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# eNERGY bulletin

Government of Western Australia
Department of Commerce
EnergySafety

## In this issue



# Battery Energy Storage Systems (BESS)

BESS are being installed in increasing numbers in electricity distribution networks, homes, remote area power supplies and commercial/industrial installations. Electrical contractors may be asked to recommend and quote for a BESS or install, commission and test a system designed or selected by others. The BESS may or may not form part of a solar PV installation.

Over recent years battery technology has seen rapid change, with a range of new chemistries being developed. Current Australian Standards do not cover many critical areas, creating potential safety hazards for installers, owners/operators and the general public.

Standards Australia is developing a new standard (AS/NZS 5139) for battery installations but its release date is not yet clear.

For this reason, Energy*Safety* has added an information guideline on its website to alert electrical contractors and electricians to the safety issues associated with BESS.

The guiding principle is one of careful design and specification of equipment for each specific installation to achieve the highest practicable standard of safety in design. This is the responsibility of all parties providing the equipment to the customer.

Visit www.energysafety.wa.gov.au to view the guideline.

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# eNotice update

**What is eNotice?**
eNotice is a free web based facility for the electronic lodgement of Gas Notices of Completion and Electricity Preliminary Notices, Notices of Completion and Electrical Safety Certificates.

The system is accessible on mobile devices and tablets (as well as normal computers) on a 24/7 basis, wherever an internet connection is available.

Paper notices can still be used. However, it is intended that these will be phased out in the near future.

**Why not give it a try?**
Invitations to start using eNotice have been emailed or posted to all gas fitters and electrical contractors in WA.

Some people may feel they are just too busy to try using eNotice or are reluctant to move away from the familiar paper forms and manual lodgement process. However, the very positive feedback from industry shows that, once registered, new users quickly find that lodging notices and certificates via eNotice is fast, easy and convenient. This translates into significant time and cost benefits.

Video tutorials and other supporting information are provided on the Energy*Safety* website to assist with registration and lodgement.

To register as a user, or if you would like further information, visit www.energysafety.wa.gov.au and click on eNotice.

**Gas update**
Some 1,400 gas fitters are now using eNotice and 17,000 notices have been lodged.

Energy*Safety* is working with gas fitters at toolbox meetings to ensure that eNotice is understood and used effectively. If you are interested, please contact Senior Gas Inspector Barry Mounfield on 6251 1946.

**Electricity update**
More than 2,700 electrical contractors and electricians are now using eNotice and 26,000 notices and safety certificates have been lodged.

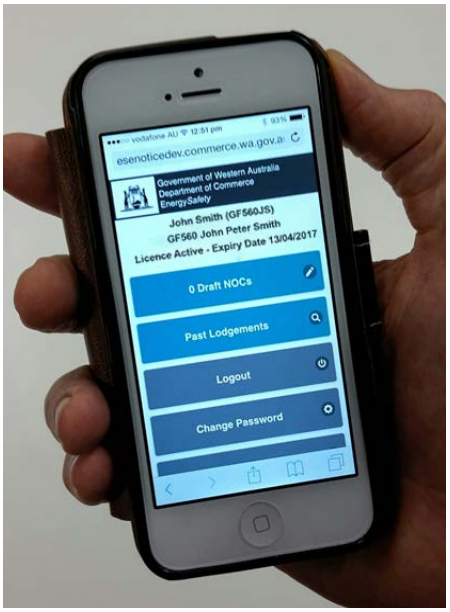
Note: If you use Western Power's ETIC system to lodge your Notices, please continue to do so. Western Power will let you know when they are ready to transition you over to eNotice, which is likely to occur around mid-2017.

Before you start using eNotice, it is important that you read the eNotice setup information on our website. Video tutorials and other supporting information are also provided to assist you.

**eNotice is continually being improved**
Energy*Safety* receives valuable feedback from companies and individuals about their experiences using eNotice and, consequently, has implemented a number of enhancements to make life easier for users.

Some of the improvements made to eNotice (since its launch) in direct response to industry feedback are listed below for information:

- April 2017: New amendment function allowing correction of errors in lodged notices.
- Streamlined completion of Electrical Safety Certificates for real estate pre-sale inspections (only).
- January 2017: Modified input fields for alternative supplies (generators).
- Streamlined production of electricity NOCs from preliminary notices where input data is identical.
- October 2016: Regular Electricians list for easy selection by electrical contractors.
- September 2016: GPS icon for easy look-up of location coordinates.
- Streamlined completion of electricity notices for solar installations.
- July 2016: Ability to record user's job reference.
- Regular Builder/Dealer list for easy selection.



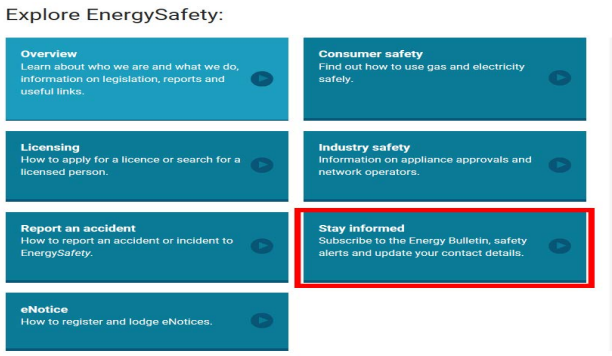

*eNotice is compatible with mobile devices*

# Subscribe to the Energy Bulletin

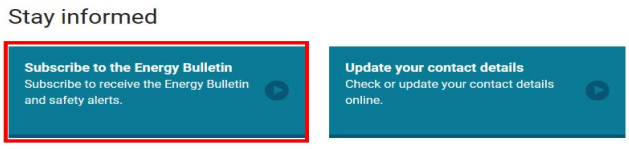
All licence holders, who have en email registered with Energy*Safety* now receive a copy of the quarterly Energy Bulletin. If your employees are not receiving it, please ask them to contact the Energy*Safety* Licesning Office on 6251 2000 or email energylicensing@commerce.wa.gov.au to check or update their email address.

Anyone who doesn't hold a licence, but would like to receive the Energy Bulletin can subscribe on Energy*Safety*'s website by following these easy steps:

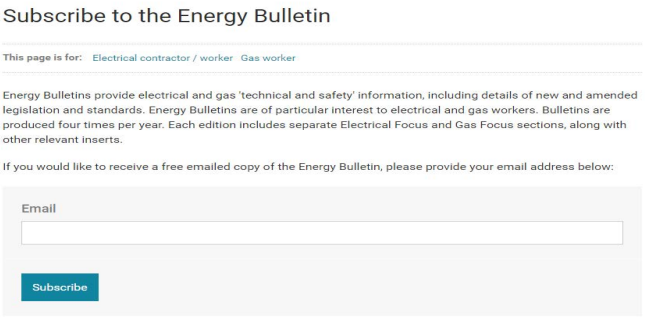
1. On the Energy*Safety* homepage, select the box 'Stay Informed'.




2. Select the box 'Subscribe to the Energy Bulletin'.

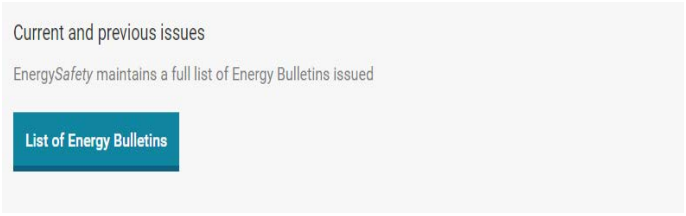



3. Enter you email address and select subscribe.




Shortly after, a confirmation email will be sent to the email address you have provided. You must confirm your email address by clicking the link in the email.

**Did you know?**
On the same page where you subscribe to the Energy Bulletin, there is also a link to all previous and current issues.




These are available for you to download as a PDF.

# First aid and CPR training - is it mandatory for electricians?

Energy*Safety* is often asked whether it is a mandatory requirement for electricians to possess current first aid and cardiopulmonary resuscitation (CPR) qualifications.

