

1. Module details**Module name****Install and Maintain Services for Cable Jointers****Module duration**

It is expected that students with the appropriate entry knowledge and skills will successfully complete this module in 36 - 40 hours.

Module code

NUE319

Discipline code

0703130

2. Module purpose

This module is designed to supply the knowledge and skills required by cable jointers to install and maintain low voltage services. The experience gained is in the correct procedures and practices involved in preparing for and carrying out installation and maintenance work on electrical services connecting consumers. Jointing, terminating and maintaining of energised and de-energised low voltage underground cables, testing procedures, commissioning and fault diagnosis. All procedures and practices comply with electricity supply industry standards, Supply Authority regulations, relevant Australian Standards and OH&S regulations.

3. PrerequisitesNUE216 Underground cable Installation
NUE217 Cable Jointing 1 – LV Polymeric**4. Relationship to competency standards**

This module addresses Unit UETTDRIS14A Install and maintain LV services underground in the ESI Transmission and Distribution Training Package.

5. Content

Underground service arrangements and procedures

System diagrams/plans, technical drawings
interpretation
analysisCables
type (polymeric)
characteristics
capabilitiesMaintenance
diagnosis of faults
repair of faultsJointing and terminating
polymeric heat shrink materials
polymeric tape materials

Test procedures and commissioning

inspection
test instruments
polarity
voltage
phase sequence
Supply Authority Regulations

Clearance to assets and structures
powerlines
communication systems
buildings

Service line constructional requirements
fuse boxes, bases and carriers
fuse ratings
fuse removal/replacement
conductors and connections
single phase/multi phase services
mid span services

Fault diagnosis and repair

Test procedures and commissioning
inspection
test instruments
polarity
voltage
phase sequence
Supply Authority Regulations

6. Assessment strategy

Assessment methods

Short answer questions (written, oral or graphic or computer based).
 Suitable practical exercises which assess the skills required of each learning outcome.

Conditions of assessment

Theory room for written tests together with practical field observation.

7. Learning outcome details

Learning outcome 1

Plan and prepare for the installation and maintenance of low voltage underground service cables.

Assessment criteria

- 1.1 Obtain and analyse all relevant text in preparation for the installation and maintenance of low voltage underground service cables.
- 1.2 Identify and interpret all technical drawings require to complete the task.
- 1.3 Identify the resources required, including personnel, plant, equipment, tools and transport to ensure the task can be completed.

Learning outcome 2

Joint, terminate and maintain energised low voltage underground service cables.

Assessment criteria

- 2.1 Prepare cable surrounds in accordance with electricity supply industry standards and procedures.
- 2.2 Joint and terminate cables in accordance with electricity supply industry standards and procedures.
- 2.3 Test cables in accordance with electricity supply industry procedures.
- 2.4 Commission low voltage service cables in accordance with electricity supply industry procedures.

Learning outcome 3

Joint terminate and maintain de-energised low voltage underground service cables.

Assessment criteria

- 3.1 Isolate low voltage underground service cables and prove safe to work on in accordance with electricity supply industry procedures.

	<p>3.2 Joint, terminate de-energised low voltage underground service cables in accordance with electricity supply industry standards.</p> <p>3.3 Test low voltage underground service cables in accordance with electricity supply industry procedures.</p> <p>3.4 Locate and repair faults in accordance with electricity supply industry procedures.</p>
Learning outcome 4	Demonstrate test procedures used prior to connecting supply to customer’s premises.
Assessment criteria	<p>4.1 Identify service test procedures preformed to and during the commissioning stage of connecting a customer’s service.</p> <p>4.2 Demonstrate the test used during the commissioning of a customer’s low voltage service including: Polarity Voltage Phase sequence.</p> <p>4.3 State the consequences of incorrect polarity or phase sequence connections.</p>
Learning outcome 5	Diagnose faults within service installations.
Assessment criteria	<p>5.1 Describe test procedures used to determine the nature of a fault in a customer’s service.</p> <p>5.2 Diagnose faults within customer’s service installation.</p>
8. Delivery of the module	
Delivery strategy	<p>Delivery strategies must be suitable for both theoretical and/or practical learning and module purpose. It is recommended that learning and assessment be facilitated in a holistic manner which may require a learning sequence other than indicated in the body of this module descriptor.</p>
Resource requirements	<p>Enterprise construction manuals Relevant Australian standards Enterprise work manuals and standing instructions Relevant manufacturers’ equipment/component manuals Range of materials/components Appropriate sit layout Test equipment Range of tools</p>

Occupational health and safety requirements

Safety equipment

WorkCover NSW, *WorkCover Code of Practice - Low Voltage Electrical Work Local electricity distributor and authority regulations, or State/Territory equivalent*

Where this module is used in an approved Traineeship or Apprenticeship program learners should be advised to obtain, where available, respective EE-Oz Training Standards¹ **User Guides** (*these outline in detail what training and work performance the Learner is required to undertake for the program*).

Students should be made aware of Occupational Health and Safety issues in all situations and be expected to demonstrate safe working practices at all times. Electrical safety must be emphasised.

¹ EE-Oz Training Standards is an ANTA declared Industry Skills Council for the ElectroComms and EnergyUtilities Industry