

# energy

## Bulletin

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## Carbon monoxide awareness campaign

Minister Michael Mischin launched EnergySafety's 'For Safety's Sake' carbon monoxide awareness campaign on 9 July 2014.

The campaign educates consumers of the dangers posed by faulty, poorly maintained or misused gas devices which could emit dangerous levels of carbon monoxide.

Often families will not know they are being exposed to potentially fatal levels of carbon monoxide until the symptoms of poisoning become severe. A person exposed to low levels of carbon monoxide may experience a headache, weakness and fatigue but at higher levels symptoms could include severe headaches, dizziness, vomiting, seizures and collapse. In extreme cases this can lead to coma and death.

For consumers to reduce their risk, they are advised to get all gas appliances checked and serviced regularly by a licensed gasfitter. Consumers are also advised to take care to keep gas devices clean and free from dust, ensuring the area in which the appliances are used is well ventilated and to never use outdoor appliances inside.



Right to left: Minister Michael Mischin with Sally and Mauro Vischi. The Vischi's told their story of how they were affected by carbon monoxide poisoning from an un-serviced gas heater. EnergySafety appreciates their participation in the launch.

EnergySafety is recommending all gas appliances, such as space heaters, should be serviced every two years or in accordance with the manufacturer's instructions. If the appliance is more than 10 years old, it should be checked annually.

KEN BOWRON  
DIRECTOR OF ENERGY SAFETY

# EnergySafety



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## Postal address change

Further to our article in the last Energy Bulletin regarding a change to our contact numbers, EnergySafety's postal address has also changed. Our physical address remains the same:

Level 1, 303 Sevenoaks Street  
(entrance Grose Avenue)  
Cannington WA 6107

Our postal address is now:

Locked Bag 14  
Cloisters Square WA 6850

Please use this address when writing to EnergySafety.

## Gas safety statistical report

EnergySafety has released the Gas safety statistical report for the period 2003/04 to 2012/13. The report summarises information about gas incidents in Western Australian and analyses statistical trends for this period.

It can be downloaded from our website at [www.energysafety.wa.gov.au](http://www.energysafety.wa.gov.au).

## For Safety's Sake ads

Further to our cover article on the carbon monoxide awareness campaign, following are the ads to encourage consumers to get their heaters serviced and use outdoor appliances outside.

## Change to opening hours

Please note, from 11 August 2014 EnergySafety's opening hours will change to 8.30 am to 4.30 pm.

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# electrical focus

## Revisions to AS 2067 – Substations and high voltage installations exceeding 1kV ac

A final draft of the proposed revisions to AS 2067 is expected to be issued by Standards Australia in July 2014 for a six-week public comment period.

The major change to this standard is to define, in significantly more detail, the risk assessment processes required in the design of substations and high voltage (HV) installations:

- Risk likelihood, frequency of exposure and range of consequences must be considered.
- A detailed analysis of all known and foreseeable hazards is required.
- The mitigation steps that can be taken, prioritised from the “elimination” of risks, through a hierarchy of controls to “PPE”, need to be determined. All such steps must be applied where the cost is not grossly disproportionate to the safety benefit gained.

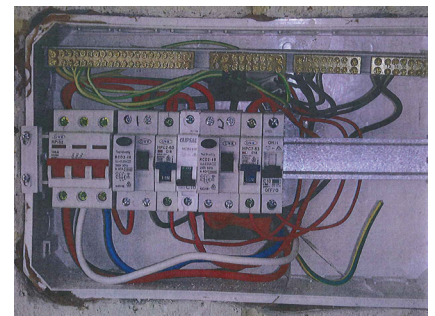
Other material changes include:

- Updated references to Australian and IEC Standards.
- Definitions:
  - “Cross country faults” are defined and must be considered in designs. ie where a phase-to-phase fault occurs following an earth fault in one location leads to an earth fault at another location on a different phase.

- The defined terms “As Low As Reasonable Practicable” (ALARP) and “So Far As Is Reasonably Practicable” (SFAIRP) have been introduced. These apply to the mitigation of hazards where the cost of doing so is not grossly disproportionate to the safety benefit.
- Clearance requirements near buildings and structures, particularly from the roof or windows with fire ratings, have been modified.
- Substantial changes, with detailed diagrams, have been made to outdoor transformer layouts for fire protection of transformers and surrounding structures. This includes an informative Appendix which sets out eight fire risk zone diagrams for distribution substations.
- Significant additional material is provided for earthing design support, including:
  - A process that can be followed to determine the level of risk associated with voltage limits.
  - Design curves for step and touch voltage limits and case studies are provided for guidance, together with nine diagrams illustrating the majority of practical earthing arrangements.
- The table for functional identification of small wiring, deleted as part of the 2008 revision, returns as an informative Appendix, which presents a typical identification system.

- The power system protection general clause is now supported by a new informative Appendix, which comprises 14 pages on detailed protection system design.

## Repeat offender – \$33,500 in fines for multiple MEN omissions



*House distribution board with no MEN connection (link) or running earth installed.*

An electrical contractor (sole trader), has received a total of \$33,500 in fines for two breaches of carrying out unsafe and substandard electrical work and two breaches of submitting Notices of Completion to the network operator Western Power when the electrical installing work had not been completed.

An investigation by a Western Power inspector identified that at a duplex installation, the electrical contractor had failed to install the MEN links at both units.

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At another installation in Hovea, the same inspector identified that, once again, the electrical contractor had failed to install an MEN (link) at the main switchboard.

This prosecution is the second time the electrical contractor has appeared in court, as he has been previously convicted and fined for failing to install an MEN at an installation in Mosman Park back in September 2000.

Other serious defects identified by the inspector at both installations included:

- The site main switchboard equipotential bond and MEN connections (links) were not the same size at the consumer's neutral conductors.
- Four lighting sockets had "live" terminals exposed.
- A lighting switch in a bathroom was installed in a prohibited zone.
- The sub-mains from the main switchboard to the residence were protected by a circuit breaker that was rated higher than the rating of the cable.
- A socket outlet in the kitchen had exposed "live" terminals.
- Two lighting fittings attached to the ceiling joist in the roof space had exposed "live" terminals".

Numerous other minor defects were also found.

At Midland court, the electrician pleaded guilty to two charges of carrying out unsafe and substandard electrical work, for which the Magistrate imposed a fine of \$16,000 with court costs of \$771.15.

For the submission of the two Notices of Completion for the defective work that had not been completed, the electrical contractor pleaded guilty and received a fine of \$17,500 along with court costs of \$771.15.

This latest conviction has come after EnergySafety issued a reminder in "Energy Bulletin" Issue No. 66, for all contractors to always ensure they check and test installation to verify the multiple earthed neutral (MEN) connection (link) has been installed.

