JER-8000-MGT-PRO-0027 Crane & Lifting

(AS/NZS, ISO 45001:2018, Clause 8.1.2)

1 SCOPE

The procedure applies to all KGL Resources Workers who are required to use lifting equipment and accessories including operating cranes.

This procedure does not apply to work activities that involve the use of 4WD recovery equipment, such as winches, shackles and chains.

2 PURPOSE OF DOCUMENT

The purpose of this procedure is to establish guidelines to manage risks arising from work that involves lifting equipment, including operating cranes.

3 RELEVANT LEGAL & OTHER REQUIREMENTS

It is the responsibility of all personnel to comply with this procedure and seek guidance from the Project Director where clarification is required.

- Work Health and Safety Act 2011 (NT)
- Work Health and Safety Regulation 2011 (NT)'
- Model Code of Practice, Managing the Risks of plant in the Workplace 2018 (Safe Work Australia)
- AS 1418.1-2002 Cranes, hoists and winches – General requirements
- AS 2550.1-2011 Cranes, hoists and winches – safe use
- AS 1666.2-2009 Wire-rope slings – care and use
- AS 4991-2004 Lifting devices

4 DEFINITIONS

Cranes	A crane is an item of plant intended for raising or lowering a load and moving it horizontally including the supporting structure of the crane and its foundations.
Crane-lifted workbox	If it is not practicable to use plant that is specifically designed to lift people, a crane-lifted workbox may be used to enable workers to perform minor work for a short amount of time in an elevated work area.
Competent Person	A person who has acquired through training, qualification or experience, the knowledge and skills required to carry out a lifting task using lifting equipment. A competent person has a more specific meaning in the following circumstances: For design verification, the independent person must have the skills, qualifications, competence and experience to design the plant or verify the design; For inspection of plant for registration purposes, the person must have:

	Educational or vocational qualifications in an engineering discipline relevant to the plant being inspected; or Knowledge of the technical standards relevant to the plant being inspected. a. For inspection of cranes, the person must: Have the skills, qualifications, competence and experience to inspect the plant, and be registered under a law that provides for the registration of professional engineers (in jurisdictions where such a law exists); or Be determined by the whs regulator to be a competent person.
Construction Work	Construction work has the same meaning under the WHS Regulation, namely any work carried out in connection with the construction, alteration, conversion, fitting-out, commissioning, renovation, repair, maintenance, refurbishment, demolition, decommissioning or dismantling of a structure.
Dogger	A person with demonstrated competency in the application of slinging techniques, selection and inspection of lifting gear and/or directing the crane/operator in moving the load.
High Risk Construction Work	Has the same meaning under the WHS Regulation, namely construction work involving: a risk of a person falling more than 2 metres; demolition of an element of a structure that is load-bearing or otherwise related to the physical integrity of the structure; or is likely to involve, the disturbance of asbestos; structural alterations or repairs that require temporary support to prevent collapse; work that is carried out in or near a confined space' work that is carried out in or near: a shaft or trench with an excavated depth greater than 1.5 metres, or a tunnel; the use of explosives; work that is carried out on or near pressurised gas distribution mains or piping; work that is carried out on or near chemical, fuel or refrigerant lines; work that is carried out on or near energised electrical installations or services; work that is carried out in an area that may have a contaminated or flammable atmosphere; tilt-up or precast concrete; work that is carried out on, in or adjacent to a road, railway, shipping lane or other traffic corridor that is in use by traffic other than pedestrians; work that is carried out in an area at a workplace in which there is any movement of powered mobile plant; work that is carried out in an area in which there are artificial extremes of temperature; work that is carried out in or near water or other liquid that involves a risk of drowning; or diving work.

