Crane Activity (High Risk)

Work Instruction

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Authority

	Title	Name	Date
Owner	HSEQ Manager	Anthony Gollan	04/03/2025
Reviewer	HSEQ Manager	Anthony Gollan	04/03/2025
Approver	Group Manager Business Services	Jamie Yeing	04/03/2025

History

Revision	Date	Amended By (Name)	Details of Amendment
0.0	06/01/2015	Codie Davies	Document renumbered, supersedes WI-OHS-005
0.1	21/06/2016	Anthony Gollan	Document reviewed to incorporate 5 Star Commitment requirements.
0.2	22/08/2016	Patrick Gabato	Updated format, reference, and related documents section.
1.0	30/08/2016	Patrick Gabato	Issued for Use
2.0	12/07/2018	Anthony Gollan	Document reviewed with minor changes
3.0	21/10/2020	Anthony Gollan	Document reviewed
4.0	26/07/2023	Vanessa Placheta	SCEE Electrical Branding and Review
5.0	04/03/2025	Anthony Gollan	Roles and responsibilities updated

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1 Purpose

The purpose of this work instruction is to provide SCEE Electrical Pty Ltd workers with the necessary guidance and information to ensure that while undertaking crane activities they will be done in a safe and efficient manner. This Work Instruction (WI) will comply in conjunction with the SCEE HSE Management Plan while undertaking crane activities. All crane activity is to be carried out in accordance with AS1418 and AS2550 as relevant.

Refer: AS1418
AS2550
SCEE-BS-HS-TEM-0006 HSE Management Plan

2 Definitions

Term	Definition
Competent person (specific to lifting operations)	Persons involved in a lifting operation that have the required qualifications, certification, authorisation, and training required to operate cranes and utilise lifting equipment in a safe manner.
Dogman	A trained and competent person, responsible for: • Applying slinging techniques for the purposes of lifting a load, including selecting the method of lifting (by consideration of the nature of the load, its mass, and its centre of gravity) and inspecting lifting gear (for suitability, condition, and compliance); or • Directing the operator of a crane or hoist in the movement of a load when the load is out of the view of the operator.
High Risk Work Licence	A national licence required prior to performing High Risk Work. This licence is valid for 5 years and is subject to identification checks. CO: Slewing Mobile Crane Over 100 Tonnes, incl. CN, CV, C2, C6, C1. C1: Slewing Mobile Crane up to 100 Tonnes, incl. CN, CV, C2, C6. C6: Slewing Mobile Crane up to 60 Tonnes, incl. CN, CV, C2. C2: Slewing Mobile Crane up to 20 Tonnes, incl. CN,CV. CV: Vehicle Loading Crane CN: Non-Slewing Mobile Crane DG: Dogging RB: Rigging Basic RI: Rigging Intermediate RA: Rigging Advanced LF: Forklift Truck)

Rigger - Advanced	A trained and competent person, responsible for: • Movement of plant and equipment • Steel erection • All hoists • Placement of pre -cast concrete • Safety nets and static lines • Mast climbers • Perimeter safety screens and shutters • Cantilevered crane loading platforms • Slinging and directing of loads • Rigging of cranes hoists, conveyors, dredges, and excavators • Tilt-slabs • Demolition • Dual lifts • Rigging of gin poles and shear legs • Flying foxes and cableways • Guyed derricks and structures • Suspended scaffolds and fabricated hung scaffolds
Rigger - Basic	A trained and competent person, responsible for: • Movement of plant and equipment • Steel erection • Particular hoists • Placement of pre -cast concrete • Safety nets and static lines • Mast climbers • Perimeter safety screens and shutters • Cantilevered crane loading platforms
Rigger – Intermediate	A trained and competent person, responsible for: • Movement of plant and equipment • Steel erection • All hoists • Placement of pre -cast concrete • Safety nets and static lines • Mast climbers • Perimeter safety screens and shutters • Cantilevered crane loading platforms • Rigging of cranes, conveyors, dredges, and excavators • Tilt-slabs • Demolition • Dual lifts
Rigging of cranes	Includes attaching fly, re-reeving hook block, fitting super lift, assembling lattice boom crane.
Safe working load (SWL)	Maximum gross load that may be applied for a specific use in order to allow an adequate margin of safety. The SWL may equal but never exceed the WLL.
Suspended load	A suspended load is that which is suspended from the lifting equipment. The lifting equipment is not classed as a suspended load, but its weight must be included in the load calculations.