## Standards update

Amendment No. 1 for '**AS/NZS 4871.1 – Electrical equipment for mines and quarries Part 1: General requirements**', was published on 4 April 2014. This amendment applies to Clause 3.7 Batteries, which is to be deleted from the original standard and replaced with the updated Clause.

**'AS/NZS 3105; 2014 – Approval and test specification – electrical portable outlet devices'** published on 28 April 2014 provides the electrical industries with the requirements and test methods for electrical portable outlet devices.

**'AS/NZS 4934.1: 2014 – Incandescent lamps for general lighting service – Part 1: Test methods – Energy performance'** was published on 1 May 2014.

This Standard includes a number of amendments to the Interim Standard that expired on 7 April 2013. Changes include the reference to the optional usage of IES LM-79-08 and the restructuring and minor improvements to the methods of measurement.

The revision of '**AS/NZS Luminaires – Part 2.1: Particular requirements – Fixed general purpose luminaires**' published on 16 May 2014 provides the lighting industry with essential safety requirements for double-capped LED lamps.

**'AS/NZS 60079.31: 2014 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"'** was published on 16 May 2014. This standard, which was first published as AS/NZS 60079.31: 2011, sets out the requirements for electrical equipment protected by an enclosure and with surface temperature limitations for use in explosive dust atmospheres. AS/NZS 60079.31: 2014 is to be read in conjunction with 'AS/NZS 60079.0 Explosive atmospheres, Part 0: Equipment – General requirements'.

**'AS/NZS 60076.1: 2014: Power transformers – General' (IEC 60076-1, ED.3.0 (2011) MOD)** was published on 10 June 2014. This standard, which was first published as AS 60076.1-2005 – Power transformers – General (IEC 60076-1, Ed.2.1 (2000) MOD), is an adoption with national modifications and has been varied to take into account Australian/New Zealand conditions. It provides manufacturers, suppliers, test laboratories, purchase and users of power transformers with general requirements for single-phase and three-phase transformers.

## New changes to smoke alarm laws

The new national smoke alarm laws featured in the Building Code of Australia, which came into effect on 1 May 2014, requires electrical contractors to interconnect smoke alarms in domestic installations, when more than one alarm is installed.

Due to concerns from building and electrical stakeholders who felt they could not comply with the new requirements before the 2014 deadline, buildings in Western Australia have a one-year transition period to comply with the interconnection requirement.

Buildings that were constructed, or approved for construction before 1 May 2015 and are:

- Subject to sale, transfer of ownership, rent or hire
- Replacement smoke alarms in a dwelling subject to sale, transfer of ownership, rent or hire

will not be required to have smoke alarms interconnected.

For dwellings under construction, smoke alarms must comply with approved plans and specifications associated with the building permit.

For further information on the new smoke alarm requirements, please contact the Building Commission on **1300 489 099** or visit their website [www.buildingcommission.wa.gov.au](http://www.buildingcommission.wa.gov.au)

Below are some of the most frequent questions concerning smoke alarm installations:

### **Q: When did the initial smoke alarm regulations come into effect?**

A: 1 October 2009

### **Q: What does a smoke alarm installation need, to comply with the Regulations?**

A: The Regulations stipulate that is the owner's responsibility to ensure the smoke alarms fitted are:

- No more than 10 years old.
- In working order.
- Permanently connected to the consumer mains power.
- In accordance with the relevant Building Code of Australia in effect at the time the alarms were installed.

### **Q: How many hard wired smoke alarms does each house require?**

A: The *Building Code of Australia* has requirements for the installation of fire and smoke detectors in domestic residences. The number required depends on the design of the house. For further information on the requirements for each type of dwelling, refer to the Department of Fire and Emergency Services (DFES) website [www.dfes.wa.gov.au](http://www.dfes.wa.gov.au)

### **Q: Where should I not install smoke alarms?**

A: Smoke alarms should not be installed in kitchens, laundries and bathrooms.

### **Q: What Australian standards apply?**

A: All smoke alarms must comply with AS 3786:1993 "Smoke Alarms". The installation of smoke alarms must comply with AS/NZS 3000:2007 "Wiring Rules".

### **Q: What type of smoke alarm should be used?**

A: DFES recommends a mains power photo-electric smoke alarm with a fixed rechargeable battery that does not need to be changed for the life of the smoke alarm.

### **Q: To which circuit do I connect the smoke alarms?**

A: As set down in AS/NZS 3000:2007 "Wiring Rules", smoke alarms are to be directly connected to the lighting final subcircuit or to an individual final subcircuit.

### **Q: How often should smoke alarms be replaced?**

A: Every ten years, as there is no guarantee that the alarm will still operate after this time due to environmental factors including dust, cobwebs, insects, contaminants and corrosion of electrical components.

### **Q: What advice on smoke alarms can I give to my customers?**

A: Smoke alarms need to be tested and cleaned at least once a year. Ask them to refer to the manufacturer's instructions on how to perform these tests.

### **Q: Does smoke alarm maintenance require the services of an electrical contractor?**

A: An electrical contractor is only required for the disconnection or installation of mains powered smoke alarms. Cleaning of the alarms can be performed by the homeowner, tenant or a non-licensed contractor.

### **Q: Who has the power to take action if the requirements for smoke alarms aren't met?**

A: Local governments under the *Building Act 2011* and the Regulations may issue an Infringement Notice or prosecute an owner failing to comply with the smoke alarm requirements before selling, transferring ownership, renting or hiring a dwelling.

For further information on smoke alarms, please call the Department of Fire and Emergency Services on 1300 657 209.

## Interstate electrician prosecuted for unlicensed photovoltaic installations

An interstate electrician was recently prosecuted in Kununurra Magistrate's Court for carrying out electrical work while not holding a Western Australian's electrical worker's licence.

The electrician, who was also the nominee and Director for a company which was also not licensed to carry out electrical contracting work in this state, had carried out the installation and connection of a 5kW photovoltaic (solar) system on behalf of a solar technology and renewable energy company.

The photovoltaic system had been fully installed, was operational and connected to the Horizon Power network at the time of the inspection.

While the electrician held electrical worker's licences in the Northern Territory, Victoria and Queensland, he was not authorised by licence to carry out electrical work in Western Australia.

The electrician had mistakenly believed he was authorised to install the solar systems without holding a Western Australian electrician's licence, as he had solar installation accreditation with the Clean Energy Council.

The electrician pleaded guilty to one charge of the Electricity (Licensing) Regulations 1991, Regulation 19(1) in Kununurra Magistrate's Court, where he was convicted and fined \$2,000 with court costs of \$140.



