



Australian Government

UETTDRTS41 Install and replace complex energy/revenue metering schemes and associated equipment

Release: 1

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Modification History

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

Application

This unit covers the installation and replacement of energy/revenue meters and associated equipment in complex situations. Replacement includes the identification of faults in accordance with established procedures and return to service. It includes the requirements to ascertain if normal functions of the meters and associated equipment are in accordance with operating standards.

The application of the skills and knowledge described in this unit requires a licence/registration to practice in the workplace subject to regulations for undertaking of electrical work.

Other conditions may apply under state and territory legislative and regulatory licencing requirements which must be confirmed prior to commencing this unit.

Pre-requisite Unit

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

UEENEEG076A Install and replace low voltage current transformer metering

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

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

UEENEEG105A Verify compliance and functionality of low voltage general 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

UEENEEG171A Install, set up and commission interval metering

UETTDREL11 Apply sustainable energy and environmental procedures

UETTDREL15 Respond to power systems technical enquiries and requests

UETTDREL16 Working safely near live electrical apparatus

UETTDRTS37 Perform current injection testing using phantom load

UETTDRTS38 Install and replace high voltage metering and associated equipment

UETTDRTS39 Maintain compliance with national electricity market metrology practices and procedures

UETTDRTS40 Test and maintain energy/revenue metering schemes

Competency Field

Testing

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan for the installation and replacement of energy/revenue metering schemes and associated equipment (complex)

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1.1 Work health and safety (WHS)/occupational health and safety (OHS) practices/procedures and environmental and sustainable energy procedures, which may influence the installation and replacement of energy/revenue metering schemes and associated equipment (complex),

are reviewed and determined

- 1.2** Purpose of the installation and replacement of energy/revenue metering schemes and associated equipment (complex) is established after data is analysed and expected outcomes of the work are confirmed with appropriate personnel
- 1.3** Organisational established procedures, policies and specifications for the installation and replacement of energy/revenue metering schemes and associated equipment (complex) are obtained or established with appropriate personnel
- 1.4** Installation and replacement of energy/revenue metering schemes and associated equipment (complex) procedures are discussed with/directed to appropriate personnel in order to ascertain the project brief
- 1.5** Installation and replacement parameters are established from organisational established procedures, policies and specifications
- 1.6** Equipment/tools and personal protective equipment (PPE) are selected based on specified performance criteria and established procedures
- 1.7** Work roles and tasks are allocated according to requirements and individual competencies
- 1.8** Work is prioritised and sequenced for the most efficient/effective outcome, completed within an acceptable timeframe, to a quality standard and in accordance with established procedures
- 1.9** Liaison and communication issues with others/authorised personnel, authorities, clients, customers are resolved and activities coordinated to carry out work
- 1.10** Risk control measures are identified, prioritised and evaluated against the work schedule
- 1.11** Relevant internal and external work permits are obtained to coordinate the performance of work according to requirements and/or established procedures

2 Carry out the installation and replacement of energy/revenue metering

- 2.1** WHS/OHS and sustainable energy principles, functionality and practices to prevent accidents and minimise waste are incorporated into the project in

schemes and associated equipment (complex)	accordance with requirements and/or established procedures
	2.2 Installation and replacement of energy/revenue metering schemes and associated equipment (complex) decisions are made on the basis of safety and effective outcomes according to requirements and/or established procedures
	2.3 Technical advice is given regarding potential hazards, safety risks and control measures so that monitoring and preventative action can be undertaken and/or appropriate authorities consulted, where necessary, in accordance with requirements and established procedures
	2.6 Essential knowledge and associated skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
	2.7 Installation and replacement of energy/revenue metering schemes and associated equipment (complex) are undertaken according to requirements and established procedures
	2.8 Work teams/groups are arranged/coordinated/evaluated to ensure planned goals are met according to established procedures
	2.9 Solutions to non-routine problems are identified and actioned, using essential knowledge and associated skills, according to requirements
	2.10 Quality of work is monitored against personal performance agreement and/or established organisational and professional standards
3 Complete the installation and replacement of energy/revenue metering schemes and associated equipment (complex)	3.1 Final inspections of the installation and replacement of energy/revenue metering schemes and associated equipment (complex) are undertaken to ensure they comply with all requirements and include all specifications and documents needed to complete the project
	3.2 Appropriate internal/external personnel are notified of completion and reports and/or completion documents are finalised/commissioned according to established procedures and timeframes
	3.3 Reports and/or completion documents are submitted to

relevant personnel/organisations for approval and, where applicable, statutory or regulatory approval

- 3.4** Approved copies of the installation and replacement of energy/revenue metering schemes and associated equipment (complex) documents are issued and records are updated in accordance with established procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UETTDRTS41A Install and replace complex energy/revenue metering schemes and associated equipment.

Links

UET Training Package Companion Volume Implementation Guide is found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=229bace1-b7bc-4653-9300-dffb13ecfad7>

Assessment Requirements for UETTDRTS41 Install and replace complex energy/revenue metering schemes and associated equipment

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including the use of risk control measures
- applying sustainable energy principles and practices
- performing installation and replacement, on at least three (3) occasions, including at least three (3) of the following:
 - high voltage (HV) metering schemes
 - high voltage zone substation metering schemes
 - high voltage bulk supply point metering schemes
 - low voltage (LV) summation metering schemes
- performing on at least three (3) occasions, the installation and replacement of the following:
 - HV current/voltage transformers (including return to service)
 - energy meters
 - associated equipment
- performing on at least one (1) occasion, the following activity:
 - installation or replacement of a typical HV bulk supply point metering scheme
- dealing with unplanned events on at least one (1) occasion.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- associated equipment encompassing:
 - summation current transformers, voltage selection relays, auxiliary supply relays, voltage fail relays, fibre optics, data concentrators and in house displays
- the installation and replacement of complex energy/revenue metering schemes and associated equipment in accordance with enterprise policies and procedures applicable to the work - impact of work on local network system integrity, substation entry and access requirements,

and impacts of isolation on protection and control systems.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated conditions involving realistic and authentic activities that replicate operational workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, facilities, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, relevant industry standards, equipment specifications, regulations, codes of practice and operation manuals.

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