RISK ASSESSMENT REPORT

Service Truck

Assessment ID	#1990
Conducted Date	20/03/2025
Report Expiry Date	20/03/2026
Make	Hino
Model	300
Serial Number	end 3354
Registration	ZHO259

Customer

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1 Executive Summary

A plant risk assessment has been conducted for Libcon Group. **The Plant Risk assessment involved discussions with relevant stakeholders of the Service Truck**. If the operator did not conduct this assessment, they are required to read it before operating equipment.

Risks have been identified, categorised and assessed using PRA's Risk Management Approach. Risks have been rated from low to high using a Three-Point likelihood and Three-Point Consequence Matrix. This risk review was conducted using the PRA App managed by Glow Technologies Pty Ltd & Australian Risk Services Australasia Pty Ltd.

Australian Safety Laws are performance based, meaning that Codes of Practice and Regulations provide a strong guide on how to comply with Plant Safety Laws. Performance based risk assessment infers that the solution to a safety hazard may vary from one company to another and yet still be legally compliant. For example, a hazardous moving part that requires regular access for cleaning, it is considered more practical to install an Interlock Guard rather than a fixed guard that requires tools to remove the guard. Frequency of access deems an interlock be used; however, it is not illegal for a company to use a fixed guard or an interlock guard. Australian Standards are not considered law unless called up directly into the WHS Regulations and State based Regulations for Plant and Equipment. Standards called up in Codes of Practice can be deemed legal depending on each circumstance and if it is unclear regarding the legal status of a hazard and control, you are recommended to seek legal advice.

PRA has around **15,000 unique risk controls** that is crossed referenced to Australian Standard and ISO Standards. The cross referencing of standards to our safety control framework is to highlight the relevant standard(s) that are directly and indirectly relevant to a hazard control. The actual cross reference of the standard is just a guide to the reader and does not necessarily contain information from every standard referenced. The referencing is to improve the assessor's ability to further research and improve their knowledge of plant safety. For Example, moving parts requires guarding but alongside our guarding recommendations are Isolation of Machinery Standards and Traffic Management Standards. This is because if accessing these areas to prevent crushing, Isolation is required, and Traffic Management Controls indirectly prevent unauthorised personnel accessing dangerous areas.

National WHS and State based Plant Regulations and Plant Codes of Practice and AS4024 (Australian Standard for Plant and Equipment Guarding) are also referenced in our safety control framework where our safety controls are more stringently in line with these requirements to facilitate better legal compliance when assessing plant.

All Plant Safety Regulations require the management of Operational and Maintenance Risk and PRA Safety Framework addresses these areas in our reported assessments.

Our reports on plant safety aim at best practice in their safety control framework. There may be occasions where your operational environment requires the alteration of controls including the removal or adding of additional controls to meet your risk assessment needs. To facilitate this, PRA allows assessors to remove or add controls by accessing the Manage Controls Button during your risk assessment. The output report will list removed controls and or add further controls you have added in designated category you selected i.e. Crushing or Entanglement.

If you select NO that a safety control is NOT in place, this will be highlighted in the report as Recommended Controls Implemented once the control failure has been rectified and signed off by the assessor. Assessors can remove controls by marking them as Not Applicable and they will also appear in the report as Not Applicable controls removed in the main body of the report.

Critical safety controls are documented the same way as stated above for general controls

This Report is subject to the disclaimer which is available at the appendix of this report.

CSR CHECKLIST

	YES Is it understood that this service truck is not fume free and the truck maybe exposed to hazardous fumes during the operation of pumps and powered equipment. Operators have ensured of adequate ventilation requirements and that ignition sources are kept away from vehicle operations.?		**YES** Has all pressure relief safety valve on compressor been checked, repaired, serviced and adjusted to manufacturer's specifications prior to recommissioning plant?
	YES Is the plant fitted with safety warning and instruction signs above air delivery outlet valves, "DANGER COMPRESSED AIR WEAR EYE PROTECTION & KEEP COMPRESSED AIR AWAY FROM BODY"?		**YES** Is the plant fitted with applicable D.G. "hazardous substances" warning signs to service unit in proximity to operator station in compliance with AS 1216?

	YES Is the plant fitted with E.P.A compliant spills containment systemto service unit with safety and instruction signs?		**YES** Have you ensured all hazard warning decals are in correct location and visible.? For example, crushing risks near moving parts, burn risks near hot parts, height risks with fall hazards.?
	YES Are all motion warning systems, audible and visual are in good working order? These may include horns, reverse beepers, flashing beacons.		**YES** Is periodic servicing conducted on machine/equipment and repairs as necessary, in accordance with manufacturer's specifications?

CONTROLS

- Fit safety warning and instruction signs above air delivery outlet valves, "DANGER COMPRESSED AIR WEAR EYE PROTECTION & KEEP COMPRESSED AIR AWAY FROM BODY".
- Fit applicable D.G. "hazardous substances" warning signs to service unit in proximity to operator station to comply with AS 1216.
- Fit E.P.A. compliant spills containment system to service unit with safety and instruction signs.
- Is it understood that this service truck is not fume free and the truck maybe exposed to hazardous fumes during the operation of pumps and powered equipment. Operators have ensured of adequate ventilation requirements and free from ignition sources.
- Install hazard warning decals and ensure they are in correct location and visible. For example, crushing risks near moving parts, burn risks near hot parts, height risks with fall hazards.
- Install motion warning systems, audible and visual and ensure they are in good working order. These may include horns, reverse beepers, flashing beacons.
- Any Service work not carried out is to be carried out before operating equipment especially if there is a potential to give rise to injury. Any necessary repairs are to be carried out in accordance with manufacturer's specifications? If in doubt, verify w

ASSESSOR'S COMMENT

Always conduct a pre start each day before operating vehicle to ensure the vehicle is working safely. This should include motion warning systems such as flashing beacon and audible reverse warning buzzers, lighting and brakes are in effective order, tyres are of good condition and that this safety plant assessment is read and understood of its stated controls before operating equipment. Operstor must be competent to use the equipment and in a fit state. Ensure decals are in good order and correctly displayed eg crushing near crushing risks.

2 Risk Analysis and Evaluation

The following risk data collection and analysis was undertaken for each risk issue identified:

- A description of the risk (as far as was practicable the risk was described in the context of a hypothetical scenario).
- A description of the impact of the risk, describing a range of potential impacts on the individuals should the risk eventuate.
- A description of the control environment and estimation of its effectiveness is provided
- An estimation of the likelihood of the risk occurring and rated against the criteria below.
- A estimation of the consequence of the risk should it eventuate. Ratings for consequence are determined according to the table below.
- Determination of an overall risk rating based on the formula:

Risk Rating = Risk Likelihood X Risk Consequence

- Actual ratings are determined using the matrix on the following page:
- Where information was readily available, a preliminary description of the control environment and estimation of its effectiveness is provided
- An estimation of the likelihood of the risk occurring and rated against the criteria below
- An estimation of the consequence of the risk should it eventuate. Ratings for consequence are determined according to the table below
- Gravity - falling or things falling
- Electrical - contact or arcing

What is the potential impact of the hazard?

How severe could an injury or illness be? For example, lacerations, amputation, serious or fatal crushing injury, burns, loss of hearing

- What is the worst possible harm the plant hazard could cause?

How likely is the hazard to cause harm?

Is it highly likely or unlikely to happen?

- How frequently are workers exposed to the hazard? For example if plant is used constantly with five operators per shift and three 8-hour shifts and there is a lack of high level control measures, the risk will increase compared to the occasional use by a single operator.