## Electrical safety recalls

### **Interlogix 449 Series Self-Diagnostic Photo-electric Smoke Detector**

Photo-electric smoke and thermal detectors supplied nationally through UTC Fire & Security Australia Pty Ltd T/As Interlogix and sold nationally via Direct Alarms Supplies and Alarmcorp.

#### **Identification**

The affected models were manufactured between 25 March 2013 and 28 February 2014. The recall covers certain models with date codes ranging between 13084 and 14059 including 449C, 449CSTN-AA, 449CTE, 449CRT, 449CST, 449CT.

#### **Safety risk**

When the smoke detectors are placed near devices with frequency levels ranging from 440Mhz to 470Mhz (eg satellite phones and handheld walkie talkies), they may become idle or set off false alarms. In the case of a fire, if the smoke detector is idle, the smoke detector may not alert the property owner of the imminent danger and could contribute to property damage or loss of life.

#### **For further information**

Contact Interlogix

Telephone: 1800 700 006

Email:

499detectors@interlogix.com.au

Website:

www.interlogix.com.au

### **Uniquip Industries – PV Array Rotary DC Isolator Identification**

The affected models were supplied by GWR Pty Ltd T/As Uniquip Industries and sold through electrical wholesalers or direct to solar installers in Western Australia and Queensland between 20 December 2012 and 1 March 2014. The recall covers models GEN3DC-25, GEN3DC-32, SPMDICIS025, SPMDICIS032.

#### **Safety risk**

The internal contacts of these models may have a fault as a high resistance connection may form. There is a risk that the isolators may overheat and catch fire.

#### **For further information**

Contact Uniquip Industries

Telephone: 0457 505 122

Email: prp@uniquip.net.au

Website:

www.uniquip.net.au/prp

## Serious defective work results in the prosecution of an electrical contractor for failing to check and test

EnergySafety reminds all electrical contractors of the requirement under Regulation 62 of the Electricity (Licensing) Regulations 1991, to report any defective electrical work to the relevant network operator.

Regulation 62 stipulates that subject to subregulation (2), if it appears to an electrical worker carrying out electrical work on any electrical installation or electrical equipment, that there is a defect in the installation or equipment that renders the installation or equipment unsafe, the electrical worker is as soon as is practicable:

- a) To report the matter to the owner or occupier of the premises where the installation or equipment is located and inform the owner or occupier that the matter is required to be reported as provided in paragraph (b); and
- b) To report the matter:
  - i) to the relevant network operators; or
  - ii) if the electrical workers is unable to identify the relevant network operators, to EnergySafety.

Subregulation (2) stipulates that if:

- a) the electrical worker is carrying out electrical work on the unsafe electrical installation or electrical equipment on behalf of his or her employer; and
- b) The employer holds an electrical contractor's licence or in-house electrical installing work licence,

then the electrical worker shall report the matter to the employer who shall then comply with subregulation (1) as if that subregulation referred to the employer and not to the electrical worker.

Reporting of defective work ensures the safety of the public.

A Western Power investigation revealed that an electrician carried out defective electrical installing work at a property in Cottesloe. Serious defects identified included the failure to enclose a cable for a lighting circuit in a junction box and the failure to terminate an exhaust fan socket outlet.

Concerns about the workmanship of this electrician had been raised initially by the property owner, who then employed another electrical contractor to carry out an inspection of the electrical work.

Upon finding the serious defects, the electrical contractor reported the unsafe installation to Western Power.

The electrician who carried out the defective work was also the nominee and Director of an electrical contracting business. Although he had failed to carry out any checking and testing of the installation on completion of the electrical work, he submitted a Notice of Completion to Western Power and had certified that the electrical work had been checked and tested and was safe to connect to the electricity supply.

At Perth Magistrate's Court, the electrician pleaded guilty and was convicted and fined \$5,000 with court costs of \$666.90 for carrying out unsafe and substandard electrical work.

For failing to check and test the electrical work after completion to ensure it was safe and complied with AS/NZS 3000:2007 "Wiring Rules", the electrical contractor also pleaded guilty and was convicted and fined \$15,000 with court costs of \$666.90.

## SAI Global StandardsWatch

For electrical contractors seeking updates on standards relevant to a particular installation, SAI Global offers a paid subscription to StandardsWatch, available through their website. This service is essential for electrical contractors, considering that failing to be vigilant on updated standards could be detrimental to your business.

The service operates by sending an email to the subscriber whenever a change occurs with elected standards; whether it is amended, superseded or when a new standard is available.

There are many subscription options to select from, including:

- StandardWatch Tier 1: Watch up to 50 Standards
- StandardWatch Tier 2: View over 50 Standard and entire subject areas

To get started, you will need to register with SAI Global as a user with their four stage registration process and then select your preferred StandardsWatch option.

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### **Do you have all of these latest versions of installation standards?**

The following self-checklist is for electricians to confirm whether they currently possess the latest versions of these standards that are applicable to electrical installations:

#### **Installation standards**

<b>STANDARD</b>	<b>Tick box ✓</b>
WA Electrical Requirements – January 2014	
AS 2067:2008 “Substations and high voltage installations exceeding 1kV a.c.”	
AS/NZS 3000:2007 “Wiring Rules”	
AS/NZS 3001:2008 “ Electrical installations – Transportable structures and vehicles including their site supplies”	
AS 3002:2008 “Electrical installations – Shows and carnivals”	
AS/NZS 3003:2011 “Electrical installations – Patient standards”	
AS 3004:1:2008 “Electrical installations – Marinas and recreational boats – Marinas” <b>and</b> AS 3004:2:2008: “Electrical installations – Marinas and recreational boats – Recreational boats”	
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 3010:2005 “Electrical installations – Generating sets”	
AS 4777.1:2005 “Grid connection of energy systems via inverters – Installation requirements” <b>and</b> AS 4777.2:2005 “Grid connection of energy systems via inverters – Inverter requirements” <b>and</b> AS 4777.2:2005 “Grid connection of energy systems via inverters – Grid protection requirements”	
AS/NZS 5033:2012 “Installation of photovoltaic (PV) arrays”	
AS/NZS 60079.0:2012 “Explosive atmospheres – Equipment – General requirements” <b>and</b> AS/NZS 60079.10.1:2009 “Explosive atmospheres – Classification of areas Explosive gas atmospheres” <b>and</b> AS/NZS 60079.14:2009 “Explosive atmospheres – Electrical installations design, selection and erection” <b>and</b> AS/NZS 60079.17:2009 “Explosive atmospheres – Electrical installations inspection and maintenance”	
AS/NZS 61241.0:2005 “Electrical apparatus for use in the presence of combustible dust – General requirements”	
AS/NZS 61241.0:2005 “Electrical apparatus for use in the presence of combustible dust – Selection and installation”	
AS/NZS 7000:2010 “Overhead line design – Detailed procedures”	

For more information on StandardsWatch or purchasing standards, please visit the SAI Global website [www.saiglobal.com](http://www.saiglobal.com) or contact Publication Sales and Support on 131 242.

