



Australian Government

UET40519 Certificate IV in ESI - Power Systems Substations

Release 1

UET40519 Certificate IV in ESI - Power Systems Substations

Modification History

Release 1. This is the first release of this qualification in the UET Transmission, Distribution and Rail Sector Training Package

Qualification Description

This qualification provides the skills and knowledge to work in power system substations in the electricity supply industry (ESI).

This qualification covers selecting, installing, setting up, testing, fault finding, repairing and maintaining electrical systems and equipment in buildings and premises. It also provides a career in installation and maintenance of substations, such as the maintenance of high voltage (HV) power system, including circuit breakers and transformers. It includes substation switching, inspection and diagnosing and rectifying faults. Options are available for skills to be obtained in high current direct current (d.c.) switchgear and equipment, installation of HV plant and equipment and/or the maintenance and commissioning of discrete protection and control systems.

It includes the Electrical Regulatory Authorities Council (ERAC) requirements for an 'Electrician's licence'. Competency development activities in this qualification are subject to regulations directly related to licencing.

The skills and knowledge described within the units in this qualification may require a licence or permit to practice in the workplace.

Additional and/or other conditions may also apply under state and territory legislative and regulatory licencing requirements which must be confirmed prior to commencing the qualification.

Entry Requirements

There are no entry requirements for this qualification

Packaging Rules

A total of **1280 weighting points** comprising:

1030 core weighting points listed below; **plus**

250 general elective weighting points from the general elective units listed below.

Choose a total of **250 weighting points** elective units from the list below, of which between 0 and 50 **weighting points** can be taken from Group A; between 0 and 120 **weighting points** can be taken from Group B; and between 130 and 250 **weighting points** taken from Group C. You may select all your electives from this group.

Up to 50 weighting points of the general elective units Group A may be selected, with

appropriate contextualisation, from any relevant nationally endorsed Training Package or accredited course, provided selected units contribute to the vocational outcome of the qualification. Previously assigned weighting points are listed in UET Transmission, Distribution and Rail Sector Training Package Companion Volume Implementation Guide, if not listed weighting points will be 10 points.

Where imported units are selected, care must be taken to ensure all prerequisite units specified are complied with.

Core units		Weighting Points
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components └ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	40
UEENEEE104A	Solve problems in d.c. circuits └ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	80
UEENEEE105A	Fix and secure electrotechnology equipment └ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications └ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	40
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work └ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
UEENEEG006A	Solve problems in single and three phase low voltage machines └ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace └ UEENEEE102A Fabricate, dismantle, assemble of electrotechnology components └ UEENEEE104A Solve problems in d.c. circuits └ UEENEEE105A Fix and secure electrotechnology	80

equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuit

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits 60

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, dismantle, assemble of electrotechnology components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuit

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

UEENEEG063A Arrange circuits, control and protection for general electrical installations 40

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, dismantle, assemble of electrotechnology components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEG101A Solve problems in electromagnetic

	devices and related circuits	
	└ UEENEEG102A Solve problems in low voltage a.c. circuit	
	└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits	
UEENEEG101A	Solve problems in electromagnetic devices and related circuits	60
	└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	
	└ UEENEEE104A Solve problems in d.c. circuits	
UEENEEG102A	Solve problems in low voltage a.c. circuits	80
	└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	
	└ UEENEEE104A Solve problems in d.c. circuits	
	└ UEENEEG101A Solve problems in electromagnetic devices and related circuits	
UEENEEG103A	Install low voltage wiring and accessories	20
	└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	
	└ UEENEEE102A Fabricate, dismantle, assemble of electrotechnology components	
	└ UEENEEE104A Solve problems in d.c. circuits	
	└ UEENEEE105A Fix and secure electrotechnology equipment	
	└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications	
	└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work	
	└ UEENEEG006A Solve problems in single and three phase low voltage machines	
	└ UEENEEG033A Solve problems in single and three phase electrical apparatus and circuits	
	└ UEENEEG063A Arrange circuits, control and protection for general electrical installations	
	└ UEENEEG101A Solve problems in electromagnetic devices and related circuits	
	└ UEENEEG102A Solve problems in low voltage a.c.	

circuit

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations 20

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, dismantle, assemble of electrotechnology components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuit

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

	└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	
	└ UEENEEG109A Develop and connect electrical control circuits	
UEENEEG105A	Verify compliance and functionality of low voltage general electrical installations	40
	└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	
	└ UEENEEE102A Fabricate, dismantle, assemble of electrotechnology components	
	└ UEENEEE104A Solve problems in d.c. circuits	
	└ UEENEEE105A Fix and secure electrotechnology equipment	
	└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications	
	└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work	
	└ UEENEEG006A Solve problems in single and three phase low voltage machines	
	└ UEENEEG033A Solve problems in single and three phase electrical apparatus and circuits	
	└ UEENEEG063A Arrange circuits, control and protection for general electrical installations	
	└ UEENEEG101A Solve problems in electromagnetic devices and related circuits	
	└ UEENEEG102A Solve problems in low voltage a.c. circuit	
	└ UEENEEG103A Install low voltage wiring and accessories	
	└ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations	
	└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits	
	└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations	
	└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	

└ UEENEEG109A Develop and connect electrical control circuits

Conditions: Those holding an 'Unrestricted Electrician's Licence' or equivalent issued in an Australian State or Territory meet the requirements of this unit and its prerequisite requirements.

A 'licensed electrician' applying for an 'electrical contractors licence' may be required to undertake this unit to demonstrate their currency with verification of compliance requirements. In this case they are deemed to have met the prerequisites for this unit provided that: they hold a current 'electricians licence' or its equivalent issued in an Australian State or Territory and have recently been in permanent employment as a licensed electrician sufficient to evidence current knowledge of applicable standards and regulations.

UEENEEG106A Terminate cables, cords and accessories for low voltage circuits 40

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

UEENEEG107A Select wiring systems and cables for low voltage general electrical installations 60

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, dismantle, assemble of electrotechnology components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three

	phase electrical apparatus and circuits	
	└ UEENEEG063A Arrange circuits, control and protection for general electrical installations	
	└ UEENEEG101A Solve problems in electromagnetic devices and related circuits	
	└ UEENEEG102A Solve problems in low voltage a.c. circuit	
	└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits	
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	40
	└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	
	└ UEENEEE102A Fabricate, dismantle, assemble of utilities components	
	└ UEENEEE104A Solve problems in d.c. circuits	
	└ UEENEEE105A Fix and secure electrotechnology equipment	
	└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications	
	└ UEENEEG006A Solve problems in single and three phase low voltage machines	
	└ UEENEEG033A Solve problems in single and three phase electrical apparatus and circuits	
	└ UEENEEG063A Arrange circuits, control and protection for general electrical installations	
	└ UEENEEG101A Solve problems in electromagnetic devices and related circuits	
	└ UEENEEG102A Solve problems in low voltage a.c. circuits	
	└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits	
UEENEEG109A	Develop and connect electrical control circuits	80
	└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	
	└ UEENEEE102A Fabricate, dismantle, assemble of electrotechnology components	
	└ UEENEEE104A Solve problems in d.c. circuits	

	<ul style="list-style-type: none"> └ UEENEEE105A Fix and secure electrotechnology equipment └ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications └ UEENEEG006A Solve problems in single and three phase low voltage machines └ UEENEEG063A Arrange circuits, control and protection for general electrical installations └ UEENEEG101A Solve problems in electromagnetic devices and related circuits └ UEENEEG102A Solve problems in low voltage a.c. circuit └ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits 	
UEENEEK142A	Apply environmentally and sustainable procedures in the energy sector	20
UETTDREL16	Working safely near live electrical apparatus	20
UETTDRI62	Implement and monitor the power system organisational WHS/OHS policies, procedures and programs	30
	Common Unit Group	
	<ul style="list-style-type: none"> └ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace └ UETTDREL16 Working safely near live electrical apparatus 	
UETTDRI63	Implement & monitor power system environmental & sustainable energy management policies & procedures	30
	Electrotechnology Pathway Unit Group	
	<ul style="list-style-type: none"> └ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector 	
	ESI - TDR Pathway Unit Group	
	<ul style="list-style-type: none"> └ UETTDREL11 Apply sustainable energy and environmental procedures 	
UETTDRSB22	Carry out power systems substation inspection	60
	Common Unit Group	
	<ul style="list-style-type: none"> └ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace └ UEENEEE102A Fabricate, assemble and dismantle 	

utilities industry components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

