Facilities, Assets & Infrastructure
Subsidiary Policy & Procedure:

MANAGING ELECTRICAL HAZARDS

Document Control			
Policy Manager:	Strategic Assets Manager	**Date First Approved:**	October 2019
Policy Owner:	Executive Director, Infrastructure & Assets	**Authorised by:**	Executive Director, Infrastructure & Assets
Category:	Operational	**Date Last Revised:**	N/A
Sub category:	Workforce	**Next Review Date:**	September 2020
Relates to NZQA Tertiary Evaluation Indicator(s):		4. Governance & Management 5. Compliance	

1. Purpose & Scope

The purpose of this subsidiary policy is to clarify the responsibilities of our staff members and contractors when working near electrical hazards

This scope of this policy includes all Wintec staff, students, contractors and visitors.

2. Policy Statement

Wintec has a large, complex and varied business which produces a range of risks to staff, students, contractors and visitors. Wintec has a legislative responsibility to ensure all significant risk is controlled to ALARP (As Low as Reasonably Practicable), Wintec achieves this by ensuring all risk is assessed by competent people using an agreed methodology as per the requirements of the Health & Safety at Work Act 2015.

The objectives of effective electrical risk management at Wintec are to:

- achieve or surpass the requirements of the legislation,
- ensure that electrical risk is assessed, and mitigation controls are put in place to reduce the likelihood of people, environment, assets or reputation being adversely affected.
- practice continuous improvement, and
- do so in a fiscally responsible and cost-effective manner.

Wintec is committed to ensuring that no persons are affected adversely as a result of sub-standard management of electrical hazards.

3. Key Roles & Expectations

This subsidiary policy and related procedure are managed by the Infrastructure & Assets Team (with the exception of ITC assets, which are tagged and tested by the Information and Technology Services (ITS) team). While staff from the trades department are primarily responsible for its successful implementation, there is a requirement on all Wintec staff to familiarise themselves with the contents of this policy, particularly around safe use of electrical tools and working safely in close proximity to high voltage equipment

There are several roles referred to specifically in this policy. They are:

All Staff

- Staff are responsible for ensure a formalised risk assessment has been completed prior to any work being undertaken which has the potential to cause harm to fellow staff, students, contractors or visitors.

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Students	• Students are responsible for actively participating in the risk assessment process and ensuring that they agree with the control measures put in place to mitigate the risk to themselves and their peers.
Managers	• Managers are responsible for ensuring that the health and safety risk management process is supported within their areas of responsibility and that additional support is requested from the Health, Safety and Wellbeing team if required.
Head of School/ Centre Directors	• Responsible for ensuring all health and safety risks associated with their programmes have been assessed and suitable mitigation controls are put into place prior to the programme being ALLOWED to begin.
Infrastructure & Assets Team	• Responsible for the electrical safety, tagging, and testing of all Wintec managed electrical assets.
Information & Technology Services Team (ITS)	• Responsible for the electrical safety of all Information Technology and Communication (ITC) assets • Ensure all ITC assets are tagged and tested annually.
Safety & Wellbeing Manager	• Reports to Worksafe • can consult with and give advice to Wintec staff members and the Infrastructure & Assets team on the creation of JSAs, audits, and safety plans.
Strategic Assets Manager	• Support the wider Wintec team to ensure the requirements within this policy are effectively applied in every circumstance • responsible for ensuring the routine testing of electrical equipment (excluding ITC assets) is performed according to the requirements of the Regulations. • responsible for the day-to-day management of this policy.
Executive Director, Infrastructure & Assets	• Holds overall responsibility for the implementation of this policy.

4. Measuring Success

The measurements of successful management of electrical hazards at Wintec are:

- All portable tools, portable equipment and extension cords/cord sets be tagged / coded to indicate when they require re-testing
- Cords may not be run through doors or windows where there is a potential for damage to occur
- Maximum cord length shall be 30 metres
- All flexible cords shall be three-core.

- Household multi-outlet adaptors shall not be used outside of an office environment. Specific fit for purpose construction industry approved power boards with residual current device (RCD) shall be used in all construction environments.
- All electrical cords and cables are covered or elevated by approved devices to protect them from damage and to eliminate tripping hazards
- Extension cords as well as equipment cords shall not be modified.

5. Supporting Information

Designation of Construction Zones

For the purposes of this policy a construction zone is defined as an area which has been deemed by the Strategic Assets Manager/ Operations Manager Trades and Engineering as a construction zone.