Lifting Accessories	Equipment used to connect a load to a lifting appliance. It includes any cable, rope, chain, sling, shackle, eyebolt, hook, lifting lug, lifting frame, lifting beam, sheave, pulley, plate clamp or beam clamp.
Lifting Appliance	A machine which can be used to raise, lower or suspend a load, apply tension to a rope/chain, or apply pressure between two points. It includes any crane, forklift, winch, pulley block, gin wheel, cable climber or hoist, and may include a source of power.
Lifting Equipment	Includes all lifting appliances, lifting accessories and lifted equipment.
Lift Plan	The pre-approved system of work required to be used for a lifting operation. The lift plan will identify the type of equipment to be used and the sequence of operations to be followed. The lift plan is informed by a risk assessment and SWMS.
Rigger	A person with demonstrated competency in planning the work, selecting and inspecting equipment, setting up tasks, erecting structures and plant, and dismantling structures and plant. An advanced rigger is qualified for rigging of cranes, conveyors, dredges and excavators, and rigging associated with tilt slabs, demolition work, and dual lifts. A take 5, SWMS and the lift plan, will determine what type of rigger is required to safely complete the works.
Safe Working Load (SWL)	The maximum load that can be lifted safely.
SWMS	A SWMS is a pre-start risk assessment that is undertaken prior to commencing any high-risk construction work or as otherwise required by a supervisor or manager. A SWMS must be completed in accordance with the KGL Resource Risk Management Procedure.
Standard controls	Standard controls are control measures that are prescribed for a particular task and are used in conjunction with the Take 5 and/or SWMS.
Take 5	A pre-start risk assessment that is undertaken by all workers prior to commencing work. A Take 5 must be completed in accordance with the KGL Resource Risk Management Procedure.
Working Load Limit (WLL)	The maximum gross load that may be applied to the crane and lifting attachments while in a particular working configuration and under a particular condition of use, see also 'Rated Capacity'.
Workers	Workers include employees, contractors, sub-contractors, volunteers, visitors and consultants who conduct work for KGL Resources.

5 RESPONSIBILITIES

Senior Leadership Team	1. Ensures adequate resources are available to managers, supervisors and workers to support crane and lifting risk assessment, elimination and control. 2. Reviews and acts on reported organisational risk management performance.

Safety Manager	1. Establishes and maintains hazard identification, risk management and training systems within the KGL Resources Safety Management System, including consultation with workers. 2. Assesses and reports on risk management performance to the Senior Leadership Team. 3. Ensures this procedure is fit for purpose and meets all legislative requirements. 4. Ensures that this procedure is implemented and is regularly reviewed and monitored for ongoing effectiveness. 5. Supports managers and supervisors in the implementation and operation of this procedure. 6. Recommends change or improvement to this procedure as required. 7. Provides advice on risk management requirements. 8. Reviews and monitors crane and lifting risk management by managers and supervisors.
Managers and Supervisors	1. Managers and supervisors are responsible for ensuring this procedure is implemented in their area and this may include ensuring that: a) all workers are aware of and understand this procedure; b) any risks arising from operating cranes and undertaking lifting work are addressed proactively through risk assessments to ensure the health and safety of workers; c) risk assessments for crane and lifting work are performed as required; d) workers are provided with appropriate training in relation to the risks arising from operating cranes and undertaking lifting work and the appropriate control measures; and e) workers implement risk control to eliminate or minimise risks arising from operating lifting equipment and undertaking lifting work.
Worker	1. Ensures they are familiar with the requirements of this procedure. 2. Complies with this procedure. Continually monitors and assesses hazards and reports any change of conditions to the manager or supervisor.

6 GUIDING PRINCIPLES

At KGL RESOURCES we:

- Apply higher order controls in the hierarchy of controls
- Only use administrative controls (such as procedures) and personal protective equipment (**PPE**) in conjunction with other risk controls or where there are no other risk controls available. Further information is available in specific procedures that relate to these risks.
- Comply with all procedures and instructions
- STOP work if it seems unsafe
- Do not carry out work unless we are competent and trained to perform the task
- Check the plant, equipment and PPE each time we perform a task
- Report all hazards, incidents and near hits
- Wear and use appropriate PPE.

- When in doubt, escalate the concern.

7 CRANE & LIFTING RISK MANAGEMENT

KGL Resource manages risk associated with confined space entry through a risk management approach. The key elements of KGL Resource's systematic approach to risk management include:

a. hazard identification;

b. risk assessment;

c. controlling risks; and

d. reviewing control measures to ensure they remain effective.

This is to be undertaken in line with the **KGL Resource Risk Management procedure.**

Before undertaking any work involving lifting, workers:

a. Must complete a **Take 5**; and

b. If applicable, complete a **SWMS**. A SWMS will be required if undertaking High Risk Construction Work, or as otherwise required by a supervisor or manager;

c. a **Lift Plan** should be developed and approved for all operations involving lifting equipment.

8 BEFORE USING LIFTING EQUIPMENT

8.1.1 Planning

Planning is the first step in ensuring the lifting of a load is done safely. The following issues should be considered when planning the use of lifting equipment:

a. the scope of work;

b. the appropriate crane for the work;

c. the location of the work site and the conditions of the ground and supporting structures;

d. the licensing of the crane operator;

e. weather conditions; and

f. control measures for working near overhead powerlines.

8.1.2 Procurement of Lifting Equipment

Plant must be procured in accordance with the KGL Resources procurement process. Prior to procuring lifting equipment, a pre-purchase safety assessment needs to consider each phase of the plant lifecycle.