Pathway 1 - Electrician

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional

verification of electrical apparatus and existing circuits

UETTDRSB23 Install and maintain substation direct current systems 30

Common Unit Group

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

Group A: Imported and common elective units	Weighting Points
--	-------------------------

BSBINM401	Implement workplace information system	40
BSBLDR402	Lead effective workplace relationships	50
BSBLDR403	Lead team effectiveness	50
BSBMGT402	Implement operational plan	40
BSBMGT403	Implement continuous improvement	40

Group B: Qualification elective units	Weighting Points
--	-------------------------

UETTDRI547	Sample, test, filter and reinstate insulating oil	40
	Common Unit Group	
	<ul style="list-style-type: none"> └ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace └ UEENEEE102A Fabricate, assemble and dismantle utilities industry components └ UEENEEE104A Solve problems in d.c. circuits └ UEENEEE105A Fix and secure electrotechnology equipment └ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications └ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work └ UEENEEG006A Solve problems in single and three phase low voltage machines └ UEENEEG101A Solve problems in electromagnetic devices and related circuits └ UEENEEG102A Solve problems in low voltage a.c. circuits └ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits └ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector └ UETTDREL16 Working safely near live electrical apparatus 	

UETTDRI67 Solve problems in energy supply network equipment 80**Common Unit Group**

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

UETTDRI68 Solve problems in energy supply network protection equipment and systems 40**Common Unit Group**

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG106A Terminate cables, cords and

	accessories for low voltage circuits	
	└ UETTDRI67 Solve problems in energy supply network equipment	
UETTDRSB29	Maintain capacitor bank equipment for voltage regulation	40
	Common Unit Group	
	└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	
	└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components	
	└ UEENEEE104A Solve problems in d.c. circuits	
	└ UEENEEE105A Fix and secure electrotechnology equipment	
	└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications	
	└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work	
	└ UEENEEG006A Solve problems in single and three phase low voltage machines	
	└ UEENEEG101A Solve problems in electromagnetic devices and related circuits	
	└ UEENEEG102A Solve problems in low voltage a.c. circuits	
	└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits	
	└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector	
UETTDRSB33	Install high voltage plant and equipment	50
	Common Unit Group	
	└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	
	└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components	
	└ UEENEEE104A Solve problems in d.c. circuits	
	└ UEENEEE105A Fix and secure electrotechnology equipment	
	└ UEENEEE107A Use drawings, diagrams, schedules,	

standards, codes and specifications

└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

UETTDRSB39 Perform power system substation switching operation to 50 a given schedule

Electrical

Common Unit Group

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UETTDREL16 Working safely near live electrical apparatus

Transmission Overhead Pathway Group

└ UETTDREL11 Apply sustainable energy and environmental procedures

└ UETTDREL12 Operate plant and equipment near live electrical conductors and apparatus

└ UETTDNIS54 Install and maintain poles, structures and overhead conductors and cables

└ UETTDNTP26 Install transmission structures and associated hardware

└ UETTDNTP27 Maintain transmission structures and associated hardware

└ UETTDNTP29 Install and maintain transmission overhead conductors and cables

Distribution Overhead Pathway Group

└ UETTDNDP12 Maintain overhead energised low voltage conductors and cables

└ UETTDREL11 Apply sustainable energy and environmental procedures

└ UETTDREL12 Operate plant and equipment near live electrical conductors and apparatus

└ UETTDNIS41 Install network infrastructure electrical equipment

└ UETTDNIS42 Maintain network infrastructure electrical equipment

└ UETTDNIS52 Install and maintain poles, structures and associated hardware

└ UETTDNIS54 Install and maintain poles, structures and overhead conductors and cables

└ UETTDNIS56 Install and maintain low voltage overhead services

Rail Traction Pathway Group

└ UETTDREL11 Apply sustainable energy and environmental procedures

└ UETTDREL12 Operate plant and equipment near live electrical conductors and apparatus

└ UETTDNIS52 Install and maintain poles, structures and associated hardware

└ UETTDNIS54 Install and maintain poles, structures and overhead conductors and cables

