

eNERGY bulletin



Government of Western Australia
Department of Commerce
EnergySafety

In this issue

Opportunities to install RCDs

For this first Energy Bulletin for 2016 I wish to focus again on the important safety advantages of RCDs.

EnergySafety continues to encourage licensed electrical contractors to look out for opportunities to install residual current devices (RCDs) at their clients' premises, especially for domestic residences and small businesses.

Whenever contractors are on site to do electrical work and notice the lighting circuits and socket outlet circuits are **not** protected by an RCD they should draw the owner's attention to the importance of RCD protection. Also, if only one RCD is installed, they should offer to install additional RCDs to improve reliability. Offering this service on site may also reduce the cost for your client.

If the property is rented and at least two RCDs are **not** installed to protect all socket outlets and lighting circuits, the owner is in

breach of Regulation 14 of the Electricity Regulations 1947. This regulation requires at least two RCDs to be installed in all rental properties, protecting all socket outlets and lighting circuits.

I seek the assistance and support of all licensed electrical contractors and electricians to do all they can to foster the installation of RCDs, either voluntarily or to comply with regulations.

I wish all readers a happy, safe and successful 2016.

Ken Bowron
DIRECTOR OF ENERGY SAFETY

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RCDs not fitted - Rental Properties

Where an electrician becomes aware that the RCDs do not protect all the socket outlet and lighting circuits on a residential rental property the electrician must comply with Regulation 62 of the Electricity (Licensing) Regulations 1991 which provides:

(1) 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 operator; or
 (ii) if the electrical worker is unable to identify the relevant network operator – to the Director.*

(2) 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 inhouse electrical installing work licence, 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.

If the electrical installation of a rental property is not RCD protected it clearly is 'defective' because it does not comply with safety regulations. This means electricians and contractors must report the matter as provided above.

RCDs in nursing homes

Advice from the State Solicitor's Office has confirmed that nursing homes fall within the definition of 'residential premises' in Regulation 12 of the Electricity Regulations 1947. This means the owners of all WA nursing homes must comply with Regulation 14 concerning RCD protection. EnergySafety has written to all nursing home managers to

draw their attention to the requirements in r. 14. The letter recommends they contact their licensed electrical contractor to obtain advice about how best to comply with these requirements.

Licensing Office opening hours

EnergySafety would like to remind all Licensees that our office hours are 8:30am to 4:30pm.

Our offices are located on Level 1, 303 Sevenoaks Street in Cannington.

If you are coming into the office to submit an application, please allow approximately 30 minutes for your enquiry to be addressed.

Licensing statistics

The following tables show the number of current electrical and gas licences and permits as of 31 December 2015.

Electrical Licences and Permits	Number
Electrician's Licence	39,915
Electrician's Training Licence	4,072
Pre-Apprentices	225
Electrical Contractors	5,320
In-House Installing	258
Permits	551
Restricted	4,151
Total	54,492

Gas Permits and Authorisations	Number
Gas Permit	7,746
Certificate of Competency	1,335
Gas Authorisation	139
Total	9,220

New Electrical Notices of Completion

Important changes to Notices of Completion were announced in the last Energy Bulletin, Issue No. 72 (October 2015).

From 1 January 2016, EnergySafety started issuing the amended Preliminary Notices and Notices of Completion. These replace the existing versions.

The changes are:

1. Two new boxes have been added in the top right hand corner to allow both electrical contractors and network operators to differentiate between new connections and alterations.
2. A new field has been added to record the GPS location of remote sites.

3. New fields to better describe the scope of work have been added e.g. number of switchboards, sub-circuits etc.
4. New fields have been added to provide basic information about generators.
5. The 'Comments' section has been re-named 'Work Description and Comments' and additional space enables electrical contractors to provide more information about the work undertaken.
6. The 'yes/no' options in Sections 3 and 4 have been re-ordered.
7. Email contact details for the electrical contractor/in-house electrical installer are now required.

These changes are highlighted in the diagram below. Electrical contractors may use their existing Notices until 30 June 2016. Network operators will accept submission of either Notices until then.

From 1 July 2016, the new Notices must be used exclusively. Old versions will not be accepted beyond this date.

Government of Western Australia
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Notice of Completion

This Notice must be completed and sent to the relevant network operator at the required time, as prescribed in the *Electricity (Licensing) Regulations 1997*.

No. _____

1. Tick one of these boxes

New Installation (tick) Alteration/Addition (tick)

2. Insert GPS location (for remote sites)

3. State number of items

4. State number and type of generators

5. Note the extra space for further description & comments

6. Note the 'yes/no' order has changed

7. Provide email contact details

1 Details of installation, network operator and retailer

Owner/occupier Name: _____ Telephone: _____ Builder Name: _____ Telephone: _____ Meter No. (if existing) _____

Lot No. _____ Unit No. _____ Street No. _____ Street name _____ Suburb/Town _____ Post code _____

Directions to location (please provide sufficient information) _____ GPS location (where remote) _____

Network operator (name) _____ Ref No. _____ Electricity retailer (if new connection) _____ Customer Ref No. _____

2 Details of completed electrical work (Circle installation type; indicate number of items in each category unless indicated otherwise)

Domestic	Commercial	Industrial	Mine site	Construction/ demolition site	Unmetered supply	Other	Single phase 240v	Single phase 480v	Three phase LV	LV CT metering	High Voltage	Overhead supply	Underground supply
Work scope													
Substations		Consumers mains		1		Main switchboards		1		Distribution boards		Sub-mains	
1		1		1		1		1		1		5	
No. of units		Hazardous areas? (Y/N) (details in comments)		No. of points of supply (WAER 43.6)		Alternative supply? (e.g. generator, PV)		No. 1		Type Solar PV		Rating 5kw	
Lighting points		10 amp socket outlets		>=15 amp socket outlets		Water heaters		Stoves/ovens/ hotplates		Motors (No., kW)		Calc. maximum demand (amps)	
Pool/spa equipment		Air conditioning/ refrigeration equip		RCDs		Smoke alarms		Other fixed electrical equipment		Type, kW		Consumers mains size (sq mm)	
Work description & comments:													
Additional details to fully describe the work undertaken													

A 'live' high voltage conductor damages a caravan

Western Power has recently been found guilty of breaching the network safety legislation. It failed to provide for the safety of persons and caused damage to a property while undertaking a prescribed activity in Cape Burney.