Persons who procure Lifting Equipment must:

a. ensure that the designer, manufacturer, importer or supplier has provided information on any residual risks associated with the plant and information about their elimination or control;

b. ensure that the designer, manufacturer, importer or supplier has provided details of energy efficiencies;

c. ensure plant complies with relevant standards;

d. obtain and review the information supplied by the designer, manufacturer, importer or supplier to make sure that plant is suitable for its intended use, and where required, the design has been registered with relevant Regulators where the WHS regulations require; and

e. ensure that plant which must be registered with relevant Regulators, have all the required information in a format that will enable certification by a competent person.

In most cases, cranes and associated lifting equipment will be supplied by either the client, or wet-hire arrangement. KGL Resources workers must take reasonable steps to ensure that all equipment used is compliant and safe to use.

8.1.3 Registration

Certain plant designs and items of plant must be registered under the WHS Regulation before they are used in the workplace. Cranes that are registrable plant must be registered before they are supplied and, where necessary, item registered before they are used.

Further information on plant registration and design registration can be found in Appendix B.

8.1.4 Modification to Plant

Any modification to plant, including any modification to cranes, must be done in accordance with the requirements in KGL Resources Use of Plant Procedure.

9 TESTING & INSPECTIONS

Inspecting and testing Lifting Equipment must include the:

a. major inspection required for registrable plant under the WHS Regulations. This includes inspections at the end of the design life recommended by the manufacturer, recommendations by competent persons, or where not practicable, every 10 years from commissioning.

b. regular inspection and testing required for all plant; and

c. inspection and testing for plant item re-registration.

Inspecting and testing should include:

a. annual inspections;

b. commissioning inspection and tests;

c. routine inspections and maintenance; and

d. pre -operational inspections.

9.1.1 Proof load Testing

All new lifting equipment must be supplied with a test certificate or letter of conformity from a NATA Approved Testing Facility. Where existing lifting equipment is significant altered or a major repair to components in the load path is carried out, a proof load test must be conducted by an agreed independent specialist or insurance company. Priority test rigs should be used for proof testing of lifting accessories (i.e. cranes should not be used for this purpose).

9.1.2 Routine function Testing

Testing will include periodic function testing to verify operability and will include safety systems and equipment (for example, alarms and cut-outs).

9.1.3 Inspections

Inspections must be carried out by a competent person and recorded in the Register of Lifting Equipment. The level of inspection and maintenance will be determined by the product and any manufacturing recommendations.

Inspection intervals should not exceed 12 months. However, for equipment used for carrying passengers, inspection intervals should not exceed 6 months.

Inspections should also be conducted when the integrity of the equipment may have been affected due to involvement in an incident, exposure to overloads, modification or repair and change in condition of use.

9.1.4 Pre-operational Inspections

The operator of the Lifting Appliances must carry out a visual inspection and functional tests before the start of each work shift, including inspecting and testing the following:

- all relevant items indicated in the operations manual;
- operating and emergency controls;
- brakes;
- safety switches and interlocks, including limiting and indicating devices;
- visual inspection of the structure;
- wire ropes to ensure they are not damaged or excessively worn.

The results of the inspection should be entered into any logbook. Where issues are identified, these should be recorded, reported and rectified before the Lifting Appliance is used.

9.1.5 Register of Lifting Equipment

A register recording the following data must be maintained for all Lifting Equipment:

- manufacturing details;
- product details;
- identification number;
- SWL or WLL;
- date the equipment was first installed/commissioned;
- operator competencies;
- particulars of any defects and steps taken to remedy them;
- details and results of any tests, inspections, Start Card, SWMS and examinations that have been performed;
- dates of upcoming and periodic inspections; and
- maintenance log.

Additionally, each Lifting Appliance must be labelled to show: the SWL or the WLL, its unique identification number and the date of last certification or the date of the next certification.

10 LOAD CHARTS

KGL Resources must ensure that the load restrictions relevant to the plant being used are complied with. For example, a crane of variable radius such as a tower or mobile crane has a specific load chart setting out how its lift capacity varies depending on how the crane is set up, boom extension and boom angle. Using the load chart correctly is critical to ensuring the crane is safe to use.

Bridge and gantry cranes do not have load charts but have a maximum rated capacity or Working Load Limit (WLL) that should be marked on the crane and not exceeded.

Where plant has one main load chart it should be fixed to the plant in a place that is easy to see and read. Where the plant has more than one load chart, for example for different boom and fly jib

configurations on a crane, the charts should be easily accessible for the operator to verify that the crane is not overloaded. The charts may be kept electronically or in hard copy.