Energy*Safety's Safety Guidelines for Electrical Workers* states that all electrical workers and their assistants should possess current first aid and resuscitation skills. This training is very important and no person should need to ask if this is mandatory.

Given the serious hazards of working with electricity, Energy*Safety* encourages electricians trained in first aid and resuscitation, to undertake refresher training of these lifesaving procedures at least once a year.

Nationally recognised training organisations in Western Australia include St John Ambulance and Royal Lifesaving WA.

To download Energy*Safety's Safety Guidelines for Electrical Workers*, please visit our website at www.energysafety.wa.gov.au

# Phone scammers pose as Energy*Safety*

A licensed electrician has reported a phone scam where the caller pretended to be from Energy*Safety* and asked for the man's credit card details to pay for his electrical worker's licence.

Thankfully he was suspicious and did not hand over the information requested. It is understood he is not the only licensed electrical worker in Western Australia to receive one of these imposter phone calls.

If you receive a call claiming to be from Energy*Safety* asking for your credit card details:

- **do not** give out any personal information;
- take down the name and phone number of the caller; and
- tell them you will return the call once you have verified the request is authentic.

Next, call Energy*Safety* on 08 6251 2000 to check whether they were truly trying to contact you.

If in doubt, you can call WA ScamNet at Consumer Protection on 1300 30 40 54.

Further information can be found on the WA ScamNet website.

# Teenager left with severe injuries from damaged streelight

In March 2015, a 15-year-old male received a severe electric shock from a damaged metallic streetlight pole (see picture below). A 15-year-old girl with him at the time also received an electric shock.

The boy was given CPR and transferred to the Peel Health Campus. He was subsequently transferred to Perth's Princess Margaret Hospital where he recovered some days later. The girl was discharged from hospital after having received precautionary treatment.

Energy*Safety*'s investigation found that the pole in question was damaged some five months earlier when it was struck by a vehicle. The impact of the crash caused the pole to bend and damaged its supply cable. This caused a short-circuit and tripped the 20A circuit breaker protecting the lighting circuit. This disconnected the electricity supply.

The damaged pole remained in-situ for several months after the vehicle impact.

One month after this incident, a Project Network Officer from Western Power attended the site to investigate why the seven streetlights on this stretch of road were not working.

While investigating the fault, he reset the 20A circuit breaker at the main switchboard (which operated on overload). He disconnected both the neutral conductor (for the outgoing circuit) and the earth conductor for the multiple-earthed-neutral (MEN) connection and closed the circuit breaker.

Since the circuit-breaker did not trip again, when he switched it back on and the streetlights operated, he assumed he had corrected the fault.

The disconnected neutral conductor and the missing MEN connection at the main switchboard led to a voltage of up to 242 volts ac being present between the metallic structure of the damaged streetlight and the metallic fence. Voltages between 120 and 242 volts ac were also measured at the other streetlight poles to an independent earth. The circuit breaker protection had failed to operate as the fault-current was not sufficient due to the high loop impedance of the circuit attributed to the high soil resistivity and no MEN connection.

Energy*Safety*'s investigation found the Project Network Officer failed to carry out appropriate verification and testing of the streetlight circuit at the switchboard and at the damaged streetlight. Had he done so, this serious incident would not have occurred. He was referred to the Electrical Licensing Board who suspended his licence until he completed further training and passed a competency test. He was also fined $6,000 with court costs of $867.60.

*Damaged metallic streetlight pole*

# Forum on Energy Storage in WA

On 31 August 2017, the Clean Energy Council will conduct a full-day session entitled 'Energy Storage in WA' as part of their Australian Energy Storage Leadership Series.

Guest presenters on the day will address the following topics:

- Storage and the grid - how the integration of battery storage into the electricity grid assists network operators during periods of peak energy demand.
- Creating the right regulatory framework - the expected evolution of the regulatory framework and the resultant challenges and opportunities.
- Engaging and protecting the consumer - insights on engaging consumers and industry and the regulatory approach to consumer protection.
- Markets and opportunities - the current market in Australia and future opportunities across different market segments.

To register online now, visit Clean Energy Council's website www.cleanenergycouncil.org.au/events

Clean Energy Council members receive a 50% discount off the regular registration fee.

# National campaign for ladder safety

"When using a ladder make safety matter" is the catchphrase being used to spearhead a national education campaign highlighting the psychological and physical effects attributed to ladder falls.

The campaign, launched in September 2016, is a joint initiative between consumer affairs agencies including the Department of Commerce's Consumer Protection division.

Consumers and tradespersons are reminded to "stop and think before you use a ladder" by following these six easy steps to reduce the risk of injury:

- Choose the right ladder for the job.
- Don't work in wet or windy conditions.
- Take time to set up your ladders.
- Work safely up the ladder.
- Have another person hold the ladder.
- Know your limits and work to your ability.
- Older men are particularly vulnerable with ladder-related injuries.

In the campaign, three victims of ladder falls share how the incident has dramatically altered their lives and the lives of their family.

A video presentation by Dr Owen Roodenburg, Deputy Director of the Intensive Care Unit at Melbourne's Alfred Hospital, confirmed ladder injuries are a "surprisingly common event". He reveals some sobering statistics, including "about a third of victims come to intensive care and of that third, a quarter will die".

Dr Roodenburg also said "the majority of victims were men over the age of 55" who were "doing something they had done for a long time". However, their "reflexes, speed and strength are less."

The videos and further information on the campaign can be found at the Product Safety website www.productsafety.gov.au/news/ladder-safety-matters-national-campaign

# Applications for Senior Electrical Inspector positions closing soon

Electricians interested in joining Energy*Safety* as a Senior Electrical Inspector are encouraged to apply now before applications close on 30 June 2017. If you wish to apply, please go to www.jobs.wa.gov.au

Permanent, full time or fixed term vacancies are available for successful applicants who will be placed in a recruitment pool.

The Senior Electrical Inspector role is ideally suited to electricians equally adept at working in an office environment and in the field conducting compliance inspections and investigations.

Energy*Safety*'s Cannington office is located directly opposite the Cannington bus/train station and is only a short stroll from Westfield's Carousel Shopping Centre. Free, secure parking is also available.

Other employee benefits include a competitive salary, four weeks of paid annual leave (full-time employees) and flexible working arrangements; ideal for those seeking to achieve the elusive work-life balance.

For further information on the positions, please contact Michael Bunko, Director Electricity Compliance on 6251 1915 or Peter Johnston, Chief Electrical Inspector Utilisation on 6251 1936.

## WorkSafe's plant checklist now available

In January 2017, WorkSafe published a checklist for the isolation of plant/lock-out tag-out. It may assist where an electrical contractor or electrician is involved in the inspection, cleaning, repair, maintenance or alteration of a plant, or, where the function or condition of the plant is debilitated so it poses an immediate risk to personal safety or the safety of others. The checklist is available to download from WorkSafe's website www.commerce.wa.gov.au/worksafe

## Appointment of Chief Electrical Inspector Compliance

Energy*Safety* congratulates Todd Bell on his appointment as Chief Electrical Inspector Compliance.

The position is responsible for providing guidance and advice to network operators on compliance and inspection programs undertaken internally and externally by designated inspectors and for enforcement activities.

Todd has been with Energy*Safety* since 2005 and has led numerous significate investigations and inspections.

Before re-joining the public service, Todd had worked for network operators and engineering consultants.

## Sub-contracting work - can an employer use your EC licence?

Energy*Safety* recently received a query from an electrical contractor who also does sub-contracting work. His current employer wanted him to use his electrical contractor's licence number in advertising. The contractor contacted Energy*Safety* to ascertain whether this was legal.

Regulation 33(1) of the Electricity (Licensing) Regulations 1991 clearly states that a person shall not carry on business as an electrical contractor, or by any means, ***hold himself or herself out as carrying on business as an electrical contractor, unless the person is authorised by an electrical contractor's licence to so carry on business***.

Regulation 33(2)(b) clarifies that a person ***does not carry on business as an electrical contractor if he or she undertakes to have work done by an electrical contractor***.

