1. Definitions

Definition

Authorised Person

Only person, authorised by the Manager, Electrical Engineering, to undertake Electrical Work and who have a current and appropriate electrical worker’s licence from the Electrical Licensing Board of Western Australia and/or is duly Authorised under the Electrical (Licensing) Regulations 1991 can undertake works as defined by the legislation.

Where an Electrical Worker is not employed directly by the University, they must be associated with an Electrical Contractor in order to perform electrical work on University premises.

Clear Access

Unimpeded access to designated area, with a minimum clearance of 900mm. from opened doors.

Competent Person

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.

Construction Site

Means a workplace at which construction work is done and includes any adjoining area where plant or other materials used or to be used in connection with that work are located or kept and over which the main contractor has control for the purpose of doing the construction work.

Cord set

An assembly of a plug intended for connection to a mains socket outlet, a sheathed flexible cord and a cord extension socket, or appliance connector.

Curtin University

Curtin University of Technology including any of its campus locations.

Duty of Care

As detailed under Section 19 of the Occupational Safety and Health Act 1984.

Electrical Appliance

Means a device in which electrical energy is consumed or substantially changed in character by conversion into heat, sound, motion, light or otherwise may be classified as:
Definition

- **Fixed/stationary** – an appliance which is in normal use, fastened to a support, or is otherwise secured in a specific position, or is of such size or function as to be difficult or unlikely to be moved from one place to another, e.g. large workshop machinery (lathe, band saw, etc.) oven, refrigerator;
- **Movable** – an appliance that can be moved readily from one place to another by unplugging from a socket outlet, but that is not moved during operation e.g. cathode ray oscilloscope, electronic balance, personal computer, printer, etc;
- **Hand-held** – portable equipment that is intended to be held in the hand during normal use e.g. electric drill, angle grinder (excludes battery operated equipment); and
- **Portable** – equipment that is connected to an electrical supply and intended to be moved when in use e.g. electric arc welder, electric high pressure water cleaner.

**Electrical Shock**

Contact of a human body with any source of voltage high enough to cause harm. Generally Voltages exceeding 50 Volts AC or 120 Volts DC (Ripple free) and caused through Direct Contact or Indirect Contact with the supply voltage.

- **Direct Contact** - Contact with a conductor of conduction part that is live in normal service;
- **Indirect Contact** - Contact with a conductive part that is not normally live but has become live under fault conditions (because of insulation failure or some other cause).

All incidents that involve an electric shock are a mandatory item for reporting.

**Electrical Contractor**

Means a person who carries on business as an electrician but does not include an electrician when acting in the capacity of an employee of an electrical contractor.

**Electrical Accident**

Means an accident:
- That results from a sudden discharge of electricity or that otherwise has, or is likely to have, an electrical origin; and
- That causes, or is likely to cause, danger to life, a shock or injury to a person or loss of or damage to property.

**Electrical Installation**

Electrical equipment installed for the purposes of conveyance, control, measurement or use of electricity, where electricity is or is to be supplied for consumption.

**Electrical Portable Outlet Device** (Power Boards and EPODs)

A device, other than a cord set, having a single means of connection to a low voltage supply, and one or more outlet facilities. It may incorporate a reeling or coiling arrangement.

**Electrical Supply - Voltage**

Differences of potential normally existing between conductors and earth as follows:
- Extra-low voltage: Not exceeding 50 V a.c. or 120 V ripple-free d.c.;
- Low voltage: Exceeding extra-low voltage, but not exceeding 1 000 V a.c. or 1 500 V d.c.; and
- High voltage: Exceeds Low voltage.

**Electrical Work**

Work on electrical machines or instruments, on an electrical installation or on electrical appliances or equipment to which electricity is supplied or intended to be supplied at a nominal pressure exceeding 50 volts alternating current or 120 volts ripple free direct current whether or not the thing on which the work is performed is part of, or is connected to or to be connected to, any distribution works or private generating plant and, where work is performed on any appliance, whether or not electricity is supplied or may be supplied thereto through an electric plug socket or socket outlet.

**Electrical Worker**

A person who carries out electrical work and/or is mandated to do so in accordance with: Electricity (Licensing) Regulations 1991.

**Socket Outlet**

A device for fixing or suspension at a point, and having contacts intended for making a detachable connection with the contacts of a plug.

**Hazard**

Anything that may result in injury or harm to the health of a person.

**Hostile Environment**

A workplace where electrical equipment or flexible supply cord may, in its normal use be subject to conditions that are likely to result in damage.