A Western Power work crew was upgrading a portion of the HV backbone on the Gnarngulu West Feeder, which included replacing an in-line termination pole where a set of drop-out fuses were installed. The crew were then required to remove the drop-out fuses and join the conductors together. The crew decided to use termination fittings (modified preformed helical dead ends) to join the HV copper conductors for all three-phase conductors.

Shortly after the work had been completed, a tenant at one of the properties, connected to the network, heard a series of explosions and saw a flash on his patio. Upon closer inspection, he found that the 'live' overhead 19.1 kV conductor, located at the front of his property, had fallen to the ground and onto the caravan. This damaged a portable gas cylinder and the front undercarriage of his new caravan. He also witnessed a flash from the plug-top of an extension lead connected to the caravan's supply inlet.

When notified about the incident, the work crew returned to site and found the joint in the conductors had failed. They were instructed by their supervisor to repair the damaged conductors using a combination of splice and split bolts.

The investigation into the incident identified that one of the crew's linesmen had not followed Western Power's prescribed work practice. The crew used a modified preformed helical dead end which was half the length of the full tension helical splice.

Western Power pleaded guilty and was fined \$35,000 with court costs of \$730.60.

Network operator fails to terminate 'live' cables in a pillar

Western Power had engaged two contractors to install underground power to a new residential estate in Baldivis. At the final testing and commissioning stage, one of the contractors failed to ensure one of the cables in Western Power's mini-pillar had been correctly terminated.



The three underground low voltage cable cores that had been made off at different lengths within the Western Power pillar

Some months after this work was completed, a resident of a property in a new subdivision, received an electric shock to his hand while working on his garden water reticulation system. The mini-pillar in front of his property had earlier been knocked down by workers constructing a new concrete footpath. An explosion occurred when the victim picked up the fallen pillar. The cable shorted and resulted in the resident receiving second degree burns to his lower legs.

Western Power pleaded guilty and was fined \$70,000 with court costs of \$1,469.30 for once again failing to ensure a prescribed activity was carried out in a way to provide safety of persons.

Network operator reconnects electricity supply without a neutral conductor

Two contractors working for Western Power were upgrading eight wood poles under Western Power's wood pole replacement program. The work included replacing the 415V overhead service cable at the property. One contractor was responsible for disconnecting and reconnecting the meter while the other installed the service cable.

After completion of the work, one of the contractors failed to reconnect the line neutral at the kWh meter. He also failed to return to the site to carry out Metrel testing (which would have identified the fault) and perform the reconnection.

Western Power became aware of this serious fault some eight months later when the owner of the property reported power fluctuations and receiving electric shocks from the shower head and taps. These events occurred on the same day the property owner had damaged the main water pipe while operating an excavator.

The electric shocks were attributed to a line neutral open circuit fault. The current flow was redirected via the multiple earthed neutral (MEN) connection to the earthing system. The earthing system and any exposed metallic parts were rendered 'live' and dangerous. A potential voltage between 0 and 415V ac was supplied to the 240V ac electrical appliances while they were operating.

The damaged main water pipe had been acting as a return path for the electricity supply back to the grid and led to the power fluctuations.

Western Power again pleaded guilty and was fined \$120,000 with court costs of \$980.60.

Responsibility of contractors working for network operators

The new Electricity (Network Safety) Regulations 2015 came into force on 6 August 2015. They replace the outdated Electricity (Supply Standards & System Safety) Regulations 2001. Contractors may be engaged or authorised by network operators to perform work on network assets.

All work on transmission and distribution networks including bulk supply terminals, zone sub-stations, underground cables, 'green pillars' and service apparatus (including its connection) must comply with the new network safety regulations. These include specific provisions applicable to contractors.

Regulations 7 and 8 provide:

7. (1) *A contractor must ensure, so far as is reasonably practicable, that each prescribed activity carried out on a network by a person for whom the contractor is responsible is carried out safely.*

Penalty:

- (a) for an individual, a fine of \$50 000;
- (b) for a body corporate, a fine of \$250 000.

(2) *A contractor contravenes subregulation (1) if the contractor fails to —*

- (a) provide, so far as is reasonably practicable, adequate instruction, training and supervision to persons for whom the contractor is responsible, taking into account the nature of the prescribed activity carried out and the competence of those persons; or*
- (b) ensure, so far as is reasonably practicable, that persons who are carrying out prescribed activities on the network, and for whom the contractor is responsible, comply with the design of the network; or*
- (c) ensure, so far as is reasonably practicable, that persons who are carrying out prescribed activities on the network, and for whom the contractor is responsible, comply with the work practices applicable to the prescribed activities.*

(3) *Subregulation (2) does not limit the generality of subregulation (1).*

8. Duty of persons carrying out prescribed activities

(1) An individual must, in carrying out a prescribed activity on a network, ensure, so far as is reasonably practicable, that the activity is carried out safely.

Penalty: a fine of \$50 000.

(2) An individual contravenes subregulation (1) if the individual, in carrying out the prescribed activity, fails to –

- (a) comply with the design of the network; or
- (b) comply with the work practices applicable to the prescribed activity.

(3) Subregulation (2) does not limit the generality of subregulation (1).

prescribed activity means an activity carried out in the course of the design, construction, commissioning, operation, maintenance or decommissioning of a network.

Under the Regulations, network operators bear the ultimate safety responsibility whether they choose to perform prescribed activities with their own employees or arrange for one or more contractors to do so. But such contractors also bear a shared responsibility. In addition to the legislation, they must comply with a network operator's safety management system and work practices. They also must follow any specific instructions associated with particular work assignments.

Notices of Completion must not be issued for work that is not complete

A Notice of Completion must be submitted to certify notifiable electrical installing work.

Notices must not include details of any electrical installing work that is not ready for connection to the electricity supply. Where circuits are installed and are not terminated or do not have the consuming or switching device fitted, information about those circuits must not be included on the Notice. If the information was written through from the Preliminary Notice, then details of the work that has

not been connected must be deleted from the Notice of Completion.

Another Preliminary and Notice of Completion must be submitted (if the work is notifiable) for this work once complete.

Failure to correctly certify the work that is ready for connection constitutes a breach of the Electricity (Licensing) Regulations 1991.

