Title	**Modify installed switchboards**		
Level	**4**	**Credits**	**5**

Purpose	This unit standard is for people engaged in the manufacture and installation of switchboards in the electrotechnology industry. People credited with this unit standard are able to: – isolate switchboards – modify and test switchboards – re-energise switchboards – document switchboard modifications.

Classification	Electrical Engineering > Electric Switchboards

Available grade	Achieved

Guidance Information

1 This unit standard may be used for learning and assessment on-job.

2 Achievement of this unit standard alone does not entitle trainees to legally perform prescribed electrical work without supervision. Until registered and licenced under the Electricity Act 1992 trainees are assisting and must work under supervision when carrying out prescribed electrical work. For non-prescribed electrical work, this statement does not apply.

3 References
- Accident Compensation Act 2001
- AS/NZS 3000 (version as cited in the Electricity (Safety) Regulations), *Electrical installations* (*known as the Australian/New Zealand Wiring Rules*)
- AS/NZS 61439.4:2016, *Low-voltage switchgear and controlgear assemblies – Part 4: Particular requirements for assemblies for construction sites (ACS),* available at Standards NZ
- Electricity Act 1992
- Electricity (Safety) Regulations 2010
- Health and Safety at Work Act 2015
- The New Zealand Electrical Codes of Practice, available at WorkSafe New Zealand, worksafe.govt.nz

and all subsequent amendments and replacements.

4 Definitions

COC – Certificate of Compliance.
ESC – Electronic Speed Controller.
Industry practice – those practices that competent practitioners within the industry recognise as current industry best practice.
ROI – Record of Inspection.
Safe and sound practice – this relates to the installation of electrical equipment and is defined in AS/NZS 3000.
SDOC – Suppliers Declaration of Conformity.
UPS – Uninterrupted Power Supply.

5 Range

a Candidates may refer to current legislation and Standards during assessment.
b Demonstration of safe working practices and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.
c All evidence presented for assessment against this unit standard must be in accordance with:
  i legislation
  ii policies and procedures
  iii ethical codes
  iv Standards – may include but are not limited to those listed in Schedule 2 of the Electricity (Safety) Regulations 2010
  v applicable site, enterprise, and industry practice
  vi where appropriate manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Isolate switchboards.

Performance criteria

1.1 Confirm operation of components and all dependent circuits and equipment prior to de-energising.

Range may include but is not limited to – phase rotation, essential services, UPS systems, stand by generators, renewal energy sources, main supply, capacitors.

1.2 Validate the shutdown of all dependent units to protect staff and equipment before de-energising the switchboard.

Range may include but is not limited to – phase rotation, essential services, UPS systems, stand by generators, renewal energy sources, main supply, capacitors.

1.3 Demonstrate isolation procedures and complete documentation in accordance with job requirements.

1.4 Confirm voltage levels on the board to verify that the switchboard is electrically isolated and remove all energy systems.

Outcome 2

Modify and test switchboards.

Performance criteria

2.1 Carry out modifications in accordance with design specification.

2.2 Test modifications in accordance with Standards.

Outcome 3

Re-energise switchboards.

Performance criteria

3.1 Verify the safety of dependent equipment and users before re-energising the system.

3.2 Obtain permission from appropriate parties relevant to the job requirements to re-energise the board.

3.3 Complete re-energising the switchboard and dependent circuits using a safe and efficient sequence of steps, in accordance with relevant Standards and industry practice.

3.4 Confirm operation of components and all dependent circuits and equipment after re-energising.

Range may include but is not limited to – phase rotation, essential services, UPS systems, stand by generators, renewal energy sources, main supply, capacitors.

Outcome 4

Document switchboard modifications.

Performance criteria

4.1 Update equipment service and record the work carried out.

4.2 Document all final test results in accordance with legislation, Standards, and industry practice.

4.3 Provide relevant certified documentation in accordance with legislation, Standards, and industry practice.

Range documentation may include but is not limited to – COC, ROI, ESC, SDOC, supplied authority documentation.

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	31 August 1998	31 December 2013
Revision	2	12 March 2002	31 December 2013
Review	3	20 March 2008	31 December 2020
Rollover and Revision	4	15 March 2012	31 December 2020
Revision	5	15 January 2014	31 December 2020
Review	6	17 November 2016	N/A
Rollover and Revision	7	25 July 2024	N/A

Consent and Moderation Requirements (CMR) reference	0003

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact the Waihanga Ara Rau Construction and Infrastructure Workforce Development Council qualifications@WaihangaAraRau.nz if you wish to suggest changes to the content of this unit standard.