1. Module details

Module name

Install and Maintain Electrical Equipment 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

NUE317

Discipline code

0703130

2. Module purpose

This module is designed to supply the knowledge and skills required by electricity cable jointers to install and maintain electrical switchgear and equipment to plans, drawings and specifications. The experience gained is in the correct procedures and practices involved in preparing for and carrying out installation and maintenance work on underground electrical switchgear and equipment to plans, drawings and specifications. Correctly positioning switchgear and equipment and carry out 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. Prerequisites

NUE216 Underground Cable Installation
NUE217 Cable Jointing 1 – LV Polymeric
NUE219 Cable Jointing 3 – Paper/Lead

4. Relationship to competency standards

This module addresses Units UETTDRIS01A Install electrical equipment (network infrastructure) and UETTDRIS02A Maintain electrical equipment (network infrastructure) in the ESI Transmission and Distribution Training Package.

5. Content

Switchgear

Protection and isolation of circuits

System diagrams/plans, technical drawings
- interpretation
- analysis

Switchgear
- circuit Breakers
- fuses
- links
- street lighting controls

Equipment
- ground transformer stations

- reactors, regulators, capacitors
- fault indicators

Test procedures and commissioning
inspection
test instruments
- voltage detectors
- phasing equipment
- clip on ammeters
- insulation resistance testers
- recording metres
- earth resistance meter

polarity
voltage
phase sequence
Supply Authority Regulations

Fault diagnosis and repair

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 for the installation and maintenance of underground switchgear and equipment.**	
Assessment criteria	1.1	Obtain and analyse all relevant text in preparation for the installation and maintenance of underground switchgear and equipment.
	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	**Position, connect and/or maintain underground switchgear and equipment**	
Assessment criteria	2.1	Identify types of underground electrical switchgear and equipment and explain their function.
	2.2	Assemble and erect switchgear and equipment.
	2.3	Diagnose the maintenance requirement/s of underground electrical equipment in accordance with electricity supply industry procedures.
	2.4	Maintain electrical equipment in accordance with electricity supply industry standards and procedures.
Learning outcome 3	**Test and commission underground electrical switchgear and equipment.**	
Assessment criteria	3.1	Identify methods of testing and commissioning underground electrical switchgear/equipment in accordance with electricity supply industry procedures.

	3.2 Test and commission underground electrical switchgear/equipment in accordance with electricity supply industry procedures. 3.3 Interpret test results to ensure electrical switch gear/equipment functions in accordance with electricity supply industry procedures.
8. Delivery of the module	
Delivery strategy	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.
Resource requirements	Enterprise construction manuals Relevant Australian standards Enterprise work manuals and standing instructions Relevant manufacturers' equipment/component manuals Range of materials/components Appropriate site layout Test equipment Range of tools 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 Standards[1] ***User Guides*** (*these outline in detail what training and work performance the Learner is required to undertake for the program*).
Occupational health and safety requirements	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