



Electrical FOCUS

Issue 6 | February 2022

2021 Western Australia Electrical, Gas and Plumbing Inspectors' Conference

Electricity, gas and water are not usually a good mix – but an exception was Building and Energy's 2021 Western Australia Electrical, Gas and Plumbing Inspectors' Conference.

This event brought together over 200 inspectors and guests for a full day of education, updates and networking.



2021 Western Australia Electrical, Gas and Plumbing Inspectors' Conference group photograph



Optus Stadium event sign



Building and Energy Chief Electrical Inspectors

In this issue

2021 Western Australia Electrical, Gas and Plumbing Inspectors' Conference	1
Retirement of one of our most respected engineers	3
New Principal Electrical Engineer (Supply) and Senior Electrical Inspectors	3
Beware of switched main neutral	4
Revised Solar Standard AS/NZS 5033	5
Purchasing equipment from Western Power	5
Replacing private power poles	6
DC isolator certification – Extension period to 30 June 2022	6
Minor changes to eNotice	6
RCD injection testing	7
Are you ready for WA's new work health and safety laws?	7
Solar installation defects	8
Statement from the Electrical Regulatory Authorities Council (ERAC) and the Standing Committee of Officials (SCO) of the Electrical Equipment Safety System (EESS)	10
No interconnection of smoke alarms required in existing dwellings built before 1 May 2015 when selling, transferring ownership, renting or hiring	11
Electrical firm prosecuted after apprentice's near-death experience	11
Electrician fined after dangerous error causes electric shocks	12
Electrical contractor and electrician fined \$32,500 for serious safety breach	13
Your technical questions answered	13
Prosecutions .	15



Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**



Building and Energy

Department of Mines, Industry Regulation and Safety
303 Sevenoaks Street,
CANNINGTON WA 6107

Telephone: 08 6251 1900

Electrical enquiries: be.info@dmirs.wa.gov.au

Publication enquiries: be.publications@dmirs.wa.gov.au

Website: www.dmirs.wa.gov.au/building-and-energy

Issue no. 6 | February 2022

© Department of Mines, Industry Regulation and Safety 2021.

The Electrical Focus is published by the Department of Mines, Industry Regulation and Safety (DMIRS). It is distributed free of charge to industry and interested members of the public.

Articles in this publication may be reproduced, provided they are reproduced in full and include acknowledgement of Building and Energy.

This publication is available in other formats on request for people with special needs.

Retirement of one of our most respected engineers

Building and Energy would like to acknowledge and thank the well respected and long standing staff member Graham Rowe, who has recently retired as Principal Electrical Engineer (Supply).

Graham was instrumental in getting the Electricity (Network Safety) Regulations 2015 reviewed and amended. He provided high level professional advice in court proceedings and worked ethically with the Legal fraternity.



New Principal Electrical Engineer (Supply) and Senior Electrical Inspectors

Building and Energy welcomes Sandeep Magan to the role of Principal Electrical Engineer (Supply). Sandeep has 21 years of experience in the electricity sector working for Western Power and Horizon Power managing network design and construction standards including renewable systems. He is a member of Australian Standards Committees and will play an important role in improving safety awareness, application and review of network safety regulations for better safety outcomes.



In addition, Building and Energy welcomes new Senior Electrical Inspectors Darren Trenfield, Loren Laurie and Geoffrey Bryant.

Darren's experience spans across many parts of the electrical industry including domestic, commercial, industrial, construction and mining and he previously held roles as a Designated Electrical Inspector with two of WA's Network Operators, Horizon Power and BHP Billiton. He joins Building and Energy from the mining industry, and he looks forward to the challenges of the new role.



Loren joins the team with over 24 years' experience working in various sectors in the electrical industry. Initially on the tools as an Electrical Contractor he then transitioned to the Western Power Inspectorate for more than 12 years.



Loren brings a wealth of electrical installation knowledge and is well respected in the Electrical Contracting community.

Geoffrey has worked extensively in the domestic and commercial fields as both an individual electrical contractor and a works supervisor for several major commercial projects across WA spanning 38 years. Some of Geoffrey's most recent projects include the Perth Stadium and Perth Airport Terminal 2. Geoffrey brings a wealth of experience and knowledge to the Building and Energy team.



Beware of switched main neutral

We have recently seen several installations where the incoming main neutral conductor had been switched via an alternate supply changeover switch. These included battery energy storage systems and standby generator installations.

