Health and Safety - Electrical Safety Procedure

Section 1 - Summary

(1) This Procedure:

a. Ensures that Victoria University (VU) has a system established to eliminate or minimise risk of injury, as far as reasonably practicable, to all employees, students, contractors and volunteers from electrical hazards.
b. Ensures electrical installation and maintenance work is carried out by qualified persons and compliance requirements are met for all electrical equipment and electrical fittings.
c. Ensures that all electrical fittings and installations are safe for use.
d. Provides instruction on controlling electrical hazards for all tasks related to work at the University or to any activity under the University's control.

Section 2 - Scope

(2) This Procedure applies to all workplaces owned, managed, or controlled by Victoria University and any place where work is performed by a worker on behalf of the University.

(3) This Procedure does not address the technical details which qualified electricians and electronic technicians are expected to know.

Section 3 - Policy/Regulation

(4) Health and Safety Policy

Section 4 - Procedures

Part A - Roles/Responsibilities

Roles	Responsibility
Everyone working at VU	- Report any hazards or faults found with electrical equipment or fittings. - Report any faulty electrical equipment or source to Facilities Services immediately and complete a Hazard report via ELUMINA QUICKSAFE. - Place 'Out of Order' tag or similar notice on any equipment suspected of being faulty. - Do not use any faulty equipment or equipment that is identified as 'Out of Order.'
Executives, Directors and Senior Managers	- Ensure the requirements of this procedure are implemented and complied with in their areas of responsibility.

Roles	Responsibility
Managers and Supervisors	- At regular intervals review and monitor all electrical hazards in their area of responsibility. - Monitor information on hazards in the use of electrical equipment and fittings. - Identify electrical equipment used as part of specific job roles, ensure licensing and competency is described within job descriptions as required. - Purchase electrical equipment that is fit for purpose, meets the requirements of appropriate Australian Standards and the pre-purchase checklist provided by the University, prior to ordering any new plant or equipment. - Ensure instruction, training and supervision is provided to all employees, students and others to eliminate or minimise hazards present in the use of electrical equipment, this includes conducting risk assessments, developing and ensuring compliance with safe operating procedures and providing competency checks. - Ensure the maintenance of electrical equipment is in line with manufacturer's recommendations and Australian Standards. - Instruct and monitor staff with responsibility for electrical equipment in the requirements of safe management of all plant and equipment. - Ensure new electrical appliances are inspected and a tag with first 'in service' date is attached. - Where it is relevant, provide appropriate 'Lock-out tag-out' set for use with the equipment in their area of control, train employees in its use and monitor the effectiveness of the system.
OHS Team	- Provide advice on minimising hazards in the purchase, installation, maintenance and use of electrical equipment and fittings. - Refer staff purchasing equipment to suitably qualified professionals for advice on the most suitable equipment for the intended purpose where specific expertise is required and unavailable. - Ensure distribution of all information on electrical equipment safety controls, issue alerts and improve safe operating procedures where necessary. - Maintain records on electrical testing and tagging of university equipment.
Facilities Operations	- Ensure suitably qualified people are conducting all testing and tagging of electrical equipment i.e. University preferred providers are engaged to test and tag portable electrical equipment, as described in the appropriate Australian Standard. - Ensure all contractors comply with all relevant VU OHS policies and procedures while working on VU sites and facilities.
VU staff engaging contractors	- Ensure suitably qualified people are engaged when any electrical work is required. - Ensure compliance to the Health and Safety - Permit to Work Procedure. - Ensure electrical contractors comply with all other related health and safety policies and procedures, and Electrical Safety Act while working in VU sites and facilities.

Part B - Procedures

(5) Uncontrolled contact with electricity can pose a serious risk of death, electric shock or other injury caused directly or indirectly by electricity. The most common electrical risks and causes of injury are:

a. electric shock causing injury or death. The electric shock may be received by direct or indirect contact, tracking through or across a medium, or by arcing. For example, electric shock may result from indirect contact where a conductive part that is not normally energised becomes energised due to a fault (e.g. metal toaster body, fence);
b. arcing, explosion or fire causing burns. The injuries are often suffered because arcing or explosion or both occur when high fault currents are present;
c. electric shock from 'step-and-touch' potentials (step voltage between the feet of a person standing near an energized grounded object and touch voltage between the energized object and the feet of a person in contact with the object);
d. toxic gases causing illness or death. Burning and arcing associated with electrical equipment may release various gases and contaminants;
e. fire resulting from an electrical fault.

