls and falling object prevention.

- Be competent and authorised in the correct use and application of control measures.
- Be assessed as fit to work at height. For Tarong Energy employees this is via the Tarong Energy pre-employment medical and annual surveillance medicals.
- Inform their supervisor if they have any medical condition (permanent or temporary) that may adversely affect their competency to work safely at height.

Emergency Services Personnel Competency

The competency requirements for emergency services personnel to conduct a 'rope rescue' shall be clearly specified in the site emergency services procedures.

Emergency services personnel shall be trained in rescue from heights and depths techniques specific to their sites.

For work in areas where emergency personnel are not readily available, there shall be a core group of competent and authorised personnel who are able to affect a rescue from height/depth.

The primary focus of any work at heights shall be to ensure a JSEA / risk assessment is conducted with suitable controls in place prior to work commencing rather than relying on an unplanned response.

4.15. Inspections:

Legislation and Tarong Energy Corporation Risk Control Protocol require inspections of all fall protection equipment used to lift or support a person for access or work at height (Note: this does not include rigging equipment as per CORP-ENG-07).

Formal inspections shall be conducted by a competent and authorised person and the results of these inspections maintained for auditing purposes. Formal inspections shall be conducted at intervals not exceeding six (6) months, or as specified in legislation or by the manufacturer.

Where machinery / mobile equipment is used to conduct work at heights, a pre-start inspection by the operator/user must be performed and recorded in the log book for that item of equipment.

The formal inspection system shall include a record of, but is not limited to the following:

- Completed inspections;
- Faults found;
- Repairs required and completed;
- Date of last inspection.

The inspection system is to include the following areas:

- Anchor points;
- Harnesses and accessories;
- Lanyards and accessories;
- Static lines and accessories;
- Rope systems and accessories;
- Mobile work platforms and attachments;

- Scaffolds and access equipment;
- Work platforms and access equipment;
- Stairs;
- Portable stands;
- Ladders.

The inspection checklists should include items such as:

- Physical damage;
- Wear;
- Corrosion/erosion;
- Distortion and deformation;
- Deterioration;
- Identification markings;
- Storage;
- Labelling (safety instructions etc.);
- Statutory requirements.

4.16. Auditing:

Regular audits shall be conducted to ensure compliance with this procedure.

5. Responsibilities:

5.1. Manager Operations:

Shall ensure:

- That a safe system of work for the prevention of falls and falling objects in compliance with this procedure is implemented and maintained.
- Personnel are not exposed to hazards arising from working with height or falling objects.
- Only experienced competent personnel conduct JSEA / risk assessments and select appropriate control measures for working with height.
- Compliance with all applicable current statutory and regulatory requirements.
- That information, instruction, training and supervision of all personnel is provided to enable them to perform their work in such a manner that they are not exposed to the hazards of falling from height or falling objects.

5.2. Coordinators and Supervisors:

Shall ensure that:

- JSEA / risk assessments are conducted prior to the commencement of work and at any time the scope of work changes or the risk of a fall or falling object increases, (JSEA, Form T-1022).
- Implement appropriate controls prior to work commencing as per the JSEA.
- Where practicable, the need to work where there is the risk of a fall or a falling object is eliminated.
- Appropriate control measures are selected using the hierarchy of controls:
 - Elimination;
 - Substitution;
 - Redesign;
 - Separation;
 - Administrative Controls;
 - Personal Protective Equipment.
- All equipment used shall be available as required and fit-for-purpose.
- At shift changes, incoming personnel are aware of the measures being used for work in progress through a review of the JSEA/risk assessment.

5.3. Designers and Constructors:

To minimise the risk of falls when installing new, or modifying existing plant and equipment, designers and constructors/manufacturers shall:

- Consider all excavation, construction, operating, modification and maintenance activities for the foreseeable life of the asset.
- Use an appropriate design procedure incorporating the hierarchy of controls.
- Ensure designs conform to statutory regulations.
- Clearly identify in specifications, provisions to prevent falls.
- Always provide equipment that recognises compliance with the hierarchy of control and is best industry practice.
- Ensure that where possible, the need to work at height is eliminated.
- Conduct a risk assessment, incorporating end-users, capturing all relevant information on safe work at height. The risk assessment is to be used prior to construction or modification work, and wherever possible, utilise hazard checklists and include ergonomic considerations.

5.4. All other Persons:

All persons involved in the task shall complete a JSEA specific to the tasks. Other JSEAs previously used for the same particular job shall be reviewed and amended as required if the scope of work or conditions change.

5.5. Contract Administration:

The Contract Administrator shall always ensure that all contracts awarded comply fully with the requirements and intent of this procedure.

All purchasing of working at height equipment or plant shall be approved by the Health and Safety Department to ensure that it complies with this procedure.

Purchasing personnel shall not change the provisions to prevent falls contained in a purchasing specification, without the consent of the originator of the specification. Site standards shall be supplied to all potential contractors at the time of tendering.

6. Statutory and Legal Considerations:

Workplace Health and Safety Act 1995.

Workplace Health and Safety Regulation (1997).

Workplace Health and Safety Plant Advisory Standard (2000).