This resulted in energised earthing systems which could cause an electric shock.

The incoming main neutral is a protective earth neutral (PEN) conductor. When load is applied in the electrical installation and the PEN conductor is an open circuit, the installation earthing system will become energised as the current return path is via the earthing system through the ground.

As current increases, the voltage on the earthing system will increase due to the impedance of the ground.

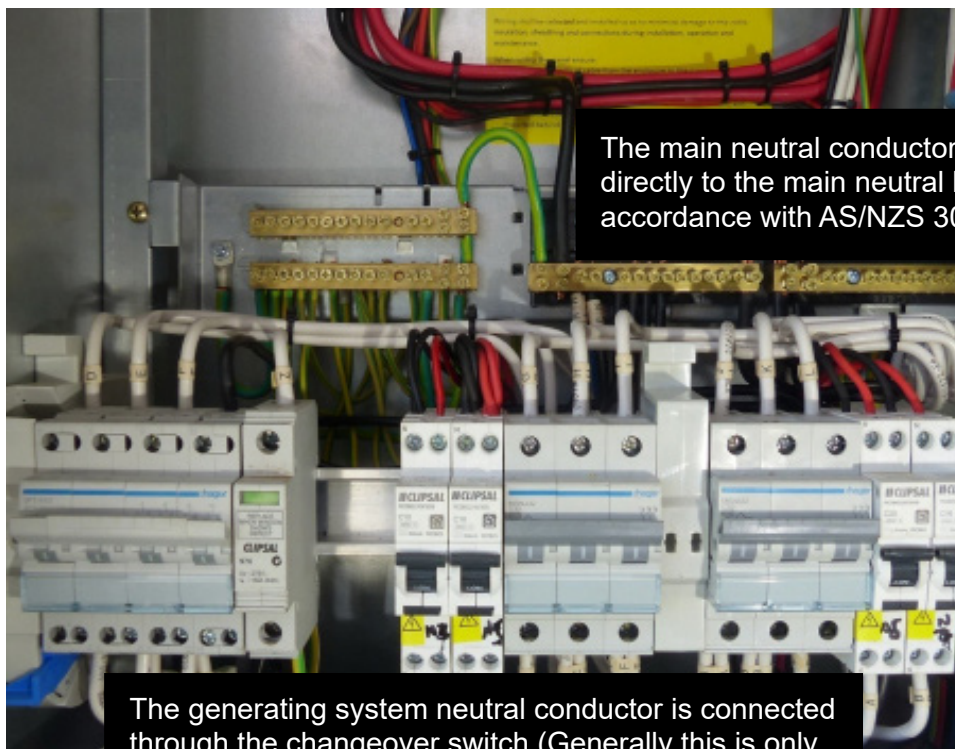
In the event of a short circuit to earth, voltage on the earthing system will rise to full supply voltage and it's unlikely that a sufficient current will pass to operate upstream protection.

Circuit protective devices and RCDs will not provide protection against the voltage rise on the earthing system.

No switch or circuit breaker should be inserted in the neutral conductor of consumer mains, or in the PEN conductor. Refer to AS/NZS 3000 clause 2.3.2.1.2, clause 7.3.8.1.1(a) and figure 5.1.

AS/NZS 3000 provides examples for the connection of alternate supplies in figures 7.3 to 7.6. AS/NZS 3010 further identifies requirements for the connection of alternative supply.

Before you start work on an electrical installation, check for alternative supplies and the integrity of the PEN conductor as part of your risk assessment.



The main neutral conductor is connected directly to the main neutral bar in accordance with AS/NZS 3000 figure 5.1.

The generating system neutral conductor is connected through the changeover switch (Generally this is only required if the connection is via an inlet socket). AS/NZS 3000, figures 7.3 - 7.6.

Revised Solar Standard AS/NZS 5033

On 19 November 2021, Standards Australia published AS/NZS 5033:2021 – Installation and safety requirements for photovoltaic (PV) arrays.

This revised version provides guidance to support safe systems and practices for industry professionals and consumers.

Some of the changes include:

- rooftop isolator now optional;
- DC cable routing and installation requirements;
- earthing requirements;
- increase in maximum PV array voltage for residential systems to 1,000 V DC;
- changes to DC optimiser and micro inverter requirements; and
- updated testing and verification requirements.

