

electrical focus

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Another two avoidable electrical fatalities

In December 2003, a refrigeration mechanic was electrocuted on the roof of a lunch bar. He grabbed a live 240v ac supply circuit cable to an evaporative air conditioning unit with a pair of multigrips, whilst simultaneously in contact with the earthed metal roof and a copper water pipe. The person was replacing an air conditioning unit and did not hold a restricted electrical worker's licence.

In January 2004, an electrician was electrocuted inside the roof space of a domestic property. His hand came into contact with the exposed live terminals of a 240v ac air conditioner zone control damper valve motor, whilst simultaneously in contact with the earthed metal roof / ceiling joists and a copper gas pipe. This licensed person was servicing the air

conditioning unit and associated equipment and was handling the live zone control damper valve motor at the time of receiving the fatal electric shock.

In both cases, the fatalities could have been avoided if the persons had simply isolated the electricity supply circuit to the air conditioning equipment prior to commencing the work.

WORKING ON OR IN CLOSE PROXIMITY TO LIVE ELECTRICAL EQUIPMENT SHOULD ALWAYS BE AVOIDED – ISOLATE AND STAY ALIVE.

It is also important to remember that the roof space of a building can be a dangerous place for anyone (including electricians, gas fitters and refrigeration mechanics) because of the possibility of deteriorated or damaged wiring or exposed joints in wiring.

All persons entering a roof space for any reason should always:

- **Turn off the main switch (of the switchboard controlling relevant circuits)**
- **Ensure there is adequate lighting (torches etc.)**
- **Inspect the work place for hazards - use mats, suitable clothing etc. to manage the hazards**
- **Proceed with caution.**

Energy Safety



Minimum safe working clearances from overhead power lines

Many enquiries are received seeking information on safe working clearances from overhead power lines. Energy Safety promotes working safely at all times and, as a minimum requirement, recommends that all persons meet the following minimum requirements.

Non-electrical work

For persons carrying out work that is not 'electrical' in nature, unlicensed persons, the requirements of the *Occupational Health and Safety Regulations 1996* (administered by WorkSafe) apply. In particular, regulation 3.64 specifies a danger zone that must be observed by persons working in the vicinity of exposed overhead power lines.

The "danger zone" means anywhere that –

- is within 0.5 metres of a live insulated overhead power line or aerial bundled conductor line of a voltage of not more than 1000 volts;
- is within 1.0 metres of a live uninsulated overhead power line of a voltage of not more than 1000 volts;
- is within 3.0 metres of a live overhead power line, whether insulated or not, of a voltage exceeding 1000 volts but not more than 33000 volts; or
- is within 6.0 metres of a live overhead power line, whether insulated or not, of a voltage exceeding 33000 volts;

as shown in the following Table 1.

Further information is available from WorkSafe's website at <http://www.safetyline.wa.gov.au>.

Table 1 Nominal Voltage (volts)	Danger zone (metres)
Up to 1,000	within 0.5 m of live insulated conductors within 1.0 m of live uninsulated conductors
Exceeding 1,000 and up to 33,000	3.0
Exceeding 33,000	6.0

An exemption from the non-electrical work safety clearances set out above is available to persons who have been trained in the control of vegetation near power lines, in accordance with Regulation 316A of the *Electricity Regulations 1947*. Such trained persons must work to approved safe working practices.

Electrical work

Persons who are required to work in close proximity to overhead power lines must be appropriately trained and authorised to do so.

The following information is extracted from Energy Safety's publication "Guidelines for electricity transmission and distribution work". (The publication may be viewed on or downloaded from Energy Safety's website.)

No part of a person's body and no material or equipment not insulated for the voltage concerned must come closer than the minimum safe working distances shown in the following Table 2 for live exposed electricity works, unless specific procedures approved by the Network Operator, including fixed barriers or live working techniques, are utilised.

Where it is considered that a person, equipment or mobile plant might inadvertently infringe limits of approach, a safety observer shall be posted. The safety observer's sole duty shall be to warn people should the approach to live electrical apparatus become hazardous. Safety observers shall be specifically instructed in their duties on each occasion they are posted.

Table 2 Nominal Voltage (volts)	Minimum Safe Working Distance (mm)
Up to 22,000	380
33,000	600
66,000	900
132,000	1,500
220,000	2,500
330,000	3,000

Industry consultation on proposed changes to the Electricity (Licensing) Regulations 1991

An article in the previous edition of the Energy Bulletin advised that Energy Safety would be proceeding with the second and final round of industry consultation on the proposed changes to the *Electricity (Licensing) Regulations 1991*.

Energy Safety has now concluded that phase of the consultation process. Energy Safety staff have met with industry representatives (union and contractor associations) and network operators (supply authorities). Industry presentations have also been held at Geraldton, Perth, Bunbury and Kalgoorlie.