Other factors to consider when undertaking a risk assessment include:

In what type of conditions is the plant used in (for example, in a confined space, muddy or dusty environment)?

What is the condition of the plant? For example, is it old and missing safety features found on new plant? Is it reliable or often needing emergency maintenance?

If there are other people or items of plant in the vicinity, what effect do they have on the likelihood or consequence?

Where and when is access required during the installation, operation or maintenance of plant and in an emergency?

What work practices and procedures exist in relation to plant safety (for example, isolation to carry out maintenance, emergency shut-down)?

What kind of training, information, instruction and supervision is provided to workers and other persons who may be exposed to plant?

Does the plant's safety depend on the competency of its operators?

How is work organised? For example:

the speed of the process line

pedestrian and vehicular traffic around the plant

time spent on repetitive tasks

shift work arrangements

any production incentives that may affect health and safety.

Identification and Classification of Hazards

Once hazards have been identified, the next step is to assess their significance. In assessing the significance of a hazard there are a number of important factors that need to be considered. **These factors include the following:**

- Probability of injury or illness, in considering the probability of injury or illness it is important to note that they can be caused either as a direct result of short term exposure to a hazard, or from long term exposure to a hazard. Injurie that may be a direct result of short-term contact with a hazard include cuts, burns, abrasions, fractures, crush and compression injuries. Long term exposure to some hazards can cause conditions such as deafness, cancers, respiratory damage and dermatitis.
- Potential severity of injury or illness.
- How often are people exposed
- Length of exposure.
- Level of exposure.
- Number of people exposed.
- Adequacy of existing control measures.
- Human differences:
- Skill level;
- Work experience;
- Training;
- Physical capabilities

As there are many types of workplaces an hazards (or combinations of hazards), the methods for assessing hazards will be quite different. The level of risk of a job or task may well have a number of contributing factors which also need to be considered.

The important factor to remember in assessing hazards is that this assessment will determine what priority is assigned to their elimination or control. Refer to Control Hierarchy below for decision making and the principle of ALARA (As Low as Reasonably Achievable) when controlling hazards.

CONSEQUENCES

LIKELIHOOD	LOW	MEDIUM	HIGH
LOW	LOW	LOW	MEDIUM
MEDIUM	LOW	MED	HIGH
HIGH	MEDIUM	HIGH	HIGH

LOW	Manage risks by routine procedures and monitor.
MED	Review risk assessment and ensure control measures to reduce risk to as low as reasonably practicable using the hierarchy of controls.
HIGH	Immediate action required – Activity must not proceed until steps are taken to reduce risk to as low as reasonably practicable using the hierarchy of controls.

3 User responsibilities

Employers:

Employers have a general duty under the OHS Act to provide and maintain for employees a working environment that is safe and without risks to health. This duty includes a requirement to provide or maintain plant that is, so far as reasonably practicable, safe and without risks to health.

Employers' duty also includes a responsibility to provide information, instruction, training or supervision so employees can perform their work safely, including when using plant.

Control of risk

So far as it is reasonably practicable, employers must identify all hazards associated with plant at the workplace and eliminate any risk involved. If it is not reasonably practicable to eliminate the risk, employers must reduce the risk, as far as reasonably practicable, by either:

- using plant that has a lower level of risk
- isolating the plant from people
- using engineering controls such as, for example, extraction systems, barriers and interlocked guarding
- a combination of any of these control methods

If there is still a risk associated with the plant after using these methods, employers must use administrative controls to reduce the risk, so far as is reasonably practicable. Examples of administrative controls include warning signs, 'lock out' systems and workplace operating procedures.

If an employer has complied with all of these risk controls and the risk associated with plant remains, the employer must reduce the risk so far as is reasonably practicable by providing appropriate personal protective equipment to those at risk.

Review of risk control measures

Employers must review and, where necessary, revise any measures to control risks associated with plant in various circumstances including:

- before any alteration to the plant or any in the way the plant is used
- if new or additional information about hazards or risks relating to the plant becomes available
- if, for any reason, risk control measures do not adequately control the risk
- after receiving a request from a health and safety representative (HSR)

When identifying hazards and deciding on control measures, employers must also, so far as is reasonably practicable, consult with employees and HSRs, if there are any HSRs in the workplace.

Employers must also comply with specific duties in relation to the control of risk associated with plant including:

- guarding
- operator controls, including emergency stop devices and warning devices
- installation and commissioning, maintenance and inspection requirements

Employers must also comply with duties associated with specific items of plant including:

- powered mobile plant, including rollover protection for tractors and industrial lift trucks
- electrical plant and electrical hazards
- plant that lifts or suspends loads, including lifts, escalators and moving walkways for moving people
- scaffolds
- providing information, instruction, training or supervision to employees

Designers:

The safe design of plant plays a critical role in reducing risks in workplaces.

So far as is reasonably practicable, a person who designs plant for use in a workplace must:

- ensure the plant is designed to be safe and without risks to health if it is used for a purpose for which it was designed
- carry out or arrange for any testing and examination needed to ensure the plant design is safe and without risks to health if it is used for a purpose for which it was designed
- identify all hazards associated with the plant's use during the design phase and provide adequate information to any person they give the design to bring into effect

A designer of plant must also provide specific information to the manufacturer of the plant. If the manufacturer advises that there are safety issues with the design, the designer must revise the information to take account of these problems, or instruct the manufacturer in writing that such revision is not necessary and provide reasons why this is the case.

Designers of high-risk plant must also register their designs with WorkSafe.

Manufacturers:

Manufacturers of plant have duties relating to the use of the safety information provided by the designer. Manufacturers must inform the designer of any hazards they identify during manufacture and ensure the hazards are not incorporated into the plant.

If it is not possible to inform the designer of the hazard, manufacturers must ensure that risks associated with those hazards are eliminated or reduced so far as is reasonably practicable.

Manufacturers also need to obtain safety information from the designer and pass this information on when supplying the plant.

Suppliers:

Suppliers of plant have duties to ensure that hazards associated with the plant have been identified and that the risks have been controlled.

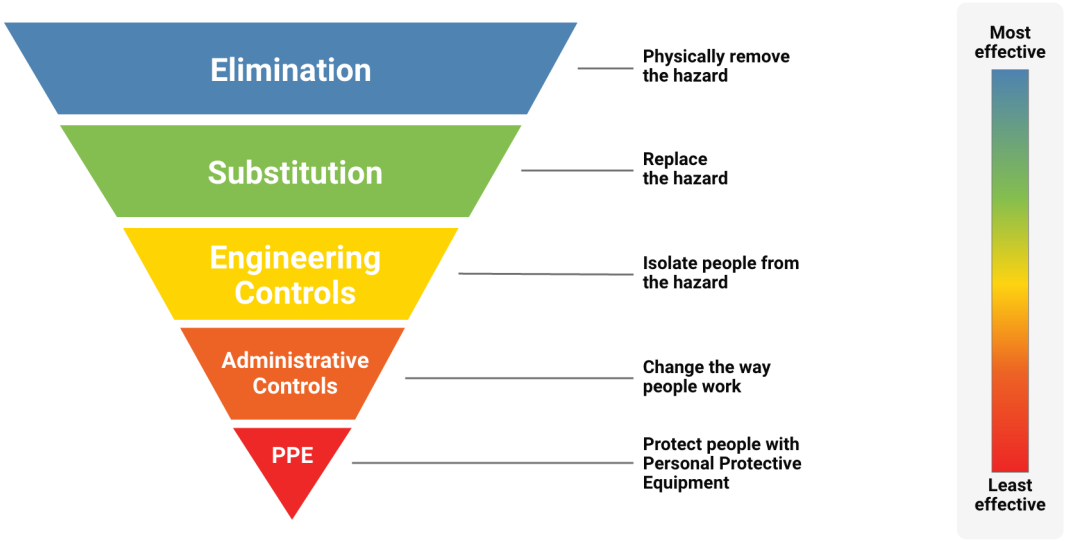
Suppliers also have a duty to control risks associated with the plant and to obtain safety information from the manufacturer and pass this information on when supplying the plant to someone else.