There is a six month transition period before AS/NZS 5033:2021 becomes mandatory on 19 May 2022.

If you choose to adopt the new standard during the transition period, the entire version must be followed. You cannot use some requirements from the 2014 version and some from the 2021.

Please nominate on the Notice of Completion which version of AS/NZS 5033 you have used.

The new version permits roof-top solar PV installations operating at 1000 V DC. The earlier 2014 version set a voltage limit of 600 V DC.

This means installers need to make sure that the DC cables, switches and other components they select are rated for the higher voltage. Refer to Clause 4.4.2 of the new version for more details about cable selection.

Please also remember who may install solar PV and battery storage systems in Western Australia ([Electrical Focus Issue 4](#) – February 2021). All work associated with these installations in Western Australia is classified as electrical work and must be performed by a licensed electrician employed by an Electrical Contractor holding a WA licence.

Electrical contractors may use a competent person (unlicensed) to assist in the installation of the structural PV rails and provide general assistance. However, all wiring, fixing in place of PV panels, earth bonding, associated accessories (DC isolator), inverters and batteries **must** be installed by licensed WA electricians.

Electrical contractors must submit a Notice of Completion to the relevant network operator or Building and Energy for all such work.

Purchasing equipment from Western Power

Electrical equipment used by Western Power is designed and engineered for the purpose of the transmission, distribution, and supply of electricity to consumer installations. While a large portion of Western Power's equipment is designed and engineered in accordance with Australian Standards, some equipment is Western Power specific and may not meet the requirements for consumer and other installations.

Electrical designers and contractors must assess all equipment purchased from Western Power as well as any other sources to ensure the equipment they use complies with all relevant requirements, including those set out in the Electrical (Licencing) Regulations 1991 and the standards identified in the Schedule 2.

In accordance with the WA Electrical Requirements (WAER), designers are required to certify the as constructed installation complies with the design and all relevant technical requirements. Evidence of certification must be provided when requested by Electrical Inspectors.

Replacing private power poles

A property owner is responsible for maintaining power poles that support the network operator's overhead service cable and power poles supporting private power lines and equipment. Only licenced electrical contractors are permitted to undertake replacements of poles, conductors, and pole top fittings, which are electrical work.

Western Power and Horizon Power proactively undertake inspections of the first consumer's pole that supports the network operator's service cable. In some instances, a defect notice may be issued to a consumer, based on the condition of the pole. Property owners issued with a defect notice will be expected to contact a licensed electrical contractor to undertake the required remedial or replacement works.

In 2015, Building and Energy produced [Guidelines for the safe management of private power poles and lines](#) that outlines options and necessary standards for private power pole replacements.

Electrical contractors are reminded to comply with the WA Electrical Requirements (WAER) when constructing replacement private power poles for property owners.

DC isolator certification – Extension period to 30 June 2022

The requirement date in Western Australia for DC isolators to be certified, where they are incorporated in inverters complying with AS/NZS 4777.2:2020, has been extended to 30 June 2022.

This extension acknowledges the challenges manufacturers and suppliers are having with obtaining DC isolator products, including those installed within inverters, certified to AS 60947.3. The current status of approved test laboratories with accreditation to carry out the required tests has not yet been settled.

From 19 December 2021, all inverters installed must comply with AS/NZS 4777.2:2020 (including the requirement that an inverter's integrated DC isolator complies with AS 60947.3:2018). However, in Western Australia the compliance date has been extended to 30 June 2022 for suppliers and manufacturers to achieve the required certification of those DC isolators to AS 60947.3.

During this extension period, inverters complying with AS/NZS 4777.2:2020 may be sold or installed whether or not the DC isolator within the inverter is certified, unless specific safety issues are identified.

Minor changes to eNotice

eNotice has been updated to include minor changes to assist in inspections of work performed and ensure information received is accurate. The changes were requested by network operators and discussed in depth with industry bodies.

Changes include:

- the type of metering arrangement was updated to Direct or CT Metering;

- LV CT Metering was removed as a voltage level; and
- the Notice of Completion Certification page now has a new feature –
 - a non-mandatory option to allow the upload of test results and switchboard photographs.

RCD injection testing

The previous edition of [Electrical Focus \(August 2021\)](#) included an article on why RCD injection testing from the switchboard is rarely justified, if ever.

The article points out that a very satisfactory, indeed preferable, safe alternative method is available. This means that injection testing from a switchboard contravenes Regulation 55 of the Electricity (Licensing) Regulations 1991.