7. Health, Safety and Environmental Considerations:

Nil.

8. Definitions:

Appropriate standard:	An Australian or internationally recognised design or construction procedure eg. AS, AS/NZS, BS, ISO, DIN.
Competent Person:	A person who has through a combination of training, education and experience, acquired knowledge and skills enabling that person to perform correctly a specified task.
Fail Safe	Fails in a way that avoids or reduces the risk of injury.
Fall injury prevention system: (FIPS)	<p>Is a system designed to arrest/prevent a person's fall from one level to another and also to minimise the risk of injuries or harm during / or if a person was to fall. Included in these systems are-</p> <ul style="list-style-type: none"> ▪ Restraint systems ▪ Fall-arrest systems ▪ Catch platforms ▪ Scaffolding ▪ Safety nets and ▪ Safety mesh.
Fall Prevention:	Is creating a safe working area that eliminates the possibility of a fall or objects falling by using fixed working platforms, temporary working platforms, scaffolding, physical barriers, tool lanyards and elevating or mobile working platforms.
Hierarchy of Control:	<p>Elimination: Remove the requirement to perform the task at height.</p> <p>Substitution: Replace the current work method with a less hazardous method.</p> <p>Isolation: Barricade or prevent the person from which they or an object can fall.</p> <p>Redesign: Modify, redesign, relocate or use working platforms or access equipment to reduce the hazard.</p> <p>Administration: Establish safe work practices, training, signage, soft bunting etc.</p> <p>Personal Protective Equipment: Can be used for restraint, work positioning, limited free fall and total free fall. Fall arrest harnesses, anchorage points and devices.</p>
JSEA	Job Safety and Environmental Analysis Sheet.
May:	A discretionary requirement, i.e. the person authorised to make a judgement is to use their discretion.
Personal fall-arrest equipment:	Equipment worn by a person where there is the risk of limited free fall, free fall arrest or restrained falls eg. fall-arrest harness, confined space fall-arrest harness.

Personal fall-restraint equipment:	Equipment worn by a person that prevents that person moving to a position where they may fall. This equipment shall not be used where there is the risk of free fall eg <i>Restraint devices</i> .
PPE	Personnel Protective Equipment.
Practicable:	Technically feasible, economically justifiable and contributing to the reduction of risk.
Shall:	A mandatory requirement.
Should:	An advisory requirement, i.e. a requirement that is to be met where practicable. Where the requirement is not implemented, the justification for non-adoption and evidence of an alternative solution shall be provided.
Working with heights:	<p>Access, Egress, Ascending, Descending, or Working in any position where a person can fall from, into or through anything from one level to another level as well as where objects could fall from one level to another.</p> <p>Where personnel work at a height, which is 2 metres or greater, or where they may sustain an injury from a fall if less than 2 metres.</p> <p>Additionally wherever there is potential for any person to fall 2 metres or more, or to gain access to within 2 metres of an open edge from where there is the potential to fall 2 metres.</p>

9. Reference Documentation:

AS 1418.1	Cranes, Hoists and Winches- general requirements
AS 1418.10	Elevating Work Platforms
AS 1418.13	Cranes- Building Maintenance Units
AS 1418.17	Cranes- Design and Construction of Work boxes
AS 1576	Scaffolding series
AS 1657	Fixed Platforms, walkways, stairways, and ladders - Design, construction and installation
AS 1891	Part 4 – Selection Use and Maintenance
AS 1891.1.1995	Safety belts and Harnesses
AS 1891.2. 2001	Horizontal lifeline and rail systems
AS 1891.3-1997	Fall arrest devices
AS 1891.4-2000	Selection use and Maintenance
AS 1892	Portable ladders
AS 2317	Collared eye bolts
AS 2319	Rigging screws and turnbuckles
AS 2359	Series Powered Industrial Trucks

AS 2550 . 10	Mobile Elevating Work Platforms
AS 2550.1	Cranes, Hoists and Winches – general requirements
AS 2550.10	Cranes- safe use- Elevating work platforms
AS 2550.13	Cranes – safe use- Building Maintenance Units
AS 2865	Safe working in confined spaces
AS 3569	Steel wire rope
AS 4142.3	Man-made fibre rope for static life rescue lines
AS/NZS 4389	Safety mesh
AS/NZS 4488 Series	Industrial rope access systems
AS/NZS 4576	Guidelines for scaffolding
AS1418.1 & 10	Cranes (Elevating work platforms)
Corp-ENG-07	Inspection of cranes, hoists and mobile lifting equipment
Corp-PTW-01	Corporate Permit to Work Manual
SAF-PROC-02	Elevated Work Platforms
OHS-PROC-102	Fall Injury Prevention System.
OHS-PROC-103	Fixed Platform Procedure
OHS-PROC-104	Unprotected Edge Risk Control
OHS-PROC-105	Scaffolding Procedure
OHS-PROC-106	Safe Working on Roofs
T-1022	Job Safety and Environment Analysis Worksheet

10. Revision History:

Rev No.	Revision. Date:	Revision Description:	Author:	Approved. By:
0	31.07.2007	New Procedure	M Joy	J Judge