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## Electrical contractor's \$40,000 error – Failure to earth a “DIN” kit

An electrical contractor recently fronted Perth Magistrate's Court and received a penalty of \$40,000 with court costs of \$666.90 for failing to earth the main switchboard “DIN” kit at an installation in Bedford.

This serious defect was identified when a Western Power inspector carried out a routine “Notice” inspection of the installation. As the installation was connected to the electricity supply at the time of his inspection, the inspector made the installation safe by installing a temporary earth connection to the “DIN” rail kit.

The electrician who carried out the electrical work did not have any experience in upgrading switchboards and only had experience working with new switchboards and transportable buildings. He failed to check and test the electrical work he had carried out and failed to complete the company's testing sheet for the installation. He had only completed the ‘Check List’ entries on the Invoices.

EnergySafety has highlighted the serious issue of failing to earth “DIN” Kits in previous “Energy Bulletins”, (Issue No.'s 62, 56, 54 and 19) but it is evident the message is not being taken on board by electrical contractors, given the number of defective installations still being identified by network operator inspectors.

## Caravan installations

Electrical contractors carrying out electrical installing work on caravans are reminded to ensure the installation meets the following requirements:

1. All caravan installations must comply with the mandatory standards AS/NZS 3001:2008 “Electrical installations – Transportable structures and vehicles including their site supplies” and AS/NZS 3000:2007 “Wiring Rules”. Please note, if a caravan was wired prior to the current edition of AS/NZS 3001:2008, then it only needs to meet the standard that was in effect at the time of manufacture.
2. When the installation has been completed, a Caravan Installation Test Certificate (available from EnergySafety's Licensing Office) must be completed and fitted to the caravan (see image below). This Certificate attests that the caravan meets required safety standards.
3. If an installation does not comply, a Caravan Installation Test Certificate must not be affixed to the caravan until further testing is carried out to rectify any identified defects.
4. If the caravan is to be connected to power on-site, ensure that the socket outlet has residual current device (RCD) protection.
5. On-site permanently wired caravans require two RCDs for the lighting and socket outlets.
6. Caravans that are sold, rented or leased require one RCD if there is one inlet socket and two or more RCDs are required if there are two or more inlet sockets.
7. A Preliminary Notice and Notice of Completion are required to be submitted to the relevant network operator if the caravan is being connected, or, reconnected to the electricity supply

To obtain more Caravan Installation Test Certificates, please contact our Licensing Office on 6251 2000 or via email [energylicensing@commerce.wa.gov.au](mailto:energylicensing@commerce.wa.gov.au)

### CARAVAN INSTALLATION TEST CERTIFICATE

The electrical installation of this caravan was checked on the date shown. Checks and tests confirmed the installation complied with AS/NZS 3001 and is safe to connect to electricity supply.

#### CARAVAN AND INSTALLATION DETAILS

Make .....	No. of Inlet Sockets .....
Chassis No .....	Lights .....
Reg No .....	Plug Sockets .....
Contractor Name.....	Other Equipment .....
Contractor Licence No. ....	.....

I certify that I have checked and tested the electrical installation of this caravan and, at the time of testing, the installation complied with AS/NZS 3001.

Name .....Signature .....Date.....

Certificate supplied by EnergySafety WA for use by licensed electrical contractors.

C 44674

**DO NOT DEFACE OR REMOVE THIS CERTIFICATE**  
ESWA E0061008

## High penalties for dangerous downlight installations

EnergySafety has previously alerted contractors to the concerns over fires in roof spaces attributed to downlights in “Energy Bulletin” Issues No. 60, 51 and 42.

An electrician has been prosecuted and fined \$20,000 with court costs of \$656.15 at Perth Magistrate’s Court for installing two recessed luminaires within the minimum clearances from combustible materials.

As the electrician had installed the downlights too close to the ceiling joists, no protective canisters could be fitted.

During his interview, the electrician stated the electrical contractor’s arrangement with the builder of the property, was that all lights had to be installed in strict accordance with the house plan and if ceiling joists were in the way, the builder would cut the joist out and modify the ceiling structure.

When the electrician had connected the downlights, he had left them hanging so that the building supervisor could modify the ceiling structure and then left the protective canisters next to them.

On completion of the job, the electrician noticed that the downlights had been fitted and had incorrectly assumed that the ceiling structure had been modified. However, he did not carry out a final check of the ceiling to ensure this was the case.

The electrician, who was also the nominee for the electrical contractor, had signed off the Notice of Completion, stating that it had been checked and tested and found to comply with the Electricity (Licensing) Regulations 1991.

This completed Notice was submitted to network operator Western Power and was selected for the inspection, where the defect was identified by an inspector.

At the time of the offence, the electrician was accredited under Western Power’s Service Connect Scheme. As a result of this defective work, the electrician’s accreditation was revoked by Western Power.

In another incident, an electrician pleaded guilty, was convicted and fined \$11,500 with court costs of \$666.90 for installing halogen downlights within the minimum clearances from combustible materials in three separate units.

The manufacturer’s instructions relating to the barriers used for the recessed luminaires, had not been followed by the electrician as he had used a different mesh type canister that was not specified in the manufacturer’s instructions.

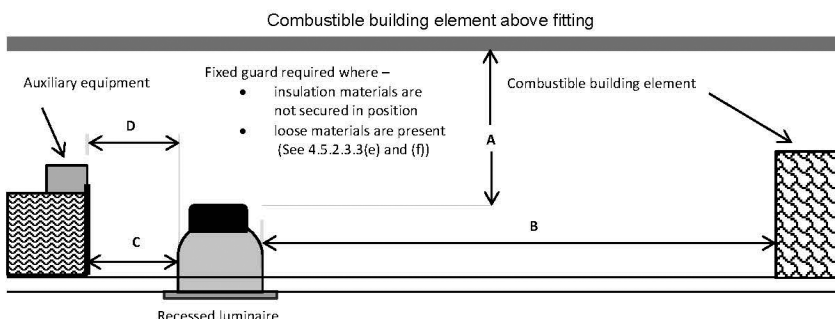
Investigation found that the electrician had also installed the same type of heat shrouds in other installations but had since replaced the incorrect shrouds with the correct ones.

