Health and Safety - Electrical Safety Procedure

Section 1 - Purpose / Objectives

(1) Ensure that Victoria University 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.

(2) Describe the variety of electrical hazards that may be present in the University.

(3) Ensure electrical installation and maintenance work is carried out by qualified persons and compliance requirements are met for all electrical equipment and electrical fittings.

(4) Provide instruction on controlling electrical hazards for all tasks in relation to work at the University or in relation to any activity under the control of the University.

Section 2 - Scope / Application

(5) This procedure applies across the University.

Section 3 - Definitions

(6) Nil

Section 4 - Policy Statement

(7) Nil

Section 5 - Procedures

Part A - Roles/Responsibilities

Roles	Responsibility
Everyone working at VU	- Take care to undertake work with electrical equipment and fittings within their competency and licensing limitations. - Follow manufacturer's instructions on safe use and appropriate use of all electrical equipment. - Use electrical equipment only within the parameters of established safe operating procedures. - Attend training to establish competency in the use of plant and equipment particularly where competency testing or licensing is required. - Conduct pre-start inspections on electrical equipment prior to commencing any work. - Report any hazards or faults found with electrical equipment or fittings and 'lock out and tag out' faulty equipment to ensure others are aware of the fault immediately. - Notify verbally and in writing, using the VU OHS Incident Recording System, any hazard with potential to, or incident which has, caused injury, illness or damage to the work environment.

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Roles	Responsibility
Executives and Leaders	- Encourage discussion and introduction of innovative identification and control of electrical equipment hazards. - Monitor information on hazards in use of electrical equipment and fittings. - Ensure availability and allocation of safe electrical equipment and fittings that are fit for the purpose for which it will be used.
Managers and Supervisors	- Identify specific electrical equipment that will be used as part of specific job roles, ensure licensing and competency is described specifically within job descriptions as required. - Purchase electrical equipment that is fit for purpose, meets the minimum 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, displaying safe operating procedures and providing competency checks. - Maintain electrical equipment in line with manufacturer's recommendations, risk assessments 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. - 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.
Teachers, Academic Staff and Researchers	- Provide induction, instruction, training and supervision to minimise hazards relating to use of electrical equipment. - Supervise pre-start inspections of electrical equipment to be used in University activities. - Research within industry and other tertiary education providers the most appropriate equipment for its intended purpose prior to purchase. - Purchase only electrical equipment that is fit for purpose, meets the minimum requirements of appropriate Australian Standards and the pre-purchase checklist provided by the University, prior to ordering any new equipment. - Ensure new electrical appliances are inspected and a tag with first 'in service' date is attached. - Notify verbally and in writing, using the VU OHS Incident Recording System provided, of any hazard with potential to, or incident which has, caused injury, illness or damage to the work equipment or environment.
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 most suitable equipment for the intended purpose where specific expertise is required and unavailable. - Ensure distribution of any information on electrical equipment safety controls, issue alerts and improve safe operating procedures where necessary. - Monitor compliance with this procedure and all aspects of electrical equipment safe purchase, installation and use at the University.
Facilities Manager	- Ensure suitably qualified people are conducting all testing and tagging of electrical equipment, University preferred providers are engaged to test and tag portable electrical equipment, as described in the appropriate Australian Standard. - Prepare whole of University schedule by Campus and Building for a controlled program of testing and tagging of portable electrical equipment.

Part B - Procedures

(8) 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;

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

(9) 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. Inclusion on the Electrical Equipment Register.
c. Initial visual inspection on receipt of new equipment and a tag with first 'in service' date is attached.
d. Inspection on a regular basis, particularly prior to use.
e. Electrical test and tag on equipment as per the ' Electrical Equipment Testing & Tagging Guide ' or a specific equipment risk assessment.
f. Lock-out and tag to indicate damaged or out of commission equipment as per the ' HSW - Lock-Out and Tag-Out Procedure '.
g. Maintenance in a condition fit for use as specified by the manufacturer or a risk assessment.
h. Repair or disposal of equipment when damaged or no longer fit for purpose.

Pre—Purchase Risk Management

(10) Prior to introducing electrical equipment into the workplace whether it is new or second hand, purchased or hired, received from a donation or any other procurement process there must be risk minimisation conducted. Consideration of all relevant items from the pre-purchase checklist is required.

(11) 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 you intend to use and the environment you intend to use it in?
d. Have you completed a risk assessment 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

(12) 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, don't 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.
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. Don't 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 properly 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

(13) 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.

(14) 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.

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

(16) Second-hand or used electrical equipment must be tested and tagged to Australian Standard prior to being used anywhere in the University. Electrical equipment that has been hired must have the test and tag, provided by the owner, verified prior to being used. 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.

(17) 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

(18) 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.

(19) 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

(20) 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.

(21) 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 6 - Guidelines

(22) Electrical Equipment Testing & Tagging Guide

Status and Details

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