Injection testing of RCDs and RCBOs at a switchboard with the front escutcheon removed to gain access to the RCD terminations is rarely justified and risks exposing electrical workers to uninsulated energised parts.

Too many of the flash burns suffered by electricians in recent years stemmed from their working on live switchboard circuits, often in direct contravention of Regulation 55.

Building and Energy Inspectors will have no option but to take appropriate action upon receiving reports of any electrician performing injection testing at switchboards where an escutcheon panel has been removed exposing uninsulated live parts.

Draft Standard AS/NZS 3019:2021 – Electrical Installations – Periodic Assessment has been released for public comment. It caters for both ‘limited testing’ and ‘additional testing’ of

installations. For RCDs and RCBOs, limited testing is all that is needed in most instances.

For limited testing, Clause 4.2.2.5(a) states:
Operate the test button twice to confirm correct operation.

This is the only test necessary in most installations and for most owners. The ‘additional testing’ option in Clause 5.7 merely states:

the correct operation of RCDs shall be assessed by the use of test equipment.

Pressing the test button of an RCD or RCBO should cause it to trip without noticeable delay.

If injection testing is required by installation owners to determine RCD compliance for trip time and current, it should be conducted at a socket outlet or luminaire at the extreme end of a final sub-circuit. This will confirm the integrity of the entire circuit and minimize the available energy should a fault event occur.

For newly installed RCDs or RCBOs, Clause 8.3.10 of AS/NZS 3000:2018 (Wiring Rules) allows for the verification of the RCD operation by either pressing the integral test button or by using special test equipment. Note 4 of the clause confirms there is no requirement to test the operating time of RCDs since this is a function of the type of RCD.

Are you ready for WA's new work health and safety laws?

Western Australia's new work health and safety (WHS) laws will come into force in 2022. The new WHS laws will bring WA workplaces under a single WHS Act.

For more information and to prepare your business visit [WorkSafe's website](#).

Solar installation defects

The uptake of solar PV systems by residents of Western Australia has not slowed down. Currently, over forty per cent of all Notices of Completion lodged by electrical contractors are related to solar PV installations.

Unfortunately, issues found in solar installations make up a large portion of the defects noted in Inspector's Orders. Mismatched DC connectors and improperly installed isolators can lead to fires. Other types of defects shorten the expected lifespan of the installation. These are some of the most common defects found:

1. All DC connectors must be of the same type/ model from the same manufacturer where they are married at a connection point.



2. The PV Array has been installed in close proximity to the gutters, AS1170.2 requires the PV Array to be a minimum of 200mm away from the roof edges.



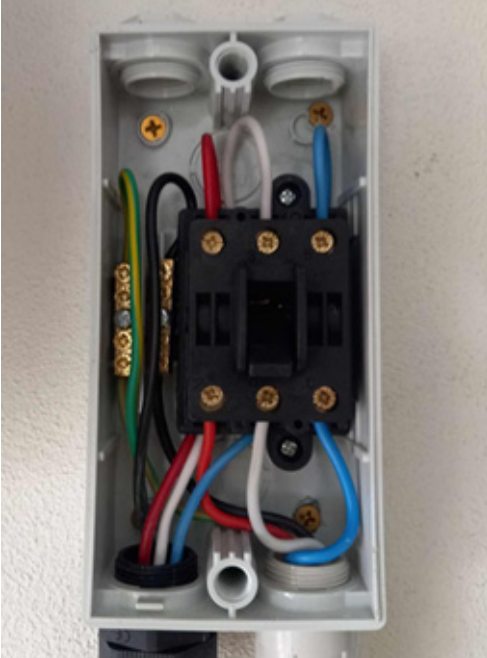
3. PV mounting structure is to be secured and installed in accordance with the manufacturer's instructions, tile brackets are to sit flat on roof rafters.



4. Earth cable connection at an array is to be protected against the effects of corrosion and penetrating washers have not been installed to comply with the manufacturer's layout instructions.



5. IP rating and mechanical protection of the AC isolator is to be maintained.



6. AC circuit within the ceiling space is to be fixed in position by suitable clips in parts of the ceiling where access is greater than 0.6m in height.