11 STORAGE OF LIFTING EQUIPMENT

Lifting equipment should be stored in a dedicated area (where practical, covered, dry or otherwise protected from the environment). Equipment should be stored in such a manner as to avoid damage, including mechanical damage and corrosion.

A crane must be stored in line with manufacturer's storage instructions, with any remote equipment isolated, any power supply and control isolated and locked off and with doors and windows locked to prevent unauthorised access.

12 MAINTAINING, REPAIRING AND CLEANING

Lifting Equipment, including cranes, should be maintained, serviced and cleaned according to the manufacturer's instructions, competent person specifications or, in the absence of such specifications, according to relevant technical standards and engineering principles.

All worn or damaged parts of a crane that constitute a hazard must be repaired or replaced. In particular:

a. repairs are carried out according to manufacturer's or a competent persons instructions to retain the crane within its original design limits; and

b. replacement parts and components should be identical or equivalent to the original equipment parts and components.

When a crane has been damaged to the extent that its function or condition is impaired, resulting in increased risk to health or safety, it should be immediately taken out of service. A competent person should assess the nature of the damage and whether the crane is able to be repaired, and if so what repairs should be carried out.

13 LIFT PLAN

The Lift Plan will document the proposed operation rather than each individual lift and will consider:

- the tasks to be carried out;
- the various ways the tasks can be carried out;
- the type of equipment to be used;
- the associated hazards and risks;
- how identified risks can be eliminated or controlled;
- any other requisite plant and material;
- any special provisions relating to the use of crane-lifted workboxes;
- communication to inform all workers of:
    - the Lift Plan;
    - the roles and expectations of each worker; and
    - contingencies;
- verification of competency of those involved in any part of the lifting operation; and
- emergency and rescue procedures.

An example of a Lift Plan is detailed in JER-8000-MGT-FRM-0023. Lift Plans shall be developed and approved by a competent person.

14 CRANE & LIFTING RISK MANAGEMENT

14.1 HAZARD IDENTIFICATION

The purpose of identifying hazards associated with crane and lifting work is to eliminate the risk or, if it is not reasonably practicable to do so, to minimise the risk so far as is reasonably practicable.

Hazards arising from working with Lifting Equipment may arise from:

a. the crane for example, structural failures, electrical problems, moving parts, load-carrying capacity;
b. the set up location for example, a rough, muddy environment or uneven ground;
c. the crane operation for example, the load, other work in the same area;
d. the crane dismantling for example, working at heights;
e. falling objects; and
f. falling from height.

14.2 RISK ASSESSMENT

When assessing the risks arising from lifting operations, workers must consider the following:

a. lifting equipment must not be used unless workers are instructed, trained, and qualified by a competent person in using the equipment. All contractor qualified crane operator qualifications and certifications must be provided upon request; and
b. specific issues relating to the different types of cranes being used;
c. risks arising from working near electric lines;
d. lifting equipment and work areas must be kept free from oil, grease and discarded material;
e. a crane must not be moved while a worker is in a crane-lifted workbox or on an elevated platform, unless equipment is specifically designed for that use;
f. the boom and crane-lifted workbox load limit specified by the manufacturer must not be exceeded;
g. a worker in a crane-lifted workbox must wear a full-body fall-arrest harness at all times — harnesses must be attached to fall-arrest anchorage points in the workbox or to the main sling ring above the workers' heads;
h. emergency retrieval arrangements must be established before the lift to ensure workers can safely exit the workbox in an emergency;
i. lanyards must be attached to lifting devices at designated attachment points, not above a block or headache ball;
j. workers must not sit, stand, or climb on the guardrail of the crane-lifted workbox;
k. personnel involved in the mechanical lifting and handling of materials and/or cargo must be trained in safe lifting and hoisting procedures. Training records must be maintained and available for review;
l. the correct cargo handling tools must be used, and these tools must be regularly inspected and maintained;

m. a dogman or rigger must continuously monitor the loads being lifted until they are secured onto or disconnected from the lifting device. For smaller loads being lifted by a HIAB, the risk assessment will determine if a dogman or rigger is required;

n. workers must not stand or pass under a suspended load;

o. the lifting area should be identifiable and barricaded off to prevent workers from inadvertently entering. For smaller loads being lifted by a HIAB, the risk assessment will determine if a barricaded area is required;

p. workers must stand clear of any rope, line, or cable that is under strain;

q. tag lines must be used to guide suspended loads. If using a tag line during a lift would be unsafe, control and mitigation measures must be included in the SWMS or Lift Plan. For smaller loads being lifted by a HIAB, the risk assessment will determine if tag lines are required;

r. cranes fitted with hook freefall ability require trip lever lock-out to prevent accidental engagement;

s. preparing a load chart and affixing this to the operator's cabin in a place that is easy to see and read; and

t. workers must comply with PPE requirements set out in the SWMS and must:

    (i) not wear loose clothing when working near rotating machinery;

    (ii) not handle rope or cables when wearing finger jewellery; and

    (iii) wear gloves when handling and using a tag line.