The electrician who installed the downlights was also the nominee and Director of the electrical contracting business. The electrical contractor also pleaded guilty to submitting three Notices of Completion to the network operator Western Power at Perth Magistrate’s Court and received a penalty of \$27,500 with court costs of \$666.90.

Ceiling fires attributed to downlights, are the result of these lights being covered by insulation and combustible material such as dust and leaves, which causes the emitted heat to be trapped. Fitted too close to beams and joists, the lights can cause ignition of the wood. These downlights operate at very high temperatures (up to 300°C).

Clause 4.5.2.3.1 of AS/NZS 3000: 2007 “Wiring Rules” requires that downlights (recessed luminaires) and their auxiliary equipment are to meet one of the following criteria when installed:

- The luminaire is designed and certified by the manufacturer as being suitable for operation to allow contact with combustible materials, or, to be covered by thermal insulation material.



Dimensions	Clearance
A – Clearance above luminaire	200 mm
B – Side clearance to combustible building element	200 mm
C – Side clearance to bulk thermal insulation	50 mm
D – Clearance to auxiliary equipment (transformer for example)	50 mm

Figure 4.7 Default minimum clearances for recessed luminaires

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- The installation of the luminaire along with a barrier that has been tested to comply with AS/NZS 5110: 2011 “Recessed luminaire barriers” as being suitable for the installation.
- The installation of a luminaire within the minimum clearances specified by the manufacturer of the luminaire, which may require a barrier or guard made of fire-resistant materials.
- The default clearances specified in Figure 4.7, which could require a barrier or guard made of fire resistant materials.

## First aid and CPR training; mandatory for electricians?

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

EnergySafety’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, EnergySafety 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 EnergySafety’s “Safety Guidelines for Electrical Workers”, please visit our website at [www.energysafety.wa.gov.au](http://www.energysafety.wa.gov.au)

## Mine site electrician pleads guilty to the inadequate supervision of an apprentice

A supervising electrical worker has been prosecuted for failing to provide adequate supervision for a third year electrical apprentice at a Rio Tinto mine site.

The electrician had been given the task of reconnecting a floodlight fitting at a primary jaw crusher. Via a two way radio, the electrician instructed his third year electrical apprentice to “sort out” the floodlight.

The apprentice was unsure of the job from the beginning but proceeded to open a junction box. She ensured the circuit was not energised before removing all the connectors and shorting the active and neutral conductors together before taping the end of the cable and removing it from the junction box.

When the apprentice installed the cable into the gland of the junction box and found it did not fit, she removed it to make new terminations. Inadvertently, she cut through the now energised cable (the floodlight circuit energised via the programmable logic controller

(PLC) and was programmed to switch on), which caused the active and neutral conductors to short together, causing the circuit protection to operate and switch off the electricity supply to the cable.

The electrician had not provided any clear instructions to the apprentice of the allotted task, the isolations required and the conditions of the environment in which she would be working. He had incorrectly assumed the task was to realign the floodlight pole and bolt it back to the handrail, as the normal on-site practice was to remove the pole from the handrail. As the electrician wasn’t involved in the pre-shutdown, he was not aware that the floodlight fitting’s supply cable had already been disconnected and removed from the handrail and was unaware of the required isolation before the apprentice worked on it.

The electrician pleaded guilty in Newman Magistrate’s Court and was convicted and fined \$4,000 with court costs of \$666.90.

Due to the seriousness of this incident, Rio Tinto terminated the electrician’s employment.

This incident once again reinforces the importance of adequate apprentice supervision as highlighted in “Energy Bulletin” February 2014 Issue No. 65.

## Free to download – current Acts and subsidiary Regulations

Electrical contractors are reminded that all the current versions of Acts and their subsidiary Regulations can be downloaded at no cost from the State Law Publisher website at [www.slp.wa.gov.au](http://www.slp.wa.gov.au)

If you are seeking to download an Act, please follow these simple steps:

1. On the home page, double click on the box for 'Click Here for Western Australian Legislation Databases', located in the middle of the page.
2. On the left hand side of the page, find 'Acts'. Underneath that, double click on the link for 'In force'.

3. Select the relevant first letter of the Act you require (eg select 'E' for the *Electricity Act 1945*). A list of all subsidiary titles beginning with the letter 'E' will appear.
4. Double click on the required legislation (ie *Electricity Act 1945*).
5. View the current version of the legislation in your desired format by double clicking on the relevant icon (ie PDF, WORD or HTML).

To download the relevant subsidiary (Regulations) legislation:

1. On the home page, double click on the box for 'Click Here for Western Australian Legislation Databases', located in the middle of the page.

2. On the left side of the page, find 'Subsidiary Legislation'. Underneath it, double click on the link for 'In force'.
3. Select the relevant first letter of the Regulation you require (eg select 'E' for the *Electricity (Licensing) Regulations 1991*). A list of all subsidiary titles beginning with the letter 'E' will appear.
4. Double click on the required legislation (ie *Electricity (Licensing) Regulations 1991*).
5. View the current version of the legislation in your desired format by double clicking on the relevant icon (ie PDF, WORD or HTML).

## What is notifiable electrical installing work?

EnergySafety still receives many queries from electricians seeking clarification on whether the electrical installing work they are carrying out is notifiable, or not.

The *Electricity (Licensing) Regulations 1991* defines notifiable work as 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.

Notifiable work requires the submission of Preliminary Notices and Notices of Completion to the relevant network operator.

The following self-test has been designed for electrical contractors to test their knowledge of which examples of electrical installing work are deemed notifiable.

Please read through each example on the next page and tick the relevant box for whether you believe the example to be notifiable, or non-notifiable work. The answers are provided below the table.

Continued over page

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**Notifiable work self test**

Example	Notifiable Tick box ✓	Non-notifiable Tick box ✓
1. The installation of a new underground consumers mains for a strata subdivision		
2. The “fitting off” at a house distribution board		
3. The installation and connection of new consumers main and sub-mains		
4. The installation and connection of a 5kW photovoltaic (solar) system		
5. The installation of a mains connection box and a consumers sub-mains to a remote meter enclosure		
6. The installation of two socket outlet final sub-circuits		
7. A sub main cable installed from the house main switchboard to a new distribution switchboard in a shed		
8. The installation of an aerial sub-main from the customer pole at the front boundary of the property to the house		
9. The replacement of the existing overhead supply conductors with a new underground consumers mains		
10. The relocation of a permanent meter position to the new switchboard enclosure		
11. The replacement of old ceramic fuses for circuit breakers		
12. The installation and termination of underground sub-main (three-phase) from the sub-board to a temporary builder’s supply panel on half pole at the new domestic house		
13. Installation and connection of an underground sub-mains from the pole mounted main switchboard panel adjacent to the transportable living unit to a main switchboard in the transportable living unit		
14. The connection of a pre-wired transportable living unit to a recently installed sub-main, which had been installed and connected to the main switchboard and terminated to a distribution board on a pole located outside the transportable unit		
15. The installation and connection of the consumers mains from the dome located on the verge at the front of the property, to the main switchboard		
16. Replacement of an electric hot water system for an equivalent type		
17. Replacement of a bayonet cap lighting fitting with another bayonet lighting fitting		
18. The relocation and replacement of a double socket outlet		
19. The installation of an air-conditioner on a single phase final sub-circuit		
20. The installation of one socket outlet final sub-circuit		