Your electrical contractor's licence is yours and yours alone. In no circumstances can it be used to represent a business that does not hold an electrical contractor's licence, even if you are carrying out electrical work on their behalf.

Energy Bulletin Issue No.76 (October 2016) featured an article on a business that had been prosecuted and fined $5,000 for advertising for solar and electrical services using the electrical contractor's licence number of the electrical contractor they had engaged, as they did not hold an electrical contractor's licence.

The non-licensed business had placed advertisements for electrical contracting work in various advertising media including the Yellow Pages, three websites (including a Facebook page), signage on business vehicles and a Transperth bus.

If you are aware of an unlicensed business using an electrical contractor's licence as its own, please report the matter to your relevant network operator or Energy*Safety*.

## Be prepared for your compliance inspection

Energy*Safety* regularly carries out inspections of the business practices of electrical contractors in Western Australia to verify compliance with the Electricity (Licensing) Regulations 1991. Be organised! Keep on top of your paperwork and have efficient filing systems in your office.

The following checklist will assist electrical contractors to comply to ensure you are prepared come audit day.

| Compliance checklist - Electrical Contractors | |
|---|---|
| **1. Advertising** | **Check box** |
| a) My electrical contractor's licence number is conspicuously displayed on all advertising material including business cards, stationery (e.g. letterhead, quotes and invoices), pamphlets, signage on business premises and vehicles, online advertisements (e.g. Local Trades and Gumtree websites), business directories (e.g Yellow Pages), newspapers, television and radio (EC number vocalised) advertisements, social media (e.g. Facebook, Instagram, Twitter) and business websites | |
| **2. Apprentices** | |
| a) My apprentices are working with the appropriate levels of supervision | |
| b) My apprentices hold the correct licence (e.g. Indentured apprentice or pre-apprentice Electrician's Training Licence) | |
| c) Upon completion of their apprenticeship, Electricians Training Licence and Restricted Approval Training licence holders are directed to Energy*Safety*'s Licensing office to obtain their electrician's or restricted electrical licence | |
| d) My apprentice has a copy of the *Apprentice Safety Assessment Guidelines* | |
| **3. Business** | |
| a) My business registration certificate is clearly displayed at my place of business | |
| b) Energy*Safety*'s Licensing Office has my current business legal or trading name that is registered with ASIC | |
| c) If there is a change in the legal or trading name for my business, Energy*Safety*'s Licensing Office is notified (no later than twenty eight days) | |
| d) My business has a registered management representative who holds a current electrical worker's licence | |
| **4. Electrical Safety Certificates** | |
| a) My customers receive an Electrical Safety Certificate within the required time frame | |
| b) I keep copies of Electrical Safety Certificates for the required period of five years | |
| c) I have appropriately authorised employees to complete Electrical Safety Certificates on my behalf | |
| **5. Invoices** | |
| a) Invoices are kept with the relevent Notices and Electrical Safety Certificates | |
| b) Invoices have a clear and accurate description of the electrical installing work carried out | |
| **6. Licensing** | |
| a) My electrical contractor's licence is current | |
| b) All my electrical employees hold a current electrical licence or permit appropriate to their training (e.g. Electrician's Training Licence for apprentices) | |
| c) Energy*Safety*'s Licensing Office has my current postal and residential addresses, phone numbers (landline and mobile) and email address | |
| d) If I have a change of address, Energy*Safety*'s Licensing office is notified in no later than 28 days | |
| e) My electrical workers are only carrying out the electrical work authorised by the scope of their licence (e.g. permit holders and provisional licence holders) | |

| Compliance checklist - Electrical Contractors | |
|---|---|
| **7. Nominees** | **Check box** |
| a) My business has at least one nominee with a current electrical worker's licence | |
| b) Energy*Safety*'s Licensing Office is notified when an electrical worker's nomination has been cancelled | |
| c) Energy*Safety*'s Licensing Office is notified when a nominee has ceased employment at my business | |
| **8. Notices/eNotices** | |
| a) I submit Preliminary Notices and Notices of Completion to the relevent network operator or Energy*Safety* within the required time frames | |
| b) All eNotices have been submitted to the relevant Network Operator or Energy*Safety* | |
| c) All handwritten Notices are clear and legible with the correct details supplied | |
| d) I keep copies of Notices for the required period of five years | |
| **9. Obligations to employees** | |
| a) My employees are appropriately trained for the tasks they are given and have been deemed competent to do so | |
| b) The electrical work of my employees is checked and tested upon completion to ensure it is safe and complies with the Regulations | |
| **10. Public Liability Insurance** | |
| a) I have a current public liability insurance policy against civil liability | |
| **11. Record of electrical workers** | |
| a) I keep a record of all employed electrical workers which I regularly maintain | |
| b) The record of electrical workers includes their name, residential address, licence number and type, licence expiry date and details of the period when they were employed | |
| c) The details of former employees are retained for up to two years from when they ceased employment | |

## A note on electric shocks/accidents received on mine sites

For electricians reporting electric shocks/accidents on mine sites, please be reminded that if the site is not supplied electricity from a network operator's grid, the shock must be reported to Energy*Safety*.

All such reports are to be made to Energy*Safety* (freecall for callers in WA) on 1800 678 198. During office hours, calls will be answered by administrative staff while an after-hours answering service will take the calls received at all other times.

Please be aware that the investigation of electric shocks/accidents at mine sites should only be undertaken by a person deemed competent to do so (i.e. the site's Electrical Supervisor or Compliance Inspector).

## Carnegie branches out into the solar market

Western Australia's renewable technology innovator Carnegie Clean Energy has recently announced its latest green energy project; the construction of a 10MW solar farm in Northam.

The power station will have 34,000 solar panels aligned on a single tracking axis with incorporated battery storage. It is expected to generate approximately 24,000 MWh of electricity each year, which will be sold through a power purchase agreement.

The project is a joint venture between new Carnegie subsidiary, Energy Made Clean and national property development and investment management company, Lendlease.

Carnegie recently changed its name from Carnegie Wave Energy after purchasing Western Australian solar and battery developer Energy Made Clean at the end of last year to increase its scope in the competitive market for renewable energy.

Construction of the solar farm is to commence mid-year and is set to be operational by the end of 2017.

## Consumer Protection turns the heat up on solar installers

The Department of Commerce's Consumer Protection division has recently taken prosecution action against a number of Western Australian solar installers for breaches of the Australian Consumer Law. These include:

**Green Engineering Pty Ltd** - A sales representative from the company sold $12,000 worth of solar panels to a couple in Watheroo via doorknocking at their home. In the sales contract, the company failed to provide:

- Their business address.
- Information on consumers' rights including the option to terminate the sales contract and no payment to be made or goods/services provided during the cooling off period of ten days.

Instead, illegal clauses were used including:

- The consumers could terminate the contract within five days of signing the contract.
- Asking the consumers to waive their consumer rights including a product warranty.

The company was fined $15,000 in Perth Magistrate's Court on 31 August 2016.

**Polaris Solar Pty Ltd** - though not a member, the company used the Housing Industry Association Inc. logo in advertising flyers dispersed in Willetton.

Also, after receiving a call from a Polaris telemarketer, a couple in Aveley were visited by a company sales representative who negotiated a sales contract for the supply and installation of solar panels. Four days later, during the cooling off period, a deposit of $1,000 was taken from their credit card. No payment should be sought from consumers during the cooling off period. The following day the couple elected to cancel the contract and their deposit wasn't refunded until a week later.

The company has been in liquidation since 2014 but was fined $15,000 for failing to comply with these provisions relating to unsolicited consumer agreements.

The current and former Directors of the company were subsequently each fined $1,500 with court costs of $622.25 in Midland Magistrate's Court on 17 February 2017.

**Puresol Pty Ltd T/As Mysol** - the company installed a solar system for a homeowner in Donnybrook for $10,600. When the system was initially operated, a short circuit fault occurred on the inverter causing it to burn out. The company replaced the inverter but, several power circuits failed to operate. Subsequent unsuccessful attempts were made to repair the system but eventually an electrician disconnected the faulty system.