14.3 RISK CONTROLS

As set out in **KGL Resources Risk Management Procedure**, control measures should always be considered in the order of the hierarchy of control starting with elimination. In some circumstances, two or more control measures will be required to minimise so far as is reasonably practicable the risk(s).

Set out in **Table 1** below are some examples of risk control measures to eliminate or minimise these risks according to the hierarchy of control.

Table 1: Examples of risk control measures for working with Lifting Equipment

Risk Control Hierarchy		**Risk Controls: lifting equipment**
Level 1	Eliminate the hazards	Eliminating the need to work with lifting equipment.
Level 2	Substitute the hazard with something safer	Substituting cranes that have restricted fields of vision with cranes that have clearer fields of vision.
	Isolate the hazard from people	Isolating the hazard by providing an effective physical barrier to separate the zones for mobile plant, crane operations and workers.
	Reduce the risks through engineering controls	Implementing physical control measures such as enclosing the operator with a falling objects protective structure.

Level 3	Reduce exposure to the hazard using administrative actions	• Specific procedures; • Prohibitions on activities unless training provided; • First aid & emergency response, including rescue planning; • Require controllers placed in “off” position; and • Workforce training.
	Use PPE	Supplying and using appropriate PPE and specialist clothing where required for working with lifting equipment, for example, workers gloves, hard hats and high visibility vests.

15 GUIDELINES FOR CRANE & LIFTING RISK CONTROLS

If workers are required to perform lifting operations and the risk cannot be eliminated through an alternate work plan, other control measures must be implemented in accordance with the hierarchy of controls. Some examples are set out in the table below:

Level 1	
Elimination	Eliminating the need to work with cranes or other lifting equipment.
Stop work	Ensuring a competent person is supervising the work. Immediately stopping lifting operation where there is an increased risk caused by such issues as: • injury to workers; • lifting equipment failures; • collisions of lifting equipment with its load, workers, equipment or other facilities; • contact with live overhead electric cables; • overloading or overturning of lifting equipment during a lift; or • damage to underground services. In such circumstances, only work necessary to stabilise the lifting operation should proceed under the direction of a competent person. In such circumstances, work should not restart until the incident has been reported and immediate corrective actions have been implemented. Authority to restart may be given by the Site Manager or Operational Safety Manager.
Level 2	

Setup and positioning	Ensuring the crane's weight is evenly distributed and the ground is firm enough for the weight of the crane and any load. Precautions must be taken to avoid damage to the surface or underground services or structures. When placing or moving cranes over or near engineered structures (e.g. retaining walls, bridges, abutments), a qualified structural engineer must provide calculations at least 1 week prior to works being performed to confirm that the crane will not damage the structures involved. A dilapidation survey should be performed before and after the work. A mobile crane should not be operated on a gradient unless it has been specifically designed for such work, e.g. all terrain cranes. Where this cannot be avoided, the chassis or the crawlers must be correctly 'blocked' to achieve a level position. When slewing or luffing, a visual check must be made to ensure that there are no obstructions. A minimum clear space of 0.6 metres should be maintained between any slewing or moving part of the crane and any fixed or stationary object. Where this is not possible, the area surrounding the crane will be barricaded and signed to prevent worker access. Pick-up and lay-down areas will be within the crane radius for the load being lifted.
Work near overhead electrical cables	When working near overhead electrical cables, a nominated electrician must be contacted to advise on the safe working clearance. In accordance with statutory requirements, for clearances outside the 'ordinary persons' category, an operator of a crane, operator of mobile plant and safety observers are required to be accredited persons. A minimum of 8 metres is required between the tip of the extended crane jib and the line of the nearest overhead electrical cable. All plant and equipment to be used must be of such construction, or be so restricted, that the safe working clearances cannot be breached. In difficult cases it is advised that the nominated electrician make the overhead cables isolated/ locked out/de-energised for a certain period of time so that work can proceed.
Level 3	
Administrative controls	

