Title | Locate faults, repair or replace faulty components in a distribution network to a consumer installation
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Level | 4
Credits | 20

**Purpose**

People credited with this unit standard are able to: identify the scope of the work for repairing or replacing faulty components or repairing faults in a distribution network up to and including the consumer main switchboard; locate faulty component or fault, and identify associated hazards in carrying out repair; isolate electrical components; repair or replace faulty component or repair fault; and complete all checks and tests as required by the Electricity (Safety) Regulations and reinstate electricity supply to consumer.

This unit standard partially fulfils the requirements for registration for line mechanics endorsement with the Electrical Workers Registration Board (EWRB).

**Classification**

Electricity Supply > Electricity Supply - Distribution Networks

**Available grade**

Achieved

**Entry information**

**Critical health and safety prerequisites**

Must be a holder of a EWRB registration and current practising licence for one or more of the following classes of registration – distribution or transmission or traction line mechanic or electrician or electrical engineers.

Unit 10509, *Climb and work on electricity network structures*; Unit 17025, *Carry out a rescue from an electrical structure*; Unit 6401, *Provide first aid*; and Unit 6402, *Provide basic life support*; or demonstrate equivalent knowledge and skills.

**Explanatory notes**

1. Safety of personnel and plant must be a priority throughout the assessment. If the safety requirements are not met the assessment must stop and the candidate will be assessed as not yet competent.

2. Performance and work practices in relation to the outcomes and evidence requirements must comply with all current legislation, the Electricity Act 1992, regulations, and codes of practice recognised under that statute; Health and Safety at Work Act 2015, the Resource Management Act 1991, electricity supply industry

3 Definitions
Asset owner refers to the owner of an electricity supply network that takes its point of supply from Transpower NZ or other local reticulation systems, and delivers electricity to industrial, commercial and residential customers. Industry requirements include all asset owner requirements; manufacturers’ specifications; and enterprise requirements which cover the documented workplace policies, procedures, specifications, business, and quality management requirements relevant to the workplace in which assessment is carried out.

4 The range of this unit standard is intended for single or three phase systems and carrying out the location of faults, repair or replacement of components located on the main MEN switchboard and to the supply point of entry.

5 It is intended that an electrical worker carrying out the work in this unit standard has a limited trainee certificate from EWRB and is under supervision by a suitably qualified EWRB registered worker with a current practising certificate.

6 Evidence is required for six faults, of which two must be in a three phase installation and each fault and repair must be different.

Outcomes and evidence requirements

Outcome 1
Identify the scope of the work for repairing or replacing faulty components or repairing faults in a distribution network up to and including the consumer main switchboard.

Evidence requirements

1.1 The relevant procedures and standards are identified and interpreted for finding the faulty component or fault.

1.2 Information received and historical information about the faulty component or fault are researched and interpreted.

Range may include but is not limited to – client report, visual sightings, test results, manufacturer’s guidelines, client operating and maintenance standards, local work procedures, condition assessment reports.

Outcome 2
Locate faulty component or fault, and identify associated hazards in carrying out repair.
Evidence requirements

2.1 Hazards associated with locating the fault or faulty component are identified and safety plan is produced.

2.2 Relevant tests and inspections to locate the fault or faulty component are carried out.

2.3 The fault or faulty component is identified for work access.

Outcome 3

Isolate electrical components.

Performance criteria

3.1 Electricity supply is isolated.

3.2 Isolations are tested and proved de-energised.

3.3 Isolations are clearly tagged to prevent further use.

Outcome 4

Repair or replace faulty component or repair fault.

Evidence requirements

4.1 Safety measures are implemented to carry out any repair or replacement of faulty component or repair of fault.

4.2 Repair or replacement of faulty component or repair of fault is carried out.

4.3 Visual checks of the repaired or replaced faulty component or repaired fault are carried out.

Outcome 5

Complete all checks and tests as required by the Electricity (Safety) Regulations and reinstate electricity supply to consumer.

Performance criteria

5.1 De-energised safety tests are completed.

Range may include but is not limited to – continuity of conductors, insulation resistance and earthing resistance, earth pin resistance.

5.2 The electricity supply is reconnected.
5.3 Energised safety tests are completed.

Range may include but is not limited to – phase rotation, polarity, live rated-voltage test, function of installation.

5.4 Compliance certificates and documentation are completed in accordance with current regulations, standards and asset owner’s reporting requirements.

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Consent and Moderation Requirements (CMR) reference 0120


Please note
Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard
Please contact the Infrastructure ITO (Connexis) qualifications@connexis.org.nz if you wish to suggest changes to the content of this unit standard.