

Title	Carry out condition assessments of electricity supply line hardware and conductors		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to: demonstrate knowledge of line hardware and conductors; and carry out a condition assessment of electricity supply line hardware and conductors.
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Classification	Electricity Supply > Electricity Supply - Transmission Networks
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Available grade	Achieved
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Guidance Information

- 1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable legislative and industry requirements.
- 2 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the current version of the Health and Safety at Work Act 2015; and any subsequent amendments and replacements; Electricity Act 1992; Electricity (Safety) Regulations 2010; Electricity supply industry codes of practice and documented enterprise procedures, including *Safety Manual – Electricity Industry* (SM-EI) (2015) Wellington: Electricity Engineers' Association available at www.eea.co.nz.
- 3 Definitions
Asset owner refers to a participant who owns or operates assets used for generating or conveying electricity.
Industry requirements include all asset owner requirements; manufacturers' specifications; and enterprise requirements which may include the documented workplace policies, procedures, specifications, business, and quality management requirements relevant to the workplace in which assessment is carried out.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of line hardware and conductors.

Performance criteria

- 1.1 Conductor types are identified and described.
- Range includes but is not limited to – Aluminium conductor steel reinforced galvanised core (ACSR/GZ), Aluminium conductor steel reinforced greased core (ACSR/AC), Copper (CU), galvanised extra high strength steel (GEHSS), optical fibre ground wire (OFGW).
- 1.2 Conductor configurations are identified and described.
- Range includes but is not limited to – strain, suspension, simplex, duplex, quad, earth wire.
- 1.3 Attachment point types are identified and described.
- Range includes but is not limited to – strain plate, swivel, hanger bracket, twisted barrel tongue, eye-bolt, U-bolt, working point.
- 1.4 Insulator assembly drawings are interpreted and matched with physical components.
- 1.5 Insulators and insulator hardware are identified.
- Range includes but is not limited to – cap and pin, composite, glass disc, porcelain disc.
- 1.6 Cap and pin insulator defects are described.
- Range includes but is not limited to – corrosion of metal caps and pins, damage to security pins, deterioration of the cement, glass cap and pin insulator defects, porcelain cap and pin insulator defects, pollution defects, flashover mark defects.
- 1.7 Conductor fittings are described.
- Range includes but is not limited to – joints, vibration dampers, conductor weights, insulator weights, repair sleeves, spacers, pre-formed armour rods, pre-formed dead ends, pressed dead ends, patch rods jumpers, twisted armour rods.
- 1.8 Conductor deterioration processes are described.
- Range includes but is not limited to – vibration, broken strands, corrosion, pollution, loss of grease, uneven sags, differential tensions.
- 1.9 Composite insulator defects are described.
- Range includes but is not limited to – corrosion of metal parts, hydrophobicity, deterioration of rubberised material.

1.10 Insulator hardware defects are described.

Range includes but is not limited to – corrosion of metal parts, wear of attachment points.

Outcome 2

Carry out a condition assessment of electricity supply line hardware and conductors.

Range evidence of three assessments is required.

Performance criteria

2.1 Procedures, equipment, access, and components are prepared for a line patrol.

Range includes – site information, landowners, measuring equipment, check sheets, specialist staff for live line and excavation.

2.2 Hardware and conductors are inspected, and defects identified.

Range includes – attachment points, insulators, earth wire, hazard identification.

2.3 Results of condition assessment are reported using the coding system.

Range includes – size, location, and impact of defects, defective line hardware and conductors.

Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	20 April 2004	31 December 2022
Rollover and Revision	2	21 November 2008	31 December 2022
Review	3	19 November 2010	31 December 2022
Review	4	27 February 2020	N/A

Consent and Moderation Requirements (CMR) reference	0120
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Connexis – Infrastructure Industry Training Organisation qualifications@connexis.org.nz if you wish to suggest changes to the content of this unit standard.