**ANSWERS: 1-15 are examples of notifiable work while 16-20 are non-notifiable.**

## Prosecutions for breaches of electricity legislation

Between 1 April and 30 June 2014

Name (and suburb of residence at time of offence)	Licence No.	Legislation and Breach	Offence	Date/s of Offence	Fine (\$)	Court Costs (\$)
Alistair Campbell (Kununurra)	NLH	Regulation 19(1) E(L)R 1991	Carried out electrical work without an electrical worker's licence on two occasions	Between 19/03/12 and 13/04/12	2,000.00	140.00
Mark Cikarela (Beeliar)	EW133809	Regulation 49(1) E(L)R 1991	Carried out unsafe and substandard electrical work	27/03/2013	8,000.00	666.90
Matthew Ryan Cole (Riverton)	EW153066	Regulation 49(1) E(L)R 1991 (2 breaches)	Carried out unsafe and substandard electrical work	Between 03/04/12 and 10/04/12	5,000.00	666.90
Leonard William Twigg (Guildford)	EW105291	Regulation 49(1) E(L)R 1991 (3 breaches)	Carried out unsafe and substandard electrical work	Between 01/04/12 and 30/08/12	16,000.00	771.15
Brendon Good (Bassendean)	EW167866	Regulation 49(1) E(L)R 1991	Carried out unsafe and substandard electrical work	27/03/12	5,000.00	666.90
B Good Electrical Services Pty Ltd (Bassendean)	EC008443	Regulation 52C(1)(b)(i) E(L)R 1991	Failing to check and test the electrical work after completion to ensure it was safe and complied with AS/NZS 3000:2007 "Wiring Rules"		15,000.00	666.90
Ivan Tanevski (Marangaroo)	EW140455	Regulation 49(1) E(L)R 1991 (3 breaches)	Carried out unsafe and substandard electrical work	15/03/12	11,500.00	666.90
Ivco Electrics Pty Ltd (Marangaroo)	EC008441	Regulation 52C(1)(b)(i) E(L)R 1991 (3 breaches)	Failing to check and test the electrical work after completion to ensure it was safe and complied with AS/NZS 3000:2007 "Wiring Rules"		27,500.00	666.90
Brendan Duncan (Corio, Victoria)	EW147921	Regulation 50(1) E(L)R 1991	Failed to provide adequate supervision for a third year electrical apprentice	12/03/2012	4,000.00	666.90
Lifestyle Electrics Pty Ltd T/As Lifestyle Electrics (Wangara)	EC008288	Regulation 52C(1)(b)(i) E(L)R 1991	Failing to check and test the electrical work after completion to ensure it was safe and complied with AS/NZS 3000:2007 "Wiring Rules"	30/01/2012	10,000.00	1,231.15

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<b>Name (and suburb of residence at time of offence)</b>	<b>Licence No.</b>	<b>Legislation and Breach</b>	<b>Offence</b>	<b>Date/s of Offence</b>	<b>Fine (\$)</b>	<b>Court Costs (\$)</b>
<i>Stateway Pty Ltd T/As Austec Electrical Service (Embleton)</i>	<i>EC006602</i>	<i>Regulation 52C(1)(b)(i) E(L)R 1991 (2 breaches)</i>	<i>Failing to check and test the electrical work after completion to ensure it was safe and complied with AS/NZS 3000:2007 "Wiring Rules"</i>	<i>Between 10/04/12 and 13/04/12</i>	<i>40,000.00</i>	<i>666.90</i>
<i>Amerla Pty Ltd &amp; Luole Pty Ltd T/As Techforce Electrical Services (partners) (Bibra Lake DC)</i>	<i>EC009348</i>	<i>Regulation 52(3) E(L)R 1991</i>	<i>Submitting a Notice of Completion to the network operator for notifiable work that had not been completed</i>	<i>4/04/13</i>	<i>5,000.00 for each company</i>	<i>333.45 for each company</i>
<i>Gunn Electrics WA Pty Ltd (Malaga)</i>	<i>EC008663</i>	<i>Regulation 52(3) E(L)R 1991</i>	<i>Submitting a Notice of Completion to the network operator for notifiable work that had not been completed</i>	<i>08/05/12</i>	<i>3,000.00</i>	<i>896.90</i>
<i>Leonard William Twigg T/As Len Twigg Electrical (Guildford)</i>	<i>EC000537</i>	<i>Regulation 52(3) E(L)R 1991 (3 breaches)</i>	<i>Submitting a Notice of Completion to the network operator for notifiable work that had not been completed</i>	<i>26/07/12 21/08/12</i>	<i>17,500.00</i>	<i>771.15</i>

Legend NLH No Licence Held

EA Electricity Act 1945

E(L)R Electricity (Licensing) Regulations 1991

\* Global Fine or Costs issued

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## focus

### Standards update

Australian Standards undergo regular review and updating. The following are the current status of the process for some of the standards used in consumer gas installations.

#### **AS 1375 : Industrial fuel-fired appliances**

This standard is referenced by AS 3814 and used to determine critical time of and explosion relief for Type B appliances. This edition has a new appendix that addresses the issue of reduced Lower Flammability Limits at above ambient temperatures for combustible vapours and dusts in process ovens.

This standard has been reviewed and a new edition published on the 25th of October 2013.

#### **AS/NZS 1596 : The storage and handling of LP Gas**

This standard covers the requirements for the installation of LP Gas storage containers and the pipework and fittings up to the outlet of the first regulator in consumer gas installations.

The 2014 edition of this standard was published on the 19th of May 2014 and adopted in Western Australia from this date. However as is EnergySafety policy, compliance with the 2008 edition is deemed to comply with the requirements of the 2014 edition until the 19th of November 2014. After the 19th of November 2014 strict compliance with the 2014 edition is required.

#### **AS 3814 : Industrial and commercial gas-fired appliances**

This standard contains the requirements for Type B appliances that they must comply with to be approved for use.

A draft for public comment of this standard was released on the 12th of February with the public comment period concluding on the 16th of April 2014. 183 comments were received, most of which relate to Gas Turbines, Gas Engines, and Programmable Electronic Systems. The public comments have been reviewed by the overseeing committee and a final draft of the revised edition of the standard is in preparation for release later this year.