There are additional duties for suppliers who hire out plant, as well as for the supply of rollover protection for tractors. Agents who act for suppliers have a duty to obtain and pass on safety information before selling the plant.

WorkSafe's Compliance code: Plant has more information and practical guidance for those who have duties or obligations in relation to plant under the OHS Act and OHS Regulations.

4 Hazard Hierarchy Of Control and Risk Management

When completing corrective actions, the assessor has deemed that hazards are adequately managed through controls that are equal to or better than those recommended within the report.



When developing solutions for identified hazards the risk assessment team members applied the Hierarchy of Controls. A hierarchy of hazard control measures has been established which is used on the basis that, the higher the control strategy is in the hierarchy, the preferable and effective it is.

** **Please note that the Working at Height Regulations for the management of Height Risks uses a different Hierarchy of controls that requires relevant stakeholders to avoid working at height and if not possible to review other various controls such as the use of scaffolding, EWP Platforms, Fall Protection Screens and Coverings, installation of railing and the use of Harness and Lanyard systems and lastly the use of ladders.**

Applying Control Measures

The higher the control strategy is on the hierarchy order, the more preferable and effective it is. Control measures can be used to reduce or eliminate the identified hazard.

Often, more than one control option maybe used to minimise risk, e.g. exhaust ventilation plus the wearing of gloves and goggles.

In many cases there will be a number of control options available. The decision about the control measures to be used should be made in consultation with the affected employees, considering the hierarchy of control measures.

When considering control measures, it is sometimes necessary to apply a control measure which is at the bottom of the hierarchy, for example PPE, as a short-term solution until a more effective control measure can be instituted. However, PPE may still be required even though control measures are in place e.g. construction item such as hard hat and boots.

5 Hazard Checklist

Entanglement

CONTROLS

- Ensure guards and covers are fitted to prevent access to moving part. (AS4024. 1601. 3.2- 3.11, 5.1-5.17, 6.1-6.4.3.3).
- Ensure operators are trained and competent in all aspects of machine operation. (AS4024. 1604. 4.41).
- Conduct risk assessment of site operations, and ensure all unauthorised personnel are prevented from accessing hazardous areas. (AS 4024. 1604. 5.4.3.1).
- Ensure Emergency stop system is functional. (AS 4024. 1604. 4.1.1- 4.4.6), (AS 4024. 1604. 4.1-4.5).
- Ensure warning decals are clear and legible (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, noise). (AS 4024. 1201. 6.4.3- 6.4.4), (AS4024:1901-1906).
- When maintaining equipment, or during break-down, ensure all energy sources (electrical, pneumatic, hydraulic, gravity and all stored energies) are effectively isolated, de-energized, tested and verified. (AS 4024. 1201. 6.2.11.1-6.2.11.6).
- Ensure appropriate use of PPE, considering operational and weather conditions. (AS 4024. 1304. 8.5.3).

- Conduct prestart checks and ensure guards and covers are fitted to prevent access to moving parts, and all audible and visual warnings are operational. (AS 4024. 1201. 6.3.3.1- 6.3.3.2.5), (AS4024:3.2-3.11,5.1-5.17,6.1- 6.4.3.3.3).
- During maintenance and operation, avoid interaction with hazardous or moving parts. (AS 4024. 1201. 6.3.3.1-6.3.4.2).
- Ensure adequate lighting when operating and maintaining equipment. (AS 4024. 1901. 6.1-7).

REFERENCES (OHS)	Division 5, subdivision 2: • Hazard identification • Specific Control measures - Guarding. • Specific Control measures - Emergency stop devices. Division 5, subdivision 4: • Information, instruction, and training

RESIDUAL RISK RATING(S)

MEDIUM

Can anyone's hair, clothing, gloves, necktie, jewellery, cleaning brushes, rags or other materials become entangled with moving parts of the plant, or materials in motion?

Crushing

CONTROLS

- Ensure guards and covers are fitted to prevent access to moving part. (AS4024. 1601. 3.2- 3.11, 5.1-5.17, 6.1-6.4.3.3).
- Ensure operators are trained and competent in all aspects of machine operation. (AS4024. 1604. 4.41).
- Conduct risk assessment of site operations, and ensure all unauthorised personnel are prevented from accessing hazardous areas. (AS 4024. 1604. 5.4.3.1).
- Ensure Emergency stop system is functional. (AS 4024. 1604. 4.1.1- 4.4.6), (AS 4024. 1604. 4.1-4.5).
- Ensure warning decals are clear and legible (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, noise). (AS 4024. 1201. 6.4.3- 6.4.4), (AS4024:1901-1906).
- When maintaining equipment, or during break-down, ensure all energy sources (electrical, pneumatic, hydraulic, gravity and all stored energies) are effectively isolated, de-energized, tested and verified. (AS 4024. 1201. 6.2.11.1-6.2.11.6).
- Ensure appropriate use of PPE, considering operational and weather conditions. (AS 4024. 1304. 8.5.3).
- Conduct prestart checks and ensure guards and covers are fitted to prevent access to moving parts, and all audible and visual warnings are operational. (AS 4024. 1201. 6.3.3.1- 6.3.3.2.5), (AS4024:3.2-3.11,5.1-5.17,6.1- 6.4.3.3.3).
- During maintenance and operation, avoid interaction with hazardous or moving parts. (AS 4024. 1201. 6.3.3.1-6.3.4.2).
- Ensure adequate lighting when operating and maintaining equipment. (AS 4024. 1901. 6.1-7).

REFERENCES (OHS)	Division 5, sub division 2: • Hazard identification • Use of Plant • Specific Control measures - warning devices • Specific Control measures - Guarding • Specific Control measures - Emergency stop devices Division 5, sub division 3: • seat restraints • Notice of rated capacity of lift

RESIDUAL RISK RATING(S)

MEDIUM Can any material fall off the plant?	**MEDIUM** Can uncontrolled or unexpected movement of the plant or its load occur?
MEDIUM Is there a lack of capacity for the plant to be slowed, stopped, or immobilised?	**MEDIUM** Can the plant tip or roll over?

	MEDIUM Can parts of the plant collapse?		**MEDIUM** Can personnel come into contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair?
	MEDIUM Can personnel be thrown off or under the plant?		**MEDIUM** Can personnel be trapped between the plant, materials or fixed structures?

