



WORK ON OR NEAR ENERGISED ELECTRICAL INSTALLATIONS

New regulations & code of practice

Presented by
Building and Energy

NEW LEGISLATION

Commencing from 14 May 2018 -

- Electricity (Licensing) Regulations 1991- R.55
- Code of Practice for Persons Working On or Near Energised Electrical Installations – published in Gazette on 1 December 2017
- Occupational Safety and Health Regulations 1996 amended

JUSTIFICATIONS FOR CHANGE

- No improvement since safe work practices Code was published in 2008
- Evidence that some EW/ECs are cutting corners
- Constant reminders about live work dangers and the importance of isolating circuits are being ignored
- Lessons from recent investigations / fatalities
- Too many serious shocks, arc-flash incidents and electrocutions involve electricians doing work on energised installations



2016/17 SAFETY REPORT CARD

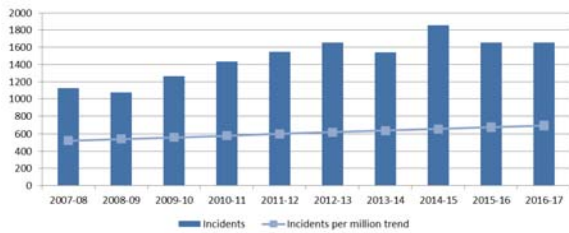
Incident type	Number
Electrical fatality	0
Electrical accident	17
Electric shock	1,639
Total	1,656

Accident - means hospitalisation or medical treatment (other than ECG check)

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirns.wa.gov.au

REPORTED INCIDENT TREND

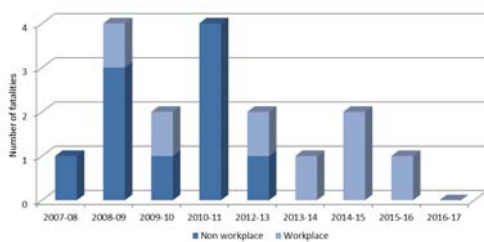
Electrical incidents in WA – 2007-08 to 2016-17



Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirns.wa.gov.au

FATALITIES

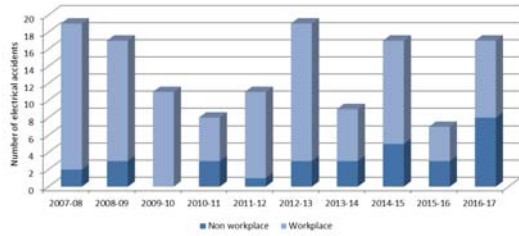
Workplace and non-workplace electrical fatalities in WA



Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirns.wa.gov.au

ELECTRICAL ACCIDENTS

Workplace and non-workplace electrical accidents in WA



Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmir.wa.gov.au

JUSTIFICATIONS FOR CHANGE



Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmir.wa.gov.au

JUSTIFICATIONS FOR CHANGE



Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmir.wa.gov.au

REGULATION CHANGES (1)

Electricity (Licensing) Regulations 1991

New Regulations 54 and 55 cover electrical work on or near electrical **installations**

- R. 55(1) creates an offence if electrical work is carried out on or near an energised part of an electrical installation unless the conditions set out in r. 55(2) are satisfied.

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmir.wa.gov.au

REGULATION CHANGES (2)

- **'Energised'** in relation to a part of an electrical installation, means connected to a supply of electricity to the part, whether or not electricity is flowing through any part of that part
- **'De-energised'**, in relation to a part of an electrical installation means separated from each supply of electricity to the part in such a way that the part cannot be inadvertently energised;

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmir.wa.gov.au

REGULATION CHANGES (3)

- **'Near'** does not refer to any given distance. If an uninsulated energised part can be reached by a person's hand or by anything in contact with a person working in the area, or a conducting object could be dropped on to an uninsulated energised part, that person is 'near'.

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmir.wa.gov.au

REGULATION CHANGES (4)

R. 55(2) provides for work on energised installations if:

- A risk assessment has been completed by a competent person familiar with the task; and
- The person is satisfied that –
 - There is no reasonable alternative to carrying out the work while the part of the installation is live; and
 - The risks identified are or can be reduced to as low as reasonably practicable; and
 - The work can be carried out safely; and
 - A Safe Work Method Statement (SWMS) for the work has been completed complying with R. 3.143(4) of the OSH Regulations 1996; and
 - Suitable personal protective equipment and safety equipment are used.

