



# electrical focus

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## Electrical Work in Close Proximity or on Live Equipment

The spate of recent serious electrical accidents and the death of an electrician working in close proximity to live equipment has prompted this Office, at the request of the Minister for Energy, to review electrical work practices. Subsequently, the Director of Energy Safety has initiated urgent action to promptly examine working practices of the electrical industry. A recent statistical analysis and review of all recorded incidents and accidents involving electrical workers highlighted the main cause (one quarter of all records) of electrical accidents as contact with live and exposed parts within switchboards and equipment.

Action considered by this Office includes the possible banning of live electrical work by means of regulatory changes. Similar regulatory action has

recently been introduced in New South Wales. Initial consultation and feedback received supports the introduction of regulatory changes to change industry work practices.

The initial position on introducing regulatory action is the requirement to critically assess the need for equipment to remain live; a partial or full shutdown is the preferred option together with the use of accepted risk assessment strategies where work is essential. These and other components of the proposed regulatory action are the subject of further consultative action with key employer, union and government organisations.

A report with recommendations will be forwarded to the Minister for Energy within three months.

## Supervision Requirements for Supervisors of Permit Holders

The Electrical Licensing Board may issue a permit to work under supervision to persons who:

- need to gain on-the-job experience when making application to obtain a second endorsement;
- have been trained overseas and need local industry experience prior to sitting the Board's licence examinations; or
- have been disciplined by the Board.

Recently the Board has indicated concern that supervisors may not be treating their supervision responsibilities seriously or do not fully understand them. Consequently, the Board now requires supervisors to make a statement to the Board, confirming that they have read and understood the requirements of

Regulation 50 of the *Electricity (Licensing) Regulations 1991*.

Supervisors also need to confirm that they will comply with other conditions set out in the permit application and declare they are prepared to make a statement in regard to the permit applicant's level of competence on completion of the supervisory period.

The purpose of these more stringent requirements is primarily to ensure the safety of the permit holder, as, at the time of application, they will not have demonstrated to the Board their ability to work in a safe and satisfactory manner.

Application forms to obtain a permit to work under supervision are available from the Licensing Office.

## Guideline 01/2002 Issued by the Director of Energy Safety

The Director of Energy Safety of the Office of Energy issued this Guideline 01/2002 pursuant to Section 33AA of the *Electricity Act 1945* in relation to:

- acceptable ceiling mounted equipment for installation within Zone 2 areas for baths and showers; and
- acceptable locations of functional switches for cooking appliances.

The Guideline was issued in January 2002. Implementation date is 01 August 2002 (see the following article “Implementation Date for New Zone 2 Areas in Baths and Showers (Guideline 01/2002)”.

### 1. Location of Electrical Equipment Within Bath and Shower Zone 2 Areas

The AS/NZS 3000:2000 Amendment No. 1, Clause 7.1.2.1 now specifies that for baths and showers, the height of Zone 2 is the lower of either:

- 2.5 m (previously 2.25 m) above the floor; or
- the room ceiling.

Ceilings between 2.25 m and 2.5 m (including the common 2.4 m residential ceiling height) above floor level are now classified as Zone 2.

The degree of protection required for all electrical equipment in Zone 2 is detailed in Clause 7.1.4.1 (in Zones 1 and 2: IPX5 in communal baths/showers; IPX4 in other locations) and Clause 7.1.4.4 [in Zone 2, luminaires of Class II construction and IPX4 protection shall be permitted (IPX5 for communal baths/showers)]. [Note: Clause 7.1.4.2 sets special

requirements for socket outlets in all zones, in addition to applicable IPX requirements]

Combination fan/heater/light or heater/light units that are flush mounted types on ceilings and designed so that the associated electrical equipment is recessed into the ceiling space are considered suitable for installation in Zone 2 areas.

All other appliances and electrical equipment considered for installation in Zone 2 areas must satisfy Clause 7.1.4.

