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electrical focus

In this issue...

Consumers Mains Upgrades – Minimum Western Power Requirements

The following list shows minimum installation requirements to be carried out when consumers mains are upgraded. This includes retro-undergrounding work, single to three phase conversions and consumers mains replacements.

1. The MEN connection must be located on the customers neutral link and be confirmed.
2. If 16mm^2 consumers mains are installed, the main earth conductor must be upgraded to a minimum size of 6mm^2.
3. If up to 10mm^2 consumers mains are installed, the electrical contractor must test and prove the continuity of the existing main earth conductor to the water pipe and, if installed, the earth electrode.
4. A minimum of 50 mm rear clearance is required behind the meter panel.
5. A meter panel with a service protective device (fuse or circuit breaker) fitted must be provided.
6. All existing metal conduits associated with the main switchboard must remain bonded to earth.
7. All metal meter enclosures must be bonded to earth with a bonding conductor not less than the size of the incoming neutral conductor. (Note: The load neutral conductor must be the same size as the incoming line neutral conductor)

The following should also be noted:

- All newly installed consumers mains and electrical installation work must comply with the current requirements of AS/NZS 3000:2000 Wiring Rules and the WA Electrical Requirements (WAER).
- The point of attachment is deemed to be at the Western Power supply pillar.
- Any existing internal electrical work, other than that listed above, is deemed to comply provided it is in accordance with the minimum wiring standards that were in force at the time of installation.
- The Western Power KWh meter must be phased-out prior to re-energising the internal installation.
- A load test or earth loop impedance test is to be applied to the installation to ensure continuity and effectiveness of the incoming neutral conductor.
- On three phase installations, phase rotation must be checked prior to and after the new consumers mains are installed to ensure phase rotation direction remains the same.

An installation check sheet should be used to ensure all of the above requirements have been met.

EnergySafety

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Another avoidable electrical fatality

A house owner was electrocuted recently in the roof space of his house when he inadvertently came into contact with an exposed live conductor and a copper water pipe.

The man was not doing electrical work. He was installing data cables.

The fatality would have been avoided if the man had simply turned the main switch off before commencing the work.

The roof space of a building, particularly an old type building, can be a dangerous place for anyone, including electricians and gas fitters, because of:

- deteriorated or damaged wiring; or
- exposed joints in wiring.

If you must enter a roof space for any reason, always:

- turn the main switch/es off;
- use a torch to light the work area;
- inspect the work place for hazards; and
- proceed with caution.

Your life is worth more than ten minutes of inconvenience to a client.

ALWAYS TURN THE MAIN SWITCH/ES OFF

Safety Alert – Western Power Below Ground Service Connection Pits

Western Power recently issued the following safety alert and advice to the Electrical Contracting Industry. The information applies to all work undertaken in Western Power below ground service connection pits (not including un-metered supply pits).

Entry to Western Power pits should only be undertaken when necessary. Where required for identification of connections, proceed with caution ensuring that the required personal protective equipment is worn.

Western Power has developed guidelines for working with pits. Copies of the guidelines are available by telephoning Western Power on 13 13 53.

Western Power offers training courses (through Power Training Services) to electrical contractors for "H" accreditation to install meters and to connect consumers mains into Western Power pillars. After successful completion of this training, electrical contractors are issued with accreditation that allows them to carry out the above works.

It should be noted that the "H" accreditation course only permits electrical contractors to work on pillars with consumers mains up to 25mm^2 and for new connections only. Electrical contractors are not permitted to carry out changeovers on existing installations.

Western Power has arranged a training course extending the "H" accreditation available for the electrical industry to obtain endorsement to work on Western Power pits where required. Details of this course are available from Power Training Services by telephoning 13 13 53 or via the website at www.westernpower.com.au. There is a fee to attend these courses.

If there is a requirement to remove or connect a cable from a Western Power pit prior to receiving accreditation, contact should be made with Western Power by telephoning 13 13 53 for a list of contact phone numbers of electrical contractors who are accredited (ie. they have been trained) to work in pits.