Verification of competency	Worker competency and licence currency will be checked prior to the lifting operation and included in a *competency register* to be accessible on site.
Pre-operational inspection	Prior to mobilising to the work site, all items of lifting equipment identified in the Lift Plan will be visually inspected by a competent person to ensure, so far as is reasonably practicable, they are in a good state of repair and it is safe to carry out the lifting activity.
Change in conditions	Any change in work conditions that are potentially hazardous to workers and other stakeholders will result in a reassessment of the work tasks and area. This change would be recorded in the Take 5 and, if required, in the SWMS. Changes in work conditions can include, but are not limited to: a. other facility activities being performed; b. scope of work; c. weather; and d. an emergency situation at the facility.
Rescue contingency and incident reporting	Rescue procedures specified in the SWMS will be executed in the event of an incident which results in the extraction of persons. All incidents will be reported in accordance with the **KGL Resources Incident Management Procedure.**
Administrative controls – Training, Licensing and Supervision	
Safe execution	Only trained, competent and licenced operators may move or operate lifting equipment. Workers undergoing training or instruction are permitted to rig and operate crane or lifting equipment provided such activity is performed in accordance with the requirements of the regulations. For equipment which does not require a licence to operate, operators must have the required training and competency. Crane operators must not leave the crane unattended while the engine is running or a load is attached, except during an emergency situation. All rigging and slinging work must be either performed or directly supervised by a person qualified in this work, paying particular attention to the following:

	• all rigging work must be either performed or directly supervised by a certified or qualified rigger; • prior to use, lifting gear is subject to inspection by qualified persons; • all lifting components must bear the SWL markings and the current inspection colour code; • sharp edges will be suitably packed to reduce sling damage; • the load should be evenly distributed when using multiple or multi-legged slings, lower loads to the ground on gluts or battens; • slings found to be unsafe or unserviceable must have an Out of Service tag attached and be returned to the dogman/riggers store and/or be destroyed to prevent future use; • shackles must show the appropriate SWL marking, with the correct pin fitted; • slings should not trail from a lifting hook – they should either be 'back hooked' or removed; • the maximum angle between legs when lifting with multi-legged slings should not exceed 90 degrees; and • minor structural steelwork or piping and equipment should not be used as anchorage or fast points for rigging work.
Signals to the crane operator	If a crane operator, at any stage of the operation, does not have a clear and unrestricted view of the load and its vicinity (or where there is no load, the point of attachment for a load), a competent person must be appointed as the dogman/rigger. The dogman/rigger must then give all necessary signals to the crane operator. Communication between the dogman/rigger and the crane operator may be by hand signals, light signals, voice direct, verbal two-way radio contact or sound (e.g. whistle) signals. All hand signals used must comply with statutory requirements. The dogman/rigger must stand in a safe position from which to see the load being worked and where practicable be seen by the crane operator.
Slewing on the ground	Loads must not be dragged along the ground by a crane as severe overloading might result.

	Where the crane alone cannot make the lift without dragging the load, independent lifting equipment should be used to get the load to the correct position for the main lift.
Travelling with extended jib	When it is necessary to travel around a site with an extended jib or fly jib, the distance must be short and a competent attendant must accompany the crane and assist the crane operator to avoid potential hazards. When travelling to and from the place of work the crane operator must keep to any height clearance frames on site.
Wind restrictions	The manufacturer's operating instructions must be strictly obeyed with regard to wind velocities during erection, operation and dismantling. Measurements of the wind speed should be taken as necessary within the erection and the operating areas. An anemometer might be required.
Free on wheels duties	The following precautions must be taken when cranes are operated 'free on wheels': • the manufacturer's recommendations for 'free on wheels' operations must be followed and lifts must be kept strictly within manufacturer's 'free on wheels' limits; • the condition of the tyres, including treads, must be within statutory limitations; and • tyre pressures must be checked regularly and adjusted as necessary.
Lowering the load	All loads must be lowered under controlled power except where a chain block system is attached between the crane hook and the load.
Travelling with loads	Not all wheeled cranes are suitable for travelling with loads attached. The following precautions must be taken before a crane is allowed to travel carrying a load: a. The manufacturer's recommendations for travelling with loads; b. The load must be secured to stop it swinging during transit; and c. The load must be clearly marked to avoid collision with workers and other traffic. If necessary it should be accompanied by a walking attendant.

16 REVIEW AND REVISION OF CONTROL MEASURES

Risk controls must be reviewed on a regular basis to ensure their effectiveness and also to ensure that new risks have not been introduced. A review is required:

- when the control measure is not effective in controlling the risk;
- before a change at the workplace that is likely to give rise to a new or different health and safety risk that the control measure may not effectively control;
- if a new hazard or risk is identified;
- if the results of consultation indicate that a review is necessary; and
- if a health and safety representative requests a review.