Cutting, stabbing and puncturing

CONTROLS

- Ensure operators are trained and competent in all aspects of machine operation. (AS 4024. 1304. 8.5.2).
- Prior to commencing work, risk assess site operations and put in place traffic management controls. (barricades and signage). (AS 4024. 1901. 6.1-7), (AS4024:3.2-3.11,5.1-5.17,6.1- 6.4.3.3.3).
- Ensure load rating signage is clear and legible, and equipment is operated within load rating capacity. (AS 4024. 1201.3.28.8).
- Ensure all audible and visual warning devices are operational. (AS 4024. 1201. 6.4.3- 6.4.4), (AS4024:1901-1906).
- Prior to operation, review housekeeping and equipment, and remove items or materials that could fall and cause injury. Secure hazardous items in a safe location. Use tool belt for loose tools. (AS 4024. 1302. 7.1- 7.2).
- Conduct prestart check, and ensure guards and covers are fitted to prevent access to moving parts and all audible and visual warning are operational. (AS 4024. 1604. 5.4.3.1), (AS4024:3.2-3.11,5.1-5.17,6.1- 6.4.3.3.3) (AS4024:1907).
- Ensure warning decals are clear and legible (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, noise). (AS 4024. 1201. 6.4.3- 6.4.4), (AS4024:1901-1906).
- Ensure that all braking systems are functioning correctly.
- Ensure the design of the operator seating includes seatbelt restraint that prevents operator ejection. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- Carrying of passengers is not permitted without authorisation, or unless designed for specific use.
- Ensure revolving amber beacon operates automatically when ignition is "ON". (AS4024:1901-1906), (AS4024:1907).
- In the event of inadvertent machine operation, consider the use of a dead man switch. Always ensure controls are guarded or time- delayed to prevent accidental activation. (AS 4024. 1201. 3.27-3.28.4), (AS 4024. 1201. 3.31), (AS4024:1901-1906).
- Fit contents identification and volume signs to outside of all storage tanks on unit.
- Carry out periodic visual inspection, service testing & adjustment in accordance with AS 3920.1 & AS 2809.to bulk tanker compartment vent, pressure relief valves & safety valves. Reset and calibrate to manufacturers specifications.
- Fit reverse warning beeper to rear of tanker to minimum of 105dbA. (Beeper must be audible over ambient noise levels).
- Replace worn chassis to sub frame fixing hardware and bolts at L.H. & R.H. sides. Re torque bolts to manufacturers specifications.
- Carry out periodic service and testing to air receiver storage unit in accordance with AS 3788, AS 3873 & AS 4037.
- Fit identification & function sign to main tanker filling and unloading coupling & shut off valve & repaint cap & valve red.
- Fit anti static earth bond system to service truck in accordance with current industry standards.
- Fit "FIT & USE ANTI-STATIC EARTH BOND LEADS AT ALL TIMES PRIOR AND DURING USE" signs in proximity to dispensing manifold.

REFERENCES (OHS)	Division 5, sub division 2: • Use of Plant • Specific Control measures - Guarding • Specific Control measures - Emergency stop devices Division 5, sub division 3: • Notice of rated capacity of lift Division 5, sub division 4: • Information, instruction and training

RESIDUAL RISK RATING(S)

MEDIUM Is there uncontrolled or unexpected movement of the plant?	**MEDIUM** Can personnel come into contact with sharp or flying objects?
MEDIUM Can personnel come into contact with moving parts of the plant during testing, inspections, operation, maintenance, cleaning or repair?	**MEDIUM** Are parts of the plant eroding, that presents a potential hazard?

Shearing

CONTROLS

- Ensure operators are trained and competent in all aspects of machine operation. (AS 4024. 1304. 8.5.2), (AS4024:3.2-3.11,5.1-5.17,6.1- 6.4.3.3.3), (AS4024:1901-1906).
- Prior to commencing work, conduct risk assessment on site operations and put traffic management controls in place. (Barricades and signage). (AS4024:1901-1906).
- Ensure load rating signage is clear and legible, and equipment is operated within load rating capacity. (AS 4024. 1201.3.28.8).
- Ensure all audible and visual warning devices are operational. (AS 4024. 1201. 6.4.3- 6.4.4), (AS4024:1901-1906), (AS4024:1907).
- Prior to operation, review housekeeping and equipment, and remove items or materials that could fall and cause injury. Secure hazardous items in a safe location. Use tool belt for loose tools. (AS 4024. 1201. 3.27-3.28.4).
- Conduct prestart check and ensure guards and covers are fitted to prevent access to moving parts, and all audible and visual warning systems are operational. (AS4024. 1601. 3.2- 3.11, 5.1-5.17, 6.1-6.4.3.3), (AS 4024. 1304. 8.3), (AS4024:3.2-3.11,5.1-5.17,6.1- 6.4.3.3.3), (AS4024:1907).
- Ensure warning decals are clear and legible (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, noise). (AS 4024. 1201. 6.4.3- 6.4.4), (AS4024:1901-1906).
- Ensure that all braking systems are functioning correctly.
- Ensure appropriate PPE considers operational and weather conditions. (AS 4024. 1304. 8.5.3).
- When maintaining equipment, or during break-down, ensure all energy sources (electrical, pneumatic, hydraulic, gravity and all stored energies) are effectively isolated, de-energized, tested and verified. (AS 4024. 1201. 36.3.5.4).
- Ensure the design of the operator seating includes seatbelt restraint that prevents operator ejection. (AS 4024. 1901. 6.1-7).
- Carrying of passengers is not permitted without authorisation, or unless designed for specific use.
- Ensure revolving amber beacon operates automatically when ignition is "ON". (AS4024:1901-1906), (AS4024:1907).

REFERENCES (OHS)	Division 5, sub division 2: • Use of Plant • Specific Control measures - Guarding • Specific Control measures - Emergency stop devices

RESIDUAL RISK RATING(S)

MEDIUM
Can anyone’s body parts be sheared between two parts of the plant, or between a part of the plant and a work piece or structure?

Striking

CONTROLS

- Ensure operators are trained and competent in all aspects of machine operation. (AS 4024. 1304. 8.5.2).
- Prior to commencing work, conduct risk assessment on site operations, and put traffic management controls in place. (Barricades and signage). (AS4024:3.2-3.11,5.1-5.17,6.1- 6.4.3.3.3),(AS4024:1901-1906).
- Ensure load rating signage is clear and legible, and equipment is operated within load rating capacity (AS 4024. 1201.3.28.8), (AS4024:1901-1906).

- Ensure all audible and visual warning devices are operational - (AS 4024. 1201. 6.4.3- 6.4.4), (AS4024:1901-1906), (AS4024:1907).
- Prior to operation, review housekeeping and equipment and remove items or materials that could fall and cause injury. Secure hazardous items in a safe location. Use tool belt for loose tools. (AS 4024. 1201. 3.27-3.28.4), (AS 4024. 1303. 7.1.1- 7.2).
- Conduct prestart check, and ensure guards and covers are fitted to prevent access to moving parts and all audible and visual warning are operational. (AS 4024. 1201. 3.27-3.28.4), (AS 4024. 1201. 36.3.3.1-6.3.3.4), (AS 4024. 1304. 8.3), (AS4024:3.2-3.11,5.1-5.17,6.1- 6.4.3.3.3).
- Ensure warning decals are clear and legible i.e (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, noise). (AS 4024. 1201. 6.4.3- 6.4.4), (AS4024:1901-1906).
- Ensure that all braking systems are functioning correctly.
- Ensure appropriate use of PPE, considering operational and weather conditions. (AS 4024. 1304. 8.5.3).
- When maintaining equipment, or during break- down, ensure all energy sources (electrical, pneumatic, hydraulic, gravity and all stored energies) are effectively isolated, de-energized and tested and verified. (AS 4024. 1201. 36.3.5.4).
- Ensure the design of the operator seating includes seatbelt restraint that prevents operator ejection. (AS 4024. 1901. 6.1-7) (AS 4024. 1401 4.1.1-5.2.5) (AS 4024. 1903. 5.2-5.53).
- Carrying of passengers is not permitted without authorisation, or unless designed for specific use.
- Ensure revolving amber beacon operates automatically when ignition is "ON". (AS4024:1901-1906), (AS4024:1907).