A construction zone assessment will be completed which takes into account the following:

- The nature of the majority of the work being undertaken in the specified area
- The frequency of the activities being undertaken in the specified area
- The tools being utilised for the work activities
- The ability to separate the activities from surrounding activities in the same place of work

6. Procedures

There are seven parts to highly effective management of electrical hazards. They cover: competency verification; management of underground and overhead electrical utilities; defining the testing requirement of equipment; effective management of stored energy; risk assessment of new and used electrical equipment; Use of residual current devices.

In all cases, mechanical plant (includes mobile plant) is not to be operated within 1 meter of electrical equipment. If the work being planned may damage or disturb electrical equipment or restrict access to the equipment for operation and maintenance purposes, contact the Infrastructure & Assets Team.

6.1. Competency verification

Electrical repair work or diagnostic work on electrical equipment shall only be performed by personnel that are qualified and licensed to perform this task. Competency will include a current registration and electrical practising license. Failure to comply with this requirement will be deemed serious misconduct, as per our Staff Discipline Policy.

6.2. Management of overhead services

This covers the process for any work being undertaken by Wintec staff or on behalf of Wintec involving work in close proximity to overhead services.

Maintaining safe distances from overhead power lines

The New Zealand Electrical Code of Practice for Electrical Safe Distances (ECP 34) is cited in regulation 17 of the Electricity (Safety) Regulations 2010. The regulations, and ECP 34, place mandatory restrictions on various activities near an electricity network – including the operation of mobile plant within 4m of an overhead power line and excavation and other work near power poles

and stay wires. Written consent from the overhead electric line owner allowing a reduced distance is required if the limits set in ECP 34 are exceeded.

Minimum safe distances have been set primarily to protect persons, property, vehicles and mobile plant from harm or damage from electrical hazards. The minimum distances are also a guide for the design of electrical works within substations, generating stations or similar areas where electrical equipment and fittings have to be operated and maintained.

The following points must always be considered when working with overhead services:

a) Extreme caution must be used when equipment is being operated near power lines. The lines should be de-energized if possible. The following DANGER ZONES must be adhered to:
   - Power line of voltage less than 1000 volts = 1m “danger zone”
   - Power line of voltage less than 33 000 volts = 3m “danger zone”
   - Power line of voltage more than 33 000 volts = 6m “danger zone”

b) Where there is risk of work being undertaken by a contractor and a person entering the “danger zone” a spotter shall be used as well as goal posts will be used for crossing under power lines. Work within 6 metres of a live overhead line must be approved by the service provider by use of a permit.

c) Prior to entering the “danger zone” a proximity permit must be obtained from the Power supplier.

d) Warning labels must be present when operating mobile plant near overhead conductors.

A high-resolution version of this can be found here. Wintec’s logo should be included.

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6.3. Management of underground services

All underground services must be identified using the following method:

i. Plan

a) Obtain and review all available information such as:
- Service Plans (available from Facilities Management)
- Contact WEL Networks Before You Dig on 0800 800 935
- 'As built' information from previous plans (available from Facilities Management)
- Examine site for indications of services that may be present.
  For example:

Service markers (warning signs)	Service pits
Drainage pits and manholes	Light pole without an overhead service
Cables running up a pole	Down pipes or vents
Control cabinets	Water valves / Fire hydrants
Overhead wires to a building	Road repairs
Trap doors or access covers	Gas or water meters

b) Use a cable locator.

c) Use a documented Excavation Permit process (contact the Strategic Assets Manager for more information).

ii. Pothole

All services must be physically located and sighted.

a) Expose all services using hydro-vacs or hand digging. **NO MECHANICAL EXCAVATION** is allowed within one metre of an existing service. Services must not be unsupported for more than one metre of their length.

Excavation and ground disturbance

High voltage and low voltage cables are present on all Wintec properties. An excavation permit is required for all ground disturbance, whether by hand or mechanical means, including tree stump grinding, concrete cutting and driving in posts, rods and pins (e.g. earth electrodes, steel waratahs) on Wintec property. Excavation permit prerequisites include:

- Recent service plans for Wintec owned services (available from Facilities Management)
- Recent service plans for other services (available from www.beforeUdig.co.nz)
- A method statement explaining the safe digging practices being proposed.