The company and its Director were charged with three breaches each of Australian Consumer Law for making false and misleading representations by claiming their solar system would "take Australians off the grid", "slash power bills by up to 100 per cent" and "homeowners would stop paying for power as soon as the system was connected."

Two other charges were made against the company for making false or misleading representations in an advertisement on the Gumtree website, including it was "a very successful business" and had orders valued at $500,000. The business only had three customers who had cancelled their orders and demanded refunds.

The company was fined $20,000 with court costs of $2,864 while the Director was fined $10,000 with court costs of $1,718 in Bunbury Magistrate's Court on 24 January 2017.

# Why you must report all electric shocks/ accidents

Most electricians are aware of their obligation to report immediately all electric shocks and accidents, (including those attributed to static), to the relevant network operator but have you considered why Energy*Safety* requires this information?

As the technical safety regulator for electricity and gas in Western Australia, Energy*Safety* analyses the data to review the effectiveness of the current legislation.

Detailed analysis of the data received on shocks and accidents can highlight deficiencies in work practices and indicates where our focus as a regulator should be directed. For example, the upcoming changes to legislation involving live work came as a result of the number of serious accidents involving electricians working on, or near live parts or equipment.

The number of electric shock reports received is increasing as shown by the red trend line in the following chart.

Analysis of the data showed the most common causes of electric shocks during this period to be:

1. Contact with live parts.
2. Physical damage to equipment.
3. High resistance neutral.
4. Moisture ingress.
5. Neutral voltage rise.
6. Insulation failure.

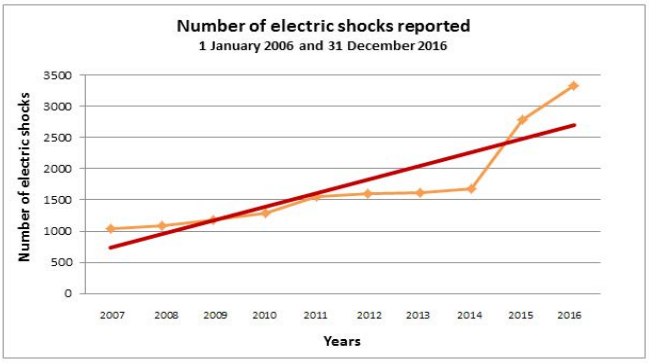



*Chart showing the number of electric shocks reported over a ten year period*

Electric shocks are required to be reported to the relevant network operator immediately after you become aware. The contact details for Western Australian network operators are as follows:

| Network Operators | |
|---|---|
| BHP Billiton Iron Ore – Newman | 1300 632 483 (option 4) |
| BHP Billiton Nickel West | 9026 5262 |
| Energy*Safety* | 1800 678 198 |
| Horizon Power | 13 23 51 |
| Indian Ocean Territories Power Service – Christmas and Cocos (Keeling Islands) | 9164 8427 |
| Rio Tinto | 1800 992 777 |
| Western Power | 13 13 51 |

The network operator will then arrange for an Electrical Inspector to attend site to investigate the cause of the accident and complete an Electric Shock/Accident Report form.

When you report an electric shock, you have played an instrumental role in keeping all Western Australians safe.

# RCD testing in Workplaces

Energy*Safety* has become aware that some electrical contractors are removing switchboard escutcheons at workplaces to carry out tests to verify correct operation of RCDs. This practice elevates risk and is not required in most circumstances.

Testing RCDs should always begin by simply pressing the 'test' button. The device should trip almost instantaneously. If a noticeable delay occurs, the RCD should be replaced. The test button is the cheapest and quickest way to identify a faulty RCD.

Harsh environmental conditions are the main cause of RCD failure. Household switchboards facing North and West can reach temperatures well above the 40 degree manufacturing standard, especially if painted in dark colours. Unsealed switchboards can admit moisture and dust. The characteristics of connected loads being protected also can affect RCD performance.

Any householder should be able to test RCDs easily whenever they wish by pressing the 'test' button, whether the RCD is mounted in a switchboard or in a fixed or portable socket outlet. Home occupants need to remember the test could cause consequential problems if essential timing devices or computers are unintentionally disconnected.

RCD testing in a workplace usually is more controlled. Only authorised persons may open switchboards to test RCDs. Again, critical equipment connected to the circuit involved needs to be considered prior to testing. However, any worker about to plug portable tools or equipment into a RCD-equipped socket outlet should be permitted to test the RCD before commencing work.

If considered necessary, injection testing using a portable testing instrument should be carried out at the farthest socket outlet or lighting point of any given circuit. Persons conducting the tests must be competent to use the instruments employed. Testing RCDs at the switchboard could produce measurement error if some leakage is present in the switchboard itself. To ensure accuracy, all loads connected to the circuit should be disconnected for the test, since some of these will have leakage currents.

Regulation 3.60 (3) of the Occupational Safety & Health Regulations provides:

*(3) A person having control of a workplace —*
*(a) must ensure that each non-portable residual current device installed at the workplace is kept in a safe working condition and tested on a regular basis to ensure its continued effective operation.*

In WorkSafe's view, 'regular basis' means, in most cases, following the guidelines in AS/NZS3760:2010 Table 4 (page 20) – "Indicative Testing and Inspection Intervals for Electrical Equipment".

The underlying principle of this Standard is stated in its Forword:

*The philosophy of the document is to provide an inspection and testing regime capable of implementation with only simple instrumentation, and performed by a person not necessarily having formal qualifications or registration, but who has the necessary practical and theoretical skills, acquired through training, qualification, experience or a combination of these, to correctly undertake the tasks prescribed by this Standard.*

*The frequency of repetition of that process is determined by the equipment type and by examination of the environment in which the equipment is used or working. For indicative purposes a number of different environments are provided with associated or suggested inspection/testing frequencies. These are based on the perception of the level of hazard and the degree of abuse to which the equipment is typically exposed. However, there will usually be multiple sub-environments within any location and the inspecting/testing frequency will be arrived at by an assessment of the actual environment in which the equipment is placed or used.*

Those in control of workplaces may carry out hazard assessments reflecting their working environment and determine the appropriate RCD testing regime, having regard for Regulation 3.60 mentioned earlier.

Clause 2.3.3.4 of AS/NZS 3760 states that:

*RCDs which are permanently wired to terminals in equipment shall be tested using the RCD test button only, observing the operating time which should be 'without undue delay'. In case of doubt, use an external timing circuit, capable of detecting the test current start and finish, to measure disconnect time which shall be not more than 150 ms for a 30 mA RCD and 40 ms for a 10 mA RCD. (The test button current is assumed to be 2 times the rated residual current).*

The main sources of shock risk are items of electrical equipment and appliances plugged into socket outlets. These may be affected by ill use or have suffered undetected damage rendering them electrically unsafe.

Lighting points present much less of a risk. Clause 1.1.2 of

AS/NZS 3760 states:

*This Standard does not apply to electrical equipment (such as suspended light fittings), installed at a height of 2.5 metres or greater above the ground, floor or platform, where there is not a reasonable chance of a person touching the equipment and, at the same time, coming into contact with earth or any conducting medium which may be in electrical contact with earth or through which a circuit may be completed to earth.*

Removing switchboard escutcheons to test RCDs is unnecessary, increases workplace risk for electricians, adds to costs and is contrary to the principles mentioned above.

For new and modified installations, the prescribed tests required by AS/NZS 3000:2007 Clause 8.3.10 must be carried out.

Energy*Safety* has been approached about whether it

# Temporary builder's supply switchboards - use of support pole as earth electrode

is permissible to use a galvanised steel pole supporting a temporary builder's supply switchboard as an earth electrode.

Standards Australia Committee EL-001, which deals with AS/NZS 3000, determined at its May 2002 meeting in Hobart that such use is permissible, provided the pole and its placement comply with Table 5.2 and Clauses 5.3.6.4 (location), 5.5.1.2 (earthing conductor connection) and 5.5.1.3 (labelling).

Energy*Safety* accepts the Committee's determination.