Any circuits which are not connected to an installation, and any unused circuits, must be terminated to comply with Clause 1.5.11.4 of AS/NZS 3000:2007, Wiring Rules.

If an inspector observes that work shown on a Notice of Completion has not been connected, the inspector will issue an Inspector's Order requiring compliance with Clause 1.5.11.4. The Order will also direct the electrical contractor to submit further Notices when the circuits are subsequently connected. The matter will also be investigated.

In summary:

- Notices of Completion submitted for notifiable electrical installing work must certify only the work completed by the electrical contractor.
- Work that has not been connected to an installation or completed must not be included on the Notice.
- If a Preliminary Notice includes electrical installing work that has not been completed, the Notice of Completion must be amended before it is submitted to the relevant network operator.
- When circuits that were left disconnected are subsequently connected to an installation, further Notices must be submitted (if the work is notifiable).
- Installations with unconnected cables must comply with Clause 1.5.11.4 of AS/NZS 3000:2007, Wiring Rules.
- Construction wiring that could be made 'live' either by connection, switching or induction, must also comply with Clause 1.5.11.4 of the Wiring Rules.

Prosecution details released following the electrocution of a young trades assistant

In Energy Bulletin Issue No. 71 (July 2015), an article was published on the tragic electrocution of a young trades assistant in February 2013 while he was working in the ceiling space of a property in East Bunbury.

The trades assistant was assisting an electrician to install a new chandelier and received the fatal shock when he made contact with a 'live' cable.

WorkSafe prosecuted the electrical contractor who failed to maintain a safe working environment and the supervising electrical worker of the trades assistant at the time of the incident. Both pleaded guilty to breaches of the *Occupational Safety and Health Act 1994*.

On 28 October 2015, WorkSafe published the prosecution details relating to this matter.

EnergySafety encourages electricians to read this information as it emphasises the importance of isolation (before working in a roof space) and tagging procedures.

The prosecution details are available via the internet as follows:

<http://prosecutions.commerce.wa.gov.au/prosecutions/view/1438>

<http://prosecutions.commerce.wa.gov.au/prosecutions/view/1439>

2015 Perth Royal Show Compliance Inspections

EnergySafety Inspectors attended the recent Perth Royal Show to carry out compliance inspections of vendors selling electrical appliances.

This was carried out in conjunction with Western Power inspections of the permanent installations and temporary supplies at the site.

Prior to the commencement of the show, EnergySafety Inspectors met with vendors to provide advice on meeting compliance regulations for prescribed appliances.

At this meeting, only one vendor was found to possess an unapproved appliance; an adaptor for a AH-64 Apache model helicopter which had a two-pin European configuration and no Australian approval number. As the product had not yet been exposed for sale, the vendor was advised to remove all stock of the appliance from sale.

EnergySafety's inspection was conducted on the first day of the show with no unapproved (Level 3 prescribed) appliances found for sale.

Selling or hiring, exposing or advertising for sale a prescribed appliance without approval, is a breach of the *Electricity Act 1945*, section 33B.

New Senior Electrical Inspector

EnergySafety welcomes our new Senior Electrical Inspector to the Electricity Compliance Directorate, Troy Mennell.

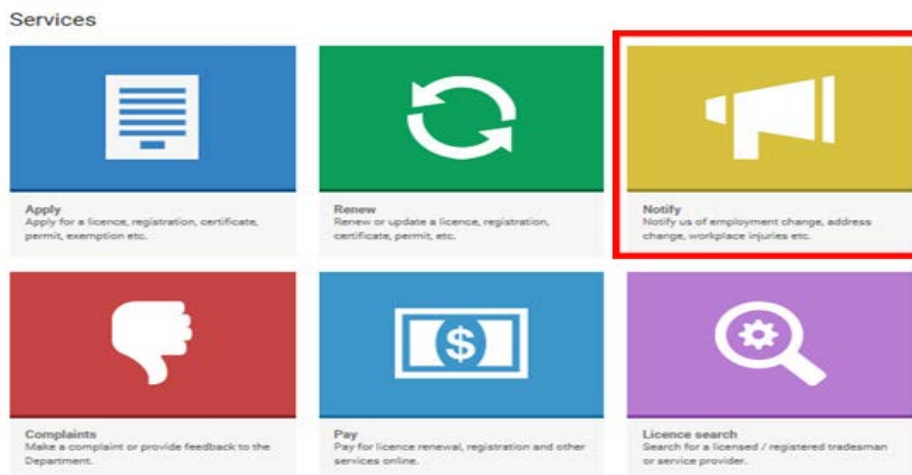
Having worked in the industry for twenty five years, Troy started as an electrician doing small fit-out work and later moved onto larger scale construction projects on commercial and industrial sites such as Fiona Stanley Hospital and the Perth Convention Centre. During this time he also gained experience as a trainer and assessor. His most recent role was as an Electrical Supervisor overseeing a major mine site in Western Australia.

Troy is looking forward to the many challenges and opportunities at EnergySafety.

Change your contact details online

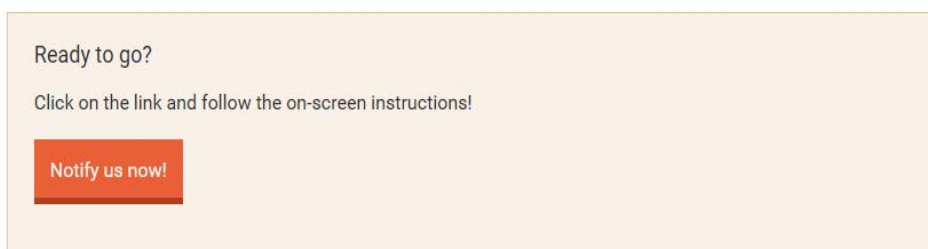
Electricians and electrical contractors do not need to submit a form to EnergySafety's Licensing Office to update their contact details (e.g. residential, postal, business or email address) as this can now be done easily via EnergySafety's website by following these steps:

Step 1: Go to the [Department of Commerce website](#). Click on the yellow icon - 'Notify'

