










## Job details

Job Description	Temporary Generator Installation	SWMS Number	201074-SE-SWM-0001								
Author(s)	Mike Bentley	Project	CBESS								
Review Team		Location	Site wide								
SWMS Approved By	Alex Yates	Area									
Skills / Qualifications / Licences Required	Electrical Licence, Site Specific Authorisations for Generator Install and Electrical Work										
Plant / Equipment Required	Generator										
Permits Required	N/A										
Applicable Documents, Legislation and COPs	<p><b>WA</b> – Work Health and Safety Act 2020, Work Health and Safety (General) Regulations, Work Health and Safety (Mines) Regulations, Work Health and Safety (Petroleum and Geothermal Energy Operations) Regulations 2022, Mines Safety and Inspection Act 1994, Energy Safety Act 2006, Energy Safety Regulations 2006, Petroleum and Geothermal Energy Resources Act 1967, Electricity Act 1945, Electricity Regulations 1947, Electricity Licensing Regulations 1991, Environmental Protection Act 1986, Environmental Protection Regulations 1987.</p> <p><b>SCEE</b> – 201074-SE-PRO-0002 Collie Battery Energy Storage Project Electrical Isolation and Tag Out</p>										
Applicable Australian Standards	AS10896.1:2019 – Rough-terrain trucks – Safety requirements and verification, AS 2550.1:2011 – Cranes Hoists & Winches – Safe use -General Requirements, AS 2550.19:2007 Cranes Hoists & Winches – Safe Use – Telescopic Handlers, AS 2550.5:2016 Cranes Hoists & Winches – Safe Use – Mobile Cranes, AS/NZS 3000:2018 Wiring Rules										
PPE (tick required)	 Uniform <input checked="" type="checkbox"/>	 Footwear <input checked="" type="checkbox"/>	 Eyewear <input checked="" type="checkbox"/>	 Gloves <input checked="" type="checkbox"/>	 Hard hat <input checked="" type="checkbox"/>	 High-Viz <input checked="" type="checkbox"/>	 Ear wear <input type="checkbox"/>	 Dust mask <input type="checkbox"/>	 Fall arrest <input type="checkbox"/>	As required	<input type="checkbox"/>
										Other <input type="checkbox"/>	Other <input type="checkbox"/>

## Potential hazards associated with the job

Category	Hazard	Category	Hazard	Category	Hazard
<b>Working at heights</b>	<input type="checkbox"/> Ladders <input type="checkbox"/> Lifting equipment, scissors / EWP's <input type="checkbox"/> Scaffolding <input type="checkbox"/> Stairs / platforms <input type="checkbox"/> Working at height <input type="checkbox"/> Working above others <input type="checkbox"/> Multiple work requiring EWP's	<b>Pressure</b>	<input type="checkbox"/> Competitive pressures <input checked="" type="checkbox"/> Compressed gases / air <input type="checkbox"/> Fluid <input checked="" type="checkbox"/> High pressure steam <input type="checkbox"/> Hydraulic <input type="checkbox"/> Water	<b>Workplace</b>	<input type="checkbox"/> Asbestos <input type="checkbox"/> Confined space / void space <input type="checkbox"/> Falling objects <input checked="" type="checkbox"/> General access <input checked="" type="checkbox"/> Housekeeping <input type="checkbox"/> Illumination / lighting <input checked="" type="checkbox"/> Noise, i.e. Exposure / nuisance <input checked="" type="checkbox"/> Poor ventilation <input type="checkbox"/> Protrusions <input type="checkbox"/> Restricted visibility <input type="checkbox"/> Restricted work area <input checked="" type="checkbox"/> Slip & trip hazards <input type="checkbox"/> Unauthorised personnel <input checked="" type="checkbox"/> Unlabelled controls <input type="checkbox"/> Vibration <input type="checkbox"/> Wet / slippery <input type="checkbox"/> Wind / storm activity <input type="checkbox"/> Fog / mist / smoke <input type="checkbox"/> Working in isolation <input checked="" type="checkbox"/> Dust / particulates
<b>Radiation</b>	<b>Using mobile plant</b>	<input checked="" type="checkbox"/> Traffic / pedestrian interaction / collision <input type="checkbox"/> Uneven terrain <input type="checkbox"/> Unlicensed / untrained operators <input type="checkbox"/> Vehicle instability <input type="checkbox"/> Vehicle access			
			<b>Mechanical</b>		
<b>Environment</b>	<input type="checkbox"/> Air contamination <input type="checkbox"/> Soil contamination <input type="checkbox"/> Stormwater contamination <input type="checkbox"/> Waste (effluent/hazardous)	<b>Thermal</b>		<input type="checkbox"/> Cold – ambient temperature <input type="checkbox"/> Heat – ambient temperature <input type="checkbox"/> Hot materials/fluids <input type="checkbox"/> Hot surfaces	