**Non-Hostile Environment**

A dry, clean workplace where the electrical equipment or flexible supply cord, in its normal use, is not subject to conditions that are likely to result in damage.

**Out of Service**

A tag used to prevent damage to plant and equipment, and/or prevent people from using or operating equipment that is faulty and in need of repair.

**Residual Current Devices (RCD)**

An electrical safety device specially designed to switch electricity off when electricity "leaking" to earth reaches a pre determined level that may be harmful to a person.

**SCC Centre**

Services Coordination Call Centre
2. Minimum Standards

These minimum standards are compulsory for all University staff, students and visitors to ensure safety is maintained. Section 3 shall be treated as a guide to assist with meeting these standards.

2.1 All electrical incidents and hazards shall be reported immediately to the Manager, Electrical Engineering, or nominee. The incident or hazard shall be recorded on the University’s online incident/hazard reporting system within 24 hours.

2.2 Any person receiving an electrical shock shall undergo a medical assessment by a qualified medical practitioner.

2.3 All electrical appliances and RCDs shall be maintained to ensure a duty of care under Section 19 of the Occupational Safety and Health Act 1984 is complied with.

2.4 All hand-held or portable appliances shall be used in conjunction with RCD protection.

2.5 Sufficient numbers of socket outlets shall be available to ensure safe operation of electrical equipment. Specifically, they shall:
   • Have access for any switches accessed frequently;
   • Be positioned such that power and extension cords do not create a Hazard;
   • Appropriate cable management for appliances can be achieved.

2.6 When power boards and/or extension cords are required:
   • A maximum of one power board and one extension cord to be used for any one socket outlet;
   • Double adaptors shall not be used.

2.7 Power boards shall be individually switched or fitted with safety shuttered where:
   • They are used in a Hostile Environment;
   • Electrical equipment is frequently plugged in and out.

2.8 Any faulty or non functioning devices or equipment shall be Tagged Out Of Service® and reported to the persons Supervisor or Manager to arrange repairs.
3. Guidelines

The Office of Facilities Management shall be responsible for the maintenance, alteration, addition, testing, and repair of Electrical Installations and shall maintain a register of all, Electrical Contractors and Electrical Workers on campus associated with the maintenance repair off or addition to Curtin’s Electrical Installations.

All staff, students, contractors and visitors are strictly prohibited from working on, or instructing any person to work on, electrical installations and electrical appliances or equipment unless suitably authorized, qualified and mandated to do so in accordance with the: Electricity (Licensing) Regulations 1991.

Table 3.1 Guidelines for all Curtin Staff, students, visitors for the implementation of the ‘minimum standards’

<table>
<thead>
<tr>
<th>Minimum Standard</th>
<th>All Curtin Staff, students and visitors</th>
<th>Office of Facilities Management</th>
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| 3.1 All electrical accidents, incidents and hazards shall be reported | Report all electrical incidents and hazards:  
• Immediately to the Manager Electrical Engineering, on extension 2020.  
• Within 24 hours complete the online incident/hazard reporting system, refer guidelines for reporting and investigation requirements are contained in the EduSafe “Making the Workplace Safe” document. | • Report Electrical Accidents to the Office of Energy  
• Immediately investigate all reported electrical accidents, incidents and hazards to ensure safety. |
| 3.2 Any person receiving an electrical shock | • For all emergencies follow the University’s Emergency Procedure  
• Refer to an approved medical practitioner after receiving any electrical shock for a medical assessment. Support is available through the University’s Health Services on extension 7345. | • Ensure medical treatment sought. |
<p>| 3.3 Hand-held or portable appliances | • Use hand – held portable Electrical Equipment/Appliance/Apparatus with power supplied through an RCD protected socket outlet. | • Ensure all socket outlets are protected by non-portable RCDs in accordance with Regulation 3.60 of the OS&amp;H Regulations 1996 (WA), and that these outlets are clearly signed as fitted with RCD protection. |</p>
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<td>3.4 Electrical Appliances</td>
<td>• Ensure a Duty of Care is maintained under Section 19 of the Occupational Health and Safety Act in respect of Electrical Appliances. For the purpose of the Act, WorkSafe WA deem compliance with AS 3760 in terms of “Testing and Tagging” as meeting a Duty of Care requirement under the Act.</td>
<td>• Provide advice to Faculties, Divisions and Schools to assist them in meeting the requirements of “Duty of Care” for Maintenance of Faculties, Divisions and Schools electrical appliances.</td>
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<td>3.4 Residual Current Devices (RCDs)</td>
<td>• Ensure the use of RCDs when using any hand held or portable electrical appliances.</td>
<td>• Inspect and test all fixed residual current devices in accordance with AS/NZS 3760. • Ensure test and inspection records are maintained for a period of seven years.</td>
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<td>3.5 Sufficient number of socket outlets</td>
<td>• Report matter to Supervisor or Manager if insufficient power outlets are available in a work area; • Ensure Clear Access to all socket outlets that require frequent access, i.e. create a safe work environment and in addition prevents manual handling injuries when accessing socket outlets; • Cables are managed to avoid trip hazards and/or damage to cables, • Furniture is positioned to take the best advantage of available socket outlets within the area.</td>
<td>• Regularly check for Hazards ensuring clearance to socket outlets. • Discuss area specific safety issues relating to insufficient socket outlets are highlighted with building occupants.</td>
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<td>3.6 Power boards and/or extension cords</td>
<td>Generally where possible the use of power boards and/or extension cords should be avoided. Where this cannot be achieved the following applies: • Position all electrical cords in a neat and tidy manner ensuring cables are managed to avoid hazards and/or damage to cables; • Only use one single extension board on any double socket outlet; • Ensure power boards and/or extension cords are used in locations which are free of liquids and other hazardous materials; If the Electrical Equipment is used in a Hostile Environment, or is frequently plugged in and out, ensure Individually Switched or Safety Shuttered power boards are in use or made available.</td>
<td>• Ensure any power boards and extension cords are in accordance with Australian Standards. • Ensure only one power board for any socket outlet • Verify no double adaptors are in use.</td>
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### Minimum Standard