KGL Resources workers may use the same methods as in the initial hazard identification section see section 14.1.

When determining how often to carry out reviews, the level of risk and the types of cranes involved should be considered.

17 INFORMATION, INSTRUCTION, TRAINING & SUPERVISION

Managers and supervisors must ensure only workers who have received training and instruction on this procedure can carry out work involving cranes and other Lifting Equipment. This training must include:

- risks of working with cranes, including traffic rules and safe distances from overhead powerlines;
- awareness of this and other referenced procedures;
- instructions on the use of specialised equipment, products and plant;
- instructions on the areas designated for work involving lifting equipment that is not to be accessed by workers not involved in the work; and
- emergency procedures.

Crane operators must have the relevant certification and be suitably trained and experienced in the operation of the particular type of crane to be used.

Riggers and dogman must be trained and deemed competent in slinging and rigging before they can undertake the work.

17.1 HIGH RISK WORK LICENCES

All workers operating specified types of cranes must hold high risk work licenses. Doggers and riggers must also hold high risk work licences relevant to their work.

See Appendix A for further information on high-risk work licences required for cranes, hoists and rigging/dogging.

18 RECORDS MANAGEMENT

All records of tests, inspections, maintenance, commissioning, decommissioning, dismantling and alterations of registrable plant must be kept by KGL Resources for the period that the plant is used or until KGL Resources relinquishes control of the plant. KGL Resources must make the record available to any person to whom the person relinquishes control of the plant.

19 INCIDENT REPORTING AND INVESTIGATION

Any incidents arising from fatigue must be reported in accordance with the **KGL Resource Incident Managing Procedure**.

20 BREACH OF THIS PROCEDURE

Workers must comply with this procedure at all times. KGL Resources takes breaches of this procedure very seriously.

If an employee is found to have breached this procedure, they may be subjected to disciplinary action in accordance with KGL Resources' disciplinary processes. Contractors of KGL Resources who are found to have breached this procedure may be the subject of action under their contract with KGL Resources.

21 CONSULTATION

This procedure has been developed and implemented in consultation and co-operation with KGL Resources' workers.

22 RELATED DOCUMENTATION

JER-8000-MGT-PRO-0006	Risk Management
JER-8000-MGT-PRO-0023	Incident Management
JER-8000-MGT-PRO-0036	Competency & Training
JER-8000-MGT-FRM-0023	Lift Plan

23 MONITORING, EVALUATION AND REVIEW

VERIFICATION	
Monitoring	Compliance with this procedure will be monitored through training and regular audits.
Evaluation & Review	The risk rating is medium, reviewed every 2 years. A review will be undertaken sooner if there are changes to legislation, standards and industry codes, or following an SMS review, changes as defined by WHS Regulators, or to ensure continual improvement.
Version Control	Version 1: May 2026

24 APPROVAL

Konrad Litfin

Project Director

Appendix A: Cranes Requiring High Risk Licence

In Northern Territory, high risk work licences are required for the following cranes and associated rigger and dogger activities.

Bridge and gantry cranes (CB)

Bridge and gantry cranes are controlled from a permanent cabin or control station on the crane as well as those that are remote controlled with more than three powered operations (hoist, raise and lower equals one operation), including the application of load estimation and slinging techniques to move a load.

Derrick crane (CD)

A slewing strut-boom crane with its boom pivoted at the base of a mast which is either guyed (guy-derrick) or held by backstays (stiff-legged derrick) and which is capable of luffing under load.

Non slewing mobile cranes greater than three tonnes capacity (CN)

A mobile crane of greater than three tonnes capacity that incorporates a boom or jib and includes articulated type mobile cranes and locomotive cranes, but does not include vehicle tow trucks. Holders of a CN licence may also operate a reach stacker until 1 July 2016.

If a non-slewing telehandler over three tonnes capacity is fitted with boom and/or jib with a hoist rope and/or hook block, a CN high risk work licence is required.

Portal boom crane (CP)

A boom crane or jib crane mounted on a portal frame that is supported on runways along which the crane travels.

Self erecting tower crane (CS)

A crane where the tower structure and boom/jib elements are not disassembled into component sections and it can be transported between sites as a complete unit with the erection and dismantling processes an inherent part of the crane's function.

Slewing mobile cranes (C2, C6, C1, C0)

A slewing mobile crane means a mobile crane incorporating a boom jib that is capable of being slewed. This excludes front end loader, backhoe, excavator and other earthmoving equipment when configured for crane operation.