└ UETTDNRT21 Install traction overhead wiring systems

└ UETTDNRT22 Maintain traction overhead wiring systems

└ UETTDNRT23 Install rail traction bonds

└ UETTDNRT27 Install overhead traction components and equipment

└ UETTDNRT28 Maintain overhead traction components and equipment

Distribution Cable Jointing Pathway Group

└ UETTDRCJ21 Lay ESI electrical cables

└ UETTDRCJ26 Install and maintain de-energised low voltage underground polymeric cables

└ UETTDRCJ27 Install and maintain de-energised high voltage underground polymeric cables

└ UETTDREL11 Apply sustainable energy and environmental procedures

└ UETTDREL12 Operate plant and equipment near live electrical conductors and apparatus

└ UETTDNIS41 Install network infrastructure electrical equipment

└ UETTDNIS42 Maintain network infrastructure electrical equipment

└ UETTDNIS55 Install and maintain low voltage underground services

Electrical Pathway Group

└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

- └ UEENEEG063A Arrange circuits, control and protection for general electrical installations
- └ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits
- └ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits
- └ UEENEEG109A Develop and connect electrical control circuits
- └ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector
- └ UETTDRIS67 Solve problems in energy supply network equipment

Group C: Qualification elective units**Weighting Points**

UETTDRSB21	Diagnose and rectify faults in substation environment	40
	Common Unit Group	
	└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	
	└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components	
	└ UEENEEE104A Solve problems in d.c. circuits	
	└ UEENEEE105A Fix and secure electrotechnology equipment	
	└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications	
	└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work	
	└ UEENEEG006A Solve problems in single and three phase low voltage machines	
	└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits	
	└ UEENEEG063A Arrange circuits, control and protection for general electrical installations	
	└ UEENEEG101A Solve problems in electromagnetic devices and related circuits	
	└ UEENEEG102A Solve problems in low voltage a.c. circuits	
	└ UEENEEG106A Terminate cables, cords and	

accessories for low voltage circuits

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

Pathway 1 - Electrician

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional verification of electrical apparatus and existing circuits

UETTDRSB24 Maintain high voltage power system circuit breakers 60

Common Unit Group

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and

protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

Pathway 1 - Electrician

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional verification of electrical apparatus and existing circuits

UETTDRSB25	Maintain high voltage power and instrument transformers	80
------------	---	----

Common Unit Group

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEE137A Document and apply measures to

control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

Pathway 1 - Electrician

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional verification of electrical apparatus and existing circuits

UETTDRSB26 Install high current d.c. equipment and switchgear 40

Common Unit Group

└ UEENEEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEEE102A Fabricate, assemble and dismantle utilities industry components

- └ UEENEEE104A Solve problems in d.c. circuits
- └ UEENEEE105A Fix and secure electrotechnology equipment
- └ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications
- └ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work
- └ UEENEEG006A Solve problems in single and three phase low voltage machines
- └ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits
- └ UEENEEG063A Arrange circuits, control and protection for general electrical installations
- └ UEENEEG101A Solve problems in electromagnetic devices and related circuits
- └ UEENEEG102A Solve problems in low voltage a.c. circuits
- └ UEENEEG103A Install low voltage wiring and accessories
- └ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits
- └ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations
- └ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits
- └ UEENEEG109A Develop and connect electrical control circuits
- └ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

UETTDRSB27 Maintain high current d.c. equipment and switchgear 40

Common Unit Group

- └ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace
- └ UEENEEE102A Fabricate, assemble and dismantle utilities industry components
- └ UEENEEE104A Solve problems in d.c. circuits
- └ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

Pathway 1 - Electrician

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional verification of electrical apparatus and existing circuits

UETTDRSB30	Maintain high voltage power system static VAR compensators (SVC)	30
	Common Unit Group	

- └ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace
 - └ UEENEEE102A Fabricate, assemble and dismantle utilities industry components
 - └ UEENEEE104A Solve problems in d.c. circuits
 - └ UEENEEE105A Fix and secure electrotechnology equipment
 - └ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications
 - └ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work
 - └ UEENEEG006A Solve problems in single and three phase low voltage machines
 - └ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits
 - └ UEENEEG063A Arrange circuits, control and protection for general electrical installations
 - └ UEENEEG101A Solve problems in electromagnetic devices and related circuits
 - └ UEENEEG102A Solve problems in low voltage a.c. circuits
 - └ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits
 - └ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits
 - └ UEENEEG109A Develop and connect electrical control circuits
 - └ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector
 - └ UETTDRSB25 Maintain high voltage power and instrument transformers
 - └ UETTDRSB29 Maintain capacitor bank equipment for voltage regulation
- Pathway 1 - Electrician
- └ UEENEEG103A Install low voltage wiring and accessories
 - └ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical

installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional verification of electrical apparatus and existing circuits