<b>Job Steps</b> List the steps required to perform the job in the sequence they are carried out	<b>Reference</b> List the references for the required job step such as work instructions, client requirements etc	<b>Hazards</b> For each job step list the hazards that could cause injury when the task is performed	<b>Initial Risk Rating</b>	<b>Control</b> List the control measures required to eliminate or minimise the risk of injury arising from the identified hazards	<b>Residual Risk Rating</b>
<b>Plan and prepare</b>					
Permit application if required (may be required for application, testing / commissioning, etc.) Work Method Statement submission	SCEE Safety Management Plan (SMP)	<ul style="list-style-type: none"> <li>• Non inducted employees</li> <li>• Staff not competent and authorised</li> <li>• Working with an un approved WMS</li> <li>• Not enough time given for permit application</li> <li>• NON Licensed and VOC operators / tradesman</li> </ul>	4	<ul style="list-style-type: none"> <li>• All staff to have OHS and environmental induction</li> <li>• Scope of work and WMS submission to be in consultation with Client</li> <li>• Organise the required Work at Height permit, hot works and isolation permits as required,</li> <li>• WMS to be submitted well before activity date for approval or amendment</li> <li>• Submittal of licences and VOC's to Client and supervisors to observe tradesman, continually for competency checks</li> <li>• Work is undertaken by a licenced electrician approved for electrical installations on site requirement.</li> </ul>	2
SWMS review (this document)	201074-SE-PLN-001 SCEE CBESS Safety Management Plan (SMP)  SCEE Work instruction - JHA	<ul style="list-style-type: none"> <li>• SWMS created without experienced personnel</li> <li>• Not enough information in the document</li> <li>• Not task specific</li> </ul>	4	<ul style="list-style-type: none"> <li>• JHA training to be rolled out to all staff, updated and re visited where necessary</li> <li>• Manager and supervisor to sign off and approve the SWMS client approval may also be needed</li> <li>• Permit controls outlined in the SWMS and a SWMS audit to confirm those controls</li> <li>• Provision for updating document included</li> <li>• JHA to be task specific</li> <li>• JHA to be signed by Supervisor</li> <li>• JHA to include the emergency response plan – mayday procedures included.</li> </ul>	2
Pre start/safety talk	201074-SE-PLN-001 SCEE CBESS Safety Management Plan (SMP)  SCEE Fitness for Work Policy	<ul style="list-style-type: none"> <li>• Misinformation conveyed at pre start</li> <li>• Staff not present at pre start</li> <li>• Pre starts not relevant to activities</li> </ul>	4	<ul style="list-style-type: none"> <li>• All staff on shift for the day to be present at pre start, BAC tests to be completed and staff are to be fit for work</li> <li>• Late comers to sign register and be given a rundown of the pre start content by HSE</li> <li>• Information to be approved by manager to ensure relevancy and accuracy</li> </ul>	2
<b>Carry out the job</b>					
The Temporary Generator that is to be installed is to be pre placed in the appropriate position taking into account work front risk assessments such as JHAs in conjunction with SCEE SWMS load and unload.	201074-SE-PLN-001 SCEE CBESS Safety Management Plan (SMP)	<ul style="list-style-type: none"> <li>• Incorrect tools for the job – not inspected or approved</li> <li>• Uneven ground presenting trip hazards,</li> <li>• Cramped position to the generator and other infrastructure</li> <li>• Proximity to other infrastructure – interaction risk</li> </ul>	9	<ul style="list-style-type: none"> <li>• Address of the site where the generator is to be connected /installed – ensure that the area around the generator is flat and removed of trip hazards and that there are no overhead or underground services in the area – note distances to the adjoining infrastructure and raise concerns for any clearance concerns.</li> </ul>	5