There are four classes of slewing mobile cranes:

1. slewing mobile cranes with a capacity up to 20 tonnes (C2)
2. slewing mobile cranes with a capacity up to 60 tonnes (C6)
3. slewing mobile cranes with a capacity up to 100 tonnes (C1)
4. slewing mobile cranes with a capacity over 100 tonnes capacity (C0)

The certificate C0 covers the requirements C1; the C1 certificate covers the requirements for C6; the C6 certificate covers the requirements for C2 and C2 covers the requirements for non-slewing mobile cranes and vehicle loading cranes.

If a slewing telehandler is fitted with a boom and/or jib with a hoist rope and/or hook block, a C2, C6, C1 or C0 high risk work licence is required, dependent on the telehandler's rated capacity.

Tower cranes (CT)

A jib or boom crane mounted on a tower structure, demountable or permanent, including both horizontal and luffing jib types.

Vehicle loading crane (CV)

Covers the operation of a crane with a capacity of 10 metres / tonnes or more, mounted on a vehicle to move a load onto or from the vehicle, including the application of load estimation and slinging techniques to move a load.

This allows the licence holder of a CV licence to operate a vehicle loading crane and conduct the full range of slewing operations without holding a slewing mobile crane licence, so long as:

- the equipment is suitable for the task
- the equipment is used within its operating parameters
- the operator has been adequately trained.

Concrete placing booms (PB)

Covers the operation of vehicle mounted concrete boom pumping systems, including a minimum of two boom stages, and the use and monitoring of the boom distribution system.

Dogging (DG)

Consists of the application of slinging techniques to move a load (including the selection and inspection of lifting gear) and/or the directing of a crane/hoist operator in the movement of a load when the load is out of the view of the crane/hoist operator.

Rigging

Rigging work means the use of mechanical loadshifting equipment (and associated gear) to move, place or secure a load using plant, equipment or members of a building or structures, to ensure the stability of those members or the setting up or dismantling of cranes or hoists.

There are three type of rigging:

Basic rigging (RB)

Consists of dogging and rigging work involving:

- movement of plant and equipment

- steel erection
- hoists (including mast climbing hoists)
- placement of precast concrete
- safety nets and static lines
- perimeter safety screens and shutters
- cantilevered crane loading platforms

Intermediate rigging (RI)

Consists of all basic rigging work plus rigging involving:

- cranes, conveyors, dredges and excavators
- tilt slabs
- hoists with jibs and self climbing hoists
- demolition
- dual lifts

But excluding rigging work involving equipment listed below under Advanced rigging.

Advanced rigging (RA)

Advanced rigging – consists of all intermediate rigging work plus rigging that involves:

- gin poles and shear legs
- flying foxes and cableways
- guyed derricks and structures
- suspended and fabricated hung scaffolds

Hoist licences

You need a high-risk work licence if you want to operate a hoist

Hoists come under four basic categories. They are:

1. boom-type elevating work platform
2. materials hoist
3. personnel and material hoists

Before you can apply for a national licence to perform high risk work to operate the types of hoists listed below, a Registered Training Organisation (RTO) must assess your training, skills and knowledge using the relevant 'assessment instrument' under realistic workplace conditions.

Boom -type elevating work platform (WP)

Covers the operation of telescoping devices, hinged devices, or articulated devices (or any combination of these) used to support a platform on which personnel, equipment and materials may be elevated to perform work and where the boom length is 11 metres or more.

The length of the boom is the greater of the following:

- the vertical distance from the surface supporting the boom-type elevating work platform to the floor, with the platform extended to its maximum height
- the horizontal distance from the centre point of the boom's rotation to the outer edge of the platform, with the platform extended to its maximum distance

A WP high risk work licence is required when operating a telehandler fitted with a personnel box with operating controls in the box, and the boom length is 11 metres or more.

Materials platform hoist (HM)

Covers the operation of a builder's hoist by which only goods or materials and not personnel may be hoisted and where the car, bucket or platform is cantilevered from, and travels up and down externally to, a face of the support structure.

Personnel and material hoists (HP)

Covers the operation of a builder's hoist in which personnel, goods and/or materials may be hoisted, and which comprises a car, structure, machinery or other equipment associated with the hoist, and which may be either a cantilever hoist, a tower hoist, or a multiple winch operation.

Note:This procedure does not currently include the full list of High-risk work licences and classes of high-risk work as set out in the WHS Regulation, for example, forklift operation, scaffolding work, pressure equipment operation and reach stackers. If undertaking any of these activities, reference should be made to the Use of Plant Procedure, and supervisors must ensure that operators hold a current and relevant licence to cover these activities].