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirr.wa.gov.au

REGULATION CHANGES (5)

- The **risk assessment** must not be superficial
- The **'competent person'**, in relation to the doing of anything, means a person who has acquired through training, qualification, or experience, or a combination of those things, the knowledge and skills required to do that thing competently

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirr.wa.gov.au

REGULATION CHANGES (6)

- Electrical contractors and in-house electrical installation work licence holders may develop generic safe work method statements (**SWMS**) for the more common types of electrical work they carry out.
- Generic SWMS forms must be customised for each individual premises by identifying the work tasks, site and the when the work is to be carried out

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirr.wa.gov.au

REGULATION CHANGES

R. 55(3) provides justifications to support a decision to perform electrical work on, or near energised parts:

- For the work to be carried out effectively; or
- Otherwise the health and safety of one or more persons would be put in imminent and significant danger; or
- In order to test, measure the performance of, or detect or locate faults or defects in part of the installation

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirr.wa.gov.au

REGULATION CHANGES

- **'Effectively'** needs careful consideration of the work site circumstances and the function of the electrical circuit or equipment involved.
- Work near energised parts is permissible if rated barriers are installed to prevent contact.
- Installing such barriers could be work on energised parts and may require de-energisation during their installation

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirr.wa.gov.au


REGULATION CHANGES

R. 55(4) creates an offence if an EC or an in-house licensee carries out or causes electrical work to be carried out under r. 55(2) unless they ensure that –

- The work is carried out in accordance with the SWMS; and
- If not, the work stops and does not resume until the SWMS is complied with; and
- The safety and personal protective equipment is used properly by each person carrying out the work

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirr.wa.gov.au

**CODE OF PRACTICE FOR PERSONS
WORKING ON OR NEAR ENERGISED
ELECTRICAL INSTALLATIONS**



Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirs.wa.gov.au

CODE OF PRACTICE (1)

- It provides more detailed information about R.55 compliance
- The Code applies to all work on electrical equipment operating at low but not to ELV or work on the four network operators' distribution networks
- A copy of the Code is available on the EnergySafety website

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirs.wa.gov.au

CODE OF PRACTICE (2)

- Clause 3 of the Code provides information about the persons collectively responsible for ensuring electrical work is carried out under de-energised conditions in all circumstances except as permitted by R.55
- Those persons are essentially the duty holders described in the Occupational Safety and Health Regulations 1996

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirs.wa.gov.au

Occupational Safety and Health Regulations 1996

New regulations 3.59A and 3.59B

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirr.wa.gov.au

OSH REGULATIONS (1)

R.3.59A - Electrical Work

- Requires duty holders to ensure that before electrical work* is carried out on a part of an installation the part is tested by a competent person to ascertain if it is energised or not and if energised to arrange for a competent person to de-energise it.

*does not apply to electrical work performed under R.55(2) of the E(L)R 1991

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirr.wa.gov.au

OSH REGULATIONS (2)

R.3.59B. - Work In Roof Spaces

- requires, before any work is carried out in the roof space of a residential premises, that all energised equipment (including cables) are de-energised by a competent person.

A **roof space** is immediately under the roof. Not all buildings have ceilings. If there is a ceiling, it is the space between it and the roof but does not include any habitable rooms in this space.

Buildings affected are Class 1, Class 2 or Class 10a under the Building Regulations 2012 (i.e. residential only)

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirr.wa.gov.au

OSH REGULATIONS (3)

R.3.59B(5) – exceptions allowed

- May remain energised to the extent required for testing, servicing or commissioning appliances (e.g. gas heater, air conditioner, antenna)
- But only after:
 - a risk assessment; and
 - preparation of a SWMS; and
 - the competent person is satisfied the work can be performed safely

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmir.wa.gov.au

NEW TECHNOLOGY & RISKS

Battery Energy Storage Systems – BESS

- These devices can have output terminals up to 600 V dc
- Batteries can deliver huge fault currents and Arc flash temperatures from such faults can approach the temperature of the surface of the sun

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmir.wa.gov.au

NEW TECHNOLOGY & RISKS

Solar panels

- The output terminals of each panel will be live during daylight unless the panel is covered with a light-blocking material
- Changing the roof-top DC isolator is energised work if series-connected panels produce at LV

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmir.wa.gov.au

CUSTOMER/CLIENT RELATIONS

- Warn them at the outset turning off the electrical supply will be required to be de-energised
- Ask about risks they will incur if the power is off
- Work with them to plan the best and least inconvenient time for the work

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmir.wa.gov.au

BUILDING & ENERGY ASSISTANCE

- Work with Electrical Contractors to apply the new regulations
- Provide a letter from Director of Energy Safety for electrical workers to give to customers and clients to explain the new regulations

Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmir.wa.gov.au



Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmir.wa.gov.au



Government of Western Australia | Department of Mines, Industry Regulation and Safety | www.dmirs.wa.gov.au
