

<b>Title</b>	<b>Demonstrate knowledge of SCADA systems in the Electricity Supply power system</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>2</b>

<b>Purpose</b>	People credited with this unit standard are able to: describe the meaning of the term SCADA and the purpose, components and equipment used in a SCADA system; describe the operational functions that SCADA provides in a specific work area within a power system network; and describe the purpose of and read and interpret single line SCADA diagrams in the electricity supply power system.
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<b>Classification</b>	Electricity Supply > Electricity Supply - Power System Management
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<b>Available grade</b>	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](http://www.eea.co.nz).
- 3 Definitions  
*Asset owner* refers to a participant who owns or operates assets used for generating or conveying electricity.  
*Data* refers to information in a written or numerical form. The latter may include summary statistics, information in tables, and numbers displayed in a variety of graphs.  
*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.  
*SCADA* – Supervisory Control and Data Acquisition system used for control, indication, and monitoring purposes.

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## Outcomes and performance criteria

### Outcome 1

Describe the meaning of the term SCADA and the purpose, components and equipment used in a SCADA system.

#### Performance criteria

- 1.1 The meaning of each term in the abbreviation, SCADA, is described.
- 1.2 The purpose of a SCADA system in the electricity supply industry is described.

Range includes but is not limited to – data acquisition, data communications, data presentation, control, alarm monitoring and diagnostics, security.

- 1.3 The main components and equipment that are used in a SCADA system are described.

Range may include but is not limited to – field devices, remote telemetry units (RTU's), programmable logic controllers (PLC's), communication networks and interfaces, operator interfaces, I/O (input/output) sub systems, communication mediums and hardware, SCADA software; evidence of five is required.

### Outcome 2

Describe the operational functions that SCADA provides in a specific work area within a power system network.

#### Performance criteria

- 2.1 Types of information provided to the user is described.

Range may include but is not limited to – alarms, events, faults, equipment states, switch positions, analogue measured values; evidence of five types of information required.

- 2.2 Types of user contact encountered in using SCADA are described.

Range may include but is not limited to – data monitoring and trending, activate control function, changing setpoints, tagging I/O, mapping I/O, response to alarms, operator interface functions; evidence of three different types is required.

### Outcome 3

Describe the purpose of and read and interpret single line SCADA diagrams in the electricity supply power system.

**Performance criteria**

- 3.1 The purpose of single line SCADA diagrams is described.
- 3.2 Symbols on the single line SCADA diagrams are identified and their meaning is explained.

Range includes but is not limited to – animated graphics, colour standards, symbolic representation, I/O numbering, plant mimic diagrams;  
evidence is required for five different types of symbols used in single line SCADA diagrams.

<b>Planned review date</b>	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	19 April 2012	31 December 2022
Review	2	23 April 2020	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	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](mailto:qualifications@connexis.org.nz) if you wish to suggest changes to the content of this unit standard.