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This is a safety briefing on (Working with Electricity) in relation to QLD WHS regulations and OFSC Audit criteria H12. Working with electricity is a high risk activity that PCBUs have to manage on a daily basis.

So please be mindful and remember work health and safety implementation is everyone's responsibility.

QLD WHS Regulation 2011 – Electrical	Optional - PCBU or Worker Action for meeting compliance
Work is conducted in a way that is electrically safe. Electrical Safety Act 2002 s.30	Conduct a Project Risk Assessment before allowing workers or plant to be operated and ensure daily pre starts are conducted to ensure worker remember to LOOK UP and LIVE and report when they see electrical equipment which is potentially damaged
A SWMS is available for all work that is carried out on or near energised electrical installations or services that has commenced or is about to commence at the workplace. Work Health and Safety Regulation 2011 s.291 and s.299	No SWMS no work as electrical work is a high risk construction activity, ensure the SWMS is relevant to the work being undertaken and is checked at the time or before the site induction by the site supervisor and the workers using the SWMS understand it also applies to all underground utilities
Electrical leads are arranged to avoid damage. Electrical Safety Regulation 2013 s.102	Ensure leads are off the ground in high traffic areas or where mechanical plant is being operated. Use insulated hooks or flexible conduit where leads go around or are laid upon conductive surfaces
Leads and tools are not used in damp or wet conditions unless they have been specifically designed to do so Electrical Safety Act 2002 s30	Water and electrical equipment do not mix, so use insulated hooks to maintain safe clearance and keep them of the ground away from water and mechanical damage
Residual current devices are installed and tested regularly. Electrical Safety Regulation 2013 s.104	The testing of electrical installations RCDs at the time of first installation and throughout the construction program is mandatory, you should ask for the initial electrical safety compliance certificate including records of all the electrical tests that verify electrical compliance and when regular and ongoing testing occurs ask for the evidence of electrical test results.
Electrical equipment has been inspected, testing, and tagged in accordance with AS/NZS 3012 Electrical installations – Construction and demolition sites.	Have you stated in your WHS Plan that there is an inspection regime that ensures all Electrical Equipment onsite is being maintained and tested to AS 3012 requirements
Electrical work is carried out by an appropriately licensed individual. Electrical Safety Act 2002 s.55	All electrical work must be is conducted by an appropriately licenced electrical worker and evidence of their competency is collected before the electrical work commences including mandatory training such as CPR and switch board rescue.
All electrical equipment for the performance of work is in accordance with the requirements of AS/NZS 3012 Electrical installations – Construction and demolition sites.	Electrical equipment includes all systems of wiring and equipment that is installed to provide electrical supply for Construction and Demolition work and is not intended to form part of the permanent installation. This includes; <ul style="list-style-type: none"> • Consumer's mains and sub mains supplying site switchboards. • Sub mains to site facilities in which electricity is used, such as sheds, amenities or transportable structures. • Final sub-circuits connected at circuit breakers on a site switchboard, supplying plant, and construction equipment such as temporary construction lighting, auxiliary socket outlet panels, hoists and personnel lifts.
The appropriate exclusion zones have been established and are enforced. Electrical Safety Regulations 2002, Schedule 2 Exclusion zones for electrical parts	PCBU and workers on site must check that controls measures such as exclusion zones are implemented also verify the ground & load stability where cranes are operating. The placement of temporary structure such as scaffolding and formwork adjacent to electrical infrastructure is risk assessed especially where worker are working adjacent, or above.
OFSC Audit Criteria Reference H12 – Electrical	Optional - PCBU or Worker Action for meeting compliance
H12.1 The risks associated with electrical installations and electrical equipment are identified, assessed and controlled in accordance with the Hierarchy of Control.	Project Risk Assessment (PRA) is conducted before construction work is commenced on site, this includes the whole of project lifecycle, starting from the time of site set up to include; <ul style="list-style-type: none"> • Design and planning of temporary construction wiring layout including emergency isolation point/s. • Installation of the site temporary buildings and amenities. • Access and egress to all of the temporary power supply boards. • Ongoing impacts from the construction program and the need to review and potentially provide additional electrical supply points to areas where construction work is being undertaken. • Ongoing maintenance and testing throughout the construction program. • Potential electrical emergencies identified in the PRA
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H12.2 Safe systems of work have been developed taking into account: <ul style="list-style-type: none"> • an isolation/de-energisation/re-energisation process; • lockout and tagout of electrical isolations; and • working near energised electrical parts. 	Ensure the site emergency plan identifies electrical emergencies which also includes where emergency isolation points are defined. Don't just depend on an RCD working every time. Ensure your electrical contractor provide you with their electrical isolation lockout and tag out process, which you understand. Identify both overhead and underground utilities (including gas telecom etc.) and list them on site maps, include them in the site induction, mark them physically on or around the site with the utility owner consent and apply code of practice requirements including, exclusion zone – minimum clearance distances, barriers, signage and when required safety spotters.