<b>Job Steps</b> List the steps required to perform the job in the sequence they are carried out	<b>Reference</b> List the references for the required job step such as work instructions, client requirements etc	<b>Hazards</b> For each job step list the hazards that could cause injury when the task is performed	<b>Initial Risk Rating</b>	<b>Control</b> List the control measures required to eliminate or minimise the risk of injury arising from the identified hazards	<b>Residual Risk Rating</b>
Preparation for the install		<ul style="list-style-type: none"> <li>Not licenced to complete the job</li> </ul>		<ul style="list-style-type: none"> <li>Planned outage or job date – confirm requirements for any isolations that maybe present – is the generator tying into existing live infrastructure? Permit and isolation procedures may be required</li> <li>Make contact with project manager/switcher regarding planned outage to let them know our crew contact details and our role (supply and connection of generator).</li> <li>Let project manager/switcher know that we will be conducting site survey prior to job date</li> <li>Make contact with client before site survey is conducted to explain planned outage/generator connection etc</li> <li>Any Risk Assessments that are competed in conjunction with this SWMS are to be approved by SCEE supervision and in compliance with client procedures</li> <li>Ensure that the correct tools for the task are being used, inspect electrical tools and ensure that all are in the current electrical test and tag date.</li> <li>Portable generators may be used and need to have the electrical leads off the ground, be self-bunded and approved for site use.</li> <li>Ensure area is well delineated and signed appropriately – spotters may be necessary – consider blind corners, traffic, pedestrians, etc.</li> </ul>	
Inspection of generator and panels / distribution boards.	201074-SE-PLN-001 SCEE CBESS Safety Management Plan (SMP)	<ul style="list-style-type: none"> <li>Incorrectly identified phase rotation</li> <li>Connecting generator incorrectly</li> <li>Pinch points</li> <li>Live boards</li> <li>Electric shock</li> </ul>	13	<ul style="list-style-type: none"> <li>LOCK OUT, TAG OUT procedures followed in accordance with SCEE Electrical isolation procedure</li> <li>Ensure any relevant Personal Protective Equipment (PPE) is used when accessing any live electrical points – Insulated gloves with outers (leather gloves), safety glasses or face shield if needed</li> <li>Distributions boards are to be de energised prior to install – confirm isolation or new boards.</li> <li>Test for potential to earth if available before touching the panel</li> <li>Remove necessary board panels/meter covers</li> <li>Ensure doors to panels are held back appropriately and are not at risk of closing and creating a crush point</li> <li>Identify main incoming consumer mains/meter/service protection device (SPD)</li> <li>Identify best option for generator cable connection</li> <li>Generator connection point must:</li> <li>Have the capability of being isolated from the network</li> </ul>	8