Hazard Management of Electrical Equipment

(6) All electrical equipment owned and operated within the University must have basic risk management steps taken including:

a. Purchase of equipment which is fit for its intended use, as agreed on the pre-purchase checklist by an appropriately delegated manager.
b. Initial visual inspection on receipt of new equipment and a tag with first 'in service' date is attached.
c. Regular inspection, particularly prior to use.
d. Electrical test and tag on equipment as per the 'Electrical Equipment Testing & Tagging Guide ' or a specific equipment risk assessment.
e. Lock-out and tag to indicate damaged or out of commission equipment as per the 'Health and Safety - Lock-Out and Tag-Out Procedure'.
f. Maintenance in a condition fit for use as specified by the manufacturer or a risk assessment.
g. Repair or disposal of equipment when damaged or no longer fit for purpose.

Pre-Purchase Risk Management

(7) Before introducing electrical equipment into the workplace, whether new or secondhand, purchased or hired, received from a donation or any other procurement process, there must be a risk assessment conducted prior to installation and use. Consideration of all relevant items from the pre-purchase checklist is required.

(8) It is mandatory to consider all the items listed below:

a. Is the equipment suitable for its intended use, including suitability for the environment it will be used in?
b. Could extra-low voltage electrical equipment, such as a battery-operated tool rather than a tool that is plugged into mains electricity, fit the purpose intended?
c. Do manufacturer's specifications of the equipment support the suitability of the equipment intended to use and the environment intended to use it in?
d. Has a risk assessment been completed documenting the hazards and risks associated with storage, transport, installation and/or commissioning of the equipment including precise details of the safety controls to be introduced with the equipment or the work environment?
e. Effective residual current devices (RCDs) must be used in certain high-risk environments as defined in the regulations.

Installation

(9) Controls to manage the risks to health and safety associated with electrical risks at the workplace include:

a. Ensure power circuits are protected by the appropriate rated fuse or circuit breaker to prevent overloading.
b. If the circuit keeps overloading, do not increase the fuse rating as this creates a fire risk due to overheating; instead ensure the circuit is not re-energised until the reason for the operation has been determined by a competent person. Contact Facilities Services for assistance.
c. Arrange electrical leads so they will not be damaged. So far as is reasonably practicable, avoid running leads across the floor or ground, through doorways and over sharp edges, and use lead stands or insulated cable hangers to keep leads off the ground.
d. Where vehicles or heavy items may need to travel over cables, cable protection ramps or similar protection must be used.
e. Do not use leads and tools in damp or wet conditions unless they are specially designed for those conditions.
f. Ensure circuits where portable electrical equipment can be connected are protected by appropriate RCDs that

are tested and maintained.

g. If RCDs, circuit breakers or other over current protective devices including fuses are triggered into operation, ensure circuits are not re-energised until the reason for the operation has been determined by a competent person.
h. Ensure that all electrical installation work and any repairs to the electrical installation are only undertaken by licensed electricians working for Registered Electrical Contractors.
i. Ensure the electrical contractor provides Certificates of Electrical Safety for all construction wiring including switchboards, each certificate should detail what work the certificate covers.

Inspection, Testing and Tagging

(10) New electrical equipment that has never been put into use (i.e. other than second-hand equipment) does not have to be tested before first use. New electrical equipment, however, should still be visually inspected to ensure that no damage occurred during transport, delivery, installation or commissioning.

(11) The date the electrical equipment was placed into service should be recorded on a fitted tag stating:

a. that the equipment is 'new to service';
b. the date of entry into service;
c. the date when the first electrical safety test is due;
d. that the equipment has not been tested.

(12) Fitting a 'new to service' tag is an administrative task that can be carried out by the person purchasing or receiving the device.

(13) Second-hand or used electrical equipment must be tested and tagged to the relevant Australian Standard prior to being used anywhere in the University. Electrical equipment hired must have a test and tag label, provided by the owner verified before being used. In case hired equipment is used longer than 3-month period, it must be tested and tagged again. Testing and tagging of electrical equipment must be undertaken by an approved provider or certified competent person at regular intervals as decided through risk assessment which considers the use, location, environment and information from manufacturers as well as relevant Australian Standards.