Standards Australia Wiring Rules Committee EL-001

The Wiring Rules Committee EL-001 met from 27 May to 29 May 2002 to discuss the maintenance and future improvements to *AS/NZS 3000:2000 Wiring Rules* and other related supporting standards.

At this meeting, a number of additional frequently asked questions (FAQs) were finalised for publishing on the Standards Australia website. The FAQs provide answers to common questions generally about the interpretation of specific clauses in the Wiring Rules. The FAQs will be available on the Internet at: www.wiringrules.com .

Committee EL-001 agreed to proceed with development of a future Amendment No. 3 to the *Wiring Rules*. This amendment will include the following **proposed** changes:

- The reduction of the height of Zone 2 and Zone 3 areas in bathrooms to 2.25 m to align with IEC standards.
- The prohibition of the installation of rewireable fuses.
- Limiting the application of functional switches for cooking appliances to hotplates only.
- Clarifying the definition of a shower base and the application of zones to a showerhead attached to a flexible hose. It is proposed to limit Zone 1, in this instance, to the area within the shower enclosure.

Details of the final version of Amendment No. 3 will be provided in a future Energy Bulletin.

The amendment of *AS/NZS 3012 Construction Sites* was discussed and it was agreed that the standard would be modified to cater for small building sites.

Persons interested in making submissions for amendments to the Wiring Rules may submit their proposals to Mr Harry Hills at Energy*Safety*. Proposals should be submitted in writing or by email to: energysafety@docep.wa.gov.au

Amendment No. 2 to the Wiring Rules

Energy*Safety* has agreed with industry suggestions, that a normal six-month transitional period will generally be permitted for the application of new Australian Standards and amendments to existing Standards. The six-month transitional period may be varied by Notice [from Energy*Safety*] to suit specific circumstances.

Amendment No. 2 to the *Wiring Rules* was published by Standards Australia on 5 April 2002. The application or compliance date is therefore 5 October 2002.

However, electrical installing work carried out between 5 April 2002 and 5 October 2002 may be in accordance with the requirements of Amendment No. 2. This is an option for each contractor and client.

Electricity on Construction Sites

A revision of the 1995 edition of *AS/NZS 3012:2002, Electrical installations – Construction and demolition sites*, is nearing publication.

The main purposes of the revision include:

- bringing the document into line with *AS/NZS 3000:2000*;
- addressing in detail aspects of portable generator usage; and
- generally making the Standard more readily applicable to all sites ranging from large commercial and industrial projects to domestic extension and renovation work.

On this last point, considerable thought and discussion was required to address the administration of testing and maintenance schemes in situations ranging from a large site where a Class 1 tool might be used by a semi-skilled labourer to a typical domestic site where a sub-contractor/tradesperson might work with only Class II tools which he or she owns and is responsible for maintaining.

Two features central to this approach are the requirements for testing and tagging. The tagging scheme provides for easy checking by any user and the use of a “competent person” (ie. competent for the relevant test) provides a practical basis for an effective testing regime.

Significant discussion was also required to match the policy of RCD protection of all electrically powered low voltage equipment with the wide use of a variety of relocatable and portable generators available in Australia and New Zealand.

Statement from the Director of Energy Safety

Electrical Licensing Board Cancels Contractor’s Licence

The Director of Energy Safety advised on 21 June 2002 that the Electrical Licensing Board had cancelled the electrical contractor’s licence of D’Adamo Nominees Pty Ltd (trading as L&A Electrics), effective from 30 June 2002.

This decision was made after L&A Electrics was found to have committed multiple breaches of the *Electricity (Licensing) Regulations 1991*. An order was initially issued by the Board against L&A Electrics in March 2000 when the contractor’s work was found to be substandard. This original order required L&A Electrics to have its work monitored by Western Power inspectors for six months. More recently, the Board determined that, during the course of this six-month period, the company either permitted or instructed its personnel to record and certify its work under names other than its own, thereby attempting to avoid the monitoring of its electrical work standards.