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<td>Hand-held portable devices shall not be used in conjunction with a power board.</td>
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<td>3.7 Non functioning electrical devices or equipment</td>
<td>Report any faulty or non functioning electrical devices or equipment to the relevant supervisor or manager.</td>
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### REVISION HISTORY:

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<th>Revision Ref. No.</th>
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### 4. References

- AS/NZS 3000 Wiring Rules, Standards Australia
- AS/NZS 3760 In-service safety inspection and testing of electrical equipment
- Occupational Safety and Health Act 1984
- Occupational Safety and Health Regulations 1996 (WA)
- Electricity Act 1945, Reprint 7: The Act as 2 May 2008
- Electricity (Licensing) Regulations 1991, Electricity Act 1945 (WA)
5  Schedule A - Portable Electrical Testing and Tagging Guideline

PROCEDURES

5.1  Electrical Equipment Requiring Testing and Tagging

5.1.1 Testing and tagging shall be undertaken in accordance with the provisions of AS/NZS 3760 In-service safety inspection and testing of electrical equipment for 'portable electrical equipment' that is used:

5.1.2 For construction and/or maintenance work; or
5.1.3 In a hostile operating environment.
5.1.4 Testing and Tagging shall be undertaken by a 'competent person'.
5.1.5 Testing records shall be maintained for a period of 7 years.

5.2  Electrical Equipment used in a Non-Hostile Operating Environment (such as an office Environment)

Appropriate control measures shall be employed to ensure a duty of care is met for the University and the operators of all electrical equipment. Irrespective of tests that may be undertaken on equipment ongoing checks shall include a combination of:

- Regular visual inspections by the user(s);
- Formal visual inspections as part of regular workplace inspections;
- Regular maintenance and servicing of equipment;
- Use of RCD’s or safety switches;
- Appropriate training and use of Standard Operating Procedures.

5.3  Serviced or Repaired Electrical Equipment

5.3.1 Electrical equipment that has been serviced or repaired shall be inspected and tested in accordance with the provisions of AS/NZS 3760 prior to the equipment being returned to service.
ELECTRICAL INCIDENT

1. Dial 5 Medical Emergency Security and Campus Health Service
   - Medical treatment is necessary due to possible secondary issues in the ensuing 24 hours
   - An ECG must be sought as soon as practically possible after an Electric Shock

2. Immediately report to Manager Electrical Engineering (Properties) via ext. 2020
   - Report to Energy Safety (formerly Office of Energy)

3. Immediately report to Responsible Officer/Project Manager (Contractors) or Supervisor/Manager (Curtin Staff)
   - Report to EduSafe
     - Complete on-line Incident Report and carry out Accident Investigation
     - [Person involved, Responsible Officer/Supervisor, Office of Energy, EduSafe, Safety & Health Representative]