REFERENCES (OHS)	Division 5, sub division 2: • Use of Plant • Specific Control measures - Guarding Specific Control measures - Emergency stop device

RESIDUAL RISK RATING(S)

MEDIUM Is there uncontrolled or unexpected movement of the plant or material being handled by the plant?	**MEDIUM** Are plant or parts of the plant or work pieces disintegrating?
MEDIUM Can work pieces be ejected?	

High Pressure Fluid

CONTROLS

- Conduct pre-start checks on vehicles including hoses.
- Ensure operators are trained and competent in all aspects of machine operation. (AS 4024. 1304. 8.5.2).
- Ensure anti-burst valves are present.
- Ensure all spills are cleaned up immediately using appropriate spill kit, block off drains, ensure used spill kit material is removed from site, and spill kit contents are replaced. (AS 4024. 1303. 7.1.1- 7.2).
- Ensure appropriate use of PPE considers operational and weather conditions. (AS 4024. 1304. 8.5.3).
- Operators should be protected from exposure to high pressure hoses by protective screens.

REFERENCES (OHS)	Division 5, sub division 2: • Use of Plant • Specific Control measures - Guarding • Specific Control measures - Emergency stop devices

RESIDUAL RISK RATING(S)

MEDIUM Can anyone come into contact with fluids under high pressure, due to plant failure or misuse of the plant?

Electrical

CONTROLS

- All electrical wiring and switches must be in good order and be tested and tagged by qualified personnel. When maintaining equipment, or during break-down, ensure all energy sources (electrical, pneumatic, hydraulic, gravity and all stored energies) are effectively isolated, de-energized and tested and verified.
- Ensure operators are trained and competent in all aspects of machine operation.
- Ensure warning decals are clear and legible (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, noise). (AS4024:1901-1906).
- If vehicle is electrified, remain in cabin, and if safe to do so, jump clear of the vehicle and land with two feet on the ground and shuffle away without feet leaving the ground to a safe location, as grounding may cause death.
- Ensure staff are trained in connecting to charging units.
- Ensure electrical components are free from water exposure (including on board generators). Where possible, waterproof the electrical components with an IP rating of 65 or 67 (greater level of water proofing).
- Ensure appropriate use of PPE considers operational and weather conditions.
- Ensure that electrical work is strictly conducted by trained personnel.
- Ensure the use of fuses to reduce circuit blow-outs and equipment damage.
- Personnel should be verified as being competent isolators and understand the testing and checking of isolations.
- Plant and equipment must operate within safe proximity to/distance from electrical connections.
- Ensure barricade protection in front of hazardous exposed electrical components.
- Ensure signage: "DANGER SWITCH OFF AND ISOLATE PLANT AT ALL TIMES PRIOR TO CARRYING OUT ADJUSTMENTS OR CLEANING" is in visible proximity to controls/operator. (AS4024:1901-1906).

REFERENCES (OHS)	Division 5, subdivision 2: • Use of Plant • Specific Control measures - Guarding. • Specific Control measures - Emergency stop devices. Division 5, subdivision 3: • Electrical plant and electrical hazards

RESIDUAL RISK RATING(S)

	MEDIUM Can the plant come into contact with live electrical connections?		**MEDIUM** Is there water near electrical equipment?
	MEDIUM Are there damaged or poorly maintained electrical leads or cables?		**MEDIUM** Can there be an overload of electrical circuit?
	MEDIUM Are there damaged electrical switches?		**MEDIUM** Is there a lack of isolation procedures?
	MEDIUM Is the plant working near electrical connections?		

Explosion

CONTROLS

- Ensure the equipment is consistently checked and free of leaks (flammable gases, vapours, liquids, dust, or other explosive substances).
- Ensure all ignition sources are eliminated from the work area and equipment is correctly earthed. Ignition sources can include naked flames, hot surfaces, mobile phones, watches, tablets, and all other equipment that can generate an electrical current.
- When conducting hot works, permits are required.
- Ensure appropriate fire extinguishers and equipment is utilised when there is a risk of fire and explosion.

- Ensure warning decals are clear and legible (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, noise). (AS4024:1901-1906).
- In the event of spillage of hydrocarbons and similar flammable substances, ensure rapid clean up and disposal. Spill kits should be readily available.
- Ensure the use of appropriate PPE, i.e respirators (N95), rubber gloves, full body suits, safety glasses.
- Hazardous waste drums and materials must be cleared from site.
- If operating in a confined area, ensure adequate ventilation.
- When refuelling, static electricity risk must be eliminated by earthing. When transferring gas bottles, use mechanical aids.

REFERENCES (OHS)	Division 5, sub division 2: • Use of Plant • Specific Control measures - Guarding • Specific Control measures - Emergency stop devices

RESIDUAL RISK RATING(S)

MEDIUM

Can anyone be injured by explosion of gases, vapours, liquids, dust or other substances triggered by plant operation or material handled by the plant?

Slipping, tripping and falling

CONTROLS

- When working at heights, ensure equipment is setup correctly, including height limiters, PPE harness and lanyard systems (including certified anchor points) is operational. Consider the use of spotters.
- Ensure staff are trained in rescue plan in the event of mobile equipment breakdown.
- Prior to commencing work, risk assess site operations and put traffic management controls in place. (e.g barricades and signage).
- Conduct prestart check and ensure guards and covers are fitted to prevent access to moving parts, and all audible and visual warning are operational.
- Ensure handrails are present when there is risk of injury, or a fall greater than one metre. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- Handrails must be the correct height, not less than 900mm, or according to risk levels in accordance with the regulations.
- Consider the working at heights hierarchy when a safe work platform is not present. All safety controls should be considered including: Scaffolding, EWP(s) etc. If these items are not practicable, then PPE Harness and Lanyard may be required, with ladders as a last resort.
- Ensure that ladders and stairs have anti slip nosing, and walking surfaces are non-slip. (AS 4024. 1901. 6.1-7).

REFERENCES (OHS)	Division 5, sub division 2: • Use of Plant Part 3.3- Prevention of falls

RESIDUAL RISK RATING(S)

MEDIUM Can there be a collapse of the plant's structure?	**MEDIUM** Are there steep walking surfaces?
MEDIUM Is there a lack of slip resistant surfaces?	**MEDIUM** Are there unprotected holes, penetrations, or gaps?
MEDIUM Is there a lack of guard rails or other suitable edge protection?	**MEDIUM** Is there a lack of work platform?

	MEDIUM Is there a lack of proper stairs or ladders?		MEDIUM Are there obstacles placed in the vicinity of the plant?
	MEDIUM Is there poor housekeeping?		MEDIUM Are there uneven or slippery work surfaces?

Ergonomic

CONTROLS

- Assess the work area, conduct manual handling assessment, and structure work activities to minimise repetitive action. Avoid carrying heavy and/or bulky/awkward loads. Mechanical aids should always be considered for both operation and maintenance activities. (AS 4024. 1901. 6.1-7).
- Ensure staff are trained in correct ergonomic setup of operator station.
- Ensure operator has clear visual access to operational areas. The use of mirrors and/or cameras reduce the need to strain the neck or body. (AS 4024. 1902. 4.1.1-5), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- Excess vibration and noise should be assessed, and regular rest breaks are required and necessary. (AS 4024. 1901. 6.1-7).
- Ensure adequate lighting.
- "Grab handles" for access and egress of vehicles are required. Ensure 3 points of contact are maintained. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- Ensure handrails are present when there is risk of injury, or a fall greater than 1 metre. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- Handrails must be the correct height, not less than 900mm or according to risk levels in accordance with the regulations. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- Ensure that ladders, stairs and walking surfaces are slip resistant.

