

| | | | |
|--------------|---|----------------|----------|
| Title | Demonstrate knowledge of electric switchboards and lighting and power circuits | | |
| Level | 3 | Credits | 2 |

| | |
|----------------|--|
| Purpose | <p>This unit standard is intended for training and assessment of electrical workers and covers knowledge and application of electric electromagnetic production and management of electricity.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate knowledge of switchboards – demonstrate knowledge of basic lighting and power circuits including associated electrical protection. |
|----------------|--|

| | |
|-----------------------|--|
| Classification | Electrical Engineering > Electrical Installation and Maintenance |
|-----------------------|--|

| | |
|------------------------|----------|
| Available grade | Achieved |
|------------------------|----------|

Guidance Information

- 1 This unit standard has been developed for learning and assessment off-job.
- 2 Definitions
 - AC* – alternating current.
 - DC* – direct current.
 - EWRB* – Electrical Workers Registration Board.
 - Industry practice* – those practices that competent practitioners within the industry recognise as current industry best practice.
 - MEN* – multiple earth neutral.
 - RCD* – residual current device.
 - Safe and sound practice* – as it relates to the installation of electrical equipment is defined in AS/NZS 3000 (version as cited by the Electricity (Safety) Regulations), *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*.
- 3 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 activities and evidence presented for all outcomes and performance criteria in 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

Demonstrate knowledge of switchboards.

Performance criteria

- 1.1 Describe types of electrical switchboards and equipment.
- Range main switchboard, multiple earth neutral (MEN) switchboard, distribution board, switchgear.
- 1.2 With the aid of diagrams outline the function of switchboards and where they fit in the circuit.
- Range domestic, commercial, industrial, electricity supply.
- 1.3 Identify components found on switchboards and outline their purpose.
- 1.4 Summarise switchboard installation requirements.
- 1.5 Describe requirements for the installation of RCD on switchboards.
- 1.6 Summarise switchboard internal arc fault and fire prevention measures.
- 1.7 Describe visual checks and electrical test procedures for main switchboards.
- Range electrical test – polarity, phase rotation, insulation resistance, bonding.

Outcome 2

Demonstrate knowledge of basic lighting and power circuits including associated electrical protection.

Performance criteria

- 2.1 Identify components and equipment found in lighting circuits and outline their purpose and operation.

- 2.2 Identify components and equipment found in power circuits and outline their purpose and operation.
- 2.3 Explain connection methods used in lighting and power circuits.
- 2.4 Describe electrical protection requirements for basic lighting and power circuit.
-

| | |
|--------------------------------|---|
| Replacement information | This unit standard replaced unit standard 1205. |
|--------------------------------|---|

| | |
|----------------------------|------------------|
| Planned review date | 31 December 2025 |
|----------------------------|------------------|

Status information and last date for assessment for superseded versions

| Process | Version | Date | Last Date for Assessment |
|-----------------------|---------|--------------|--------------------------|
| Registration | 1 | 21 July 2016 | N/A |
| Rollover and Revision | 2 | 25 May 2023 | 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 Waihangara Ara Rau Construction and Infrastructure Workforce Development Council qualifications@WaihangaraAraRau.nz if you wish to suggest changes to the content of this unit standard.