



Australian Government

UETDRTS030 Commission and maintain complex energy/revenue metering schemes

Release: 1

UETDRTS030 Commission and maintain complex energy/revenue metering schemes

Modification History

Release 1. This is the first release of this unit of competency in the UET Transmission, Distribution and Rail Sector Training Package Release 4.0.

Application

This unit includes the skills and knowledge required to commission and maintain complex energy/revenue metering schemes in the electricity supply industry (ESI).

It includes different metering scheme types, including wholesale metering, voltage changeover schemes, summation, multiple feeder high voltage (HV) and low voltage (LV) customers, and generation.

It also includes calculations of complex metering installations overall errors, calculation and verification of transformer losses, and transmission line losses, and correction factors in meter programming.

The application of the skills and knowledge described in this unit may require a licence/registration to practice in the workplace.

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

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEECD0010 Compile and produce an energy sector detailed report

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0044 Solve problems in multiple path circuits

UEECD0046 Solve problems in single path circuits

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEEEL0020 Solve problems in low voltage a.c. circuits

UEEEL0021 Solve problems in magnetic and electromagnetic devices

UETDREL005 Work safely in the vicinity of live electrical apparatus

UETDRTS031 Commission and maintain energy/revenue metering schemes

UETDRTS036 Develop secondary protection and control scheme isolation and restoration documents

Competency Field

Testing

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to commission and maintain complex energy/revenue metering schemes

PERFORMANCE CRITERIA

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

- 1.1** Legislation, regulations, standards, codes of practice and organisational workplace requirements for the work to be done are reviewed and determined
- 1.2** Purpose for commissioning and maintenance is established after data is analysed and expected outcomes of the work are confirmed with appropriate personnel
- 1.3** Work plan is determined and communicated with relevant personnel in accordance with workplace requirements
- 1.4** Commissioning and maintenance procedures are established in accordance with workplace requirements
- 1.5** Plant, tools, equipment and personal protective equipment (PPE) required for work are determined, obtained and confirmed in working order
- 1.6** Work roles and tasks are allocated according to individual competencies and workplace requirements
- 1.7** Work is prioritised and sequenced for completion in accordance with work plan and workplace requirements
- 1.8** Liaison and communication issues with others/authorised personnel, authorities, clients and customers are resolved and activities coordinated to carry out work
- 1.9** Work permits are determined in accordance with

		workplace requirements
	1.10	Hazards are identified, risks assessed, and control measures identified and applied
2 Commission and maintain complex energy/revenue metering schemes	2.1	Legislation, regulations, standards, codes of practice and organisational workplace requirements for the work to be performed are applied and monitored
	2.2	Lifting, working at heights, working in confined spaces and the use of plant, tools, equipment and PPE are carried out in accordance with workplace requirements
	2.3	Hazard control measures are monitored in accordance with workplace requirements
	2.4	Incidents or unplanned events are responded to in accordance with workplace requirements
	2.5	Complex energy/revenue metering schemes are commissioned and maintained in accordance with workplace requirements
	2.6	Quality checks of work are undertaken in accordance with work plan and workplace requirements
3 Complete work and documentation	3.1	Completed work is checked for compliance against the work plan and workplace requirements
	3.2	Work records, reports and documentation are completed, and where relevant, appropriate personnel notified in accordance with workplace requirements

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 UET Transmission, Distribution and Rail Sector Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is not equivalent to UETDRTS003 Commission energy/revenue metering schemes (complex).

Links

Companion Volume Implementation Guides are found in VETNet -

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

Assessment Requirements for UETDRTS030 Commission and maintain complex energy/revenue metering schemes

Modification History

Release 1. This is the first release of this unit of competency in the UET Transmission, Distribution and Rail Sector Training Package Release 4.0.

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 (2) separate occasions and include:

- applying relevant legislation, regulations, standards, codes of practice and organisational workplace requirements including:
 - work health and safety (WHS)/occupational health and safety (OHS) requirements
- identifying hazards, assessing risks, and identifying, applying and monitoring control measures
- obtaining, inspecting and using relevant personal protective equipment (PPE)
- establishing the purpose of the commissioning or maintenance scheme
- establishing commissioning and maintenance procedures
- performing, on at least one (1) occasion, the following activities:
 - identification of faults with metering equipment
 - identification of faults with energy registration and revenue billing
- performing, on at least three (3) occasions, the commissioning or maintaining of at least seven (7) of the following complex metering scheme types:
 - multiple feeder high voltage (HV) and low voltage (LV) customers
 - summation
 - subtraction
 - interposing
 - voltage changeover schemes
 - generation
 - bulk supply
 - interconnector
 - wholesale metering
- demonstrating all of the following activities:
 - analysing data for best outcome
 - verifying installation
- performing, on at least two (2) occasions, at least six (6) of the following activities:
 - isolation

- inspection
- monitoring
- testing
- adjustment
- calibration
- functional checks
- performing, on at least three (3) occasions, all of the following activities:
 - verifying meter function
 - determining energy flows, voltage, current and phasor relationships
 - validating actual meter energy data
- dealing with an unplanned event on at least one (1) occasion
- obtaining and signing relevant work permits in accordance with workplace requirements
- completing relevant work records, reports and documentation.

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:

- relevant legislation, regulations, standards, codes of practice and organisational workplace requirements, including WHS/OHS requirements
- hazard, risk assessment and risk control requirements, including potential hazards
- types and application of PPE
- application, purpose and types of permits
- events constituting an unplanned event or incident
- procedures for responding to an unplanned event or incident
- workplace records, reports and documentation
- instrument transformers, including types, application and characteristics
- data analysis for best outcomes
- installation, and meter function and actual meter energy data
- energy flows, voltage, current and phasor relationships
- commissioning and maintaining metering scheme types and auxiliary systems, including:
 - wholesale metering
 - voltage changeover schemes
 - summation
 - multiple feeder HV and LV customers
 - generation
- principles of the following commissioning metering scheme types:
 - subtraction
 - interposing
 - bulk supply
 - interconnector

- procedures to perform all of the following activities in relation to metering equipment:
 - isolation
 - inspection
 - monitoring
 - testing
 - adjustment
 - repair
 - calibration
 - functional checks
- calculations of complex metering installations overall errors
- calculation and verification of transformer losses, transmission line losses, and correction factors in meter programming
- inputs and relationships of metering points to verify logical metering schemes
- metering instrument transformer burdens
- communication with market participants.

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:

- relevant and appropriate tools, facilities, equipment and PPE currently used in industry
- applicable documentation, including workplace requirements, relevant industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume Implementation Guides are found in VETNet -

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