REFERENCES (OHS)	Division 5, sub division 2: • Use of Plant Chapter 3- Physical hazards • Part 3.1 hazardous manual Handling

RESIDUAL RISK RATING(S)

	MEDIUM Is there poorly designed seating?		MEDIUM Is body movement repetitive?
	MEDIUM Do personnel have constrained body posture or the need for excessive effort?		MEDIUM Is there a Mismatch of the plant with human traits and natural limitations?
	MEDIUM Is there inadequate or poorly placed lighting or a lack of consideration given to human behaviour?		MEDIUM Is there design deficiency causing mental or physiological stress?

Suffocation

CONTROLS

- Prior to commencing work, assess area for hazardous atmosphere; (dust, vapours, fumes, smoke), if present ensure adequate ventilation (natural and/or fan forced) and if required use an oxygen depletion warning system. Extreme caution must be taken when operating mobile equipment in freezers. (AS 4024. 1302. 7.1- 7.2).
- If required, conduct confined space or restricted space risk assessment. Never use mobile equipment within an enclosed area. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- Ensure the equipment is consistently checked and free of leaks including flammable gases, vapours, liquids, dust or other

explosive substances.

- Ensure appropriate fire extinguishers and equipment is utilised when there is a risk of fire and explosion.
- Ensure warning decals are clear and legible (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, suffocation, noise)
- Ensure that hazardous chemicals are not stored near plant.
- In the event of spillage of hydrocarbons and similar flammable substances, ensure rapid clean up and disposal. Spill kits should be readily available.
- Ensure the use of appropriate PPE including respirators (N95), rubber gloves, full body suits, safety glasses.
- When operating in a confined area, ensure adequate ventilation. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- When refuelling, the static electricity risk must be eliminated by earthing. When transferring gas bottles, use mechanical aids.

REFERENCES (OHS)	Part 4.1 Hazardous substances:

RESIDUAL RISK RATING(S)

MEDIUM

Can anyone be suffocated due to lack of oxygen or atmospheric contamination?

High temperature or fire

CONTROLS

- Prior to commencing work, assess the area for hazardous atmosphere (dust, vapours, fumes, smoke), if present ensure adequate ventilation (natural and/or fan forced) and if required the use of oxygen depletion warning system. Extreme caution must be taken when operating mobile equipment in freezers. (AS 4024. 1302. 7.1- 7.2).
- Ensure the equipment is consistently checked and free of leaks including flammable gases, vapours, liquids, dust or other explosive substances.
- Ensure appropriate fire extinguishers and equipment is utilised when there is a risk of fire and explosion.
- Ensure warning decals are clear and legible (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, suffocation, noise)
- Ensure that hazardous chemicals are not stored near plant.
- When the risk category of fire and explosion is high, a risk assessment should consider the need for spark arrester mufflers or intrinsically safe equipment.
- In the event of spillage of hydrocarbons and similar flammable substances, ensure rapid clean up and disposal. Spill kits should be readily available.
- Ensure the use of appropriate PPE including respirators (N95), rubber gloves, full body suits, safety glasses.
- Hazardous waste drums and materials must be cleared from site.
- When refuelling, static electricity risk must be eliminated by earthing. When transferring gas bottles, use mechanical aids.

REFERENCES (OHS)	Division 5, sub division 2: • Use of Plant • Specific Control measures - Guarding • Specific Control measures - Guarding and insulation from heat and cold

RESIDUAL RISK RATING(S)

MEDIUM Can anyone come into contact with objects at high temperature?	**MEDIUM** Can anyone be injured by fire?

Temperature

CONTROLS

- If plant and equipment expose personnel to high or low temperatures for too long, the exposure length of time should be monitored, and if possible minimised to the safest length of time.
- Check weather prior to commencing work, and in extreme conditions evaluate necessity to work.
- Ensure the correct PPE is worn including sunglasses, hat, long sleeves, sunscreen.
- If possible, equipment should have operational A/C.
- If A/C is not in use, open windows are required.
- Ensure regular rest breaks and access to drinking water. Be aware that dark urine colour can indicate de-hydration.
- In very cold conditions, heaters and correct clothing is required.
- Provide adequate shading.

REFERENCES (OHS)	Division 5, sub division 2: • Specific Control measures - Guarding • Specific Control measures - Guarding and insulation from heat and cold

RESIDUAL RISK RATING(S)

MEDIUM

Can anyone suffer ill health due to exposure to high to low temperatures?

Chemical

CONTROLS

- Prior to commencing work, assess the area for hazardous atmosphere (dust, vapours, fumes, smoke), and if present ensure adequate ventilation (natural and/or fan forced) If required use an oxygen depletion warning system. Extreme caution must be taken when operating mobile equipment in freezers. (AS 4024. 1302. 7.1- 7.2).
- Ensure the equipment is consistently checked and free of leaks including flammable gases, vapours, liquids, dust or other explosive substances.
- Ensure appropriate fire extinguishers and equipment is utilised when there is a risk of fire and explosion.
- Ensure warning decals are clear and legible (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, suffocation, noise). (AS4024:1901-1906).
- Ensure that hazardous chemicals are not stored near plant equipment.
- In the event of spillage of hydrocarbons and similar flammable substances, ensure rapid clean up and disposal. Spill kits should be readily available.
- Ensure the use of appropriate PPE including respirators (N95), rubber gloves, full body suits, safety glasses.
- If operating in a confined area, ensure adequate ventilation. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- When refuelling, static electricity risk must be eliminated by earthing. When transferring gas bottles, use mechanical aids.
- If practical, use a less hazardous chemical in application.
- Ensure SDS is read prior to use and application.
- If application of chemical is through spraying, ensure area is clear of unauthorised personnel, and that surrounding personnel are not exposed to risk
- Portable eye wash station and equipment to be readily accessible.
- First Aid Kits are to be nearby and readily available.

REFERENCES (OHS)	Part 4.1 Hazardous substance

RESIDUAL RISK RATING(S)

	MEDIUM Is there exposure to chemical substances?

Fumes

CONTROLS

- Prior to commencing work, assess the area for hazardous atmosphere (dust, vapours, fumes, smoke), if any are present, ensure adequate ventilation (natural and/or fan forced) and if required, use an oxygen depletion warning system. Extreme caution must be taken when operating mobile equipment in freezers. (AS 4024. 1302. 7.1- 7.2).
- Ensure the equipment is consistently checked and free of leaks including flammable gases, vapours, liquids, dust or other explosive substances.
- Ensure appropriate fire extinguishers and equipment is utilised when there is a risk of fire and explosion.
- Ensure warning decals are clear and legible (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, suffocation, noise). (AS4024:1901-1906).
- Ensure that hazardous chemicals are not stored near plant equipments.
- In the event of spillage of hydrocarbons and similar flammable substances, ensure rapid clean up and disposal. Spill kits should be readily available.
- Ensure the use of appropriate PPE including respirators (N95), rubber gloves, full body suits, safety glasses.
- If operating in a confined area, ensure adequate ventilation. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- When refuelling, static electricity risk must be eliminated by earthing. When transferring gas bottles, use mechanical aids.

REFERENCES (OHS)	Part 4.1 Hazardous substances:

RESIDUAL RISK RATING(S)

	MEDIUM Is there exposure to fumes?