#### **AS 5263 : Gas appliances**

AS 5263 is a series of standards that are the required tests of Type A gas appliances before they can be approved for use in gas installations. They are a compilation and revision of the Australian Standards. The series of standards is intended to harmonise the testing requirements over the varied classes of Type A Appliances with type approval standards. At this time the series consist of:

- **AS 5263.0-2013 : Gas appliances – General requirements;**

The standard contains the generic tests required to be carried out before a Type A appliance can be approved for installation.

The standard was published on the 17th of September 2013 and adopted by EnergySafety.

- **AS 5263.1.1 : Gas appliances – Part 1.1: Domestic gas cooking appliances**

This standard is intended to be implemented in conjunction with AS 5263.0 and contains the specific test required for the approval of domestic gas cooking appliances. When published it is intended to replace AS 4551-2008.

A draft of this standard was published on the 6th of June 2014 for public comment; the public comment period closes on the 8th of August 2014.

- **AS 5263.1.3:2014 : Gas appliances – Part 1.3: Gas space heating appliances**

This standard is intended to be implemented in conjunction with AS 5263.0 and contains the specific test required for the approval of domestic gas space heating appliances. When published it is intended to replace AS 4553-2008.

A draft of this standard was published on the 6th of June 2014 for public comment; the public comment period closes on the 8th of August 2014.

- **AS 5263.1.7:2014 : Gas appliances – Part 1.7: Domestic outdoor gas barbecues**

This standard is intended to be implemented in conjunction with AS 5263.0 and contains the specific test required for the approval of domestic gas outdoor barbecues.

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A draft of this standard was published on the 6th of June 2014 for public comment; the public comment period closes on the 8th of August 2014.

Part 2 and 3 of this series of standards when published will cover energy efficiency testing and rating and the maximum energy consumption requirements.

### **AS/NZS 5601 : Gas installations**

This standard covers the requirements of consumer gas installations from the outlet of the first regulator for installations supplied from a fuel container or from the outlet of the meter for an installation supplied from a distribution system.

The 2013 edition of this standard was published on the 16th of September 2013 and adopted in Western Australia. Strict compliance with this standard came into effect from the 16th of March 2014.

Not all issues that require attention could be addressed during the preparation of the 2013 edition; in addition some further issues have been raised since the 2013 edition was published. These issues are being addressed by the overseeing committee and an amendment to the standard is expected to be published in 2015.

Note: Amendments to Australian Standards are available free of charge from the SAI Global web site [www.saiglobal.com.au](http://www.saiglobal.com.au)

## **Hoses and hose assemblies in consumer gas installations**

EnergySafety has received enquires about the use of hoses in consumer gas installations required to comply with AS/NZS 5601.1.

To be approved for installation in a consumer gas installation piping system with an operating pressure up to 200 kPa the piping material must be listed in Table 4.1 of the Standard or be a component covered by Section 5 of the Standard.

Table 4.1 includes many materials that are acceptable piping materials but materials commonly thought of as hose material (that as assemblies could even be certified to AS/NZS 1869) are not included. As a consequence hose piping cannot be used in consumer gas installation piping systems.

However there is an exception to this; hose assemblies which are covered by Section 5.9 of the Standard can be used in consumer gas piping systems. To be approved for use the hose assembly must be:

- as short as practicable and subject to the specific appliance requirements, not exceed 3 m in length;
- of adequate diameter for the maximum gas consumption of the appliance;
- be fully assembled by the supplier; and
- certified to the current AS/NZS 1869.

Section 5.9 of the Standard contains many restrictions and requirements for the installation of hose assemblies. There are also addition specific appliance requirements in Section 6 of the Standard.

Hose assembly installations must comply with the Standards requirements but also those of the manufacturer's. The operational life of a hose assembly is not unlimited and attention must be given to the manufacturer's instruction on when the hose assembly is to be replaced.

Although section 5.9 of the Standard includes some limitations on where hose assemblies can be installed, EnergySafety strongly recommends that any hose assembly is only used for the final connection to an appliance where the Standard and the hose assembly and appliance manufacturer's instructions permit this practice.

It should be noted that the Standard does not prohibit the making up a hose assembly through the connection of more than one hose assembly together. However, EnergySafety considers this practice to represent a breach of the 3m length restriction. This oversight in the Standard will be corrected in the upcoming amendment to the Standard.

## **Hazardous area classification of consumer gas installations**

In Western Australia electrical installations are required to comply with AS/NZS 3000, "Wiring Rules". The standard requires the person in control of the installation to assess the hazardous area classification of the installation. Consumer gas installations contain combustible gases and as such may represent hazardous areas.

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It should be noted that it is not a requirement for the gas fitter to determine the hazardous area classification of areas containing gas installations. However they should be aware of the implications on hazardous area classification and the equipment protection required by installing gas equipment.

In Western Australia hazardous areas that may contain combustible gasses are assessed in accordance with AS/NZS 60079 : Explosive atmospheres – Equipment.

This standard uses a three zone classification system, these are:

- **Zone 0**

An area in which an explosive gas atmosphere is present continuously or is present for long periods. Examples would be the vapour space of vented vessels, vapour space of vented storage tanks and immediately adjacent to a continuous source of release.

- **Zone 1**

An area in which an explosive gas atmosphere is likely to occur periodically in normal operation. Examples would be where pumps are liable to leak under normal conditions, or where vents, relief valves or sample points are likely to release vapour to the atmosphere.

- **Zone 2**

An area in which an explosive gas atmosphere is not likely to occur in normal operation and if it does occur, it will exist for a short period only. Examples would be where vessels, pumps, compressors and pipes containing flammable gases and liquids are constructed and maintained to prevent leakage under normal operating conditions.

Although not classified there is an effective fourth classification, this being non-hazardous. These are areas where an explosive atmosphere is not present, or may not be expected to be present, in quantities such as to require special precautions for the construction, installation, and use of potential ignition sources.

The hazardous area requirements for atmospheres containing flammable gases or vapours are given in AS/NZS 60079.10.1 : Explosive atmospheres Part 10.1: Classification of areas — Explosive gas atmospheres.

This standard in clause Annex ZA.6.2.2 classes consumer gas installations installed to AS/NZS 1596, AS 3814 or AS/NZS 5601 as non-hazardous with the exception of installations which include:

- pressure relief device and vent pipe discharge points, this includes LP Gas cylinder installations which all have over pressure reliefs;
- pits and similar below ground enclosures;
- cylinder storage containing natural gas;
- natural gas cylinder filling compressors; and
- natural gas cylinder filling hoses.