Tag Line	A rope attached to a load during a lifting operation to allow the rigger to control swinging and /or rotation of the suspended load. Taglines are to be non-conductible with a minimum diameter of 16mm.
Worker	A person is a worker if the person carries out work in any capacity including work as — a) a worker; or b) a contractor or subcontractor; or c) an worker of a contractor or subcontractor; or d) an worker of a labour hire company who has been assigned to work in the person's business or undertaking; or e) an outworker; or f) an apprentice or trainee; or g) a student gaining work experience; or h) a volunteer; or i) a person of a prescribed class.

3 Responsibilities

Role	Responsibility
Project Manager	• Ensure full compliance with the requirements of this work instruction.
Site Manager	• Audit and Monitor Compliance with this procedure. • Identify remedial corrective actions required to ensure compliance to this work instruction.
HSE Advisor	• Audit and Monitor Compliance with this work instruction. • Identify remedial corrective actions required to ensure compliance to this work instruction.
Supervisor	• Conduct workplace inspections and enforce compliance with this work instruction.

4 Flow Chart

N/A

5 Activities

Crane Activity has been identified as a **High Risk Work Activity** by SCEE

The below is to be read in conjunction with SCEE's 5 Star Commitment Procedure SCEE-HS-BS-PRO-0027. The intent of this procedure is to eliminate the risk of fatalities, injuries and events arising from lifting operations.

Refer: SCEE-HS-BS-PRO-0027 5 Star Commitment Procedure

5.1 Risk Assessment and Safe Work Methods

The statutory requirements regarding duty of care to both SCEE and its workers remain the first priority at all times.

This WI shall accompany a Job Hazard Analysis (JHA) and helps ensure that variables relevant to each task are recorded via risk assessment.

Mobile cranes owned by SCEE shall carry the current plant logbook and manufacturer's operation and maintenance manual at all times.

Routine lifts of similar risk level may be controlled by means of a JHA reviewed regularly by the crew/s involved.

The following shall be reviewed and considered in the JHA if applicable:

- Ground conditions.
- Personnel requirements and individual responsibilities.
- Environmental conditions (wind, rain, dust, storms, lightning etc).
- Transportation requirements.
- Stabilisation during transportation.
- Personal protective equipment.
- Access and egress for rigging crews.
- Plant and equipment required.
- Rigging gear required.
- Means of communication; and
- Exclusion zones and barrier/barricade requirements.
- Weight and dimensions of object to be lifted.

Refer: SCEE-BS-HS-TEM-0008 Job Hazard Analysis (JHA)

5.2 Prestart

Pre-start inspections shall be carried out and recorded for all cranes prior to use and a copy of the record shall be kept with the crane.

A crane shall not be operated with an inoperable, defective or missing safety device, and shall be tagged out of service and the defect reported to the Supervisor.

All lifting equipment shall be inspected before each use and where defects are found the item shall be removed from service, tagged with an Out of Service tag and the defect reported to the Supervisor.

5.3 General Crane Operation

SCEE management shall ensure that crane operations comply with the following as required:

- Suitably qualified, certified, and competent people shall be involved in the planning and implementation of the lifting operations. A Registered Training Organisation (RTO) shall conduct any required competency assessments.
- All lifting operations must be carried out using a minimum of two people, an operator and dogman or rigger. The operator shall remain in the cab of the crane at all times when the crane is in use or under load.
- The operator of a crane shall hold a Licence to Perform High Risk Work endorsed for the category of equipment they are operating. Most SCEE owned cranes fall under the non-slewing mobile crane category CN (e.g. Franna). Personnel may also hold C1, C2, C6 or CO licence which also qualifies them to use a non-slewing mobile crane.
- Operators of HIAB cranes shall have a CV, C1, C2, C6, or CO Licence to Perform High Risk Work.
- Operators of bridge cranes shall have a CB Licence to Perform High Risk Work.
- The manufacturer's operating manuals and load charts (in English) should be readily available to the crane operator.
- Risks associated with all lifting, crane maintenance, assembly activities and environmental conditions are assessed as part of the operators lifting plan process.
- When lifting equipment is operating in the proximity of live electrical conductors, JHA's to control the risk are developed and vicinity permits sourced and adhered to where applicable.
- A procedure is in place to address crane operations when lifting near or over unprotected people, plant, equipment, or services, whether controlled by SCEE or others.
- Barricading, warning signs or other means of ensuring safety of personnel protection are in place during crane operations.
- Exclusion zones shall be established for the purposes of excluding personnel not directly involved with the lift or lifting area. The zones shall be established using barriers, barricades, or witches' hats.
- Controls are in place to prevent objects from lifting equipment and loads falling from height.
- A checklist is used for inspections to be carried out prior to any crane operation taking place.
- If the mobile crane is used to pick and carry loads the loads must be clearly identified at all extremities and the load escorted by a clearly visible rigger or dogman walking in front of the crane. Riggers and/or dogmen shall hold, as a minimum, a Licence to Perform High Risk Work endorsed for Basic Rigging or Basic Dogging.
- All lifting devices and equipment have been visually examined before each lift by a competent person.
- All lifting equipment shall be clearly marked with its Safe Working Load (SWL)
- Lifting equipment shall not be overloaded
- Lifting gear shall be inspected and tagged according to Australian Standards.

- Inspections of lifting equipment shall be carried out in accordance with legislative requirements at intervals no greater than three monthly.
- Equipment inspections shall be performed by an authorised person who holds as a minimum a current Dogman's qualification.
- The weight and nature of a load must be determined prior to a lift
- An assessment of the lift has been completed and the lift method and equipment has been determined by a competent person(s).
- Personnel shall never be positioned under a load.
- Clear and uninterrupted communication shall be established between all persons involved in a lift.
- All loads shall be properly secured.

Riggers and dogman shall, whilst travelling with loads:

- Wear high visibility vests or clothing whilst walking with the crane load.
- Be responsible for clearing a safe passage (this includes checking for clearances under such structures as conveyors etc.) for the crane and traffic management.
- Remain clear of the area between the load and the body of the crane; and
- Use taglines to control or secure the load.

Rough terrain cranes shall only be used for pick and carry operations in strict accordance with the crane manufacturer's instructions and shall exercise extreme caution over uneven and potentially unstable ground. An additional safety factor should be applied when referencing the crane mobile load chart to account for sudden movement and load shifts due to ground conditions.

Crane operators and crew shall at all times maintain clear lines of communication. Wherever possible crane operations shall be conducted with a dedicated crane radio channel that cannot be broken by general radio traffic to ensure there is no possibility of outside interference from other personnel or radio signals.

When using a forklift or telehandler with a lifting device ≤3T attached, the following shall apply:

- The operator shall have the appropriate class of high risk license for the forklift/telehandler being operated.
- The attachment shall comply with the relevant Australian standards and forklift/telehandler OEM specifications and requirements.
- Only a competent person (dogman as a minimum) shall attach the load and direct the lift.

When using a forklift/telehandler with a lifting device >3T attached, the following shall apply:

- The operator shall have the appropriate class of high risk license for the forklift/telehandler being operated and hold a CN crane ticket.
- The attachment shall comply with the relevant Australian standards and forklift/telehandler OEM specifications and requirements.

- Only a competent person (dogman as a minimum) shall attach the load and direct the lift.

Items of lifting equipment that are subject to wear and frequent replacement (e.g. slings and shackles) or used to transport equipment to and from sites shall be colour coded to confirm compliance with certification and inspection requirements. A register of lifting equipment will be maintained.

