



Australian Government

UETDRTS022 Perform current injection testing using phantom load

Release: 1

UETDRTS022 Perform current injection testing using phantom load

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.

Application

This unit covers the performance of current injecting testing using a phantom load. It includes the application of artificial load onto low voltage (LV) current transformers to determine correct meter function while ensuring testing is conducted in accordance with established procedures.

It also includes the validation of secondary wiring circuits to determine the correct operation of the metering scheme.

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

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

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

UEENEEG171A Install, set up and commission interval metering

UETDREL001 Apply environmental requirements

Competency Field

Testing

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

1 Plan for the performance of current injection testing using phantom load

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) practices/procedures and environmental and sustainable energy procedures, which may influence the performance of current injection testing using phantom load, are reviewed and determined
- 1.2** Purpose of the performance of current injection testing using phantom load 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 performance of current injection testing using phantom load are obtained or established with appropriate personnel
- 1.4** Performance of current injection testing using phantom load procedures are discussed with/directed to appropriate personnel in order to ascertain the project brief

- 1.5 Current injecting testing 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 and 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/external work permits are obtained to coordinate the performance of work according to requirements and/or established procedures
- 2 Carry out the performance of current injection testing using phantom load**
- 2.1 WHS/OHS and sustainable energy principles, functionality and practices to prevent the incidents of accidents and minimise waste are incorporated into the project in accordance with requirements and/or established procedures
 - 2.2 Decisions with regard to performance of current injection testing using phantom load are made on the basis of safety and effective outcomes according to requirements and/or established procedures
 - 2.3 Mathematical/engineering models for the application of current injection testing using phantom load are used to analyse the effectiveness of the finished project in accordance with requirements and established procedures
 - 2.4 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

- 2.5 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
- 2.6 Application of current injection testing using phantom load is undertaken according to requirements and established procedures
- 2.7 Solutions to non-routine problems are identified and actioned, using essential knowledge and associated skills, according to requirements
- 2.8 Quality of work is monitored against personal performance agreement and/or established organisational and professional standards

3 Complete the performance of current injection testing using phantom load

- 3.1 Final inspections of the LV current transformers 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 application of current injection testing using phantom load 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 UET Transmission, Distribution and Rail Sector Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UETTDRTS37 Perform current injection testing using phantom load.

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 UETDRTS022 Perform current injection testing using phantom load

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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, on at least three (3) occasions, the following:
 - application of artificial load onto low voltage (LV) current transformers for injection of current to determine correct meter function testing
- performing, on at least three (3) occasions, the following:
 - validation of secondary wiring circuits to determine the correct operation of the 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:

- the application of current to an existing customer load through the primary of the current transformer
- the principles of current transformer operation
- determine the loading of the current transformer to apply the appropriate level of current required to verify the current transformer ratio, polarity and secondary wiring
- impacts of testing on market settlement/financial data and managing the data substitution requirements.

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, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

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