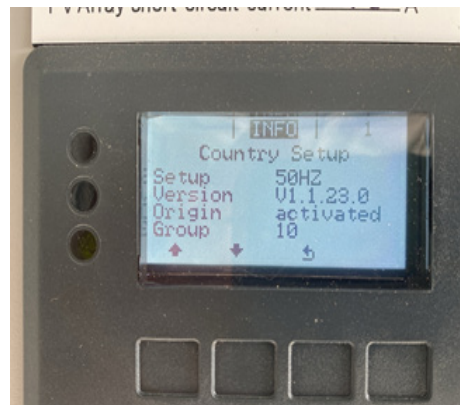
7. Ensure all conduit glands and fittings are glued.



8. HD Conduit within the ceiling space is to be secured by clips or saddles as required.



9. Inverter not set to Network Operator required settings.



10. PV array systems – Conduits require sealing glands and cable ties to have tails cut.



Photos courtesy of the Clean Energy Regulator

Statement from the Electrical Regulatory Authorities Council (ERAC) and the Standing Committee of Officials (SCO) of the Electrical Equipment Safety System (EESS)

ERAC and the Standing Committee of Officials responsible for managing the national Electrical Equipment Safety System (EESS) in Australia acknowledge issues related to DC isolator certification requirements for DC isolators in solar PV inverters incorporating DC isolators, and each jurisdiction has agreed to the following:

- Under electrical safety laws of each jurisdiction Solar PV inverters incorporating DC isolators do not require certification to AS/NZS 4777.2:2020 to be sold or installed.
- Suppliers of solar PV inverters are required to declare the inverter incorporating DC isolator complies with AS/NZS 4777.2:2020 (including the requirement in AS/NZS 4777.2:2020 that an inverter's installed DC isolators comply with AS 60947.3:2018).
- Suppliers of inverters incorporating DC isolators that have been declared by the supplier to meet AS/NZS 4777.2:2015 (the current standard being superseded) can also make declarations of compliance to AS/NZS 4777.2:2020 for electrical safety requirements, subject to any required additional tests of the new standard being met.
- Verification of compliance to certification of DC isolators installed within solar PV inverters, where the supplier has declared the inverter is compliant to AS/NZS 4777.2:2020, will not be requested by electrical safety regulators until 30 June 2022.
- Electrical Safety regulators will continue to work with industry, test facilities and accredited certifiers to ensure suitable approved testing facilities are available to enable suppliers to obtain certification of DC isolators installed in inverters by 30 June 2022.
- Installers of solar PV inverters incorporating DC isolators can rely on the supplier declaration of compliance to AS/NZS 4777.2:2020 as evidence the inverter can be installed in accordance with AS/NZS 3000; The Wiring Rules and AS/NZS 5033; Installation and safety requirements for photovoltaic (PV) arrays.
- It remains the equipment supplier's responsibility to ensure compliance to relevant safety standards and should any incident occur in any solar PV inverter claimed to be compliant to AS/NZS 4777.2:2020 action will be taken under normal electrical safety regulator investigative processes.
- Each jurisdiction will provide information relevant for their jurisdictions suppliers and installers as required.

ERAC and SCO note the Clean Energy Council (CEC) has accepted this position and will not require further evidence than the above to enable solar PV inverters incorporating DC isolators to be able to be listed on the CEC list of compliant inverters and power conversion equipment (PCE) suitable for installation under the Small-Scale Renewable Energy Scheme (SRES).

No interconnection of smoke alarms required in existing dwellings built before 1 May 2015 when selling, transferring ownership, renting or hiring

Since 2009 there has been a requirement for dwellings subject to sale, transfer of ownership, rent or hire to have hardwired smoke alarms installed in accordance with the Building Code of Australia (BCA).

Changes to the Building Regulations 2012 (which adopt the BCA) mean that interconnection will not be required in existing dwellings (i.e. those that were constructed or approved for construction before 1 May 2015) that are subject to sale, transfer of ownership, rent or hire.

While owners still need to have compliant smoke alarms prior to selling, transferring ownership, renting, or hiring a dwelling, these alarms do not need to be interconnected if the dwelling was approved or constructed before 1 May 2015.

For further information on the laws requiring smoke alarms please refer to the Building and Energy [Smoke alarm laws for existing dwellings – Fact sheet](#). For information on smoke alarm requirements for construction of new dwellings, please refer to [Industry Bulletin 40](#).

Electrical firm prosecuted after apprentice's near-death experience

An apprentice electrician is lucky to be alive after an electric shock left him unresponsive and without a pulse while working at a property in Mandurah.

