



Australian Government

UETDRTS028 Calibrate, verify and certify revenue metering/energy measurement instruments

Release: 1

UETDRTS028 Calibrate, verify and certify revenue metering/energy measurement instruments

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 calibrate verify and certify revenue metering/energy measurement instruments in the electricity supply industry (ESI).

It includes the evaluation and development of procedures and routines to certify the accuracy and traceability of revenue metering/energy measurement instruments.

It also includes the evaluation of test equipment capability. These processes must ensure compliance with metering industry regulations to ensure traceability of all measurements.

Note: Users who hold a Certificate III Electrotechnology electrician qualification or equivalent, meet the UEE prerequisite unit requirements.

They are still required to complete UETDREL005 Work safely in the vicinity of live electrical apparatus, to meet the requirements of working within the electricity supply industry (ESI).

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 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

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

UEEEL0019 Solve problems in direct current (d.c.) machines

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

Competency Field

Testing

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to calibrate, verify and certify revenue metering/energy measurement instruments

PERFORMANCE CRITERIA

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

- 1.1** Workplace organisational requirements for the verification and certification of revenue metering/energy measurement instruments, are reviewed and determined
- 1.2** Purpose of the calibration, verification and certification of revenue metering/energy measurement instruments is established
- 1.3** Calibration, verification and certification procedures are established in accordance with workplace requirements
- 1.4** Tools, equipment and personal protective equipment (PPE) required for work are determined, obtained and confirmed in working order
- 1.5** Work is prioritised and sequenced for completion in accordance with work plan and workplace requirements
- 1.6** Relevant stakeholders are identified and liaised with
- 1.7** Work permits are determined in accordance with workplace requirements
- 1.8** Hazards are identified, risks assessed, and control measures identified and applied

2 Calibrate, verify and certify revenue metering/energy measurement instruments

- 2.1** Organisational workplace requirements for the work to be performed are applied and monitored

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| | 2.2 | Relevant stakeholder liaison and work permits are applied |
| | 2.3 | Lifting, and the use of tools, equipment and PPE are carried out in accordance with workplace requirements |
| | 2.4 | Hazard control measures are monitored in accordance with workplace requirements |
| | 2.5 | Incidents or unplanned events are responded to in accordance with workplace requirements |
| | 2.6 | Revenue metering/energy measurement instruments are calibrated, verified and certified in accordance with workplace requirements |
| | 2.7 | Quality checks of work are undertaken in accordance with work plan and workplace requirements |
| 3 Complete work and documentation | 3.1 | Revenue metering/energy measurement instruments are verified using results and certified for use |
| | 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 UETDRTS027 Verification and certification of revenue metering/energy measurement instruments.

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 UETDRTS028 Calibrate, verify and certify revenue metering/energy measurement instruments

Modification History

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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 (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)
- dealing with an unplanned event on at least one (1) occasion
- obtaining and signing relevant work permits in accordance with workplace requirements
- establishing the purpose of the calibration, verification and certification of revenue metering/energy measurement instruments
- establishing calibration parameters
- developing and evaluating procedures and routines to verify and certify the accuracy and traceability of revenue metering/energy measurement instruments
- conducting a test of revenue metering/energy measurement instruments and evaluating test results
- evaluating and implementing procedures and practices to ensure traceability of test equipment to workplace requirements
- developing test procedures for new hardware and analysing performance against required outcomes
- evaluating test equipment capability.

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
- purpose of the calibration, verification and certification of revenue metering/energy measurement instruments
- procedures for the calibration, verification and certification of revenue metering/energy measurement instruments
- equipment traceability and registration
- electrical field testing and measurement including:
 - measurement concepts, including notion of error, accuracy, resolution, sources of measurement error and uncertainties, instrument specifications and calibration certificates, test and measuring instrument safety certification levels and their application
 - types of field measuring instruments and their application
 - measuring low voltage (LV) in direct current (d.c.) and alternating current (a.c.)
 - measuring high voltage (HV)
 - measuring power, energy, reactive power, power factor and maximum demand
 - measuring power quality, including waveform distortion, harmonics, power factor, and transients
- calibration techniques including:
 - principles of common calibration techniques
 - purpose of standards and calibration certification
 - minimising error during calibration
 - determining calibration parameters
 - need for normal performance check.

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

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