However, earth electrodes are required to be driven 1.2 metres into the ground. The purpose is to reach a good earth connection in moist soil. Many soil types in Western Australia are dry and sandy, causing high earth resistivity.

If galvanised steel support poles are used in place of an earth electrode they must be buried at least 1.2 metres in the ground and must not be encased in concrete. They must also be placed to be exposed to weather, thus ensuring the wettest possible soil and hence conductivity to earth.

Care must be taken to make sure the pole's galvanising is intact and corrosion is not present on the buried section, thus reducing conductivity to the mass of earth.

### Powerleader 4 Outlet Surge Protected

# Product recalls

### Heavy Duty Metal Powerboard (metal cased)

A recall was issued on 20 February 2017 for the affected model reference L54185 with batch code JI12332 which were sold nationally by Powerleader between January 2016 and February 2017.

Consumers should check whether they can move the flexible cord through the grommet. The increased stress of the supply cord may present a risk of a consumer receiving an electric shock. If it cannot be moved then no action is required.

Contact Powerleader Support
Telephone: (02) 9860 2782
Email: support@powerleader.com.au

*Powerleader 4 outlet surge protected heavy duty metal powerboard*

### Gerard Lighting – Crompton XL – LED Performance Track Spotlight

A recall was issued for the affected model reference SKU 27031 CTIK –N1568 with batch codes 4314 or 2116 which were sold nationally by Crompton Lighting, Gerard Trade Supplies and Gerard Lighting between 31 July 2014 and 30 September 2016.

Consumers should check whether they can move the flexible cord through the grommet. The increased stress of the supply cord may present a risk of a consumer receiving an electric shock. If it cannot be moved then no action is required.

Consumers should return the product to the place of purchase for a refund.

*Gerard lighting - Crompton XL - LED performance track spotlight*

## Schneider Electrical President Systems Limited – Clipsal Meter Box

A recall was issued on 17 March 2017 for the affected models

- 230DRAVL;
- 230DRAQ;
- 230DRAQTP; and
- 230DRAT,

with serial number XXXX-2016-10-XXXXX to XXXX-2016-33-XXXXX which were sold by Schneider Electrical President Systems Limited in Queensland, Tasmania and Victoria between 18 April and 17 August 2016.

The conductive parts of the metallic meter box enclosure may not have been earthed effectively as the earth cable was not manufactured to specifications and does not comply with the relevant standards. Therefore, there is a potential electric shock risk if a live wire was to come into contact with the metallic enclosure.

Contact Schneider Electrical Customer Care
Phone: 1300 369 233


*Schneider Electrical President Systems Limited Clipsal meter box*

## GSM International Ltd – Click 4 outlet powerboard

A recall was issued on 20 March 2017 for:

- Model number CLKPB4A.
- Approval number TUV021351EA.
- Batch code ID 09/16.
- Item number 4331777.

They were supplied nationally by GSM International Ltd and sold at Bunnings Warehouse between 1 December 2016 and 28 February 2017.

There is a fire risk when the powerboard is used.

Contact your local Bunnings store
Phone: 1300 669 862 or go to www.bunnings.com.au

*GSM International Ltd - Click 4 outlet powerboard*

# Use of trades assistants

Companies using trades-assistants (TAs) must ensure that they are not breaking the law by asking these unskilled and unlicensed workers to perform electrical work.

TAs are **not** permitted to carry out **any** electrical work. They are not licensed. They must not be sent up into roof spaces to pull cables into or within buildings, affix switchboards, switches or socket outlets or install conduits in buildings. The role of TAs is to provide unskilled labour. They may dig and backfill trenches, lay sand padding, conduits and cables in trenches, carry tools, equipment, conduits and cables on and off work sites and similar jobs.

Deploying TAs to perform activities that are part of electrical work will leave licensed electrical contractors and any supervising electricians open to prosecution.

# Notifiable work - new definition

The definition of Notifiable Work has been changed in the Electricity (Licensing) Regulations 1991.

**Old definition:**
*'notifiable work'* means electrical installing work other than —

a) maintenance work, unless that work requires the disconnection and reconnection of the supply of electricity to the electrical installation concerned or the replacement of service apparatus;
b) the alteration of a final sub-circuit; or
c) the addition of a single final sub-circuit.

**New definition:**
*'notifiable work'* means all electrical installing work other than -

a) maintenance work, unless that work requires the disconnection and reconnection of the supply of electricity to the electrical installation concerned or the replacement of service apparatus;
b) the addition or alteration of one final sub-circuit including the addition or alteration of its protective device; or
c) the alteration of one or more final sub-circuits.

As a guide, the following table gives an indication of how the new definition will operate in practise. The table also shows when Electrical Safety Certificates (ESC) are required.

| | Notifiable | Not Notifiable | ESC |
|---|---|---|---|
| Addition of one single final sub-circuit including its protective device | | ✓ | ✓ |
| Addition of two or more final sub-circuits including their protective devices | ✓ | | ✓ |
| Addition of one (or more) socket outlets (or light points) to the same existing final sub-circuit | | ✓ | ✓ |
| Addition of one (or more) socket outlets (or light points) to different final sub-circuits | | ✓ | ✓ |
| Addition of one RCD to protect one existing final sub-circuit | | ✓ | ✓ |
| Addition of one RCD to protect more than one existing final sub-circuit | | ✓ | ✓ |
| Addition of two or more RCDs to protect two or more existing final sub-circuits | ✓ | | ✓ |
| Addition of one smoke alarm to an existing final sub-circuit | | ✓ | ✓ |
| Replace one fuse with a circuit breaker | | ✓ | ✓ |

| | Notifiable | Not Notifiable | ESC |
|---|---|---|---|
| Upgrading of one or more submains | ✓ | | ✓ |
| Addition of one or more submains | ✓ | | ✓ |
| Replace one circuit breaker with one RCBO (combination RCD/MCB) | | ✓ | ✓ |
| Replace two or more circuit breakers with RCBOs (combination RCD/MCB) | ✓ | | ✓ |
| Replace more than one fuse with circuit breakers | ✓ | | ✓ |
| Installation of solar panels and inverter system | ✓ | | ✓ |
| Replace a defective main switch, lighting switch, socket outlet or lighting point | | ✓ | |
| Replace a defective hot water system, air conditioner, cook top or oven with an item of equivalent specification | | ✓ | |
| Replace one or more socket outlets or lighting points on one or more final subcircuits | | ✓ | |

# Standards update

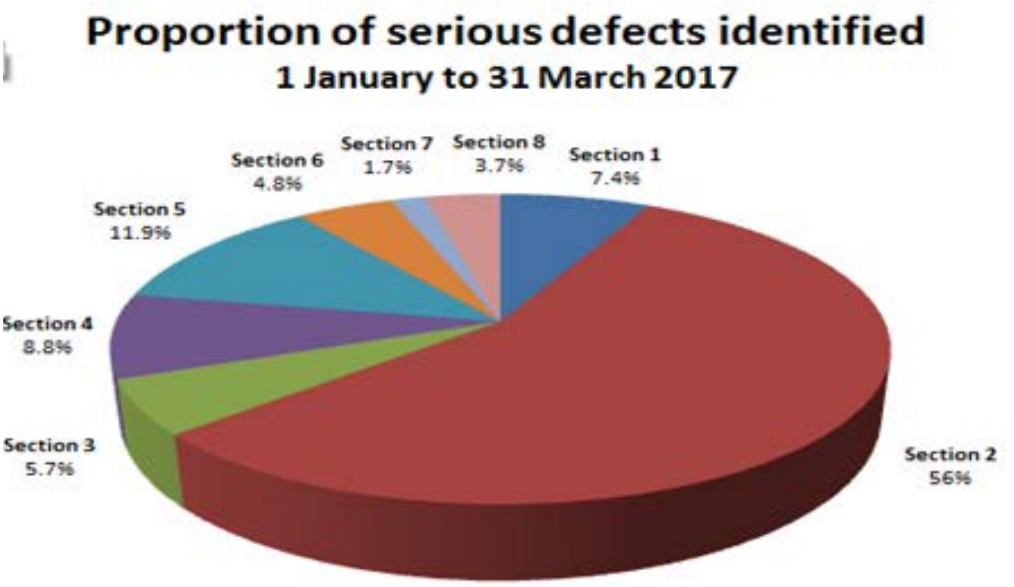
| Standard | Published Date | Supersedes |
|---|---|---|
| AS/NZS 3008.1.1: 2017 'Electrical installations – Selection of cables – Cables for alternating voltages up to and including 0.6/1 kV – Typical Australian installation conditions | 2 February 2017 | AS/NZS 3008.1.1: 2009 'Electrical installations – Selection of cables – Cables for alternating voltages up to and including 0.6/1 kV – Typical Australian installation conditions |
| AS/NZS 3100: 2017: Approval and test specification – General requirements for electrical equipment | 13 January 2017 | AS/NZS 3100: 2009 'Approval and test specification – General requirements for electrical equipment |

