



Electricity Industry Bulletin No: 56 December 2004

FOR THE ATTENTION OF ALL ELECTRICAL WORKERS

1. HIGH VOLTAGE INSTALLATIONS

Recent events have highlighted the need to clarify the process for contractors intending to perform high voltage (HV) electrical work.

The first question a nominated manager for a contractor's licence should ask is 'do we have available to us the skills and resources to perform HV work according to AS/NZS 3000 the *Wiring Rules* and AS 2067 *Switchgear assemblies and ancillary equipment for alternating voltages above 1 kV?*'

Consultation and communication with appropriate professionals or organisations—such as consulting engineers and both the New Supply and Compliance sections of Aurora Energy—is an area that is often overlooked. **The key is to sort out any issues early to ensure connection deadlines are achieved.**



The following is a basic list of the must do's; however each installation is different and may have other specific requirements.

- Comply with AS/NZS 3000 (in particular clauses 7.8.1 to 7.8.13.7) and any other relevant standard such as AS 2067.
- In accordance with clause 7.8.2 of AS/NZS 3000, notify Aurora Energy Compliance Inspectors via a Preliminary Electrical Installation Notice (PIN), before work commences.
- Provide design and construction drawings to the appropriate Aurora Energy Compliance Inspectors office (with your PIN). Drawings shall include site layout, single line electrical, earth mat design and switchboard design/s, as applicable.
- Be prepared to provide verification of the competence of each electrical worker involved in the installation. Workers must be competent to perform each individual task they undertake, such as cable terminations or earthing testing.
- Ensure that every avenue has been explored to achieve a combined earthing system before considering separate HV and LV earthing systems (according to clause 7.8.10.2 of AS/NZS 3000). Where earthing is poor due to soil composition, consultation with a Compliance Inspector is important so that an acceptable system of earthing is installed. In some cases the Compliance Inspector may require inspection of the earth mat installation before backfilling.
- The test certificates mentioned in clause 7.8.13.2 of AS/NZS 3000 are required in Tasmania and should be provided to Aurora Compliance Inspectors as soon as available.
- On completion of the works, provide a plan of who is to undertake the regular earthing tests recommended by clause 7.8.13.7 of AS/NZS 3000 and the maintenance of HV switchgear.
- All HV electrical work must be reported to Aurora Energy via an EIN. There are **no exceptions**.

If you are considering alterations or additions to an existing HV installation, it is advisable to arrange an on-site visit with a compliance inspector and other stakeholders.

Note: For some HV installation work, there may also be a need to contact and provide information (such as metering) to Aurora Energy's New Supply section (phone 1300 137 008)

Failure to comply with these requirements can prove to be time consuming and costly for everyone involved.

2. ELECTRICAL WORK CAN BE HAZARDOUS

Electrical work in hazardous areas is defined in AS/NZS 3000, the *Wiring Rules*.

The *Wiring Rules* states in clauses 7.9.2.1 and 7.9.2.2 (amendment 1) that for zoning 'gas hazardous areas' to use the AS/NZS 2430 series of standards, and for 'dust hazardous areas' to use AS/NZS 61241.3.

Clause 7.9.3.2 of the *Wiring Rules* requires that the selection and installation of equipment for either type of hazardous area is to comply with the AS/NZS 2381 series of standards.

Worker competence

Electricians must be competent to work on hazardous installations and regular updates of appropriate training must be undertaken to comply with AS/NZS 2381.1.

Question:

Does every worker performing electrical work on a hazardous site need to be competent to the same level?

Answer:

Let's use a service station as an example where new petrol dispensing pumps are to be installed.

A licensed electrician, competent to perform electrical work in this type of hazardous area in accordance with AS/NZS 2430.3.2 and the AS/NZS 2381 series, must be on site at all times whenever electrical work is being performed, either within a hazardous zone or on wiring or equipment that is run through or associated with a hazardous zone.

Other electricians (or apprentices under supervision) performing electrical work on the site must be competent to undertake each specific task, such as the termination of a petrol dispensing pump. If gas dispensers are to be installed then a different or additional range of competencies are required. Labourers may dig trenches, assist with heavy lifting and provide 'step and fetch it' for electrical equipment only.