There was considerable interest from those attending the industry presentations. A final draft of the amendments will now be prepared, taking into account many of the responses and suggestions received at the presentations.

This final draft will then be forwarded to the Minister for approval, with a report on the outcomes of industry consultation that formed a major part of this important project to update the regulations.

Explanation of previous Energy Bulletin article

The article "Licensing requirements for testing and tagging electrical equipment" in Energy Bulletin No. 30 (January 2004) contained the statement:

"On **sites other than construction** sites, testing and tagging of electrical equipment is not specifically required by law, but is frequently required as part of an organisation's own occupational safety and health policy or some other requirement".

Some readers have misconstrued this statement to mean that testing and tagging of electrical equipment is not required in workplaces, such as workshops, offices, commercial buildings etc.

Regulation 4.37 of the *Occupational Safety and Health Regulations 1996* places an obligation on a person who is an employer, a main contractor, a self employed person, a person having control of a workplace or a person having control of access to a workplace, to 'ensure that plant at the workplace is subject to appropriate checks, tests and inspections necessary to

reduce the risk of injury or harm occurring to a person at the workplace'.

A testing and tagging regime for electrical equipment is the way to demonstrate compliance with the above regulation.

Further enquiries on these occupational safety and health legislation requirements may be directed to Peter White of WorkSafe by telephoning 9327 8777.

Product recall – reclosers

Nu-Lec has initiated a product recall of U and W series high voltage power line reclosers.

The products affected are sold under the Nu-Lec, Merlin Gerin, and Siemens brand names and were available for sale from March 1999. The serial numbers are in the range 133321 to 248419.

There have been a small number of reported instances of the pushrods in the reclosers fracturing and breaking. All such instances have so far occurred in the tropical regions. If a pushrod breaks then when an open operation is initiated either electrically or mechanically, the vacuum force from the vacuum interrupter on the phase with a broken pushrod will remain closed rather than opening. As a result, electricity will continue to flow through the recloser rather than being shut off. This situation is not visibly evident to an operator, as both electrical and mechanical indications will [wrongly] show the switch as open. The affected phase is still energised even when both electrical and mechanical indications indicate open, which may pose an electric shock hazard situation.

Further information on this recall may be directed to Nu-Lec Industries P/L by telephoning (07) 3249 5624.



Electrical industry forum held in Perth

Replaced electrical worker licences

Details of licences that have been replaced due to being lost or stolen are provided to assist employers and others in maintaining accurate registers and employing new staff.

Previous No.	New No.	Grade	Name	Issue Date	Expiry Date
EW121812	EW143506	A	Murray Sleath	02/01/2004	05/02/2007
EW113070	EW143569	REL	Stephen Duzevich	20/01/2004	02/03/2006
EW139496	EW143580	A	Damien Burns	20/01/2004	13/09/2005
EW106247	EW143614	A	Gregory Fauntleroy	29/01/2004	05/09/2005
EW134616	EW143611	A	Joel Fitch	28/01/2004	15/09/2005
EW140863	EW143615	A	Colin McCarthy	29/01/2004	17/12/2006

PROSECUTIONS FOR BREACHES OF THE *ELECTRICITY (LICENSING) REGULATIONS 1991* 1 November 2003 to 31 January 2004

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(1) E(L)R	Ryan Wood (Hocking)	NLH	1,277.70
Carried out substandard electrical work Regulation 49(1) E(L)R	Laurence Zani (Ashfield)	EW 101438	1,027.70
As an employer, failed to ensure effective supervision Regulation 50(1) E(L)R	Stephen Bettles (Alexander Heights)	EW 115693	1,500.00
Permitted unsafe wiring or equipment to be connected to an electrical installation Regulation 50A E(L)R	Stephen Bettles (Alexander Heights)	EW 115693	1,500.00
	Anthony Huckerby (Wedgefield)	EW 104899	* 4 Breaches
Failed to submit a Notice of Completion for electrical work carried out Regulation 52 (1) E(L)R	Anthony Huckerby T/A Port Hedland Electrical Service (Wedgefield)	EC 005134	*1,413.50
Sent in a Notice of Completion to the relevant supply authority in respect of the electrical installing work not being completed Regulation 52(3) E(L)R	D'Adamo Nominees Pty Ltd T/A L&A Electrics (Osborne Park)	EC 003836	2,067.70
Employed/instructed an unlicensed person to carry out electrical work Regulation 53(2) E(L)R	Garland & Johnson (Geraldton)	EC 000949	2,500.00
Failed to report an electrical accident Regulation 63 E(L)R	Anthony Huckerby (Wedgefield)	EW 104899	*

Legend:

NLH No Licence Held
E(L)R Electricity (Licensing) Regulations 1991
* Global fine (more than one offence)

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