Repairs and maintenance on all cranes, VLCs, overhead travelling cranes, and lifting equipment shall as a minimum, comply with the manufacturer's specifications and regulatory requirements and be performed by a competent person before the equipment is returned to service.

Modifications to any part of a crane and lifting equipment, shall not be undertaken without undergoing an engineering assessment by a competent person to ensure compliance with AS1418.1 (as per AS2550.1, section 6.25).

5.4 Lifting Plans

All lifting tasks shall be subject to a lift plan. The lift plan must give attention to the following factors as per section 4 (AS 2550:5 2002) for mobile cranes, including but not limited to:

- Cranes standing.
- Drop zones (see section 5.5 for more detail).
- Load control.
- Visibility issues.
- Environmental factors (e.g. windspeed as per OEM recommendations).
- Clearance issues; and
- Required competencies.

Note: when carrying out multiple lifts of similar size and weights using the same rigging gear, same radius and the hazards remain the same a single lift plan may be used to cover this series of lifts.

A JHA or SWMS must be completed prior to starting lifting tasks.

In the case of a job being handed over to a new Crane Operator and or rigger (e.g. during a lunch break or shift change), a new lift plan does not need to be developed.

Note: Critical lift plans cannot be handed from shift to shift. New plans must be developed by the oncoming team.

5.5 Lifts Involving Multiple Cranes

Multiple cranes shall not be used to lift a load unless a single crane of the required capacity is not readily available. In the event that a multiple crane lift is required, the following conditions shall be met.

- Each cranes capacity shall exceed the cranes share of the load by at least:
- 20% for a two crane lift.
- 33% for a three crane lift.
- 50% for a four or more crane lift; and
- The hoisting shall be supervised by a person holding a Licence to Perform High Risk Work that includes the use of multi hoisting, and who is not an operator of one of the cranes. (Intermediate or Advanced Rigging).
- A lift study must be completed by those involved prior to commencing the lift.

5.6 Drop Zones and Barricading

A drop zone is an area below any work being done above ground level and to an outward distance where a load could foreseeably land and spread.

A drop zone should take into account the following considerations:

- Size of the load – dimensions and combination of the item.
- Potential for falling or spreading.
- Weight of the load.
- Height of the lift.
- Radius of the lift in relation to the pick-up and drop off point of the load (i.e. load travel path); and
- Other work, people, or structures in the area.

The drop zone shall be identified as part of the risk assessment and lift plan, and controls shall be put in place to ensure workers (or any body part) are not located within this zone. This shall be communicated to all personnel working within the area.

Work areas including drop zones shall be identified and barricaded to keep people clear from potential harm.

Hard barricading shall be utilised when an area is required to be completely enclosed to prevent unauthorised entry into a work area including the drop zone. Hard barricading is not required with Franna Cranes.

Signage must be in place to identify crane working areas. Signs must have contact details of whom to contact to enter crane working areas.

5.7 Interaction with Other Work Groups

This WI and associated JHA aims to ensure that all workers are aware of the need to provide safe interactions and clear communications with other workgroups involved or working near the task.

5.8 Contingency Controls

The Emergency Response Plan incorporated into the SCEE-BS-HS-TEM-0008 Job Hazard Analysis (JHA) must list relevant contact details of Paramedics. The JHA should also indicate the team member who is First Aid Qualified.

Refer: SCEE-BS-HS-TEM-0008 Job Hazard Analysis (JHA)

6 References

Documents, both internal and external, that are referenced within the content of this work instruction, including Australian and International Standards and legislation.

Document ID	Document Title
SCEE-BS-HS-TEM-0008	Job Hazard Analysis (JHA)
	AS1418
	AS2550
SCEE-BS-HS-TEM-0006	Safety Management Plan
SCEE-HS-BS-PRO-0027	5 Star Commitment Procedure

7 Related Documents

Related documents are those that have a relationship with this document, for example if this was the Operational Risk Management procedure related documents would include the work instruction to complete a JHA, the JHA template, Take 5 work instruction and booklet, etc.

Document ID	Document Title
SCEE-BS-HS-SWM-0019	Crane Operations