**Note: Incandescent or fluorescent batten holders** do not comply with the requirements for equipment within Zone 2 areas and must NOT be installed within Zone 2, including on the ceiling, unless at a height above 2.5 m.

### 2. Location of Functional Switches for Cooking Appliances

AS/NZS 3000:2000 Clause 4.3.11 “Cooking appliances” requires fixed or stationary cooking appliances to be provided with a functional switch mounted near the appliance in an accessible position.

The “Note” to this Clause in the Wiring Rules provides explanatory advice that the switch should be within 2 metres of the cooking appliance (and in such a position that the user does not have to reach over the hob to activate it).

The Director considers the “within 2 m” requirement to be satisfactory advice. However, where it can be clearly substantiated that this distance cannot be achieved (due to built-in furniture etc), then, provided the functional switch is mounted in an accessible position in the same room and in the nearest practical

position to the cooking appliance, it will be deemed to comply with the Wiring Rules requirement.

## Implementation Date for New Zone 2 Areas in Baths and Showers (Guideline 01/2002)

Amendment No. 1 to the Wiring Rules (issued on 25 September 2001) detailed a Zone 2 height above floor level increase for baths and showers from 2.25 m to 2.5 m (refer to Clause 7.1.2.1 (c)(ii) of the Wiring Rules).

Application of the new Zone 2 dimension to many dwellings effectively precluded the installation of ceiling mounted batten holders in many bathrooms.

Following industry consultation and representation, the implementation date for Guideline 01/2002 (see previous article) and the above segment of Amendment No. 1 will be 01 August 2002. Specifically, the height of Zone 2 will remain at 2.25 m until 01 August 2002, at which time the newly amended height of 2.5 m will come into effect. This interim dispensation of the Zone 2 height requirement will permit incandescent or fluorescent batten holders to be installed in typical bathroom ceilings, provided the fitting is installed outside of the 2.25 m Zone 2 area.

From 01 August 2002, Completion Notices submitted must be for electrical work completed in accordance with the Amendment No. 1 or Guideline 01/2002 if applicable.

## Installations in Hazardous Area and Explosive Atmospheres

An article in the Electrical Focus of the December edition of the Energy Bulletin (No. 19) provided information about the certification of electrical equipment for use in explosive atmospheres. The following additional information is provided.

### Requirement to Maintain a Dossier

Electrical contractors and workers need to be aware that Clause 1.6 of AS 2381:1999 requires that a dossier, containing pertinent information in respect of an installation in an explosive atmosphere, must be established and maintained.

This dossier must be kept at the premises where the installation is located or at another place, the location of which shall be detailed and kept at the premises in question.

Clause 1.6 details the information required to be kept in the dossier and reference should be made to the clause for full details.

An example of the type of information that is required to be kept is shown below. Note that this is not the full list but is provided to give an indication of what is required within the dossier.

- a) Classification of the hazardous area and the Standards used to determine the classification. This should also include the plans or drawings used to delineate the area and the methods used to determine the area classification/zone.

- b) Equipment groups and temperature classifications. As part of the classification process the details of the group and temperature classes of the equipment necessary for each classified area should be provided.
- c) Certificates (or documents) for each item of explosion protected equipment installed in the hazardous area. The testing authority issues these certificates and such equipment comes with a copy of the certificate enclosed in the package and this should be recovered and retained.
- d) Descriptive system documents relating to any intrinsic safety system installed.
- e) Records or documents relating to the explosion protected equipment or installation that will enable maintenance, repair or overhaul of the system to be carried out in accordance with the respective explosion protection technique standards.
- f) Records of all maintenance, repair or overhaul carried out to the explosion protected equipment or installation.
- g) Drawings and schedules relating to circuit identification. To enable identification of explosion protected circuits, full drawings and schedules should be included in the dossier.

It is the responsibility of the legal owner/s of the installation/ premises to provide the dossier and to ensure that it is kept up to date.

