Title	**Plan, joint, and test underground cables, and operate a cable spiking or cutting tool**		
Level	**4**	**Credits**	**10**

Purpose	People credited with this unit standard are able to: • plan and joint a live underground network LV cable; • plan and carry out a transition joint between two HV service cables on a distribution network; • plan and carry out identification and earthing of cables and equipment within a work area; • obtain a permit for working on de-energising LV and HV electric underground cables; and • operate a cable spiking or cutting tool. This unit standard partially fulfils the requirements for registration as a cable jointer with the Electrical Workers Registration Board (EWRB).

Classification	Electricity Supply > Electricity Supply - Distribution Networks

Available grade	Achieved

Prerequisites	Unit 10547, *Joint high voltage polymeric insulated power cables up to 22kV in the electricity supply industry*; Unit 20535, *Joint high voltage paper insulated power cable to polymeric insulated cable up to 22kV using a transition jointing method*; Unit 24152 *Operate a cable spiking and cutting tool,* or demonstrate equivalent knowledge and skills.

Guidance Information

1 This unit standard underpins one of two capstone assessments for registration with the EWRB for the practical skill set of a cable jointer in the electricity supply sector.

2 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.

3 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to 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 Electricity Engineers Association *Safety Manual – Electricity Industry* (SM-EI) (current version) and relevant EEA guides including *Safe Work with Cables* available at www.eea.co.nz.
- Electrical Engineers Association (2013) *Line Mechanic and Cable Jointers Handbook* (6th ed.) Chapter 18 Cables – Jointing and Terminating available at www.eea.co.nz.

4 Definitions

Asset owner refers to a participant who owns or operates assets used for generating or conveying electricity.

Basic life support is as referred to in the *New Zealand Resuscitation Council Guidelines* as that phase of emergency care that either:

a) prevents respiratory or circulatory arrest or insufficiency through prompt recognition or intervention; or
b) supports the person to relieve an airway obstruction; or
c) supports the breathing and circulation of a person with cardiopulmonary resuscitation (CPR) and supports the person through accessing an Automated External Defibrillator (AED) where available.

HV is defined as 'high voltage' and includes voltages exceeding 1000V AC.

Industry requirements include all asset owner requirements and standards; 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.

LV is defined as 'low voltage' and includes voltages exceeding 50V AC but not exceeding 1000V AC.

5 The assessment activities of this unit standard may be conducted using a simulated electricity workplace environment.

Outcomes and performance criteria

Outcome 1

Plan and joint a live underground network LV cable.

Performance criteria

1.1 Hazard identification and risk assessment of workplace environment are completed prior to work being undertaken.

1.2 Cable is tested prior to starting work.

1.3 A live LV electric cable is jointed in accordance with manufacturer's instructions.

1.4 Electric cable is checked after completing work and required report is filed.

Outcome 2

Plan and carry out a transition joint between two HV cables on a distribution network.

Performance criteria

2.1 Hazard identification and risk assessment of workplace environment are completed prior to work being undertaken.

2.2 Cables are tested prior to starting work.

2.3 Two HV cables are transition jointed.

2.4 Electric cable is tested after completing work and the required reports are filed.

Outcome 3

Plan and carry out identification and earthing of cables and equipment within a work area.

Performance criteria

3.1 Cables and equipment to be earthed in the work area are identified.

3.2 Proving earth point is de-energised before earthing is demonstrated.

3.3 Cables and equipment are earthed.

3.4 Earthing is removed once work is completed.

Outcome 4

Obtain a permit for working on de-energising LV and HV electric underground cables.

Performance criteria

4.1 Process for obtaining a permit is identified.

4.2 Process is carried out.

4.3 Authorisation permit is obtained.

4.4 Permit conditions are communicated to team members.

Outcome 5

Operate a cable spiking or cutting tool.

Performance criteria

5.1 The requirement for an access or test permit is determined and, if required, an access or test permit is obtained prior to operation.

5.2 A cable spiking or cutting tool is operated, following safety procedures, and in accordance with manufacturers' instructions.

5.3 Tool maintenance procedures are undertaken following operation of the tool in accordance with manufacturers' instructions.

Replacement information	This unit standard replaced unit standard 28278.

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	26 May 2022	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 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.