Vibration

CONTROLS

- Vibration can cause strain on personnel who are exposed to large amounts of vibration. Ensure that adequate break time is taken when exposed to vibration. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- Ensure plenty of rest breaks. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- If required, conduct a vibration analysis to determine if vibration is at unacceptable levels.
- Review seating absorption dampeners. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- Ensure vibrations do not cause plant equipment to become unstable. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- For equipment suffering significant vibration problems, review the wheel and track suitability (softer tracks can decrease vibration by up to 40%). (AS 4024. 1901. 6.1-7).
- When operating handheld equipment, where exposure to excessive vibration is constant, risk assess the activity and ensure adequate breaks to reduce the risk of vibration white finger (VWF). Seek alternative work methods to reduce exposure. (AS 4024. 1901. 6.1-7).
- Where possible use anti-vibration gloves.

REFERENCES (OHS)	Chapter 3- Physical hazards • Part 3.1 hazardous manual Handling

RESIDUAL RISK RATING(S)

MEDIUM

Is there exposure to vibration?

Noise

CONTROLS

- Ensure appropriate use of PPE including earmuffs that are rated to a certain decibel level.
- Ensure warning decals of noise risk are displayed. (AS4024:1901-1906).
- Where possible keep the noise level below 85 dBA.
- When working in an area with a high DBA reading ensure frequent breaks.
- Personnel operating around noisy mobile equipment need to consider using hearing protection and/or communication devices such as radios and/or hand signals.
- Review effectiveness of sound absorption material

REFERENCES (OHS)	Part 3.2 Noise

RESIDUAL RISK RATING(S)

MEDIUM

Is there exposure to noise?

Radiation

CONTROLS

- Exposure to radiation can be mitigated through PPE (full Hazard suit, goggles, breathing apparatus, sunscreen, hats, sunglasses, as well as safeguard antiradiation shields.
- In the event of high radiation of heat from operation, cabin temperature control is required through air conditioning systems.
- When applicable use insulation of operation cabins.
- Exposure to radiant heat should be monitored and have time restraints imposed. Avoid working during times of the day that have the highest radiation.
- Always consider adequate breaks and rehydration with water.
- The use of cooling gel kits for body and neck should be considered
- Check weather prior to commencing work, and in extreme weather conditions evaluate the necessity to work.
- Provide adequate shading.

REFERENCES (OHS)	Part 4.1 Hazardous substances:

RESIDUAL RISK RATING(S)

MEDIUM

Is there exposure to radiation?

Dust

CONTROLS

- Dust can be filtered through breathing filter apparatus ensuring that dust is not breathed in.
- Ensure equipment filters are regularly cleaned that provide fresh air to cabin.
- Avoid build-up of high dust levels in the atmosphere to reduce the risk of dust explosion.
- If dust is prevalent, keep windows and vents closed.
- Use water trucks to suppress road dust levels.
- Review work activities, and where possible redesign work activities to reduce air-borne dust impacting nearby neighbours.
- Ensure dust is cleaned from machine and operator controls. (AS 4024. 1902. 4.1.1-5).

REFERENCES (OHS)	Part 4.1 Hazardous substances:

RESIDUAL RISK RATING(S)

MEDIUM

Is there exposure to dust?

Toxic gasses or vapours

CONTROLS

- Prior to commencing work, assess the area for hazardous atmosphere (dust, vapours, fumes, smoke), if any are present ensure adequate ventilation (natural and/or fan forced) and if required, use an oxygen depletion warning system. Extreme caution must be taken when operating mobile equipment in freezers. (AS 4024. 1302. 7.1- 7.2).
- If required conduct confined space or restricted space risk assessment. Never use mobile equipment within an enclosed area. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- Ensure the equipment is consistently checked and free of leaks including flammable gases, vapours, liquids, dust or other explosive substances.
- Ensure appropriate fire extinguishers and equipment is utilised when there is a risk of fire and explosion.
- Ensure warning decals are clear and legible (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, suffocation, noise). (AS 4024. 1201. 6.4.3- 6.4.4), (AS4024:1901-1906).
- Ensure that hazardous chemicals are not stored near plant equipment.
- In the event of spillage of hydrocarbons and similar flammable substances, ensure rapid clean up and disposal. Spill kits should be readily available.
- Ensure the use of appropriate PPE including respirators (N95), rubber gloves, full body suits, safety glasses.
- If operating in a confined area, ensure adequate ventilation. (AS 4024. 1901. 6.1-7), (AS 4024. 1401 4.1.1-5.2.5), (AS 4024. 1903. 5.2-5.53).
- When refuelling, static electricity risk must be eliminated by earthing. When transferring gas bottles, use mechanical aids.
- Ensure that equipment is sanitized.
- Ensure operators are trained and competent in all aspects of machine operation.
- Ensure warning decals are clear and legible (crushing, entanglement, pinching, heights, hot parts, electrical, explosive, chemical, hazardous fumes, vibration, friction/abrasion, noise). (AS4024:1901-1906)
- Conduct prestart check and ensure guards and covers are fitted to prevent access to moving parts, and all audible and visual warning are operational. (AS4024:3.2-3.11,5.1-5.17,6.1- 6.4.3.3.3).
- When maintaining equipment or during a breakdown, ensure all energy sources (electrical, pneumatic, hydraulic, gravity and all stored energies) are effectively isolated, de-energized, tested and verified.

REFERENCES (OHS)	Part 4.1 Hazardous substances:

RESIDUAL RISK RATING(S)

	MEDIUM Is there exposure to toxic gasses or vapours?

Friction/abrasion burn

CONTROLS

- Ensure operators and maintenance staff are adequately trained.
- Ensure the use of warning decals. (AS4024:1901-1906)
- Ensure the use of guarding. (AS4024:3.2-3.11,5.1-5.17,6.1- 6.4.3.3.3).
- Ensure correct isolation and de-energisation requirements are followed. Personnel must be VOC in isolation requirements. Check and test for correct isolation.
- Ensure "DANGER HOT SURFACES" signs are fitted to hot surfaces. (AS4024:1901-1906)
- Ensure hot parts including exposed hot exhausts are cladded to prevent skin contact.
- Ensure adequate guarding of hot or moving parts.
- If equipment is required to be operating during maintenance, in order to verify correct operation, personnel are not to interact with moving parts and are required to observe visually only, and if further adjustment is required, equipment is to be shut down and isolated for further observation without interaction. (AS 4024. 1303. 7.1.1- 7.2).

REFERENCES (OHS)	Division 5, sub division 2: • Use of Plant • Specific Control measures - Guarding • Specific Control measures - Emergency stop devices

RESIDUAL RISK RATING(S)

	MEDIUM Can anyone be burnt due to contact with moving parts of the plant, or material handled by the plant?

Combination of hazards

CONTROLS

- Prior to operating equipment, conduct a pre-start check to ensure that computer and/ or program logic control system is functioning correctly. (AS4024:1901-1906).
- Risk review electronic functioning of equipment to determine adequate category safety requirements (1,2,3,4). For risk of serious injury consider categories 3 and 4.
- Competency of operators is to incorporate understanding of software operations, errors and maintenance including updates and patches.
- Ensure Software Maintenance, software patches and any updates are current.
- Failsafe systems are to be tested to ensure correct operation.
- Online maintenance systems are to be regularly verified for accuracy and lockout.
- Ensure controls can be clearly understood by the operator (use of symbols. (AS 4024. 1902. 4.1.1-5), (AS4024:1901-1906).
- When operating equipment remotely via computer, radio, or wireless transmission, and transmission failure occurs; the equipment is to default to a safe operational mode.
- If equipment function becomes erratic and operates contrary to normal expected operational functions, the equipment is to be locked out until rectified.
- In the event of over-pressurisation, the equipment is cut out to a safe state.
- Mobile equipment braking systems are to always operate in the event of exhaustion of energy sources.