If four electricians were working on the site simultaneously then the level of competence should be relative to their delegation of duties and under the direction of a competent person.

Documentation (site dossier)

This is an area where there is often non-compliance. Clause 1.6 of AS/NZS 2381.1 details the information required in the dossier, and this must be complied with. One example of the importance of this dossier is in stating the zone classification; this is so that the next electrical contractor and/or the compliance inspector have a starting point to ensure compliance is maintained. Compliance inspectors will ask to see the dossier when visiting the site, and defective notices will be issued if

either the dossier does not exist or information is not current.

All electrical work in hazardous areas must be reported to Aurora Energy via an EIN. There are **no exceptions**. Evidence of worker competence must also be provided to compliance inspectors on request.

A course is proposed to be held in Launceston from 31 January 2005 to 4 February 2005.

For information on hazardous area training contact Warren Crichton on 6233 7718.



Longford Gas Metering Site

ELECTRICAL LICENSING BOARD SURVEY

Enclosed in this Bulletin you will find an Electrical Licensing board (ELB) survey for you to complete. The purpose of the survey is to assist the ELB with determining the numbers of Electricians required to be trained to meet future demands. It will also help with determining the value of providing refresher courses for those contemplating a return to the electricity industry.

You can complete the form provided and either fax it to the Electricity Standards and Safety office on (03) 6233 8844 or send it back in the pre-paid envelope provided. Alternatively, you can visit our website at www.wst.tas.gov.au/electricity to complete the form online.

We appreciate you taking the time to complete the survey. Please note that the return date for completed surveys is **17th December 2004**.

Occupational I

It's anticipated that the draft Occ distributed for stakeholder consul perspective, the aim of the Bill is to ensu persons engaged in the plumbing, g appropriately qualified, licensed and r and to high standards by, amongst other meas licensing system by creating a 'or licences in more than one of these occ released, copies will be avail Standards Tasmania websi

3. \$2500 FINE FOR DEFECTIVE ELECTRICAL WORK

In December 2002, Mr Graeme Desmond Bourke failed to connect a neutral link to a PAYG meter at 93 Bass Highway, Westbury. The householder sustained minor electrical shocks.



In seeking to mitigate the penalty, counsel for Mr Bourke indicated that his client:

- was highly regarded as an electrician and licensed since 1972
- had been unwell and taking prescription medicine
- couldn't recall not connecting the neutral link
- had made only this mistake and no other.

In noting that he could fine Mr Bourke up to \$10,000, Magistrate Peter Wilson said:

- Mr Bourke was well-qualified with 30 years experience, familiar with this work and unwell on the day
- Mr Bourke's conduct was not performed in a carefree or abandoned way
- Mr Bourke had compulsory retraining by Aurora and not been allowed to install PAYG meters in the interim
- the householder had suffered minor shocks and there was a chance of fire
- these were not insignificant matters, fortunately, there had been no injury or fire
- this was the first such prosecution
- Mr Bourke had a persuasive claim for a low penalty
- there was a public interest to be upheld.

Mr Bourke was fined \$2,500 and ordered to pay court costs at Burnie Magistrate's Court on 13 September 2004 and given 28 days to pay.

4. ELECTRICAL INSTALLATIONS- RISK ASSESSMENT

It is important that electrical contracting businesses involved in commercial and industrial installations have a set of documented principles and procedures for working on, or near low-voltage electrical equipment, and in particular, for the commissioning of new works.

This is to ensure that there is no risk of injury to non-electrical persons or visitors on site as well as your employees following the energising of a new main switchboard or distribution switchboard.

Where an installation has been energised and the electrical installation is not fully completed, it is also important that correct procedures are undertaken in regards to circuit isolation and tagging. It is vital that any incomplete circuits are either correctly terminated or disconnected from the switchboard and terminated. Placing tape over a circuit breaker toggle is not acceptable.

The Australian Standard AS/NZS 4836:2001 *Safe working on low-voltage electrical installations* provides guidance on risk assessments.