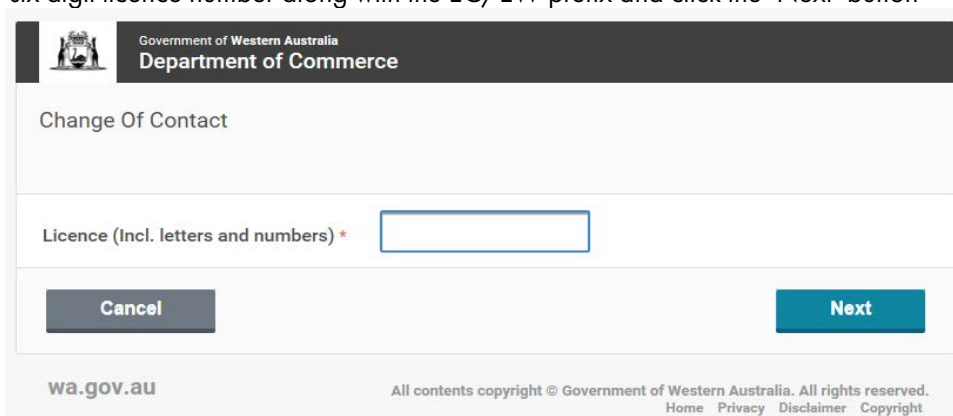


Step 2 Under the headings for 'Notify', click on the link for 'Electrician or Electrical Contractor – Change of Contact Information'

Step 3: Click on the 'Notify us now!' button (as shown below)



Step 4: Enter your six digit licence number along with the EC/EW prefix and click the 'Next' button



To protect your personal details, you will be prompted to enter either your email address or mobile phone number that is registered with EnergySafety. This is so an email or SMS can be sent to you with a temporary security access code.

If you do not receive the access code, please contact EnergySafety's Licensing Office on 6251 2000 to check that the mobile phone number or email address you have supplied is registered with EnergySafety.

The 'Notification of Change of Address' form is still available to download via [EnergySafety's website](#) for electrical contractors to print and post/fax to EnergySafety's Licensing Office.

Registering for Western Power's Electronic Ticketing (ETIC)

Electrical contractors working on installations connected to the Western Power grid can register for Western Power's Electronic Ticketing (ETIC) application.

ETIC allows for Preliminary Notices and Notices of Completion details to be submitted electronically to Western Power, and provides many benefits, including:

- meeting licence regulations 51 & 52;
- easy submission of notices within three days of work;
- verifies the date your notices were submitted to Western Power;
- automatically verifies your licence information held by EnergySafety;
- an automatically generated Electrical Safety Certificate,

which you can email or print at any time;

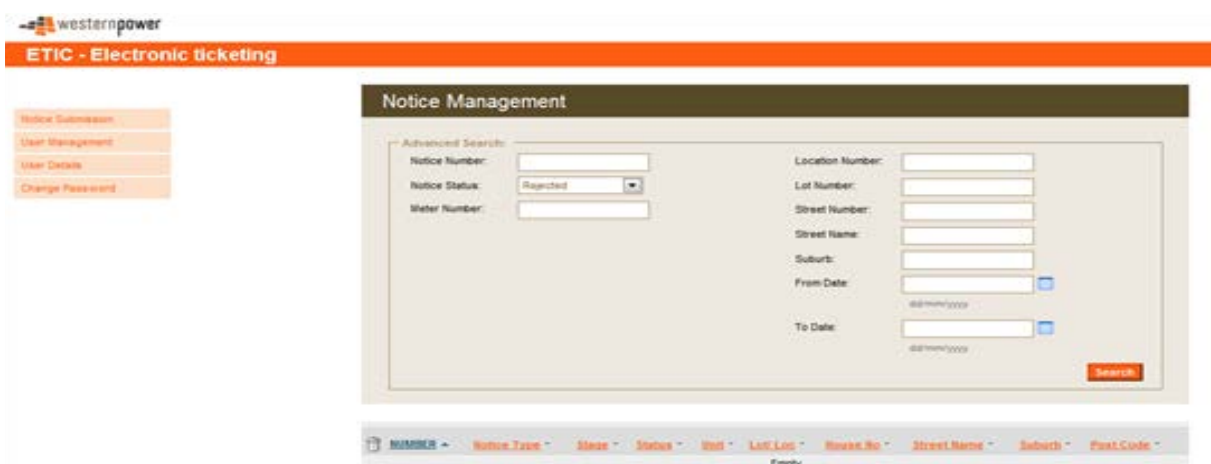
- ability to retrieve historical notices – search by notice number, address, meter number, date;
- copy previous notices to submit multiple tickets quickly;
- validate address and meter information up front;
- no more notices returned for insufficient details or illegible handwriting;
- all information that is required is collected in ETIC e.g. no need to submit a separate form for solar installs;
- keep copies of your notices electronically – no more paper;
- multiple staff can submit notices wherever they have the internet - on site, in the office, or at home; and
- save time and money with no postage or faxing.

Notices issued by In-House licence holders cannot be submitted through ETIC.

How to register for ETIC

1. Confirm eligibility
To be eligible to register as an ETIC user, you must be:
 - a. a licenced electrical contractor in Western Australia; and
 - b. your company has an electrical nominee registered with EnergySafety who holds an electrician's licence.
2. The registered Management Representative for the electrical contractor completes an 'Application for an Electrical Contractors ETIC account'. This is available to download from [Western Power's website](#).
3. Once the electrical contractor entity has been registered, you can link your administration staff and electrical nominees directly to your account to upload Notice details, certify Notices on your behalf (nominee) and view the current status of Notices.

For more information on ETIC, please visit [Western Power's Electrical Contractors webpage](#).



Reporting vandalism to Horizon Power infrastructure

An incident involving vandalism to Horizon Power's infrastructure in the north-west Kimberley town of Derby last year resulted in power outages to more than four hundred customers.

The majority of customers had their electricity supply restored within a few hours. However twenty five were inconvenienced by additional faults stemming from the initial damage which continued until the next morning.

Horizon Power crews located a piece of fencing wire, hanging over a high voltage line. As the wind blew, the fault was continually exacerbated and posed a real safety issue to Horizon Power crews working to restore power.

In a 19 August 2015 media statement, Horizon Power urged the community to report immediately any vandalism to the electricity infrastructure to improve public safety and minimise disruptions to electricity supply.

Electricians working in the locality of Derby who observe any damage to electrical infrastructure can report it to their local police station (contact details are available on the [Police website](#))

For other faults and emergencies identified on the Horizon Power network, please contact 13 23 51.

