

Title	Carry out routine inspection and service of a power transformer		
Level	4	Credits	6

Purpose	People credited with this unit standard are able to carry out routine inspection and service of a power transformer.
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Classification	Electricity Supply > Electricity Supply - Power System Maintenance
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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; Electricity Act 1992; Electricity (Safety) Regulations 2010; and any subsequent amendments and replacements; 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.
IEC refers to International Electrotechnical Commission.
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.
- 4 *Tests may include* – applying tests across the following in accordance with IEC 76 or quoted standards. The deviation to be less than what the client has prescribed;
windings – resistance of windings, tap changer, surge arrestors, insulation resistance, thermal auto-protection, thermal comparison between units, thermal alarms;
bushings – tap insulation resistance, insulation resistance;
cooling system – all pump operating smoothly, controls and indication, fans tested, alarms and settings;
protection – Buchholz relay indications, pressure relief valve indication, oil flow indication, oil sampling for dissolved gas analysis and moisture and power factor analysis, tap change number operations checked;

tank – inspection for oil leaks, plinth footings.

- 5 *Service* activities may include – on line oil filters checked, cleaning ceramic bushings, Buchholz relay operation checks, replacement of oil pump bearings or unit, fan motor repairs, remove blockages in oil system, check seismic constraints are secure, oil treatment and re-testing, tap changer inspection and oil change.

Outcomes and performance criteria

Outcome 1

Carry out routine inspection and service of a power transformer.

Range evidence of three different transformers is required.

Performance criteria

1.1 Equipment is prepared for inspection and service.

Range procedures, test specifications, maintenance records, equipment operational release, diagnostic test equipment.

1.2 An access permit, or its approved equivalent, is obtained and a safe work zone is prepared.

Range includes – additional isolation from other energy sources, safety measures to protect the environment and personnel; briefing of work party.

1.3 Transformer is inspected for damage or defects.

1.4 Diagnostic tests are carried out.

1.5 Results are recorded and analysed for compliance with the standard required.

1.5 Service of transformer is carried out.

1.6 Documentation is completed.

Range may include – maintenance records, return of access permit or its approved equivalent, work authority.

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	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.