5. NEW GUIDE FOR SMALL BUSINESS

The new Workplace Safe guide *Making your small business safer and healthier* is a concise, practical resource kit for small business operators in Tasmania. It was launched in October during Workplace Safe Week.

Making your small business safer and healthier contains to-the-point OHS information. It also has checklists and other sample documents that are ready to use in any small business workplace. The tools will help you plan your safety training, conduct risk assessments, and keep safety records.



As well as these hands-on tools, the kit contains a CD with some of Workplace Standards' most comprehensive OHS and workers compensation guides, including the popular *Welcome to the Workplace, A Guide to First Aid in the Workplace and Body Strain Prevention Kit*.

Making your small business safer and healthier is available from the Workplace Standards Helpline on 1300 366 322 or go to www.workcover.tas.gov.au/node/PubsGeneral.htm

Licensing Bill

Occupational Licensing Bill will be introduced shortly. From a licensing perspective that contractors, practitioners, and other gas-fitting and electrical trades are regulated to perform their work safely measures, simplifying the administration of the 'one-stop-shop' for workers acquiring occupational groups. When the draft Bill is available from the Workplace Standards Helpline at www.wst.tas.gov.au.

6. COATED EARTH ELECTRODES

Recently a copper-coated earthing electrode was brought to Electricity Standards *and* Safety showing severe signs of rust and corrosion on both the above and below-ground sections. The electrode had only been in the ground for about two years. Mainland jurisdictions have also experienced this problem and some have introduced requirements regarding the minimum copper thickness on coated earth electrodes.

AS/NZS 3000 clause 5.6.2.2 note (a)(ii) permits 12mm non-ferrous coated rods; however, the thickness of the coating is not specified. Other international documents such as UL 467 *Standard for Grounding and Bonding Equipment* and BS 6651 *Code of Practice for protection of structures against lightning* give guidance by stating the minimum thickness of the coating to be 250 microns ensuring the longevity of the electrode and the integrity of the earthing system.

The *Electricity Industry Safety and Administration Act 1997* section 4 (b) states that electrical work is considered defective if 'the materials used are faulty or unsuitable for the purposes of the work'.

To comply with section 4 (b) of the Act, in the absence of an Australian Standard, Electricity Standards *and* Safety require the **minimum thickness of the copper coating to be 250 microns** as from **1 March 2005**.

If you perform work on an existing electrical installation that includes the consumers mains, submains or main earthing system, then the earth electrode must be inspected and upgraded if necessary. Signs of rust on the outside of the electrode above the ground is a good indicator of what could be a worse situation below ground.

Please check with your supplier to ensure you are purchasing a compliant product.

Note: All Tasmanian Electrical Wholesalers listed in the Yellow Pages have received a letter explaining this position.

7. XPELAIR FAN HEATERS

Electricity Standards *and* Safety was recently notified of an incident at a childcare centre where a XPELAIR fan caught fire.

Investigation revealed that the fusible link within the heater had been replaced with a section of copper wire. Copper wire does not provide over temperature protection.

This non-compliant modification is extremely dangerous. Electricity Standards *and* Safety advise that any alterations to electrical equipment protection devices must be carried out in accordance with the manufacturers' requirements.



8. RECALLS

Prima Upright Fan Heater

Aria, Nova and Gamma Hair Styling Hot Irons

Austrabeam Branded Krypton 2Lt Floor Lamp

Dell AC Power Adaptors C Series sold with
Dell notebook computers

Omega and Smeg Dishwashers

Westinghouse Virtuoso Touch Control Ceramic Cooktop

**For product information, defect details and consumer action,
visit the Product Recalls Australia website at www.recalls.gov.au**



John Hammersley and staff at
Electricity Standards *and* Safety wish you all

*a safe and Merry Christmas
and a Happy New Year*

Office Hours over Festive Season
Close 3.00pm Friday 24th December
Reopen 9.00am Tuesday 4th January



Office 30 Gordons Hill Road, (PO Box 56)
Rosny Park, Tasmania, 7018
E-mail: robert.steedman@dier.tas.gov.au

Electricity Standards *and* Safety

Telephone: (03) 6233 7831
Facsimile: (03) 6233 8844
Website: www.wst.tas.gov.au/electricity