| Amendment | Published Date |
|---|---|
| AS/NZS 4417.2: 2012 / Amdt 3: 2017: Regulatory compliance mark for electrical and electronic equipment – Specific requirements for particular regulatory applications | 9 February 2017 |

| Draft for Comment | Closing Date for Comments |
|---|---|
| AS/NZS 4761.1: 2017 Competencies for working with electrical equipment for hazardous areas (EEHA) | 23 May 2017 |

# Serious defects - 1 January to 31 March 2017

The number of serious defects taken from Inspector's Orders issued by Energy*Safety* and network operator inspectors between 1 January and 31 March 2017 are shown in the following chart and table.
A summary of the defects this period is as follows:
Number of non-serious defects = 1,370
Number of serious defects = 352 (20.4%)
TOTAL = 1,722




*Pie chart showing the proportion of serious defects from Sections 1 to 8 of AS/NZS 3000: 2007, Wiring Rules*

| Section | Clause | Serious defects identified |
|---|---|---|
| **Section 1 - Scope, Application and Fundamental Principles**<br><br>Scope. application, referenced documents, definitions, fundamental principles, design of an electrical installation, selection and installation of electrical equipment, verification (inspection and testing) and means of compliance | 1.5.3.1 | Live parts of the installation are not enclosed or protected to prevent direct contact |
| | 1.5.4 | Where contact can be made with live terminal/conductors without the use of a tool i.e. exposed live parts/conductors (including fittings left off) and wiring joints (including taped joints) |
| | 1.5.4.1 | No protection provided against dangers that may arise from contact with parts of the electrical installation that are live in normal service. |
| | 1.5.4.2 | Where contact can be made with live terminal/conductors without the use of a tool i.e. exposed live parts/conductors (including fittings left off) and wiring joints (including taped joints) |
| | 1.5.4.3 | Where contact can be made with live terminal/conductors without the use of a tool i.e. exposed live parts/conductors (including fittings left off) and wiring joints (including taped joints) |
| | 1.5.4.4 | Where contact can be made with live terminal/conductors without the use of a tool i.e. exposed live parts/conductors (including fittings left off) and wiring joints (including taped joints) |
| | 1.5.9 | No/inadequate protection of sub mains |
| | 1.6.1 | Equipment that does not operate correctly (switches, RCDs, ACBs etc. that are provided for protection/safety) |
| | 1.7 | Electrical equipment is unsafe or defective |
| | 1.7.1 | Selection and installation of equipment is unsafe or not installed to manufacturer's recommendation |
| | 1.7.2(g) | Non-compliance with applicable Australian Standards |
| **Section 2 - General arrangement, control and protection**<br><br>General, arrangement of electrical installation, control of electrical installation, fault protection, protection against overcurrent, additional protection by residual current devices, protection against overvoltage, protection against undervoltage and switchboards | 2.5 | Circuit protection/switches not correct for cable size/MD/equipment (overload/short circuit/RCD) or not fitted |
| | 2.5.1 | Circuit protection/switches not correct for cable size/MD/equipment (overload/short circuit/RCD) or not fitted |
| | 2.5.1.2 | Submains and final subcircuits not protected by an overload device |
| | 2.5.4.5 | Circuit protection/switches not correct for cable size/MD/equipment (overload/short circuit/RCD) or not fitted |
| | 2.6.2.4 | RCD protected final subcircuits not arranged as required |
| | 2.6.3.1(a) | Final subcircuits for socket outlets not provided with 30mA RCD protection |
| | 2.6.3.1(b) | Circuit protection/switches not correct for cable size/MD/equipment (overload/short circuit/RCD) or not fitted |
| | 2.6.3.2.1 | Circuit protection/switches not correct for cable size/MD/equipment (overload/short circuit/RCD) or not fitted |
| | 2.9 | Fire retention barrier not fitted in switchboards |
| | 2.9.3 | Electrical equipment is unsafe or defective |
| | 2.9.3.1 | Where contact can be made with live terminal/conductors without the use of a tool i.e. exposed live parts/conductors (including fittings left off) and wiring joints (including taped joints) |
| | 2.9.3.3 | Electrical equipment is unsafe or defective |
| | 2.9.7 | Switchboard spread of fire protective measures do not meet requirements |

| Section | Clause | Serious defects identified |
|---|---|---|
| **Section 3 - Selection and installation of wiring systems**<br><br>General, types of wiring systems, external influences, current-carrying capacity, conductor size, voltage drop, electrical connections, identification, installation requirements, enclosure of cables, underground wiring systems, aerial wiring systems and cables supported by a catenary | 3.1.2 | Non-compliance with applicable Australian Standards |
| | 3.4.1 | Circuit protection/switches not correct for cable size/MD/equipment (overload/ short circuit/RCD) or not fitted |
| | 3.7 | Non-compliance with applicable Australian Standards |
| | 3.7.1 | Electrical equipment is unsafe or defective |
| | 3.7.2.2 | Conductor insulation shall not be removed any further than necessary |
| | 3.7.3 | Where contact can be made with live terminal/conductors without the use of a tool i.e. exposed live parts/conductors (including fittings left off) and wiring joints (including taped joints) |
| | 3.9.3.1 | Failure to adequately secure cables/junction boxes (in accessible locations where they can be subject to mechanical damage) |
| | 3.9.3.3 | Failure to adequately secure cables/junction boxes (in accessible locations where they can be subject to mechanical damage) |
| | 3.9.4.1 | Failure to adequately secure cables/junction boxes (in accessible locations where they can be subject to mechanical damage) |
| | 3.9.4.3 | Electrical equipment is unsafe or defective |
| | 3.9.7.1.2 | No/inadequate protection of sub mains |
| | 3.10.2.3 | Equipment exposed to the weather without correct protection |
| | 3.11.1 | Failure to adequately secure cables/junction boxes (in accessible locations where they can be subject to mechanical damage) |
| **Section 4 - Selection and installation of appliances and accessories**<br><br>General, protection against thermal effects, connection of electrical equipment, socket-outlets, lighting equipment and accessories, smoke and fire detectors, cooking appliances, appliances producing hot water or steam, room heaters, electric heating cables for floors and ceiling and trace heating applications electric duct heaters, electricity converters, motors, transformers, capacitors, electrical equipment containing liquid dielectrics and batteries. | 4.1.2 | Selection and installation of appliances does not meet requirements |
| | 4.19 | Equipment that does not operate correctly (switches, RCDs, ACBs etc. that are provided for protection/safety) |
| | 4.4.2.2 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 4.4.5 | Active not switched or incorrect socket outlet/polarity |
| | 4.5.2.3.1 | Recessed ceiling light fittings that do not have adequate clearance from combustible material or adequate ventilation |
| | 4.8.2.3 | Equipment that does not operate correctly (switches, RCDs, ACBs etc. that are provided for protection/safety) |
| **Section 5 - Earthing arrangements and earthing conductors**<br><br>General, earthing functions, earthing system parts, earthing of equipment, earthing arrangements, equipotential bonding, earth fault-loop impedance, and other earthing arrangements. | 5.1.2 | Selection and installation of earthing conductors do not meet requirements |
| | 5.1.3 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 5.3.1 | Incorrect wiring or incorrect sizing of DC isolating device on solar PV system installation |
| | 5.3.2.3(c) | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 5.3.3 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 5.3.3.2 | Main earthing conductor does not meet requirements |
| | 5.3.4 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 5.3.5 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 5.3.5.1 | Failure to install an MEN connection |
| | 5.3.5.2 | MEN size does not meet requirements |
| | 5.3.5.3 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 5.3.6.1 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 5.4 | No or inadequate labelling on solar PV system installation |
| | 5.4.1.1 | Exposed conductive part/s of electrical equipment not effectively earthed as required |
| | 5.4.2 | Incorrect wiring or incorrect sizing of DC isolating device on solar PV system installation |
| | 5.4.3 | Lighting points are not earthed (or provided with an earth) to meet requirements |