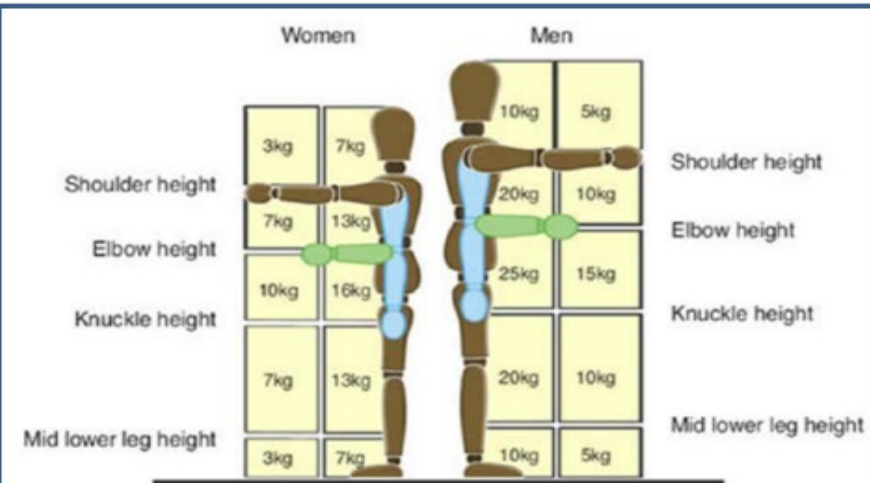
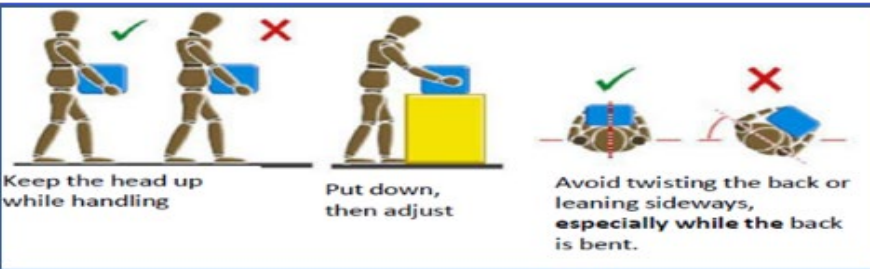
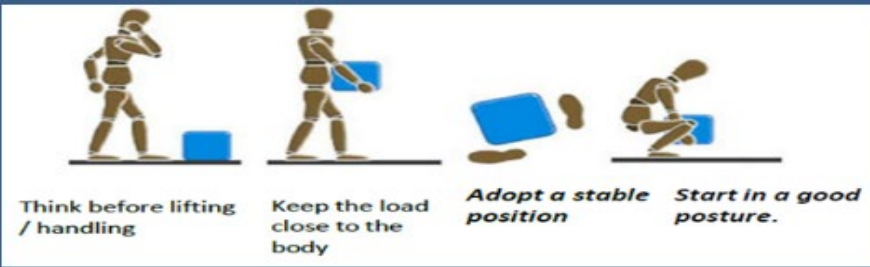
<b>Job Steps</b> List the steps required to perform the job in the sequence they are carried out	<b>Reference</b> List the references for the required job step such as work instructions, client requirements etc	<b>Hazards</b> For each job step list the hazards that could cause injury when the task is performed	<b>Initial Risk Rating</b>	<b>Control</b> List the control measures required to eliminate or minimise the risk of injury arising from the identified hazards	<b>Residual Risk Rating</b>
				<ul style="list-style-type: none"> <li>• Have air gap from network</li> <li>• Use in-test correct category test equipment only (Category III or IV are the likely requirements)</li> <li>• Check Phase Rotation</li> <li>• Check load current on all phases (ideally at peak time or when generator will be in use so correct generator size is selected)</li> <li>• Place sticker in easy to see location for future reference</li> <li>• Check MEN link</li> <li>• Check Earth loop impedance</li> </ul>	
Termination of LV cables form generator to distribution boards / termination points  Note – notification of power outage must be given and be pre-arranged with client if isolations and power outages are required for the termination, testing and commissioning.	201074-SE-PLN-001 SCEE CBESS Safety Management Plan (SMP)	<ul style="list-style-type: none"> <li>• Sharp objects / wires</li> <li>• Incorrect wiring</li> <li>• Loose items – trip hazards</li> <li>• Pedestrians / traffic</li> </ul>	<b>13</b>	<ul style="list-style-type: none"> <li>• Place any bunting/traffic cones/cable tray required into position and run cable from generator to connection point</li> <li>• Connect cable to generator making sure cable is the appropriate size for load and protection from generator circuit breaker</li> <li>• Ensure generator main switch/circuit breaker is in off position</li> <li>• Only retractable blade knives are to be used – appropriate gloves for the task and always cut away from the body – remain out of line of fire at all times</li> <li>• Ensure generator RCD/earth leakage is isolated</li> <li>• Turn battery isolator on</li> <li>• Turn generator on and warm up</li> <li>• Check voltages / frequencies correct on generator control panel (voltages to be within 5% and frequency to be with 1% - Frequency will likely drop slightly once generator has warmed up/loaded up)</li> <li>• Make sure all tools/equipment on hand at connection point to reduce changeover time</li> <li>• Re-confirm with client that you will now be doing changeover</li> <li>• Do changeover following appropriate connection/changeover form (follow all steps) – complete generator connection form in job cloud at same time</li> <li>• Ensure work area is safe and no access to live parts (any live parts must only be accessed via keyed or tooled methods)</li> <li>• Recheck generator voltages/frequency/load</li> <li>• Contact client and ensure correct operation of site/premises</li> <li>• Fill out paperwork:</li> </ul>	<b>8</b>