The requirements for these exceptions can be found in AS/NZS 6009.10.1, AS/NZS 1596, or AS/NZS 5601.

Use of this exemption for consumer gas installations must only be applied after consideration. An advisory note in Clause ZA.6.2.1 states that the exemption is based on the premise that installation standards (as listed above) provide, by equipment design and instructions, an installation that produces a non-hazardous environment.

In some instances, particularly for larger industrial equipment, the installer needs to ensure that this premise is justified.

Energy Safe Victoria has released a guidance note on the application of the exemption. EnergySafety has adopted this guidance note for Western Australia.

The guidance note advises that hazardous area classifications for consumer gas installations be considered as:

- For consumer gas installations with a maximum gas consumption less than 10 GJ/hr or operating at a pressure up to 200 kPa; non-hazardous.
- For consumer gas installations with a maximum gas consumption of 10 GJ/hr or greater, or operating at a pressure greater than 200 kPa and up to 1050 kPa; Zone 2 NE unless an assessment has been completed and there are special circumstances.
- For consumer gas installations with an operating pressure greater than 1050 kPa; an assessment is required and, depending on the engineering outcomes applied as a result of the assessment, can be non-hazardous, Zone 2 NE, Zone 2 or Zone 1.

Note: NE indicates a zone which would be of negligible extent under normal conditions.

## Consumer risks electrocution

A report received by EnergySafety of a fire in a roof space in a Nedlands residence is a timely reminder to gas fitters and plumbers placing gas pipes in roof spaces.

An elderly couple residing at this house were awakened by a “roaring noise” in the early hours of a morning in March. Checking round the house for the cause of the noise eventually led them to believe it was in the roof space.

At this time they also noticed that some of the lights in the house were not working either. Having obtained a step ladder the husband climbed into the roof space and noticed a bright light that he identified as a gas flame coming from around the copper gas pipe.

The wiring in this instance was Vulcanised Indian Rubber (VIR) used extensively for wiring houses in the 1940s and 1950s. The rubber insulation had broken down exposing the live copper conductor inside. The method of wiring involved single conductors laid above the ceiling joists and secured with insulated cleats fixed to the joists. This wiring is unsafe.

Had the couple not been home at the time of occurrence the house may have burnt down. The elderly resident that climbed into the roof space was lucky not to have been electrocuted, a different outcome had he touched the exposed live conductor.

The report compiled by the network operator included photographs of the wiring in the vicinity of the copper gas pipe (see image). A short circuit between the exposed conductor and the copper gas pipe caused an arc that subsequently pierced the copper pipe.



*Picture depicts unsafe wiring near copper gas pipe*

The escaping gas was immediately ignited.

The gas inspector contacted the installer and when asked how he had undertaken the installation, admitted to feeding the copper pipe through the open eaves then clipping the copper pipe.

When a gas fitter/plumber is required to enter a roof space you must ensure there is adequate lighting to examine the possible route of the gas line.

In older houses be aware of the older type of VIR wiring. Should VIR wiring be encountered, advise the consumer of a need to engage an electrical contractor to ensure the electrical installation is safe.

In addition, if you hold a restricted electrical worker's licence, you must report defective installations (such as open/VIR wiring as depicted) to the relevant electricity network operator.

Prior to entering a roof space consult with the customer the need to isolate the electrical installation, remove any fuses or lock off the

mains switch. However this does not ensure voltages are not present until verified. In the past there have been reported cases of faulty isolation switches or power coming from other sources (isolation switch by-passed).

**WARNING: EnergySafety and WorkSafe recommend that the power is isolated prior to working in the roof space.**

## Faulty flexible hose assembly

A local gas fitter was called to a restaurant in the Perth CBD following a report by the chef of a Smell of Gas (SMOG). The gas equipment was originally installed in the kitchen some six months prior. The gas fitter had fitted up three gas appliances, a range and two fryers with flexible hose assemblies.

The SMOG (gas leak) was located on one of the flared brass nuts securing the hose connected to the back of the range. A second hose connected to one of the fryers was checked after moving the fryer backwards and forwards simulating movement of the fryer for cleaning, with that the hose broke away at the same brass flared nut.

Realising an inherent fault with these hoses the gas fitter, after replacing the two faulty hoses, contacted the gas inspectors at

EnergySafety. The gas inspectors examining the hose noted the gas fitters concern that needed some urgent action.

The Certification Body, the Australian Gas Association (AGA), was contacted later that afternoon and sent photographs of the faulty hose. A Defective Component Report together with the faulty hose was posted to the AGA.

AGA on receiving the hose and the Defective Component Report from EnergySafety summoned the Certificate Holder into the office and discussed the matter. The Certificate Holder conducted in-house testing to AS 3688 on two samples and found to comply with the performance requirements.

The Certificate Holder also provided two samples to the AGA to conduct further tests, which also revealed all hoses complied with the performance requirements of AS 3688.

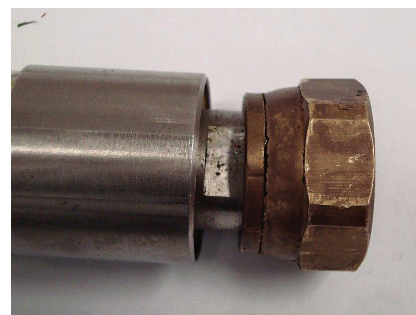


Photo shows the failed hose assembly

Even though the requirements of AS 3688 were satisfied, the Certificate Holder initiated a change of material from brass to stainless steel and a more robust design of flare nut used.

In this instance it can be clearly demonstrated the appropriate actions were undertaken by the gas fitter, the Regulator, the Certification Body and the Certificate Holder in acknowledging the limitations of AS 3688.

This in turn enables the necessary modifications to be undertaken to ensure the flexible hose assemblies remain safe and compliant for use.

## Summary of infringements for breaches of gas legislation

1 April to 30 June 2014

Legislation and Breach	Offence	Number of Infringements	Fine (\$)
GSA S13A(2)	Engaging in an operation or carrying out work or process, of a kind prescribed to be nature of gasfitting work otherwise than in a prescribed capacity without a permit or certificate of competency	2	2,000
GSR R18(2)	Failing to ensure gas installation complies with prescribed requirements	6	3,600
GSR R26(1)(a)	Failing to ensure gas installation is gas-tight	1	600
GSR R28(2)	Failing to attach approved badge or label on completion of work	2	800
GSR R28(3)	Failing to give notice of completion of gasfitting work within required time	1	400
	<b>Total:</b>	<b>12</b>	<b>7,400</b>

Legend NLH No Licence Held

GSA Gas Standards Act 1972

GSR Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999