The January 2020 incident was described at Mandurah Magistrates Court this month following Building and Energy's prosecution of the apprentice's employer.

The company was fined a total of \$21,500 and ordered to pay costs of \$343.50 after pleading guilty to two offences under WA's Electricity Licensing Regulations.

The court was told that the second-year apprentice and his supervising electrical worker attended a commercial premises to disconnect and remove an electric hot water unit.

While on a phone call, the supervising electrician directed the 19-year-old electrical apprentice towards a kitchen cabinet where the younger man started to cut and disconnect electrical wiring within an isolator associated with the hot water unit.

Shortly after, the apprentice received an electric shock of up to 240 volts and he was unable to let go of the electrified cable in his hand for at least 30 seconds.

The supervising electrician and property tenant pulled him away from the cabinet area and began CPR. Paramedics arrived within seven minutes and found the apprentice had stopped breathing and had no pulse, but fortunately they were able to resuscitate him with a defibrillator.

A Building and Energy investigation found a circuit breaker that supplied power to cabling within the isolator in the cabinet was left on during the work, resulting in some conductors remaining energised or "live".

The company was fined \$20,000 for ineffective supervision under section 50(1) of the Regulations. The supervising electrical worker failed to adequately isolate relevant parts of the electrical installation prior to the work to ensure the apprentice would not come into contact with energised components, as outlined in section 50(3)(g).

This requirement is reinforced by Building and Energy's [Safe Work Guidelines for Electrical Workers](#), which states that the supervising electrical worker must carefully consider the type of work to be carried out by the apprentice and "ensure there are no exposed live parts and the electrical equipment is de-energised and safe to be worked on or near".

The company was also fined \$1,500 because the apprentice did not hold an electrician's training licence, which was required for the work he carried out at the property.

Magistrate Leanne Atkins said the apprentice had been "brought back, in effect, from the dead" and the young man no longer wanted to work in the electrical industry.

Her Honour added that electricians and electrical companies should note the significant penalties imposed for endangering a person by failing to supervise.

This case is a confronting reminder about why specific rules and responsibilities are in place when working with electrical apprentices. This incident could have easily been a tragedy for a young man at the start of his career. The laws are in place to ensure employers do the right thing by their apprentices and keep them safe. It is unacceptable for an employer to place a trainee in such a dangerous situation by failing to ensure the installation was not live, as required by law.

Building and Energy urge the industry to ensure they isolate and test all electrical installations to verify they are properly de-energised prior to anyone working on them.

Electrician fined after dangerous error causes electric shocks

A Perth-based electrical worker has been fined \$2,000 for failing to carry out work at a Bedford property safely where three family members received electric shocks after touching energised taps.

On 10 December 2021 in Perth Magistrates' Court, the electrician pleaded guilty to breaching WA's Electricity Network Safety Regulations, following prosecution by Building and Energy.

The court was told that the electrician failed to follow kilowatt-hour (kWh) meter replacement procedures, which require either turning off the main switchboard or disconnecting the load actives.

The electrician noted unusual readings while testing the kWh meter. Around the same time, the woman living at the property informed the electrician that her son had received an electric shock while touching a tap. The woman and her daughter also received shocks from taps, but luckily no one was seriously injured.

An investigation found that the electrician's work was unsafe because the electricity supply was connected to the installation without a neutral conductor in place. This caused an open circuit load neutral, which resulted in the metallic water pipes and appliance casings connected to the earthing system becoming live with dangerous voltage levels.

Magistrate Donna Webb described the electrician's behaviour as "negligent" and said the fault could have caused serious harm, referring to the 2018 electrical accident in Beldon where a young girl was severely injured after touching an energised garden tap.

This case is a reminder that electricians must work diligently and ensure their work complies with the applicable safety standards and legislation.

Electrical contractor and electrician fined \$32,500 for serious safety breach

On the 5 November 2021, the Joondalup Magistrates Court fined an electrical contractor and their electrical worker a combined \$35,000 for breaching regulations 52(3) and 49(1) of the Electricity (Licensing) Regulations 1991.

The electrical contractor installed a new distribution switchboard that supplied power to four buildings and a shed.

A Western Power Electrical Inspector attended the site to complete an inspection. As part of the inspection, he carried out an Earth Fault Loop Impedance (EFLI) test at a socket outlet installed at the garden shed. The test produced an unsafe high impedance reading of 10.81 Ohms.