### Competence of Workers

The Standard also requires that persons who install, maintain, repair, overhaul or inspect such installations must be competent to do so. To be competent, the person must have had appropriate training in the class of work to be undertaken. National Electrical Equipment in Hazardous Area Competency Standard (CS-EEHA-001) details the competencies required.

AS 2381 is called up in *Electricity (Licensing) Regulations 1991* [Regulation 49 (1)]. The requirements of the Standard are therefore mandatory.

Electrical Inspectors inspecting electrical installing work involving hazardous areas will ask to see the dossier.

### Six-Months Transition Time for Standards and Amendments

Following a suggestion from Industry, the Office of Energy has agreed that generally a six-month transitional period will 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 the Office of Energy] to suit specific circumstances.

## New Publication “Designing to the Wiring Rules”

Standards Australia has published a new Handbook to provide guidance to designers, consultants and the electrical contracting industry on electrical installation design methods to comply with the latest requirements of AS/NZS 3000 *Wiring Rules*.

*Handbook 301 Designing to the Wiring Rules* was produced in response to a request from the Electrical Regulatory Authorities Council (ERAC) which was supported by the National Electrical and Communications Association (NECA). These

groups called for a document containing “complying solutions” for typical electrical installations. The Office of Energy WA was a key player in moves to have this handbook prepared.

Complete design details and worked examples for the following seven types of electrical installations are included in the Handbook:

- Residential – multiple detached units
- Residential – multiple grouped units with common walls – single level
- Residential – multi (3) storey – 18 units
- Retail development – single level – 10 units

- Multi (3) storey office building
- Light industrial units – detached – single level
- Light industrial units – grouped.

The Handbook is particularly suitable for:

- electrical contractors and designers who may need to design electrical installations in the range of 100 A to 400 A per phase
- instructors and students wishing to improve their knowledge on the practical application of the Wiring Rules.

Copies of *HB 301 Designing to the Wiring Rules* are available from Standards Australia’s Customer Service Centre by telephoning 1300 65 46 46.

### PROSECUTIONS FOR BREACHES OF THE ELECTRICITY (LICENSING) REGULATIONS 1991 1 November 2001 to 28 February 2002

<i>Breach</i>	<i>Name (and suburb of residence at time of offence)</i>	<i>Licence No.</i>	<i>Fine &amp; Court Cost (\$)</i>
<i>Unlicensed electrical work Regulation 19 E(L)R</i>	<i>William Foster (Dawesville)</i>	<i>NLH</i>	<i>2 057.70</i>
<i>Carried out substandard electrical work Regulation 49 E(L)R</i>	<i>William Alexander (Ballajura)</i>	<i>EW 107248</i>	<i>1 267.70</i>
	<i>Patrick Allen (Ballajura)</i>	<i>EW 117923</i>	<i>357.70</i>
	<i>John Bech (Riverton) – 2 offences</i>	<i>EW 111373</i>	<i>1 907.70</i>
	<i>Benjamin Hegney (Cannington)</i>	<i>EW 131355</i>	<i>557.70</i>
	<i>David Holden (Gosnells)</i>	<i>EW 129139</i>	<i>457.70</i>
	<i>Norman Mills (Australind) – 2 offences</i>	<i>EW 130125</i>	<i>1 897.70</i>
<i>Caused or permitted unsafe wiring to be connected or remain connected to an installation Regulation 50A E(L)R</i>	<i>Barry Vause (Geraldton)</i>	<i>EW 132510</i>	<i>1 857.70</i>
	<i>Darren Thorn (Kingsley)</i>	<i>EW 127130</i>	<i>2 302.70</i>
<i>Submitted a Notice of Completion when the work was not complete Regulation 52 E(L)R</i>	<i>GD &amp; F Mayvis (Ballajura)</i>	<i>EC 001757</i>	<i>767.70</i>
	<i>David Holden (Gosnells)</i>	<i>EW 129139</i>	<i>1 802.70</i>

Legend:

NLH No Licence Held

E(L)R Electricity (Licensing) Regulations 1991

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