| Section | Clause | Serious defects identified |
|---|---|---|
| | 5.4.6 | Incorrect earth resistance |
| | 5.4.6.1 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 5.5.1.2 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 5.5.1.2(d) | Equipment exposed to the weather without correct protection |
| | 5.5.2.2.1 | Incorrect wiring or incorrect sizing of DC isolating device on solar PV system installation |
| | 5.5.3 | No or inadequate labelling on solar PV system installation |
| | 5.5.3.2 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 5.5.3.5 | Unprotected consumers mains not earthed in accordance with requirements |
| | 5.5.5.2 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 5.6.3.2 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| | 5.7 | No or inadequate labelling on solar PV system installation |
| | 5.7.4 | Earth fault loop impedance does not meet requirements |
| **Section 6 - Damp situations**<br><br>General, baths, showers and other fixed water containers, swimming pools, paddling pools and spa pools or tubs, fountains and water features, saunas, refrigeration rooms, sanitization and general hosing-down operations | 6.2.2 | The classification of zones in a damp situation do not meet requirements |
| | 6.2.2.2 | The classification of zones in a damp situation for other fixed water containers do not meet requirements |
| | 6.2.4.2 | Socket outlets installed in a damp situation does not meet requirements |
| | 6.2.4.3 | Switches and other accessories in damp situations do not meet requirements |
| | 6.2.4.6 | Equipment installed in a restricted zone (damp situation) that is not correctly installed or inappropriate for zone |
| | 6.3 | Incorrect wiring or incorrect sizing of DC isolating device on solar PV system installation |
| | 6.3.4.3(b) | Equipment installed in a restricted zone (damp situation) that is not correctly installed or inappropriate for zone |
| **Section 7 - Special electrical installations**<br><br>General, safety services, electricity generation systems, electrical separation (isolated supply), extra-low voltage electrical installations, high voltage electrical installations, hazardous areas (explosive gas or combustible ducts) and specific electrical installation standards | 7.3.2 | Selection and installation of electricity generation systems do not meet specified standards. |
| | 7.3.8.1.1 | Equipment not earthed correctly or earthing not installed correctly (including MEN connections) |
| **Section 8 – Verification**<br><br>General, visual inspection, testing and date of initial energisation of an installation. | 8.3.5.2 | Incorrect earth resistance |
| | 8.3.6.2 | The insulation resistance between conductors and live parts does not meet requirements |
| | 8.3.7 | Active not switched or incorrect socket outlet/polarity |
| | 8.3.9 | The earth fault-loop impedance does not meet requirements |

## Reporting defects

If you come across an unsafe installation or equipment, under Regulation 62(1) of the Electricity (Licensing) Regulations 1991 you are required to undertake the following:

- Report the defective work to the owner / occupier.
- Let them know the defective work is required it to be reported to the network operator.
- Report the defective work to your relevant network operator (where the network operator cannot be identified, the relevant network operator is Energy*Safety*).
- If you are carrying out work on behalf of your employer (electrical contractor or In-house licence holder), your employer must also be made aware of the defective work.

Network operator contact details are found on the inside cover of books of Preliminary Notices and Notices of Completion and on Energy*Safety*'s website.

# Prosecutions for breaches of electricity legislation

Between 1 January and 31 March 2017

| Name (and suburb of residence at time of offence) | Licence Number | Legislation and Breach | Offence | Date of Offence | Fine ($) | Court costs ($) |
|---|---|---|---|---|---|---|
| Malcolm John Cooper (Halls Head) | EW121231 | E(L)R 1991 Regulation 50A | A licence holder who causes or permits any unsafe wiring or equipment to be connected or remain connected to an electricity supply | Between 18 and 20 November 2014 | 6,000.00 | 867.50 |
| Electricity Networks Corporation T/As Western Power (Perth) | NLH | E(SS&SS)R 2001 Regulation 10(1)(a) | A Network Operator failing to ensure that a prescribed activity was carried out to provide for the safety of persons | 15 September 2014 | 75,000.00 | 649.70 |
| Hamersley Iron Pty Ltd T/As Rio Tinto (Perth) | NLH | ER 1947 Regulation 242(1)(b) | A network operator supplied electricity to a premises and the connection of the supply of electricity to the premises caused, or is likely to cause, the consumers' electric installations to become unsafe | 3 December 2014 | 60,000.00 | 742.50 |

# Summary of infringements for breaches of electricity legislation

Between 1 January and 31 March 2017

| Legislation and breach | Offence | Number of Infringements | Fine ($) |
|---|---|---|---|
| Regulation 33B(2) EA 1945 | Selling or hiring, or exposing or advertising for sale or hire, prescribed appliance without approval | 1 | 5,000.00 |
| Regulation 14 ER 1947 | Owner of residential premises failing to ensure that at least two residual current devices are installed | 1 | 1,000.00 |

# Gas compliance and Pop-up markets

Pop-up markets are always a concern for Energy*Safety's* gas inspectors. The role of the gas inspector is to ensure all gas installations remain safe and compliant. This is quite easily defined where there is gas fitter involvement. As we know all good gas fitters have an in-depth knowledge of these requirements under the various codes and regulations.

Two recent pop-up markets within the Perth CBD have been the Night Noodle Markets at Elizabeth Quay and the Night Markets in Forrest Place.

Energy*Safety* has developed a publication to assist event organisers, venue organisers, asset managers and catering vendors to comply with the safety requirements for the use of gas appliances in public venues. The City of Perth Environmental Officers have adopted this publication *Use of gas appliances in public venues* for all these events and provide Energy*Safety* with advance warning.

As the title implies the gas installations are of a temporary nature. Prior to the introduction of both this publication and the electronic Notices of Completion (eNotice) a gas supplier may not have received the Notice of Completion until after the event. Now, as the gas installations are completed the gas fitters are able lodge an electronic Notice of Completion via Energy*Safety's* eNotice. This also enables the gas inspectors an opportunity to inspect the food vending stalls prior to opening mitigating possible hazards, thus ensuring the safety of the users and public alike.

At the Night Noodle Markets a number of marquees were erected to accommodate the food vendors. Two gas fitters, experienced with these types of activities were engaged by the organisers to install and manage the total gas installations throughout the ten days of this event. On this occasion all the gas appliances were hired from a reputable supplier further enhancing the safety of this event.

The gas installations were grouped within three to four marquees fed from nine banks of four 45kg LP Gas cylinders securely housed in cages set back from public areas. These cages contained a manifold, pigtails and regulators sized to accommodate the gas load. Copper gas fitting lines were then run to each marquee fitted with isolating valves and final gas appliance connections using flexible hose assemblies.


*Bank of four 45Kg LP Gas cylinders secured and caged*

One evening a moderate south westerly common with this time of the year caused a minor incident when an unrestrained plastic side of a marquee touched the hot surface of a gas fired solid grill plate. Fortunately quick action by the chef prevented the incident escalating.

*Plastic marquee damaged after touching gas fired solid grill plate*

At the Friday Night Markets in Forrest Place, after a late afternoon inspection of installed gas appliances by gas inspectors, prior to opening, a vendor introduced Lunch Box Cookers to prepare their culinary delights. Fortunately, an Environmental Officer from the City of Perth visited that evening and had the vendor remove them from the site.

