

Title	Monitor electricity supply power network system		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: monitor power supply trends, communication, and security systems; respond to alarms in the network; and determine changes in the status, condition, and performance of power system components.
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Classification	Electricity Supply > Electricity Supply - Power System Management
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Available grade	Achieved
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Prerequisites	Unit 16276, <i>Respond to electricity supply external system operations communications</i> , or demonstrate equivalent knowledge and skills.
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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:
 - Health and Safety at Work Act 2015
 - Electricity Act 1992
 - Electricity (Safety) Regulations 2010
 - Electricity supply industry codes of practice and documented enterprise procedures, including *Safety Manual – Electricity Industry (SM-EI)* and relevant EEA guides available from www.eea.co.nz and any subsequent amendments and replacements.
- 3 Definitions

Asset owner refers to a participant who owns or operates assets used for generating or conveying electricity.

CCTV – closed circuit television.

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.

Integrity is the ability of an asset owner to maintain or integrate the unity of the sum total of components in an electrical power system to deliver electricity to its customers.

SCADA – Supervisory Control and Data Acquisition system used for control, indication, and monitoring purposes.

- 4 This unit standard can be assessed against in a workplace environment, or in a training or educational environment if simulated equipment response and examples are able to be provided, or in a combination of both environments.

Outcomes and performance criteria

Outcome 1

Monitor power supply trends, communication, and security systems.

Performance criteria

- 1.1 Trends in electricity power supply are monitored and documented.
- Range may include but is not limited to – documentation such as load graphs, data logging, SCADA archive system.
- 1.2 Status of substation security system is monitored and documented.
- Range may include but is not limited to – door security, bunding, CCTV systems, entry access.
- 1.3 Status of communication system is monitored and documented.
- Range may include but is not limited to – radio, phone.
- 1.4 Integrity of power system is monitored for effectiveness of delivery of power to customers.
- Range may include but is not limited to – SCADA indications, metering summation, total load.
- 1.5 Abnormalities in power supply, communication, and security systems are noted and immediately reported to supervising officer.
- Range may include but is not limited to – over or under voltage, overcurrent, loss of signal.
- 1.6 Data is collated and analysed to establish causes of variations in performance levels of power supply, communication, and security systems.
- Range may include but is not limited to – analysis of voltage levels, determine priority, asset owner procedures.

Outcome 2

Respond to alarms in the network.

Performance criteria

- 2.1 Network alarms are immediately acknowledged with investigative or corrective action being initiated.
- Range may include but is not limited to – documenting time, location, alarm type, indication signals, possible cause, related operations documented, circuit breaker tripping, review of electronic logging.
- 2.2 Indicating devices such as circuit breaker trippings and relay flag operations are assessed, and listed in terms of priority prior to restoration and investigation.
- Range may include but is not limited to – checking for circuits with overcurrent flags, earth fault flags, other fault or protection indications, distance protection operations, differential protection.
- 2.3 Relay codes, protection codes, and abbreviations are used and comply with operating standards and terminology used by asset owner.
- Range may include but is not limited to – industry list of approved abbreviations.
- 2.4 Contractor is engaged to carry out remedial work within a timeframe as agreed with the asset owner.
- Range may include but is not limited to – job specification, approval procedures, time for entry to equipment.
- 2.5 Alarms are reset.

Outcome 3

Determine changes in the status, condition, and performance of power system components.

Performance criteria

- 3.1 Condition of power system components is inspected and reported on at the agreed intervals.
- Range may include but is not limited to – condition of lines, cables, switchgear, SCADA.
- 3.2 Changes or modifications that affect the operation of power system components are documented.
- Range may include but is not limited to – abnormal circuits, re-close blocks, circuit interruptions, relay indications.

3.3 Status, condition, and performance of power system components are updated in the report to supervising officer, at agreed intervals.

Range may include but is not limited to – timely reporting, situation update, media release information.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	3 August 1999	31 December 2019
Revision	2	11 February 2004	31 December 2019
Rollover and Revision	3	26 November 2007	31 December 2019
Review	4	16 April 2010	31 December 2019
Review	5	28 September 2017	31 December 2024
Review	6	2 March 2023	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 Waihanga Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@WaihangaAraRau.nz if you wish to suggest changes to the content of this assessment standard.