(14) Unsafe electrical equipment must be disconnected or isolated from its electricity supply. It must not be reconnected unless it is repaired by a competent person or tests by a competent person have confirmed it is safe to use. Alternatively, it could be replaced or permanently removed from use. When issues or faults are detected a tag-out system must be used to ensure unsafe electrical equipment is not operated.

Maintenance of Electrical Equipment

(15) All electrical apparatus should be considered energised unless it is specifically tested to show that it is de-energised. Testing and maintenance of electrical equipment or fittings must be done by authorised persons. Lock-Out and Tag-Out Procedures are to be employed to ensure that the apparatus remains de-energised while being worked on. Testing of energised electrical equipment must be done only by authorised and qualified persons in limited situations and with appropriate risk management.

(16) A permit to work system must be implemented to avoid any inadvertent energising of plant that has been isolated but not physically disconnected from the electrical supply.

Working near power lines

(17) Risk assessments must be completed to specify safe clearance areas, from work on or near overhead and underground power lines and work must be completed only by licensed electricians working for Registered Electrical

Contractors. Make sure there is always a safe distance between live power lines and cranes, concrete booms, earth moving equipment, elevating work platforms, hoists, scaffolds, false work and portable ladders by strictly observing "no go zone" safe clearances. No go zones must be established with clearly visible barriers that will stand up in the prevailing weather conditions.

(18) High risk electrical work must be controlled by a permit to work system, the risk assessment must look at all hazards involved in the job to be completed including electrical, working at heights, outdoor environmental and site conditions and/or confined spaces.

Section 5 - HESF/ASQA/ESOS Alignment

(19) HESF: Standard 2.3 Wellbeing and Safety; 7.3 Information Management.

(20) Compliance Standards for NVR Registered Training Organisations and FPP Requirements 2025: Standard 20 Compliance with Laws.

(21) National Code of Practice for Providers of Education and Training to Overseas Students 2018 (Cth): Standard 6 Overseas Student Support Services.

(22) This Procedure also meets ISO 45001:2018 Clause – 6.1, 8.1.2, 9.

Section 6 - Definitions

(23) Competent person:

a. For electrical work (other than electrical testing) on energised electrical installations – a licensed or registered electrician or any other person permitted to carry out or supervise electrical work under relevant State or Territory legislation.
b. For any other case (including electrical testing) – a person who has the knowledge and skills, acquired through training, qualification and/or experience, to carry out the tasks required. Minimum qualifications:
    i. for testing and tagging: Parts I & II Certificate or equivalent TAFE or similar qualifications
    ii. for work on research/teaching electrical equipment (including energized equipment) Tertiary or TAFE certification as an electrical/electronic technician or similar qualifications.

(24) Electrical equipment: Any apparatus, appliance, cable, conductor, fitting, insulator, material, meter, or wire that:

a. is used for controlling, generating, supplying, transforming, or transmitting electricity at a voltage greater than extra-low voltage
b. is operated by electricity at a voltage greater than extra-low voltage
c. is part of an electrical installation located in an area in which the atmosphere presents a risk to health and safety from fire or explosion

(25) Electrical work: work on or near any of the following:

a. connecting electricity supply wiring to electrical equipment or disconnecting electricity supply wiring from electrical equipment
b. installing, removing, adding, testing, replacing, repairing, altering, or maintaining electrical equipment or an electrical installation.
c. extra low voltage (ELV) ELV is defined in AS/NZS 3000 Wiring Rules as "Not exceeding 50 V (AC) or 120 V ripple-

free (DC)".

d. a low voltage means voltage that exceeds extra-low voltage and does not exceed 1000 volts alternating current (1000 V AC) or 1500 volts direct current (1500 V DC).
e. a high voltage means voltage that exceeds low voltage.

(26) Energized: connected to a source of electrical supply or subject to hazardous induced or capacitive voltages.

(27) Isolated - disconnected from all sources of electricity supply and rendered incapable of being made energised without premeditated and deliberate action.

(28) Residual current device (RCD): A device intended to isolate supply to protected circuits, socket outlets or electrical equipment in the event of a current flow to earth that exceeds a predetermined value. The RCD may be fixed or portable.

Status and Details

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Effective Date	10th January 2023
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