<b>Job Steps</b> List the steps required to perform the job in the sequence they are carried out	<b>Reference</b> List the references for the required job step such as work instructions, client requirements etc	<b>Hazards</b> For each job step list the hazards that could cause injury when the task is performed	<b>Initial Risk Rating</b>	<b>Control</b> List the control measures required to eliminate or minimise the risk of injury arising from the identified hazards	<b>Residual Risk Rating</b>
				<ul style="list-style-type: none"> <li>Safety Certificate will be required to be filled out and any client requirements for testing and commissioning / sign off for energisation.</li> <li>Recheck generator throughout day</li> <li>Check fuel level throughout day</li> <li>Keep in contact with switcher/project manager throughout day to get updates of the outage</li> </ul>	
<b>Job Specific Hazards and Controls – Work Crew to Complete this Section</b>					
<ul style="list-style-type: none"> <li>Ground Conditions</li> </ul>					
<ul style="list-style-type: none"> <li>Live/Moving Equipment</li> </ul>					
<ul style="list-style-type: none"> <li>Obstructions</li> </ul>					
<ul style="list-style-type: none"> <li>Weather</li> </ul>					
<b>Complete the job</b>					
Testing and commissioning Note: client may instruct a third party (client) to complete testing.	SCEE Safety Management Plan (SMP)  SCEE Work Instruction - MEWP  SCEE Work Instruction - Working at Heights  SCEE SWMS - Use of Power Tools  SCEE SWMS - Dressing Power Poles  SWMS – Elevated Work Platform	<ul style="list-style-type: none"> <li>Isolation procedure breaches</li> <li>Non-conformance of commissioning requirements</li> <li>Unauthorised access to commissioning areas.</li> <li>Tests not complete by qualified personnel</li> </ul>	<b>21</b>	<ul style="list-style-type: none"> <li>Certified person to conduct veer left test – sub contractor to be commissioned</li> <li>Electrical license of subcontractor to be current, valid and lodged with calibre</li> <li>Are to be delineated (with commissioning tape)/barricaded while commissioning in process</li> <li>Commissioning activities to be registered with Client for service interruptions</li> <li>Relevant tests and checklists to be conformed with as per Client procedure</li> </ul>	<b>7</b>
Demob clean up – remove mobile equipment, eliminate trip hazards, loose objects and rubbish		<ul style="list-style-type: none"> <li>Manual handling</li> <li>Vehicle/vehicle/pedestrian interaction</li> <li>Sharp objects – cuts</li> </ul>	<b>9</b>	<ul style="list-style-type: none"> <li>Correct PPE to be worn while cleaning the area – gloves, glasses, full clothing and eyewear</li> </ul>	<b>2</b>

# Safe Work Method Statement – Temporary Generator Installation

<b>Job Steps</b> List the steps required to perform the job in the sequence they are carried out	<b>Reference</b> List the references for the required job step such as work instructions, client requirements etc	<b>Hazards</b> For each job step list the hazards that could cause injury when the task is performed	<b>Initial Risk Rating</b>	<b>Control</b> List the control measures required to eliminate or minimise the risk of injury arising from the identified hazards	<b>Residual Risk Rating</b>
		<ul style="list-style-type: none"> <li>• Non segregation of rubbish</li> </ul>		<ul style="list-style-type: none"> <li>• Correct segregation of rubbish to be used – metal, wood, general, cardboard and recyclables.</li> <li>• Spotters to be used for the de mobbing of the mobile equipment and assessments of the culverts for exiting equipment to be made by the spotters and the operators</li> <li>• Correct manual handling techniques to be used as per training that has been completed, two man lifts, mobile equipment where necessary</li> <li>• Post activity checks of machines and surrounding areas to be completed to ensure security of machines and examine the potential for fire in hot conditions - report to supervisor if this is identified. Machines are not to be parked on cleared tracks where possible - this will avoid the potential for ignition with vegetation</li> </ul>	

## Manual Handling Techniques/Guide



## EMERGENCY PREPAREDNESS

### Medical Emergency Response

- Danger - Check for danger
- Response - Check for response
- Send - Send for help
- Airways - Check for blocked airway
- Breathing - Check for breathing
- CPR - CPR 30 compressions 2 breaths
- Defibrillation - Apply defibrillator (if available)

### Electrical Medical Emergency Response

- Do not touch person in contact
- Warn others to stay clear
- Disconnect power source if possible
- Call emergency contacts immediately

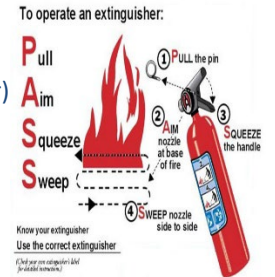
If not possible to isolate energy

- Open LV Rescue Kit
- Place insulated gloves on
- Use insulated LV Hook to break contact between person and electricity

**Medical attention must be sought for all electric shocks**

### Fire (Electrical)

- Rescue
- Alarm
- Contain Fire
- Extinguish (CO<sup>2</sup> or ABE Powder)
- Pull the pin
- Aim at the base of fire
- Squeeze the trigger
- Sweep base of fire



