



Australian Government

Assessment Requirements for UETDRTS027 Verification and certification of revenue metering/energy measurement instruments

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 Release 2.0.

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 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, on at least three (3) occasions, the following activity:
 - developing and evaluating procedures and routines to verify and certify the accuracy, traceability and uncertainty of metering standards and test equipment
- performing, on at least one (1) occasion, the following activity:
 - evaluating and implementing procedures and practices to ensure traceability of test equipment to National Association of Testing Authorities (NATA) requirements
- performing, on at least one (1) occasion, the following activity:
 - developing test procedures for new hardware and analysing performance against required outcomes
- performing, on at least one (1) occasion, the following activity:
 - evaluating test equipment capability and design of hardware interfaces
- 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:

- enterprise-specific policies and procedure instructions encompassing:
 - responsibilities and duty of care of employer and employee relationship
 - methods of obtaining the up-to-date information on enterprise policies and procedures
 - rules and regulations
 - induction into workplace - location of work area and storage area, timetable, uniform, personal wellbeing, housekeeping rules, emergency procedures and evacuation

procedures

- techniques when dealing with others - working in teams, customer relation, and complaint and issues procedures
- overview of enterprise professional development - firefighting procedures, fatigue management, and training and competency development - understanding and promotion
- electrical field testing and measurement encompassing:
 - measurement concepts - 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 - instrument meter movements and readouts (moving coil, moving iron and dynamometer meter movements, liquid crystal display (LCD) digital and screen readouts), and role of a microprocessor/controller in measuring instrument
 - measuring low voltages (LV) and direct current (d.c.) and alternating currents (a.c.) - LV and current measurement techniques embodied in microprocessor-based instruments, causes of inaccuracies and overcoming them, test instrument set-up and safety procedures, and interpreting test readings
 - measuring HV and d.c. and a.c. - HV and current measurement techniques embodied in microprocessor-based instruments, causes of inaccuracies and overcoming them, test instrument set-up and safety procedures, and interpreting test readings
 - measuring fault levels and (earth) fault loop impedance - fault and fault loop impedance measurement techniques embodied in microprocessor based instruments, causes of inaccuracies and overcoming them, test instrument set-up and safety procedures, and interpreting test readings
 - measuring power, energy, reactive power, power factor and maximum demand - power measurement techniques embodied in microprocessor-based instruments, causes of inaccuracies and overcoming them, test instrument set-up and safety procedures, and interpreting test readings
 - measuring power quality - power measurement techniques embodied in microprocessor based instruments, causes of inaccuracies and overcoming them, test instrument set-up and safety procedures, and interpreting test readings (power quality measurement, including waveform distortion, harmonics, power factor and transients)
- calibration techniques encompassing:
 - principles of common calibration techniques
 - purpose of standards and calibration certification
 - minimising error during calibration - source and type of errors, techniques to minimise errors during measurements, calculating the degree of error and calibration factors
 - determining the parameters to which the device will be calibrated
 - need for normal performance check
 - purpose of calibration documentation.

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.

Links

Companion Volume Implementation Guides are found in VETNet -

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