

Plant and Equipment Risk Assessment

Equipment Location:	Hired From All Master Hire Stores	Equipment:	FUEL CELL		Approved By:	Steven Jose
						Signature:
		Manufacturer Details	Various			

Hazard	Action Required Yes/No	Risk Level (Refer to risk matrix)	Hierarchy of Control	Hazard and Risk Treatment (Complete Hazard Report Form)	Risk Level after Risk Treatment (Refer to risk matrix)
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Entanglement					
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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input type="checkbox"/> Administration <input type="checkbox"/> PPE		

Crushing		ACUTE			HIGH
Can anyone be crushed due to: <ul style="list-style-type: none"> ▪ Material falling off the plant? ▪ Uncontrolled or unexpected movement of the plant or its load? ▪ Lack of capacity for the plant to be slowed, stopped or immobilized? ▪ The plant tipping or rolling over? ▪ Parts of the plant collapsing? ▪ Coming in contact with moving parts of the plant during testing, inspection, use, maintenance, cleaning or repair? ▪ Being thrown off or under the plant? ▪ Being trapped between the plant and materials or fixed structures? • Other factors? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input checked="" type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Ensure travel of moving vehicle (forward or reversing) is free of all personnel except driver</i> <i>Ensure equipment is tied down securely while transporting</i> <i>Ensure all signage, labels and warning decals are clear and visible</i> <i>Ensure appropriate PPE is worn to ensure safety and minimise personal injury</i>	

Cutting, Stabbing and Puncturing					
Can anyone be cut, stabbed or punctured due to? <ul style="list-style-type: none"> ▪ Coming in contact with sharp or flying objects? ▪ Coming in contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair of the plant? ▪ Plant, parts of the plant or work pieces disintegrating? ▪ Work pieces being ejected? 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input type="checkbox"/> Administration <input type="checkbox"/> PPE		

<ul style="list-style-type: none"> ▪ The mobility of the plant? ▪ Uncontrolled or unexpected movement of the plant? ▪ Other factors? 					
Shearing					
Can anyone's body parts be: <ul style="list-style-type: none"> ▪ Sheared between two or more parts of the plant, or between a part of the plant and a work piece or structure? 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input type="checkbox"/> Administration <input type="checkbox"/> PPE		
Friction					
Can anyone be burnt, gain abrasions etc. due to: <ul style="list-style-type: none"> ▪ Contact with moving parts or surfaces of the plant, or material handled by the plant? 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input type="checkbox"/> Administration <input type="checkbox"/> PPE		
Striking					
Can anyone be struck by moving objects due to: <ul style="list-style-type: none"> ▪ Uncontrolled or unexpected movement of the plant or material handled by the plant? ▪ Plant, parts of the plant or work pieces disintegrating? ▪ Work pieces being ejected? ▪ Mobility of the plant? ▪ Other factors? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Ensure all signage, labels and warning decals are clear and visible at all times</i> <i>Ensure travel of moving vehicle (forward or reversing) is free of all personnel except driver</i> <i>Ensure all loads are placed and secured</i> <i>Ensure exclusion zone in and around vehicle while loaded or being filled</i> <i>Ensure appropriate PPE is worn to ensure safety and minimise personal injury</i>	LOW
High Pressure Fluid					
Can anyone come into contact with? <ul style="list-style-type: none"> ▪ Fluids under high pressure in normal use, in the instance of plant failure? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LOW	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Ensure all signage, labels and warning decals are clear and visible</i> <i>Ensure appropriate PPE is worn to ensure safety and minimise personal injury</i>	LOW

