Title	Compile and action switching instructions to maintain electricity supply power network security		
Level	4	Credits	9

Purpose	People credited with this unit standard are able to: plan network operating; compile switching instructions; action switching instructions; and review operating actions.

Classification	Electricity Supply > Electricity Supply - Power System Management

Available grade	Achieved

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.
     Industry requirements include all asset owner requirements and standards; 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.
     SCADA – Supervisory Control and Data Acquisition system used for control, indication, and monitoring purposes.
     Switching instruction is a planned sequence of operating actions (or a single action) that has been compiled in an approved format. It is sometimes referred to as an operating order or operating sequence.
     The log is the collection of log books, log sheets, completed authorisation forms, and other records including electronic and tape, which together form a complete record of operating events in a station or operating area.

Work management systems include but are not limited to access permits, test permits, work authority, assurances.

4   It is recommended people achieve Unit 16285, *Plan for scheduled work on electricity supply network equipment*, or demonstrate equivalent skills and knowledge, before being assessed against this unit standard.

Outcomes and performance criteria

Outcome 1

Plan network operating.

Performance criteria

1.1   The nature of operating to be carried out is identified in consultation with others.

   Range   may include but is not limited to – consultation with network release coordinator, system controllers, contractor, system operator, network operations manager, project manager.

1.2   Equipment required to carry out the operating is identified.

   Range   may include but is not limited to – prepared switching instructions, earths, special tools, personal protective equipment.

1.3   Requests to carry out network operating are received within a set timeframe prior to commencing work.

   Range   may include but is not limited to – rolling release timeframe, asset maintenance schedule.

1.4   Requests to release network equipment from the system for maintenance and/or repair are interpreted in accordance with job specification.

   Range   may include but is not limited to – consider the impact on the rest of the network, isolation zone for compliance with industry safety rules.

1.5   Authorisations and approvals to carry out work on the network are documented.

   Range   may include but is not limited to – log entries, access permits.

1.6   Register of competent workers is checked to ensure compliance with work competency criteria of asset owner.

   Range   may include but is not limited to – competency register, approved contractor lists.

1.7   Work is assigned a reference number.

        Range   may include but is not limited to – planned work schedule, works orders, release numbers.

Outcome 2

Compile switching instructions.

Performance criteria

2.1   Network diagrams are examined and any changes to the network configuration status are incorporated in the steps of the switching instructions.

        Range   diagrams may include but are not limited to – single line diagrams, SCADA, mimic displays.

2.2   Switching instructions are compiled within set timeframe.

2.3   Each step of the switching instructions is confirmed as clear, concise, and unambiguous.

        Range   may include but is not limited to – correct equipment identification, only relevant equipment referred to, can only be interpreted in one way for taking operating actions.

2.4   Terminology and abbreviations are used.

2.5   Switching instructions are confirmed as having the minimum number of operations to achieve the objective.

2.6   Switching instructions are approved.

2.7   Known safety hazards on site are documented and reported to affected parties.

        Range   may include but is not limited to – reporting to contractor, system operator, network operations management.

2.8   Switching instructions and operating procedures required are arranged with the contractor and documented.

Outcome 3

Action switching instructions.

Performance criteria

3.1   Switching is carried out.

        Range   may include but is not limited to – operating orders, SCADA.

3.2   Operating steps are instructed and carried out in accordance with sequence specified in switching instructions.

        Range   may include but is not limited to – field operators, SCADA.

3.3   Time of initiating and completion of each operating step is documented on switching instructions.

        Range   may include but is not limited to – system operator and field operator reports.

3.4   Alterations to switching instructions are discussed, approved, and implemented in consultation with all affected parties.

        Range   may include but is not limited to – network controller, operator, contractor, release system coordinator.

3.5   Communication links with contractor and/or operator are maintained at agreed intervals.

        Range   may include but is not limited to – phone, radio.

3.6   Completion of testing or proving deenergised is confirmed and network equipment is restored to, or removed from, service.

3.7   Steps in switching instructions are actioned and documented.

        Range   may include but is not limited to – log entries, reports from network controllers, field operators, contractors.

Outcome 4

Review operating actions.

Performance criteria

4.1   Operating steps and actions are reviewed to determine compliance with the switching instructions.

        Range   may include but is not limited to – network controllers, operators, contractors.

4.2   Changes and modifications to status of network equipment are recorded from switching instructions.

        Range   may include but is not limited to – mimic display, SCADA, the log, single line diagram.

4.3   Work management systems are monitored for their acceptance and return within a timeframe specified by asset owner.

Planned review date	31 December 2026

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	3 August 1999	31 December 2018
Revision	2	11 February 2004	31 December 2018
Rollover and Revision	3	26 November 2007	31 December 2018
Review	4	16 April 2010	31 December 2019
Review	5	16 March 2017	31 December 2023
Review	6	30 September 2021	N/A

Consent and Moderation Requirements (CMR) reference	0120

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.