Excavation permits are issued by Facilities Management

Note: In accordance with Electricity (Safety) Regulations 2010, a person must not interfere with, or move or attempt to move, any works (i.e. cables and equipment owned by WEL Networks) unless the person obtains permission from the owner or operator of the works.

Exceptions:

- Hand digging without an excavation permit may be undertaken when an emergency requires it.
- Gardening activities using safe practices are excluded from permit requirements e.g. planting small shrubs, removing weeds, etc.
- Facilities Management must be informed prior to starting and no mechanical plant is to be used.

More information on safety with underground services and excavation is available in WorkSafe's Excavation Safety Good Practice Guide.

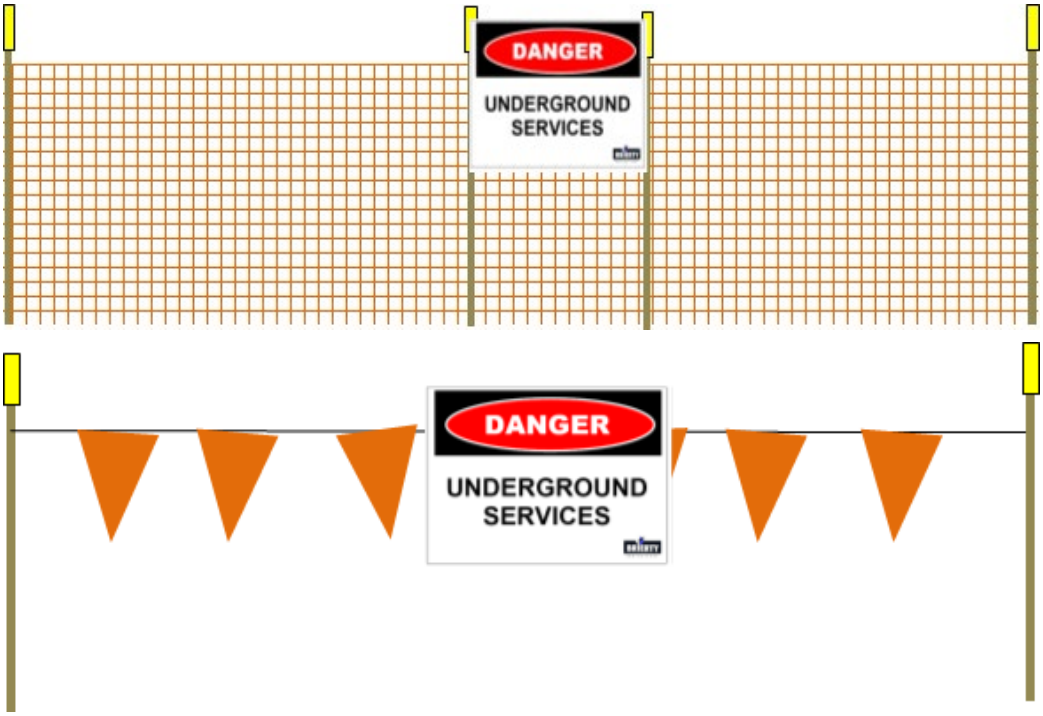
iii. Protect

a) After physically locating all services, assess the risk to determine the level of protection required. Protection must be provided for people, environment, asset and reputation

b) Minimum requirements for service protection require:

i. Completion of a cable location and services mark out (to determine location and depth of cables)

ii. Erect signs – Danger Underground Services. Such as:



iii. A physical barrier may need to be put in place to create a No- Go Zone for people and other plant.

c) Before commencing the excavation:

i. Apply for a Permit to Dig

ii. Determine the safest method of excavation and carry out a JSA

iii. Assign a spotter as necessary

iv. Carefully break through the surface.

iv. **Proceed (with caution)**

a) **STOP** and check if there is a change in soil colour or type when excavating.
b) **STOP** if you come across Danger or Warning Tape.
c) ONLY use hand tools within **close proximity >1000mm** of the service.

6.4. Testing requirements of electrical equipment

Fit for use electrical testing in compliance with the electrical safety regulations 2010 will be undertaken at the following intervals:

- All areas assessed as construction zones – 3 monthly visual test verification
- Workshops and maintenance support areas – 3 monthly visual test verification
- General office areas including all learning environments – 6 monthly test verification

Testing must be undertaken by a trained and competent person who has successfully completed the approved electrical testing course.

