

Title	Apply and remove safety measures in an electricity supply environment		
Level	3	Credits	3

Purpose	People credited with this unit standard are able to: demonstrate knowledge of safe working systems and risk management procedures; demonstrate knowledge of the planning requirements for the application and removal of safety and risk management measures; confirm present status of systems; apply safety measures to manage risk; remove safety measures; and document application and removal of safety measures, in an electricity supply environment.
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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:
 - 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, a computer system that is used to operate equipment and monitor the performance of the electrical power system and/or network, gather data for analytical purposes, and generally assist the operation and delivery of electrical network functions concerning the supply of electricity to customers.

Status refers to the operational condition or state of any or all of the components of an electrical power system, relative to its expected or required performance level.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of safe working systems and risk management procedures in an electricity supply environment.

Performance criteria

1.1 The principles of sections of the Health and Safety at Work Act 2015 and Electricity (Safety) Regulations 2010 about safety of persons are described.

1.2 The requirements of SM-EI and any local instructions about making equipment safe are described.

1.3 The safety responsibilities of all employees when making plant and equipment safe for work to reduce risk are explained.

Range competency; fit state; safety of self, workmates, and public; use of safety equipment; isolation; earthing; bonding; immobilising.

1.4 Approved electrical safety devices and their limitations are explained.

Range may include but is not limited to – earths, voltage detection devices, permit ropes, signs, chocks, tags, locks.

1.5 Power system plant and equipment and identification systems are described.

Range plant and equipment may include but are not limited to – circuit breakers, bypass switches, disconnectors, earth switches, generators, transformers, current transformers, voltage transformers, capacitor voltage transformers, circuits, fuse switches, isolators, magnefix; identification includes but is not limited to – equipment numbering systems, equipment codes, equipment abbreviations.

Outcome 2

Demonstrate knowledge of the planning requirements for the application and removal of safety and risk management measures in an electricity supply environment.

Range may include but is not limited to – plant and equipment types, plant and equipment site layout, access, required safety measures, industry safety rules, local procedures, work control systems, isolations, reclose block, immobilisation, dewatering, depressurisation, release of stored energy, proving de-energised, earthing, bonding, tagging, locking systems.

Performance criteria

2.1 Safety measure application and removal sequence plans are described in accordance with industry requirements to achieve the required risk objective.

Range includes but is not limited to – outage requests, work plans, single line diagrams.

2.2 Plans are produced to include identification and risk management of hazards, and all steps necessary to meet all statutory requirements.

Range may include but is not limited to – plant and equipment characteristics, work site layout, tailgate forms, safe working practices, weather (current and forecast), Electricity Regulations, industry operating standards, SM-EI.

2.3 Plans are produced in a format used by the industry with defined locations and types of systems for application of safety measures and risk management.

Range operating orders, permit and work authority forms, system and substation plant and equipment records.

2.4 Plans for application of additional safety and risk management measures to accommodate unforeseen conditions and/or activity are described.

Range includes but is not limited to – equipment malfunction and/or damage.

Outcome 3

Confirm present status of systems in an electricity supply environment.

Range plant, market rules, prevailing system conditions.

Performance criteria

3.1 Present status is determined.

3.2 Planned events which impact on status are identified, and their impact is determined on risk management and recorded in the required format.

Range weather forecast, other plant or equipment unavailability.

3.3 Handover procedures at shift change are completed, ensuring that all relevant information is transferred to the new operator or controller in a manner and time frame which meets established operating requirements.

Outcome 4

Apply safety measures to manage risk in an electricity supply environment.

Range may include but is not limited to – industry safety rules, local procedures, work control systems, isolations, reclose block, immobilisation, dewatering, depressurisation, release of stored energy, proving de-energised, safety indications, earthing, bonding, tagging, locking systems.

Performance criteria

4.1 System, plant and equipment are identified, and the procedures and safety requirements for the application of the safety measures are complied with.

4.2 Isolation activities are carried out safely in accordance with established plan.

4.3 Additional safety measures and management of risk appropriate to the situation are identified, and applied.

4.4 Permit areas are established by boundary marking and notices.

Range may include but is not limited to – permit rope, permit notices, fenced areas.

Outcome 5

Remove safety measures in an electricity supply environment.

Range may include but is not limited to – unlocking, untagging, restoring, preparing for return to service, industry safety rules, local procedures, work control systems, plant or site layout.

Performance criteria

5.1 System, plant and equipment are correctly identified, and the procedures and safety requirements for the removal of safety measures are complied with.

5.2 Removal activities are carried out safely in accordance with the restoration plan.

5.3 Safety measures are removed and confirmed 'clear of plant' or equipment.

Outcome 6

Document application and removal of safety measures in an electricity supply environment.

Range may include but is not limited to – safety measure application and removal plans (operating orders), the log, access permits, test permits, work authority, recipient applied safety measures record sheet, SCADA printouts.

Performance criteria

6.1 Safety measure application and removal information is recorded concisely in the required format, and filed within scheduled timeframe.

Planned review date	31 December 2026
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 April 1998	31 December 2013
Revision	2	11 February 2004	31 December 2013
Rollover and Revision	3	26 November 2007	31 December 2013
Review	4	9 December 2010	31 December 2016
Review	5	21 May 2015	31 December 2019
Review	6	28 September 2017	31 December 2023
Review	7	30 September 2021	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.