*Lunch box cookers at the Night Markets in Forrest Place*

Just over eighteen months ago all Lunch Box Cookers were the subject of a National Recall following a spate of incidents where users were injured when not following user instructions. Injuries resulted after users placed large solid BBQ plates and pans covering the entire cooker, reflecting heat back onto the disposable butane cartridge contained in the cooker causing it to explode. Those unfortunate enough to be too close to the cooker suffered burns from the erupting fireball. Although Lunch Box cookers are again being sold they are of a better design and approved, but the user warnings are still in place in regards to the size of utensils to be placed on the cookers.

Should you be involved in any event similar to the ones described above, in an organising committee or as a gas fitter engaged to install a temporary gas installation, it is recommended that you obtain a copy of this publication *Use of gas appliances in public venues* from Energy*Safety's* website.

# Approval of a coffee roaster

Quite often Energy*Safety* has a request from the public on how they get a gas fired coffee roaster connected to gas. A coffee roaster is a Type B gas appliance as defined in s13d of *The Gas Standards Act 1972*.

A Type B gas appliance is an appliance that has a maximum hourly input rating exceeding 10 megajoules, but is neither a Type A appliance nor a mobile engine.
The following outlines the stages involved in approving a Type B gas appliance.

**Stage 1 – Approval for installation**
Generally an industrial gas appliance requires individual approval in writing by an inspector. This requires the owner/operator to satisfy a Type B gas appliance inspector, through a technical submission (that is a desk top appraisal), that the appliance will satisfy the technical standards required by the regulations, resulting in gaining an 'approval for installation'.

**Stage 2 – Installation**
After obtaining approval for installation, the Type B gas appliance can be installed. A formal approach for gas connection (Commissioning Gas) is made to the nominated gas supplier or network operator. The gas fitter is then able to fire the gas appliance and run the appliance to meet all the requirements of the codes and standards and that requested of the owner or operator of the appliance.

**Stage 3 – Compliance demonstration**
This stage requires an on-site demonstration to the Type B gas appliance inspector that the installed appliance complies with all the technical and safety requirements. For example, checks on the combustion process, safety controls/interlocks and flueing.

The Type B gas appliance inspector issues a certificate of compliance when satisfied that the installation meets prescribed requirements. This is done in accordance with Regulation 22A(1) which states: *An inspector may issue a certificate of compliance for a Type B gas appliance if the inspector has inspected the appliance and ascertained, as far as practicable, that it complies with the requirements referred to in Regulation 32.*

**Stage 4 – gas supplier approval**
Once a certificate of compliance is issued by the inspector, the appliance is allowed to be connected to the gas supply for permanent operation subject to the approval of the gas supplier. This usually involves an inspection of the total gas installation by the gas supplier.

Only a gas fitter having a gasfitting permit Class I is able to work on Type B gas appliances.

*Gas fired coffee roaster*

# Mounting heights for LP Gas regulators

There has been considerable debate of late regarding the mounting height of LP Gas regulators to suit 45kg exchange cylinders. A rule of thumb has been 1,200mm above the finished ground level.

In 90% of cases this height appears to work, however if the consumer raises the finished ground level, by filling or paving it no longer applies. In these circumstances by raising the surrounding levels the 45kg gas cylinder regulator will be below the valve where it should be above. The implication is, in extreme cold weather, vapour contained in the pigtail can condense and form droplets. These droplets can fall back to the gas regulator and accumulate in the diaphragm chamber in direct contact with the rubber diaphragm.

Over time this diaphragm will lose its ability to operate correctly, in the worst case sending elevated pressure to the connected gas appliances.

For gas fitters installing LP Gas on houses and businesses, mounting the regulator at 1,300mm is recommended where finished ground level may increase. Remember it may be some weeks after you submit your Notice of Completion that a designated (gas) inspector may arrive to conduct an inspection of the total gas installation. Should the LP Gas regulator be below the level of the gas cylinder shut-off valve a Notice of Defect will be issued.

For further information on this matter the reference is AS/NZS 5601.Pt 1 2013 General installations, Appendix J6 Cylinder regulations (a) (ii).

# Tube-out and completion

On many new gas installations, usually residential, the gas installation tube out is done by one gas fitter and the subsequent completion of the installation is by a separate gas fitter.

**Scenario**
The tube out gas fitter completes the associated work, attaches an appropriately completed compliance badge in the meter box, regulator hood, etc. along with any proprietary system label and submits the Notice of Completion.

Later, when the building is ready, another gas fitter extends the piping, where required, and installs and commissions the installation and the gas appliances (completion). Again this gas fitter then attaches an appropriately completed compliance badge any proprietary system label and submits the Notice of Completion.

**Requirements**
It is a requirement of AS/NZS 5601.1:2013 Clause 3.5.1 that all piping is to be tested prior to being made inaccessible such as being installed under slabs, wall cavities, false ceilings and chased into walls. Therefore the tube out gas fitter should carry out the piping pressure test at seven kilopascals (7kPa) or one and a half times the operating pressure whichever is the greater. The tube out gas fitter is also required to ensure all piping is effectively terminated so as to be gas tight. See the below images.

The gas fitter carrying out the appliance installation is also required to test any associated piping extensions or modifications as above without any gas appliances connected and test with the appliances connected at 2kPa or operating pressure whichever is the greater.

*Non-compliant temporary termination*

*Non-compliant temporary termination*

*Compliant temporary termination*

# ATCO Gas Australia - Gas Utilisation Inspection team changes

ATCO Gas Australia has recently introduced a number of changes to the roles and responsibilities within the Gas Utilisation Inspection team.

The manager of the gas inspection team will continue in his role overseeing the department and will be supported by the addition of a Supervisor Gas Utilisation. This new position will provide support to the Gas Utilisation Inspectors and administration team in ensuring compliance with the ATCO Gas Australia Gas Utilisation Inspection Plan (Plan).

A number of Senior Gas Utilisation Inspector positions have been created to undertake inspection work on industrial Type B appliance installations and complex commercial gas installations (Class I installations).

There are also several gas inspectors available for general domestic and commercial gas installations (Class G installations). A Compliance Reporting Officer has also been appointed to support the inspection administration and inspection team with reporting and analysis required by the inspection Plan.

ATCO Gas inspectors are also available to attend your "Toolbox" meetings to discuss industry related issues. For assistance please contact 13 13 56 or contact the relevant person on the following numbers.

| Position | Name | Phone |
|---|---|---|
| Manager Gas Inspection | Peter Farrell | 6163 5116 |
| Supervisor Gas Utilisation | Steve Mills | 6163 5124 |
| Class I Inspectors | Martin Bishop | 6163 5118 |
| | Richard Brewell | 6163 5120 |
| | Damian Tabram | 6163 5125 |
| Class G Inspectors | Paul Ramsey | 6163 5119 |
| | Martin Airns | 6163 5122 |
| | Lara Koeman | 6163 5117 |
| | Alan Carter | 6163 5123 |
| Compliance Reporting Officer | Joel Brokaw | 6163 5126 |

# Summary of infringements for breaches of gas legislation

Between 1 January and 31 March 2017

| Legislation and breach | Offence | Number of Infringements | Fine ($) |
|---|---|---|---|
| r. 18(2) | Failing to ensure gas installation complies with prescribed requirements. | 4 | 2,400.00 |
| r. 20(1) | Installing appliance, apparatus or part contrary to instructions or recommendations of manufacturer or designer | 1 | 600.00 |
| r. 28(3) | Failing to give notice of completion of gasfitting work within required time | 2 | 800.00 |
| r. 30 | Failing to rectify defects and give notice of rectification within required time | 1 | 600.00 |
| r. 34(1) | Failing to keep records of employed gas fitters in required manner | 2 | 2,500.00 |
| r. 34(3) | Failing to keep records for required time | 1 | 1,250.00 |
| s. 13A(2) | Engaging in an operation or carrying out work or process, of a kind prescribed to be of nature of gas fitting work otherwise than in a prescribed capacity and without a certificate of competency, permit or authorisation | 3 | 3,000.00 |
| | **Total** | **14** | **11,150.00** |