REFERENCES (OHS)	

RESIDUAL RISK RATING(S)

MEDIUM Can failure/disorder of the control system occur? For example, category one and two electrical control system allow an operator to restart a piece of equipment that could be in a hazardous state such as a guard left open and exposed to moving parts. Other examples could include hydraulic failure.	**MEDIUM** Is there a lack of restoration of energy supplied after an interruption? For example, category one and two electrical control system allow an operator to restart a piece of equipment that could be in a hazardous state such as a guard left open and exposed to moving parts.
MEDIUM Is there other extreme environmental factors present (gravity, wind, etc.)?	**MEDIUM** Is machinery software malfunctioning?
MEDIUM Can there be confusion when operator is interacting with operator panel leading to increased risk of operator error?	

6 Machine Details

Service Truck

Make: Hino | Model: 300

Registration: ZHO259
Serial Number: end 3354
hghs

Front of plant

Rear of plant

Left of plant

Right of plant

Interior of plant

Another Interior of plant

7 Appendix

Risk Management Approach

Risk Management Strategy

The Strategy requires the analysis of operational and maintenance activities to determine the likelihood of the risk eventuating and what required controls are necessary to reduce the risk by applying current Safety Regulations and Codes of Practice and relevant Australian Standards. The objective of the Plant Risk Assessment is to demonstrate an reduction of risk through engineering or administrative controls which is represented in the residual or risk exposure (reduced risk ratings High to Medium) remaining after the mitigation effort. In essence, the aim of a Plant Risk Assessment is to provide a common risk management framework to assist all relevant stakeholders (operators, maintenance staff, site supervisors) to understand and agree on controls put in place to manage the risk of a plant item.

A Definition of Risk

Broadly speaking, risks are defined as uncertain future events that could influence the achievement of the organisation's strategic and operational goals and objectives. In practical terms, risk is the exposure to the threat of such things as economic, financial, reputational loss or gain, physical damage, injury or delay, as a consequence of pursuing or not pursuing a particular course of action.

Definition of Hazard

A HAZARD is any situation with the potential for human injury, damage to property, damage to the environment or a combination of these.

The Process

Identification of Risk

The underlying philosophy for the identification of risk exposure is to use directly the expertise of persons that have the responsibility for managing those risk exposures.

In practice this should involve all stakeholders such as operators, maintenance personnel and other involved personnel such as site supervisors. The Plant Assessor needs to understand the entire dynamic risk exposure of all exposed persons to potential hazards from the plant.

In the event of time constraints of the availability of stakeholders its not always possible to involve such people in direct discussions when conducting the plant assessment. In such situations the Plant Assessor should have sufficient qualifications, experience, and knowledge to understand the dynamics of the plant risks in commonly used environments and make suggested controls contained within this PRA App or if required their own. In such situations, it is always preferred that the Plant Risk Assessment is reviewed by site-based personnel and other relevant stakeholders to confirm the adequacy of the identification of hazards and suggested risk control framework based on the exposure to site environmental and operational constraints.

Codes of Practice and Hazard Identification

Remember, Codes of Practice are part of a strategy to raise the awareness of workplace health and improve safety practice. They have been developed for particular hazards and provide guidelines to help designers, manufacturers, suppliers and employers/PCBU's identify, assess and control risks arising from these hazards, such as Plant and Equipment.

Unless cited in a Regulation, they are not compulsory for designers, manufacturers, suppliers or employers/ PCBU's to implement, but their implementation signifies the employer's/PCBU commitment to comply with their legal obligation to provide a safe and healthy workplace.

Not withstanding the above, a Code of Practice may be used as evidence of a breach of the Act, or as a defence that all reasonably practicable steps were taken to prevent an injury or illness.

without limiting the foregoing, the Assessor is solely responsible for:
  - assessing the relevant plant's compliance with applicable laws including any work health and safety (WH&S) laws and applicable Australian and international standards (**Laws**);
  - assessing whether there have been changes to the relevant Laws following the currency date of the template utilised in the Plant App and to factor this in to any assessment included in this Report;
  - ensuring that any data that is used to produce the Report (**input data**) is accurate, complete, up to date, does not infringe any Laws, privacy rights or intellectual property rights; and
  - reviewing the Report prior to providing it to the Customer to confirm the Report accurately represents the assessment they have carried out (**final review**)
- this Report has been prepared for and is solely for the benefit of the Customer, and must not be relied upon by any other person;
- the accuracy, completeness and currency of the Report, including any finding that aspects of the plant are compliant or non-compliant with any Laws, relies on the input data, the Assessor's professional judgement and on the Assessor conducting the final review;
- Glow Technologies is unable to analyse or confirm the accuracy of the input data and has not itself assessed the plant;
- the Report is confined to assessing WH&S matters only and is not a structural engineering report, and the Report does not constitute legal or financial advice, and should not be relied upon as such; and
- they have relied on their own inquiries and due diligence to assess the skills, qualifications and experience of the Assessor to provide the plant assessment services. Glow Technologies does not warrant or guarantee that this Report will correctly assess the plant for compliance with applicable Laws or be fit for any purpose, or that the Assessor has the necessary skills, qualifications or expertise to perform the plant assessment services.

To the maximum extent permitted by law, Glow Technologies excludes all liability for (and Customer and any other recipient of this Report releases Glow Technologies from) any loss, damage or expense suffered or incurred by Customer, the recipient of the Report or any other person, whether arising in contract, negligence or any other tort, under statute or otherwise, including:

- any loss of profit, revenue, data, contracts, goodwill, business or business interruption;
- any damage to property or personal injury/death;
- any fines or penalties imposed by any regulator; and
- any consequential, indirect, special, punitive or incidental damages,

arising out of or in connection with:

- the Report and any person's reliance on it;
- the plant the subject of the Report;
- the input data;
- any failure of the plant, the Customer or any other person to comply with any Law; or
- any third party claims or allegations (including investigations by a regulator) in connection with any of the foregoing.

Where Glow Technologies is not permitted by law to exclude any liability in the manner set out above but it is lawful to limit such liability, such liability is limited to the lesser of:

- the pro rata license fees paid by the Assessor to Glow Technologies to use the Plant App to produce this one Report; and
- the minimum amount permitted by law.

The Customer must promptly review the Report following receipt and immediately notify the Assessor if it has any issues or concerns with the Report, including its accuracy, currency or completeness.

It is Customer's responsibility to ensure that it and any Assessor it retains have in place appropriate insurances to cover any damage or loss that the Customer and third parties may suffer in connection with the Report including any plant the subject of this Report.

The Customer must not disclose the Report to any person except:

- to those persons that need the Report in order to operate or repair the plant the subject of the Report;
- to occupiers of the facilities where the relevant plant is to be used where the Report is required for WH&S purposes;
- where the plant is leased, to the owner of that plant for its own internal quality assurance, verification and WH&S purposes;
- where the plant is sold or leased to a new lessee, to the new owner or lessee of the plant for its own internal quality assurance, verification and WH&S purposes;
- to the Customer's legal advisors and insurers, to the extent required for Customer to receive legal and insurance advice; or
- if disclosure is required by law or a government authority,

provided such recipients agree to only use and copy the Report for the purposes for which it was disclosed to them and are made aware of and accept the terms of this Disclaimer.