Approved inverter list for photovoltaic systems

Electrical contractors installing photovoltaic systems should refer to the Clean Energy Council's (CEC) comprehensive database and list of complying inverters and power conversion equipment before commencing work.

The database covers models complying with AS/NZS 5033:2014, Installation and safety requirements for photovoltaic arrays and includes:

- Grid connector inverters - < 30kW, between 30-200kW and > 200kW.

- Micro inverters.
- Off grid inverters.
- Multimode inverter (GC and OG modes).
- All-in-One (UPS) (energy storage and inverter).
- Grid control devices.
- Power conversion equipment.

Models on the database have met compliance standards by having their Certificate of Suitability assessed and validated by the CEC.

The two options available for searching for a model on the database via the CEC website include downloading the PDF format which encompasses all the approved models or alternatively, conducting a search for a specific manufacturer/certificate holder, model number or equipment category.

Only photovoltaic systems using approved models from this database are eligible for small-scale technology certificates under the Australian Government Clean Energy Regulator's Renewable Energy Scheme.

These certificates are eligible for sale to claim back a portion of the expense involved in purchasing and installing photovoltaic systems.

For further information on the database:

Email: accreditation@cleanenergycouncil.org.au

Phone: (03) 9929 4141

Website: www.solaraccreditation.com.au

Energy Safety presence in the Indian Ocean Territories

Readers will be aware of their obligations to comply with Western Australia legislation, particularly the *Electricity Act 1945* and *Gas Standards Act 1972* and subsidiary legislation.

In turn, the subsidiary legislation calls up AS/NZS 3000:2007, Wiring Rules and AS/NZS 5601.1: 2013, Gas installations – General installations.

The same legislation applies for electrical contractors and gas fitters carrying out work in the Indian Ocean Territories (i.e. Christmas and Cocos (Keeling) Islands).

At Christmas Island, the Indian Ocean Territories Power Service (IOTPS) is responsible for electricity generation and distribution.

IOTPS electrical supervisors are designated as Electrical Inspectors by the Director of Energy Safety and carry out the same functions as Inspectors employed by network operators in WA.

Work on the islands is carried out mainly by resident electrical contractors and gasfitters, however, from time to time, external gasfitters and electrical contractors are brought in from the mainland to undertake specific projects.

Instances of breaches of electricity and gas-related legislation are investigated by Inspectors in much the same way as in Western Australia. EnergySafety Electrical and Gas Inspectors visit the two islands several times each year, meeting with Territories administration staff, stakeholders and licensed operatives.

Recently, breach action has been initiated for substandard electrical installing work and carrying out electrical work without the requisite licence. Enquiries are also being made into unauthorised gasfitting work.

EnergySafety reminds electrical contractors, electricians or gas fitters granted the opportunity to work in the Territories, to comply with the same standards applying throughout WA.

Electrical contractors carrying out notifiable electrical installing work are to submit Notices to IOTPS within the required time frames while Electrical Safety Certificates are to be provided to customers.

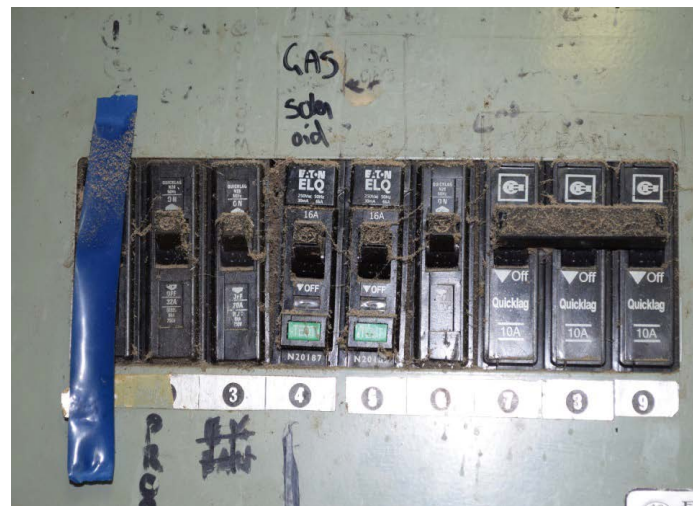


IOTPS Electrical Supervisor Phil Shanhun is the designated Inspector for Indian Ocean Territories

Defective work carried out on Rottnest Island

EnergySafety Inspectors recently conducted inspections on Rottnest Island. Several serious defects were identified and Inspector's Orders issued. Defects included:

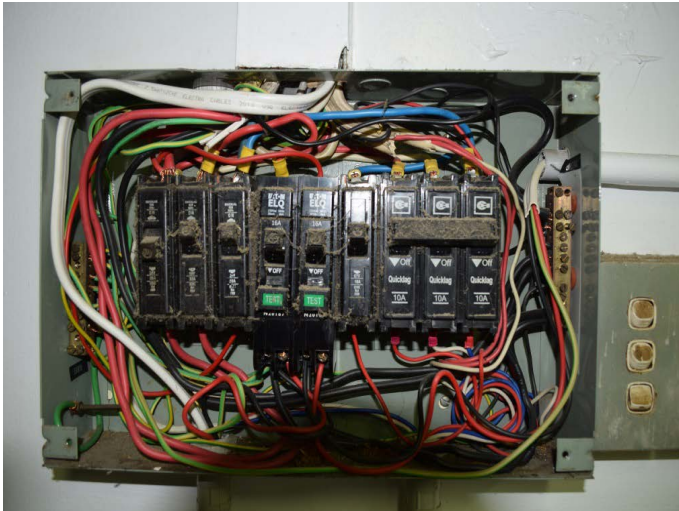
- An installation failing to pass the earth fault loop impedance test. The test result was inadequate to satisfy trip times if the insulation were to fail.
- The failure to legibly and permanently mark the main switches on the main switchboard.
- The removal of redundant tree lighting cables positioned along the main island walkway.
- The corresponding active and neutral conductor terminals for the electrical equipment were not marked or arranged to be easily identifiable.
- A single insulated cable was showing on a major gas solenoid.
- Inadequate terminations at a sub-board.
- Conductive building material was not earthed in an area where it would be likely to become 'live' in a fault condition.
- The failure to secure the ends of stranded conductors.
- Equipotential earthing was not provided for taps.