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H12.3 The system ensures that RCD protection is provided on all construction wiring and portable generators.	All power circuits which are part of the system of wiring and equipment that is installed to provide electrical supply for Construction and Demolition work and is not intended to form part of the permanent installation will have RCD protection, which is tested to the required maintenance regime, with electrical test results being collected and retained by the PC management team on site.
H12.4 The system ensures that testing and tagging of electrical equipment and RCDs is completed in accordance with relevant legislation, codes of practice and Australian standards.	Ensure your electrical contractor use AS 3012 and AS 3760 as their guide and in turn they define the correct standard/s in their methods of testing.
H12.5 The system ensures that electrical installations are inspected and certified as correctly installed prior to use in accordance with relevant legislation, codes of practice and Australian standards.	Electrical test certificates are required before an electrical installations that complies with AS 3012 is allowed to be used.
H12.6 The system ensures that electrical works are undertaken by qualified and licensed persons.	All electrical work is conducted by an appropriately licenced electrical worker and evidence of training and competency is collected before work commences including mandatory training such as CPR, switch board rescue and SWMS training etc.
H12.7 The system ensures that emergency procedures are established specific to the scope of works.	Develop a project specific emergency response plan from the PRA that identifies potential electrical emergencies and ensure this is communicated through site induction and toolbox talks.

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General Information on Working with Electricity – Note this provides some more guidance

- Each temporary power board is uniquely identified “TPS 1” and in turn defines where the electricity supply is coming from “Power supply from Main Board Wentworth Road side of the site for example.”
- Each temporary power board will be of robust construction and have a degree of protection that considers the environment “is it inside or outside exposed to the elements etc” and is installed subject to the minimum protection of IP23 which classifies the degrees of protection against both solids and liquids in electrical enclosures.
- All live parts within a temporary power board will be protected, this includes no gaps where the GPOs and RCDs are mounted and no external holes are left open to the environment or where workers can be exposed to live parts, this also includes portable generators.
- An Insulated tie bar is provided on each temporary power board to anchor and prevent strain on flexible power leads.
- The temporary power board door or lid, requires a tool for it to be removed, be lockable “especially in areas where you are working in an existing premise, such as a school etc.”, be fitted with a retention device to hold the lid or door in the open position when required, be kept closed at all other times and have a sign that states that all leads are to run through bottom with an appropriate danger LIVE parts sign attached for all to see.
- Temporary power boards are required to be easily accessible and protected from mechanical damage “ideally have a 1 metre clearance”.
- On multi-level buildings flexible extension leads will not be run between different floor levels. “Plan your temporary power board locations.
- Temporary power boards shall be securely mounted to take in account external forces such as flexible leads being pulled.
- They must have a fitted extension arm with a material attached which is non-conducting that can be extended to raise flexible leads above the ground, so the leads do not impede on passing traffic or be easily damaged.
- All construction wiring which feeds temporary power boards will be appropriately protected against mechanical damage and will be marked using yellow warning tape every 5 metres.
- Never allow the doubling up of extension leads, as the RCD protection system may not operate to its electrical safety design requirements.
- A good practice is to get workers to use a portable RCD unit that has been tested and tagged and have the unit next to where they are working, especially when working in an existing client workplace.
- Remember unless your electrical contractor has tested the existing permanent electrical installation and has provided you evidence of electrical test and has then also explained to you where the emergency isolation point is for the electrical supply, and now you have to consider how easy it will be to gain access back inside of the client installation if an electrical emergency occurs where an RCD protection does not operate.
- Minimum lighting levels of 40 lux for walk ways and 160 lux for work areas, listens to the workers if they are complaining or you observe use of torches, it’s time to review the electrical lighting requirements.
- Lift shafts shall be illuminated by a minimum of a 36 watt florescent tube or equivalent, be protected against mechanical damage and be installed at intervals of no more than 6 metres apart and within 1 metre of the top of the shaft. Usually the placement of a light in a lift shaft indicates that there is a point of egress at that location.
- Emergency evacuation lighting including lift shafts is to be installed to a 20 lux level and will continued to work for at least 1 hour after a power failure occurs. All battery backup systems are required to be dump tested to ensure they meet and operate to manufacturer’s specification.
- Emergency evacuation signage to be installed including battery backup and provides clear direction on the safe means of egress in the event of a power failure or other emergencies identifies in the PRA.
- Consider the emergency response arrangements for your lift construction contractor especially when power is lost and a fire occurs below their work location.
- “How would you get them out”, as their “false car” can only go down, do they carry a small portable ladder on the false car that allows them to go up. Or as it has been suggested in the past they will climb out using whatever means they can, and the site team will call triple zero!
- If you test this one out in your site emergency scenario tests, beforehand plan and review your emergency response arrangements;
 - Review the lift contractors SWMS for emergency response management and brief the site emergency team.
 - Take a camera and record what happens and don’t forget to time the drill from start to finish.
 - You may have to take a big breath but don’t hold for too long as you may fall down because now you are aware of the site response and limitations of this “high potential incident / back swan event” – high consequence risk but very low likelihood of occurrence.
 - And if you are really game only tell the lift contractor supervisor, invite their Safety Manager who can be one of the observers and then
 - Report back your findings to the WHS committee.
 - Remember if you do decide to do this drill scenario, make sure the false car is at the lowest level of the lift shaft as it minimises the risk of a potential incident and ensure that all observers can stop any dangerous acts they see but they can prompt – just record the actions being made.

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