The Board then decided that these serious and ongoing breaches demonstrated unwillingness on the part of the contractor to accept its responsibilities under the regulations, which are in place to safeguard electricity consumers, and cancelled the licence.

The Director warned that this action should be noted by other licence holders, as it clearly shows that they must be prepared to comply with electrical safety and regulatory requirements if they expect to remain in the industry.

Disciplinary Action Taken by the Electrical Licensing Board

From 1 March 2002 to 31 May 2002

The Electrical Licensing Board dealt with 22 operatives from 1 March 2002 to 31 May 2002.

COMPETENCY ASSESSMENTS

Five operatives were required to undergo competency assessments:

T Hendricks
T Fletcher
A Wareing
M Dunlop
G Hunt

Messrs Hendricks, Dunlop, Fletcher and Wareing have since complied with the Board's order and satisfactorily completed the competency assessment.

Mr Hunt's EW and EC licences have been cancelled. He failed to comply with the Board's order to undertake and satisfactorily complete the competency assessment.

DETAILS OF SUMMARY PROCEEDINGS

Mr Richard MacFarlan
(EW 127512)

Grounds for Proceedings:

Mr MacFarlan carried out electrical work on a transportable house that was not effectively earthed. Mr MacFarlan, since the incident, has undertaken the Electrical Contractor's Training Programme and successfully completed it.

The Board's Order:

Mr MacFarlan is censured for his actions.

DETAILS OF FORMAL PROCEEDINGS

Mr Phillip Paul Jamieson
(EW 102986, EC 001710)

Grounds for Proceedings:

The grounds for the proceedings were that Mr Jamieson carried out electrical work related to the installation of a bore pump. The work was not completed in accordance with Clause 8.4.1 of the Western Australian Electrical Requirements in that the installation wiring at the first address crossed over into the property of the second address and supplied the bore pump, reticulation pump and associated control system installed within the boundary of the second address.

The Board's Order:

Mr Jamieson is to undertake and satisfactorily complete the nominee modules of the Electrical Contractor's Training Programme by 30 August 2002. Failure to do so will result in his electrical contractor's licence being cancelled.

Mr Geoffrey Keith Collins
(EW 113149 – licence suspended pending the outcome of proceedings).

Grounds for Proceedings:

Mr Collins carried out electrical work on a Simpson Maxidry 1200S tumble dryer and the householder received an electric shock when removing clothes from the revolving drum of the dryer. The earth conductor from the supply cord had not been reconnected to the earth terminal on the dryer and the dryer was not earthed, creating a potentially dangerous situation. The metal drum of the dryer had damaged the insulation on the unrestrained single insulated conductors associated with the over temperature cut-out devices and the revolving drum was live at approximately 240 volts AC above earth.

The Board's Order:

Mr Collins' electrical worker's licence number is to remain suspended until he undertakes and satisfactorily completes an assessment of his competence to hold a restricted electrical worker's licence for the work area category "domestic equipment" before this suspension shall be lifted.

PROSECUTIONS FOR BREACHES OF THE ELECTRICITY (LICENSING) REGULATIONS 1991
1 March 2002 to 31 May 2002

Breach	*Name (and suburb of residence at time of offence)*	*Licence No.*	*Fine & Court Cost ($)*
Carried on business as an electrical contractor without a licence. Regulation 33 E(L)R	*Karratha Electrical Co (Karratha)*	*EC 000162*	*885.25*
Carried out substandard electrical work. Regulation 49(1) E(L)R	*Craig Pointing (Mandurah)*	*EC 117686*	*962.50*
Employed/instructed an unlicensed person to carry out electrical work Regulation 53 E(L)R	*Karratha Electrical Co (Karratha)*	*EC 000162*	*637.70*

E(L)R Electricity (Licensing) Regulations 1991