Illegible and unmarked sub-board

Electrical contractors carrying out electrical work on the island are reminded that all work must comply with the Regulations including AS/NZS 3000:2007, Wiring Rules.

Rottnest Island Authority alerts EnergySafety about any electrical installing work being carried out on the island.



Poorly constructed and maintained sub-board

While Rottnest Island Authority is responsible for the management of the island under the *Rottnest Island Authority Act 1987*, EnergySafety is the relevant network operator for the submission of Notices. All Notices for notifiable electrical installing work carried out on the island are required to be submitted to EnergySafety via:

Fax: (08) 6251 1901 ATTN: Electricity Compliance Directorate

Email: energysafety@commerce.wa.gov.au ATTN: Electricity Compliance Directorate

Post: EnergySafety, Electricity Compliance Directorate, Locked Bag 14 Cloisters Square, Perth WA 6850

Electrical Safety Certificates are also to be provided to customers who requested the work to be carried out within 28 days of the work being completed.

For any non-electrical queries about the Island, contact Rottnest Island Authority Administration on (08) 9432 9300 or enquiries@rottnestisland.com

Employing electrical apprentices is good for business

Electrical contractors not yet employing an electrical apprentice will find the addition of an apprentice provides many unexpected financial incentives including:

- Commencement, recommencement and completion incentives - as Electricians (General) fall under the National Skills Needs List (NSNL) (i.e. occupations which are of national shortage). These incentives are available for Australian apprentices (full-time, part-time and school based) undertaking Certificate III or IV studies towards this trade.
- Mature Aged Workers Incentives - commencement and recommencement incentives for apprentices aged over 45 years old who are undertaking study towards a Certificate II, III, IV or Diploma/Advanced Diploma trade occupation.
- Support for Adult Australian Apprentices - for apprentices over 25 years old who are undertaking a Certificate III or IV lead qualification that leads to an occupation on the NSNL.
- Disabled Apprentice Wage Support - paid to employers with a disabled employee who meets the disabled eligibility criteria and also when an apprentice becomes disabled during the course of their apprenticeship.
- Australian School-based Apprenticeship Incentive - commencement and retention incentives are available for apprentices still at school who are also undertaking paid and vocational work and Certificate II, III, IV or Diploma/Advanced Diploma training towards a trade occupation.

Both the Western Australian and Commonwealth Governments oversee apprentice activities. The Commonwealth Government's Australian Apprenticeship Support Network (AASN) offers prospective employers and apprentices support by dispensing information and advice before an apprenticeship is commenced.

Prior to signing a training contract, AASN provides job placement services and pairs apprentices with suitable employers. Post-signing of the contract, AASN can be contacted for information on apprenticeship payments, loans and incentives, employment conditions (visit [Fair Work Ombudsman](#) for more information on workplace rights and conditions), dispute resolution (initial contact) as well as offering a mentoring service.

Upon signing the training contract, Western Australia's Department of Training and Workforce Development's Apprenticeship Office then takes over. It is responsible for registering the training contract and overseeing administration aspects including contract variations and terminations, regulating compliance to training plans and apprenticeship completion as per the *Vocational Education and Training Act 1996 (WA)* and associated Regulations.

With dispute resolutions between the apprentice and employer, the Apprenticeship Office will only become involved after they have received formal notification from the AASN provider.

To assist electrical contractors (with existing apprenticeship contracts) in the common administration aspects involved with apprentice employment, the following table has been provided.

Scenario	Fact Sheet/Policy	Applicable Form
My apprentice needs to update their personal details (e.g. name, date of birth, postal, email or residential address or phone number)	NA	Notice to update personal details (apprentice/trainee/guardian)
I need to make some changes to the training contract for my apprentice, such as: <ul style="list-style-type: none"> • qualification and trade • training provider • employment (e.g. full time, part time or school-based) • employment arrangements (e.g. agreements/awards) • any other details on the contract 	NA	Notice to vary a training contract
What paperwork is required to be submitted if my apprentice is going to be working for a new employer?	Assignment (transfer) of training contract to a new employer	Notice to assign (transfer) a training contract to a new employer
I have paid for my apprentice's travel and accommodation to attend 'off-the-job' training. Am I eligible to claim this expense back?	Travel and Accommodation Policy for Apprentices	Travel and Accommodation Allowance claim form for employers (Federal Modern Awards) NB: Only if the apprentice meets the eligibility criteria for Travel and Accommodation allowance
My apprentice is eligible for a trade certificate through the Trades Skills Recognition process.	Trade Certificate Policy	Trade Skills Recognition Trade Certificate Application Form
My apprentice and I have mutually decided to terminate the training contract	Termination of a contract by mutual agreement	Notice to terminate a training contract
The probation period for my apprentice needs to be extended	Important information regarding extending the probation period of a training contract	Application to extend the probation period of a training contract
I need to terminate the training contract for my apprentice during their probation period	Important information regarding termination of a training contract during the probation period	Notice to terminate a training contract during probation period
Is there a plan available which I can use to monitor my apprentice's training?	Training plans	Apprenticeship/Traineeship Training Plan or National Training Plan template

Scenario	Fact Sheet/Policy	Applicable Form
I have agreed to allow my apprentice to suspend the training contract while they go overseas	Suspension by parties of a training contract	Notice by parties to suspend a training contract
I've caught my apprentice engaging in serious misconduct	Suspension by employer for serious misconduct fact sheet	NA
I want to terminate the training contract with my apprentice	Non-mutual termination of a training contract	NA
The training contract for my apprentice has expired. How do I extend the contract?	Extending and completing training contracts	Notice to extend a training contract
What are my obligations under the training contract?	Training contract obligations	NA
I would like to learn more about competency based training	Competency-based training	NA
How do I work out which level of competency my apprentice has reached and whether a pay rise is warranted?	Competency-based wage progression and institutional training	NA
Can my apprentice seek credit for previous studies?	Recognition of prior learning and credit transfer	NA

To download any of these documents, visit the [Apprenticeship Office website](#). For queries on your current training contract, the Office can be contacted on 13 19 54.

For electrical contractors considering employing an apprentice, please contact the Australian Apprenticeship Support Network on 13 38 73 or visit their website www.australianapprenticeships.gov.au

Standards update

Amendment to standard AS/NZS 3012: 2010, Electrical installations – construction and demolition sites was published on 20 October 2015.