### Contact with Electricity Mobile Plant (HV)

- Stay calm
- Stay within mobile plant (if safe to do so)
- Avoid touching anything metal within the cab
- Warn other to stay away (minimum 8 meters)
- Call emergency contacts immediately

If unsafe to remain in plant

- Do not touch metal when exiting
- Try to jump well clear landing with feet together
- Jump with both feet together until 8 meters away
- Do not touch any metal object within 8 meters of plant



## Risk Matrix

Consequence					
	Health & Safety	Environment	Legal & Regulatory	Financial / Commercial	Reputation
Catastrophic	Fatality. Multiple fatalities. Serious safety breach leads to loss of multiple key employees or fatality	Severe damage to environmental / heritage damage	Imprisonment of officers, loss of Electrical Contractors Licence	Not meeting market set expectations by >30%	Permanent loss of strategic client, Systemic brand damage
Major	Multiple LTIs, permanent disabling injury.	Significant environmental / heritage damage. Costly clean up	Major ASX breach, loss of Electrical Contractors Licence, major breach of legal and/or regulatory requirements	Not meeting market set expectations by 10% -30%	Major brand damage
Moderate	Serious injury, Lost Time Injury (LTI)	Moderate effects on environment / heritage area. External assistance required for clean-up / remediation	Moderate breach of legal and/or regulatory requirements	Not meeting market set expectations by 5%-10%	Moderate brand damage
Minor	Medical treatment injury, restricted work injury	Minor short term damage to environmental / heritage area	Minor breach of legal and/or regulatory requirements	Not meeting market set expectations by <5%	Minor brand damage
Negligible	Minor injury at site, first aid treatment	Limited damage to area of no or low significance. Internal clean up	Minor breach of legal and/or regulatory requirements	N/A	Negligible brand damage

Likelihood					
	Rare	Unlikely	Possible	Likely	Almost Certain
Historical	Unheard of in the industry	Has occurred once or twice in the industry	Has occurred many times in the industry but not in the company	Has occurred once or twice in the company	Has occurred frequently in the company
Frequency (Continuous Operation)	Once every 10 years or more within SCEE	Once every 2 to 10 years within SCEE	Once every 1-2 years within SCEE	Once every year within SCEE	More than once each year within SCEE
Probability (single activity)	Rare	Unlikely to occur	May occur	Will probably occur	Will occur

Risk Matrix					
	Rare	Unlikely	Possible	Likely	Almost Certain
Catastrophic	11	16	20	23	25
Major	7	12	17	21	24
Moderate	4	8	13	18	22
Minor	2	5	9	14	19
Negligible	1	3	6	10	15

Legend		
	Operational	Corporate
Low 1 – 3	Acceptable with adequate controls.	Project/Functional Manager is responsible
Medium 4 – 10	Acceptable with adequate controls. Confirm that controls implemented have reduced risk to as low as reasonably practicable. Supervisor sign off on JHA required for tasks with residual risk that remains at this level.	Acceptable with *adequate controls. Responsibility of Operations /Divisional /Functional Manager.
High 11 – 19	Acceptable only if controls have been reduced as low as reasonably practicable. Site manager approval of controls for residual risks that remain at this level.	Only acceptable with *excellent controls. All treatment actions to be explored within 1 – 3 months. Responsibility of COO/CEO/MD.
Extreme 20 – 25	Risk needs to be reduced to a level as low as reasonably practicable. Project Manager and HSE Manager consultation is required for any tasks which have residual risk assessed at this level, divisional GM or higher approval required.	Only acceptable with *excellent controls. All treatment actions to be explored within 1 month. Responsibility of the Board.

\*adequate controls = only what a reasonable person would be expected to do in the circumstances

\*excellent controls = more than what a reasonable person would be expected to do in the circumstances



# Safe Work Method Statement – Temporary Generator Installation

We the undersigned, confirm that we have been consulted in the preparation of the SWMS nominated above and that the content has been clearly explained is understood and accepted. We also confirm that our qualifications to undertake this activity are current.

We clearly understand the controls in this SWMS must be applied as documented including our responsibilities for the implementation; otherwise work is to cease immediately.

Name	Signature	Date	Name	Signature	Date

Comments: \_\_\_\_\_



# Safe Work Method Statement – Temporary Generator Installation