Plant and Equipment Risk Assessment

<p>Electrical</p> <p>Can anyone be injured by electrical shock or burnt due to:</p> <ul style="list-style-type: none"> ▪ The plant contacting live electrical conductors? ▪ Plant working close to electrical conductors? ▪ Overload of electrical circuits? ▪ Damaged or poorly maintenance electrical leads or cables? ▪ Damaged electrical switches? ▪ Water near electrical equipment? ▪ Lack of isolation procedures? ▪ Other factors 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<p><i>Follow manufacturers' instructions</i></p> <p><i>Obey all warning decals</i></p> <p><i>Do not operate in areas with overhead/underground wiring or other obstructions</i></p> <p><i>Ensure placement of Fuel Cell is away from electrical conductors</i></p> <p><i>Ensure any ignition source is removed prior to operation</i></p> <p><i>Do not use this machine under bad weather conditions</i></p> <p><i>Ensure all emergency stops, switches and buttons are in good working condition</i></p> <p><i>Ensure appropriate PPE is worn to ensure safety and minimise personal injury</i></p>	LOW
<p>Explosion</p> <p>Can anyone be injured by fuels such as gases, vapours, liquids, dusts or other substances being ignited triggered by the operation of the plant or by materials handled by the plant?</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	HIGH	<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input checked="" type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<p><i>Follow manufacturers' instructions</i></p> <p><i>Obey all warning decals</i></p> <p><i>Ensure all signage, labels and warning decals are clear and visible</i></p> <p><i>Ensure placement of Fuel Cell is away from electrical conductors</i></p> <p><i>Ensure any ignition source is removed prior to operation</i></p> <p><i>Ensure the labels on the tank clearly specify the contents and any necessary controls</i></p> <p><i>Ensure fire extinguisher is always present, have current certification and be fully functional</i></p> <p><i>Ensure appropriate PPE is worn to ensure safety and minimise personal injury</i></p>	LOW

Plant and Equipment Risk Assessment

Slipping, tripping and Falling					
<p>Can anyone using the plant, or in the vicinity of the plant, slip, trip or fall due to:</p> <ul style="list-style-type: none"> ▪ Uneven or slippery work surfaces? ▪ Poor housekeeping, such as shavings in the vicinity of the plant, spillage not cleaned up? ▪ Obstacles being placed in the vicinity of the plant? ▪ Other factors? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Wear appropriate footwear</i> <i>Use steps provided when getting in/on Fuel Cell</i> <i>Never climb on or enter tank area</i> <i>Take precaution when refilling tank to not spill the contents</i> <i>Ensure appropriate PPE is worn whilst operating this machine to ensure safety and minimise personal injury</i>	LOW
High Temperature					
<p>Can anyone:</p> <ul style="list-style-type: none"> ▪ Come into contact with objects at high temperature? ▪ Come into contact with hot fluids? ▪ Be injured by fire? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LOW	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Ensure fire extinguisher is always present, have current certification and be fully functional</i> <i>Ensure appropriate PPE is worn to ensure safety and minimise personal injury</i>	LOW
Temperature and Thermal Comfort					
<p>Can anyone suffer ill-health due to:</p> <ul style="list-style-type: none"> ▪ Exposure to high or low temperatures? ▪ Failure of air conditioning equipment? 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input type="checkbox"/> Administration <input type="checkbox"/> PPE		
Suffocation					
<p>Can anyone be suffocated due to:</p> <ul style="list-style-type: none"> ▪ Lack of oxygen, or atmospheric contamination? 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input type="checkbox"/> Engineering <input type="checkbox"/> Administration <input type="checkbox"/> PPE		

Plant and Equipment Risk Assessment

<p>Ergonomics</p> <p>Can anyone be injured due to:</p> <ul style="list-style-type: none"> ▪ Poorly designed seating? ▪ Repetitive body movements? ▪ Constrained body posture or the need for excessive effort? ▪ Design deficiency causing physical or personal stress? ▪ Inadequate or poorly placed lighting? ▪ Lack of consideration given to human error or human behaviour? ▪ Mismatch of the plant with human traits and natural limitations? ▪ Other factors? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LOW	<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input type="checkbox"/> PPE	<p><i>Follow manufacturers' instructions</i></p> <p><i>Obey all warning decals</i></p> <p><i>Take regular breaks/rests</i></p> <p><i>Exercise/stretch regularly</i></p> <p><i>Do not operate beyond your personal capabilities</i></p> <p><i>Use suitably designed and secured loading/unloading procedures including crane, hoist, ramps etc. when moving cell</i></p> <p><i>Observe and use proper manual handling techniques</i></p>	LOW
<p>Transportation</p> <p>Can anyone be injured by this equipment falling or driven off vehicle or trailer while loading, unloading or transportation?</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<p><i>Follow manufacturers' instructions</i></p> <p><i>Obey all warning decals</i></p> <p><i>Ensure engine and fuel is switched off</i></p> <p><i>Ensure equipment, attachments and sundry items are securely tied down</i></p> <p><i>Apply/use chocks if necessary</i></p> <p><i>Ensure liquids are prevented from spillage</i></p> <p><i>Maintain vehicle and/or equipment in good working order - report any malfunction or damage to Master Hire immediately and stop using equipment where it is reasonable to foresee further risk to persons or damage to equipment</i></p> <p><i>Ensure appropriate PPE is worn whilst operating this machine to ensure safety and minimise personal injury</i></p>	LOW