The amendment applies to the following:

- Clauses 1.4.21; 2.3.6; 2.4.6.2; 2.5.2; 2.5.3; 2.6.10; 2.7.3; 3.2; 3.4.2; 3.6.1 and 3.6.4.
- Appendices A, F, G, I and J.
- Table 2 - Maximum Spacings for Class A Luminaires, Table 3 – Maximum Spacings for Class B Luminaires, Table 4 – Maximum Spacings for Class C Luminaires and Table 5 – Maximum Spacings for Class D Luminaires.

AS/NZS 4777.2: 2015, Grid connection of energy systems via inverters – Inverter requirements, which was published on 9 October 2015, supersedes AS 4777.2 2005 Grid connection of energy systems via inverters – Inverter requirements. This Standard details the safety requirements and tests for low voltage inverters which transmit electricity into an electrical installation that feeds into an electricity network.

To download the amendments or, to receive alerts on when a Standard is new, being reviewed, updated or superseded, please visit the [SAI Global website](#) and subscribe to Standards Watch.

From the SAI Global website, you can also subscribe to their free industry newsletter, which provides updates on industry news and events and updates for relevant Codes, Acts and Regulations.

Product recalls

National recall on SKL (2C + E) TPS flat cables

On 24 November 2015, EnergySafety issued SKL Cables Australia with a Prohibition Notice pursuant to Section 33C of the *Electricity Act 1945* to stop the sale, hire or use of these cables in Western Australia.

A national recall has also been issued by the Australian Competition and Consumer Commission for a brand of TPS cable manufactured by SKL Cables Australia.

The affected cables marked with 2013, are the flat electrical cable 2 core and earth PVC Insulated and sheathed 450/750 Class 2 type range are the following models:

- WF2C1E105 (1.5mm²)
- WF2C1E205 (2.55mm²)
- WF2C1E004 (4mm² TPS)
- WF2C1E006 (6mm² TPS)
- VVF2C1E010 (10mm² TPS)
- VVF2C1E016 (16mm² TPS)

The above cable types were sold from SKL Cables Australia and supplied by Shanghai Mining Cable Pty Ltd between 9 October 2014 and 19 September 2015. The majority of defective cables were sold in Queensland. However a few were also sold in Western Australia.

These products did not pass the required aging test of AS/NZS 5000.2, Electric cables - Polymeric insulated - For working voltages up to and including 450/750V.

As it ages, the insulation within the cables can become prematurely brittle, particularly if exposed to high temperatures. If it breaks, the 'live' conductors could be exposed which may result in a consumer receiving an electric shock. There is also a potential fire hazard.

As per Regulation 62 of the Electricity (Licensing) Regulations 1991, electricians who find these defective cables are required to report them to the relevant network operator, or to EnergySafety, if the network operator cannot be identified.

If you have installed the defective product, please contact SKL Cables Australia who will arrange for the replacement of the product at no cost to the consumer.

Telephone: (07) 3341 3216

Website: www.sklcables.com.au

To view the recall notice visit www.recalls.gov.au while further details can be found on the [ACCC website](http://www.accc.gov.au).

Beijing Hua Xin Liu He Investment (Australia) Pty Ltd 240W LED High Bay Luminaire

The affected model FK-GK240 was sold in Western Australia between 17 May 2012 and 1 October 2014 at Brooks Construction, Balcatta and Solar Harness, Belmont.



LED High Bay Luminaire



LED High Bay Luminaire

These products were manufactured with a terminal block on the secondary driver which could be prone to charring. Also, the accessible metal find on the luminaire cannot be earthed.

Consumers are at risk of receiving an electric shock. There is also a potential fire hazard.

Contact details:

Telephone: (08) 6555 1815

Email: service@zeus.com.au

New documents published in Government Gazette

In the previous Energy Bulletin, Issue no. 72 (October 2015), EnergySafety announced the publication of the following two documents:

- the amended *WA Electrical Requirements* (WAER); and
- the new *Guidelines for the safe management of private power poles and lines*.

As a formal record, these documents have been published in the Government Gazette.

They can be downloaded from EnergySafety's website at www.energysafety.wa.gov.au.

WA Electrical Requirements Amendment No. 2

A second amendment has been issued to the January 2014 WA Electrical Requirements.

Section 6.3 ('Energisation') has been amended to remove the requirement to complete and fix an Installation Test Certificate inside the meter enclosure to verify that the installation is ready for energisation.

Failure to fix an Installation Test Certificate in an installation is not a defect.

The WAER incorporating Amendments No. 1 and No. 2 can be downloaded from the [EnergySafety website](#).

Prosecutions for breaches of electricity legislation

Between 1 October and 31 December 2015

Name (and suburb of residence at time of offence)	Licence Number	Legislation and Breach	Offence	Date of Offence	Fine (\$)	Court costs (\$)
John Vickery (Warnbro)	EW157456	Regulation 50(1) E(L)R 1991	Inadequate supervision of a trainee or other person requiring supervision, where the work is on or near live electrical installation or equipment	6 September 2013	2,000.00	855.60
		Regulation 63(2) E(L)R 1991	Failing to report an electrical accident immediately they become aware		2,000.00	
Electricity Networks Corporation T/As Western Power (Perth)	NLH	Regulation 10(1)(a) E(SS&SS)R 2001	A network operator failing to ensure that a prescribed activity was carried out to provide for the safety of persons	4 June 2013	70,000.00	1,469.30
Electricity Networks Corporation T/As Western Power (Perth)	NLH	Regulation 10(1)(c) E(SS&SS)R 2001	A network operator failing to ensure that a prescribed activity was carried out to avoid or minimise damage to property, inconvenience or other detriment	9 August 2013	35,000.00	730.60

Name (and suburb of residence at time of offence)	Licence Number	Legislation and Breach	Offence	Date of Offence	Fine (\$)	Court costs (\$)
Electricity Networks Corporation T/As Western Power (Perth)	NLH	Regulation 242(1)(b) ER 1947	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	17 August 2013	120,000.00	980.60
Lee Brough (Thornlie)	EW153398	Regulation 50(1) E(L)R 1991	Inadequate supervision of a trainee or other person requiring supervision, where the work is on or near live electrical installation or equipment	17 December 2013	4,000.00	730.60

Legend

- NLH No Licence Held
 EA *Electricity Act 1945*
 E(L)R Electricity Licensing Regulations 1991
 * Global fine or costs issued

Press-fit joining systems

Plumbers and gas fitters have adopted the proven method of joining copper pipes with the use of press-fit copper fittings. Not only does it cut down the time spent with preparation of a welded joint, but it also eliminates the hazards of using a welding torch in confined spaces, such as ceiling spaces and being able to work around days of severe fire bans in country regions.