UETTDRSB31 Maintain high voltage power system synchronous condensers 50

Common Unit Group

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

Pathway 1 - Electrician

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional verification of electrical apparatus and existing circuits

UETTDRSB32	Maintain power transformer on load tap changers (OLTC)	80
------------	--	----

Common Unit Group

└ UEENEEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEEE104A Solve problems in d.c. circuits

└ UEENEEEE105A Fix and secure electrotechnology equipment

└ UEENEEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c.

circuits

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

└ UETTDRSB25 Maintain high voltage power and instrument transformers

Pathway 1 - Electrician

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional verification of electrical apparatus and existing circuits

UETTDRSB34 Carry out surveys using thermovision techniques 30

Common Unit Group

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three

phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

Pathway 1 - Electrician

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional verification of electrical apparatus and existing circuits

UETTDRSB35 Maintain discrete control and protection systems 80

Common Unit Group

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology

equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

Pathway 1 - Electrician

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional verification of electrical apparatus and existing circuits

UETTDRSB36	Commission discrete control and protection systems	30
	Common Unit Group	

- └ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace
 - └ UEENEEE102A Fabricate, assemble and dismantle utilities industry components
 - └ UEENEEE104A Solve problems in d.c. circuits
 - └ UEENEEE105A Fix and secure electrotechnology equipment
 - └ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications
 - └ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work
 - └ UEENEEG006A Solve problems in single and three phase low voltage machines
 - └ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits
 - └ UEENEEG063A Arrange circuits, control and protection for general electrical installations
 - └ UEENEEG101A Solve problems in electromagnetic devices and related circuits
 - └ UEENEEG102A Solve problems in low voltage a.c. circuits
 - └ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits
 - └ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits
 - └ UEENEEG109A Develop and connect electrical control circuits
 - └ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector
 - └ UETTDRSB25 Maintain high voltage power and instrument transformers
 - └ UETTDRSB29 Maintain capacitor bank equipment for voltage regulation
- Pathway 1 - Electrician
- └ UEENEEG103A Install low voltage wiring and accessories
 - └ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical

installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional verification of electrical apparatus and existing circuits

UETTDRSB37 Maintain power system distribution field devices 80

Common Unit Group

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and

sustainable procedures in the energy sector

Pathway 1 - Electrician

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional verification of electrical apparatus and existing circuits

UETTDRSB38 Commission power system distribution field devices 30
Common Unit Group

└ UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

└ UEENEEE102A Fabricate, assemble and dismantle utilities industry components

└ UEENEEE104A Solve problems in d.c. circuits

└ UEENEEE105A Fix and secure electrotechnology equipment

└ UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

└ UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

└ UEENEEG006A Solve problems in single and three phase low voltage machines

└ UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

└ UEENEEG063A Arrange circuits, control and protection for general electrical installations

└ UEENEEG101A Solve problems in electromagnetic devices and related circuits

└ UEENEEG102A Solve problems in low voltage a.c. circuits

└ UEENEEG106A Terminate cables, cords and

accessories for low voltage circuits

└ UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

└ UEENEEG109A Develop and connect electrical control circuits

└ UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

└ UETTDRSB37 Maintain power system distribution field devices

Pathway 1 - Electrician

└ UEENEEG103A Install low voltage wiring and accessories

└ UEENEEG104A Install appliances, switchgear and associated accessories for low voltage electrical installations

└ UEENEEG105A Verify compliance and functionality of low voltage general electrical installations

└ UEENEEG107A Select wiring systems and cables for low voltage general electrical installations

Pathway 2 - Electrical Fitter

└ UEENEEG199A Conduct compliance and functional verification of electrical apparatus and existing circuits

Qualification Mapping Information

This qualification replaces and is equivalent to UET40512 Certificate IV in ESI - Power Systems Substations

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=229bace1-b7bc-4653-9300-dffb13ecfad7>