The Inspector completed a further visual inspection of the distribution switchboard and identified there was no Multiple Earthed Neutral (MEN) connection installed at the switchboard.

By failing to install an MEN connection the electrical worker breached Clauses 5.3.5.1, 5.3 and 5.34 of the Wiring Rules and hence breached the WA electrical safety regulations.

If an electrical fault had occurred without an MEN connection in place, the associated circuit protection may not have operated. The inability of protective devices to operate under fault conditions can lead to life threatening voltages remaining on all earthed metallic enclosures and equipment within the installation which, if touched by a person can lead to serious injury or death.

The electrical contractor also submitted a Notice of Completion to the Network Operator, Western Power certifying that all checks and tests had been completed in accordance with the regulations and was safe. However, as there was no MEN connection installed at the switchboard the work did not comply with the regulations and was not safe.

By law, electricians are required to undertake their own testing and verifications when they work on electrical installations. Had the electrician done his due diligence, he would have easily identified this serious defect. This case highlights the importance of checking and testing electrical installations.

The community relies upon licensed electricians to carry out their work in accordance with accepted standards and Regulations. The consequences of not doing this can be fatal.

Your technical questions answered

Q: Is there a requirement for an electrician to have full colour vision?

A: There is no requirement for an electrician to pass a colour blindness examination prior to obtaining an electrical licence.

Q: Switchboard compliance: Which version of AS/NZS 3000?

A: As of 30 October 2021, AS/NZS 3000: 2018, Wiring Rules Amendment 2 became mandatory. Amendment 2 covers:

- Clause 2.10.2.2 – Switchboard accessibility and emergency exit facilities: location, spacing, room layout, switchboard doors and switchboard room doorways.
- Clause 2.10.3.2 – Switchboard construction and verification – boards rated at 125 A per phase or 10 kA fault capacity must comply with either AS/NZS 3439 (now superseded) or AS/NZS 61439.

- Switchboard type testing and verification requirements clarified.
- Inspectors will want to see documentary evidence of such verification.

Q: Strata lots: What are the requirements for temporary supplies?

A: Network operators may have varied or alternative arrangements for strata connections and associated service and installation requirements, which can be found on their respective web pages. Western Power's Western Australian Services and Installation Requirements (WASIR) provides specific detail of these arrangements.

The following are the minimum requirements for provision of a temporary builder's supply to a lot with an existing point of supply:

- Temporary building supplies shall comply with the Wiring Rules. Compliance with AS/NZS 3012, Electrical installations – Construction and demolition sites also is required where relevant.
- The builder shall be responsible for both the permanent and the temporary supplies while the building site is under the builder's care.
- The temporary builder's supply shall service only the building project site and all wires and cables energised from this supply shall be within the builder's operational area, fenced or not.
- Where building work takes place on an adjacent block, the network operator may provide a separate temporary builder's supply.

Q: Apprentice supervision: As a licensed electrician, what are my responsibilities when an apprentice is working with me?

A: The importance of effective supervision is recognised in the Electricity (Licensing) Regulations 1991. Regulations 50, 50AA and 50AB provide detailed requirements for supervision of workers.

Effective supervision includes, but is not limited to:

- ensuring that all apprentices are licensed;
- adequate job planning, risk assessment and risk mitigation;
- ensuring the supervising electrical worker has the necessary knowledge and skills for the type of work to be undertaken;
- giving due consideration to the level of training, knowledge and skill of the apprentice being supervised; and
- managing the number and proximity of apprentices to ensure the required level of oversight and clear lines of communication.

The supervising electrical worker must ensure that there are no live parts, all sources of electricity are effectively isolated and de-energised and the electrical equipment is safe to be worked on or near.

The responsibility for providing effective supervision of apprentice's rests with the licensed electrical contractors employing them and supervising electricians. In deciding on the appropriate level of supervision for an apprentice for a particular work task, the supervising electrician must consider all relevant factors including, but not limited to the:

- type of work;
- knowledge and skills of the apprentice; and
- competence of the supervising electrical worker.

Check out Building and Energy's publication [Safe working guidelines for electrical workers](#) for guidance on effective supervision of apprentices with varying competencies.

Prosecutions

Please visit Building and Energy's website to view the:
[Disciplinary and prosecution media releases](#).