There are a number of propriety systems available, each with their own approved electro-hydraulic pressing tool. To be able to use this form of pipe jointing, training in its use and being deemed competent is strongly recommended.

There are however some pitfalls that as a plumber/gas fitter you need to be aware of:

1. In working with gas, only fittings marked for gas shall be used. Do not mix fittings identified for use with water as the sealing material is not compatible with gas. Such was the case when a plumber/gas fitter did not use fittings entirely for gas. This was discovered at the time of the gas supplier's gas installation inspection. The whole of the gas installation had to be replaced to enable compliance to be met.
2. Ensure the electro-hydraulic pressing tool is within calibration. This is important as, if the tool is incorrectly calibrated it can lead to under/over compression of the joint. This is critical as pipework that is later concealed may leak causing undue costs associated with the repairs.

3. Only use the electro-hydraulic pressing tool compatible with the system in use, as not all tools are compatible with the different systems.
4. Where the gas installation contains a press-fit system, welding in the near vicinity of a press-fit fitting needs to be considered, as failing of the sealing material will result if welding is too close to a press-fit fitting and overheating of the seal occurs.
5. Gas piping installations containing a press-fit joining system are to be identified at the gas meter position or adjacent to the LP Gas regulator under the hood.

When completing the Notice of Completion, under section 8 it is worthwhile to note the use of the press-fit joining system on the gas installation.



Fitting marked for use with Gas



Over compression due to the electr-hydraulic pressing tool being out of calibration

Manufactured structures and buildings

EnergySafety will often receive photographs of installations supplied from vigilant and concerned gas fitters and plumbers alerting us to possible unsafe gas installations and we commend them for this. Early in the new year EnergySafety received the below photographs of recently completed gas installations from an out of town address.

The structures being manufactured off-site appeared to have been built on steel beams to enable ease of transportation. When they arrived on site the structures were stumped and levelled on concrete blocks into their permanent location. Water, gas and electricity were then connected. In the case of the gas supply, the structures were provided with a gas hood covering the regulator bracket, with the regulator and pig-tails ready to accept the connection of 45kg LP Gas cylinders.

Over the years we have seen many makeshift gas installations set up for 9kg cylinders, however this is a first for 45kg cylinders. Needing to have gas connected, cylinders were delivered to site ready for connection. As the height of the connection point was far beyond the reach of the pig-tails a swivelling bar stool was used to provide a base for a gas cylinder. To further prevent the cylinder from being dislodged if the bar stool was bumped; a chain was used to secure the cylinder to the regulator bracket.



45Kg LP Gas cylinder installed on a bar stool

With the other installation, two 'concrete breeze' blocks were used to support the cylinders together with another securing chain.



45Kg LP Gas cylinder installed on 'concrete breeze' blocks

As the installations were obviously non-compliant, the consumer was issued with an Inspector's Order requiring the gas installations be made complaint. The reference in this instance is Appendix J4 (a) Standards Australia AS/NZS 5601.1.2013, General Installations. The standard requires that "cylinders should be installed on a firm, level, non-combustible base, not resting on soil. The floor or base should be constructed so that water cannot accumulate within any enclosure or base."

It is also incumbent on the gas supplier, when delivering LP Gas cylinders for the first delivery, to undertake a visual inspection of the gas installation to identify any obvious safety concerns.

Creative gasfitting - Digging yourself deeper

A recent audit inspection for the installation of a gas storage water heater resulted in the gas inspector issuing a notice of defect. Why you may ask?

The gas fitter had been instructed by the owner to replace the old water heater with a larger storage capacity at the request of the tenant. The problem was that the gas fitter purchased the larger appliance with a top mounted flue that did not meet the required clearances to the eaves.

So rather than consider alternative options such as relocate the appliance or exchange the appliance of a different size, flue design or type (instantaneous or constant flow), what did the gas fitter do?

This gas fitter used his shovel and dug a hole approximately 400mm deep and installed the appliance in the hole! Apart from failing to meet the installation instructions that required the appliance to be on a concrete slab 50mm above floor level, it was also potentially hazardous for relighting and water ingress.

When the gas fitter was contacted by an EnergySafety Inspector to find out why he had installed the appliance in this manner the fitter replied "I know I shouldn't have done it, I must have had a brain snap"

The gas fitter received a \$600 infringement in addition to having to rectify the installation. A costly reminder.



Gas hot water system installed in a hole



Gas hot water system installed in a hole

Summary of infringements for breaches of gas legislation

Between 1 October and 31 December 2015

Legislation and breach	Offence	Number of Infringements	Fine (\$)
GSR R18(2)	Failing to ensure gas installation complies with prescribed requirements	4	2,400.00
GSR R20(1)	Installing appliance, apparatus or part contrary to instructions or recommendations of manufacturer or designer	4	4,800.00
GSR R23	Failing to record service information in required manner	1	2,000.00
GSR R26(1)(a)	Failing to ensure gas installation is gas-tight	2	1,200.00
GSR R28(2)	Failing to attach approved badge or label on completion of work	3	1,200.00
GSR R28(3)	Failing to give notice of completion of gasfitting work within required time	4	1,600.00
GSR R34(1)	Failing to keep records of employed gas fitters in required manner	1	1,250.00
GSR R42	Failing to report incident causing, or likely to cause, injury or damage	1	3,000.00
GSA S20(2)	Failing to provide information, records or documents when requested under s.14(d)	1	1,000.00
GSA S13A(2)	Engaging in an operation or carrying out work or process, of a kind prescribed to be of nature of gasfitting work otherwise than in a prescribed capacity and without a certificate of competency, permit or authorisation	4	4,000.00
	Total	25	22,450.00

Legend

GSA Gas Standards Act 1972

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