Operational					
Can anyone be injured by this equipment	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	MEDIUM	<input type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Ensure equipment is on stable ground and clear of obstructions</i> <i>Ensure adequate ventilation</i> <i>Ensure safety gears, levers, switches etc. are engaged/disengaged appropriately before starting/operating</i> <i>Ensure machine is switched off before making any adjustments</i> <i>Regular inspection to check for any structural damage must be done prior to commencing operation</i> <i>Do not remove the hazard warning label</i> <i>Ensure fire extinguisher is always present, have current certification and be fully functional</i> <i>Ensure appropriate PPE is worn whilst operating this machine to ensure safety and minimise personal injury</i>	LOW
Other Hazards					
Can anyone be injured or suffer ill-health from exposure to: <ul style="list-style-type: none"> • Chemicals? • Toxic gases or vapours? • Fumes? • Dust? • Noise? • Vibration? • Radiation? • Other Factors? 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	LOW	<input checked="" type="checkbox"/> Elimination <input type="checkbox"/> Substitution <input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Engineering <input checked="" type="checkbox"/> Administration <input checked="" type="checkbox"/> PPE	<i>Follow manufacturers' instructions</i> <i>Obey all warning decals</i> <i>Operate in well-ventilated areas only</i> <i>Check for overhead/underground utilities (gas, water, electrical) before operation</i> <i>Ensure equipment is appropriately labelled and meet the relevant State Legislative requirements</i> <i>Maintain vehicle and/or equipment in good working order - report any malfunction or damage to Master Hire immediately and stop using equipment where it is reasonable to foresee further risk to persons or damage to equipment</i> <i>Ensure appropriate PPE is worn whilst operating this machine to ensure safety and minimise personal injury</i>	LOW



SAFETY MANAGEMENT SYSTEM

Plant and Equipment Risk Assessment

Further Comments:	A Specific Risk Assessment on site must be undertaken prior to plant operation.
	This equipment must only be driven/operated by competent persons and holders of the appropriate license
Checklist:	<input checked="" type="checkbox"/> <i>Manufacturers' manuals referenced</i> <input checked="" type="checkbox"/> <i>Copy kept in Master Hires' Risk Management File</i>

Hazard / Risk Matrix

Reference: Workplace Health and Safety Queensland - Risk Assessment - Supplement 2
Risk Management Code of Practice 2007

Step 1 Determine Likelihood – What is the possibility of the event happening?

	Criteria	Description
Almost certain	Expected in most circumstances.	Event is a common problem
Likely	Will probably occur in most circumstances.	Event is known to have occurred at this site or it has happened
Possible	Might occur at some time	Event could occur at the site or I've heard of it happening
Unlikely	Could occur at some time	Event is not likely to occur at the site or I have not heard of it happening
Rare	May occur only in exceptional circumstances	Event is practically impossible.

Step 2 Determine Consequence - What will be the result if it happens?

Classification	Example detail description
Insignificant	No injuries
Minor	First aid treatment only; spillage contained at site.
Moderate	Medical treatment; spillage contained but with outside help.
Major	Extensive injuries; loss of production
Catastrophic	Death; toxic release of chemicals

Step 3 Determine the risk score

LIKELIHOOD	CONSEQUENCE				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	3 High	3 High	4 Acute	4 Acute	4 Acute
Likely	2 Medium	3 High	3 High	4 Acute	4 Acute
Possible	1 Low	2 Medium	3 High	4 Acute	4 Acute
Unlikely	1 Low	1 Low	2 Medium	3 High	4 Acute
Rare	1 Low	1 Low	2 Medium	3 High	3 High

Step 4 Record risk score against the job sequence steps

(Note – Risk scores have no absolute value and should only be used for comparison and to engender discussion.)

Score	Action
4 A: Acute	ACT NOW – Urgent – do something about the risks immediately. Requires immediate attention.
3 H: High	Highest management decision is required urgently.
2 M: Medium	Follow management instructions.
1 L: Low	OK for now. Record and review if any equipment/ people/ materials/ work processes or procedures change.