6.5. Effective management of stored energy

Electrical energy can be stored inside equipment for a period of time after the equipment has been switched off. It is important to note that prior to working on equipment you must check to ensure the risk of being harmed due to exposure to stored energy is eliminated.

6.6. New and second - hand electrical equipment

All new and second - hand equipment destined to be used on Wintec sites are required to have a full electrical compliance check prior to being approved for use. These checks must be completed by a suitably qualified person (SQP). Monitoring of existing electrical equipment shall be included as part of the equipment asset register.

6.7. Use of residual current devices

All electrical equipment used at Wintec is required to have either an inbuilt residual current device installed or be used with a commercial grade residual current device. These devices prevent the possibility of harm occurring through electric shock.

7. Processes

There are no associated process maps for this policy. If you have any questions regarding this policy, please contact the Infrastructure & Assets team ('Facilities') to discuss.

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8. Related Legislation, Policies, Guidelines, and Forms

Applicable Legislation	Related Policies & Guidelines	Forms
Building Act 2004 Health and Safety at Work Act 2015 Electrical Safety Regulations 2010	Coordinated Incident Management Policy Managing Contractors Policy Working Safely at Heights Policy Health & Safety Risk Management Policy (TBD) Accident & Incident Reporting Policy Records & Information Policy	Job Safety Analysis HAZID Incident Investigation Report Electrical Certificate of Compliance & Electrical Safety Certificate
Copies of New Zealand Legislation can be found on the New Zealand Legislation Website. You can view Wintec's Policies and Procedures on the Policy Web. This is not an exhaustive list of policies, procedures and legislation.		

9. Key Definitions & Glossary

ALARP	As low as reasonably practicable.
Close Proximity Permit	A permit issued on behalf of the energy asset owner to any individual who is planning to work within 6 metres of their energy asset.
Competency Verification	A process which defines the set of competencies required of an individual and has a system of routine inspection and observation of those competencies to verify the person is competent.
Electrical Safety Regulations 2010	Governing NZ electrical regulations which are covered in detail by WorkSafe.
Designation of Construction Zone	An area which has been authorised by a competent person where its use is specifically for construction activities.
Residual Current Device	A device where cords and leads are plugged into and prevents an electric shock to the person using the equipment by tripping the circuit out on overload
Testing of Electrical Equipment	Independent testing of electrical equipment by a suitably qualified person; some are tested monthly, while some are tested annually.
Suitably Qualified Person	A person who has successfully achieved the required competencies through an electrical testing course aligned to the Electrical Safety Regulations 2010.
HAZID	Hazard Identification Study. A hazard identification study is a method for identifying hazards in order to prevent and reduce any adverse impact that could cause injury to personnel, damage or loss of property, environment and production, or become a liability.

JSA	A job safety analysis is a procedure which helps integrate accepted safety and wellbeing principles and practices into a task or job operation. In a JSA, each basic step of the job is to identify potential hazards and to recommend the safest way to do the job.
PPE	Personal Protective Equipment
PCBU	A PCBU is a 'person conducting a business or undertaking' is a broad concept as defined by the Safety and Wellbeing at Work Act 2015. A PCBU may be an individual person (a sole trader) or an organisation, however in most cases a PCBU will be an organisation (a business entity such as a company). A PCBU does not include a person to the extent that the person is employed or engaged solely as a worker in, or as an officer of, the business or undertaking.
Site-Specific Safety Plan	A Site-Specific Safety Plan (SSSP) is an agreement between businesses working on a specific site / project that determines how health and safety will be managed. It ensures that site information is regularly updated and safety is monitored.

10. Records Management

In line with the Public Records Act 2005, Wintec is required to provide a records management programme to ensure that authentic, reliable, and usable records are created, captured and managed to a standard of best practice and to meet business and legislative requirements. All records relevant to a specific policy need to be listed in every policy in the following format:

Record	Minimum Retention Period	Disposal Action	GDA Reference #
This policy document	7 years after date of last action	Destroy	5.1.2
Incident investigation reports	10 years after date of last action or when all conditions have been met and administratively no longer required for reference purposes	Destroy	10.6.3
Job Safety Analysis (this depends on the significance of the job undertaken)	7 years after work completed	Retain as public archive on job file	10.6.2
Hazard Identification Study (HAZID)	7 years after last action	Destroy	14.1.1

11. Version History

Version	Date Approved	Details
1	October 2019	First Published. Specific policy relating to managing electrical hazards.