



Australian Government

UETTDRDS45 Organise and implement ESI line and easement surveys

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 surveying of distribution and sub-transmission lines and easements for activities associated with the design and installation of electrical equipment. This activity encompasses the use of instruments, such as compasses, inclinometer and distance measuring devices, and be in accordance with customer requirements, nominated design specifications and company processes.

The application of the skills and knowledge described in this unit may require 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

UEENEEE104A Solve problems in d.c. circuits

UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

UEENEEG101A Solve problems in electromagnetic devices and related circuits

UEENEEG102A Solve problems in low voltage a.c. circuits

UETTDRDS39 Prepare and manage detailed construction plans for electrical power system infrastructure

UETTDREL11 Apply sustainable energy and environmental procedures

UETTDREL16 Working safely near live electrical apparatus

UETTDRIS62 Implement and monitor the power system organisational WHS/OHS policies, procedures and programs

UETTDRIS63 Implement & monitor power system environmental & sustainable energy management policies & procedures

Competency Field

Design

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan and coordinate the organisation and implementation of line and easement surveys

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 organisation and implementation of line and easement surveys, are reviewed and determined
- 1.2** Purpose of the line and easement surveys is established and expected outcomes of the work are confirmed with appropriate personnel
- 1.3** Organisational established procedures on policies and specifications for the design are obtained or established with appropriate personnel
- 1.4** Equipment/tools and personnel protective equipment (PPE) are selected and coordinated based on specified requirements and established procedures
- 1.5** Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes, to a quality standard and in accordance with established procedures
- 1.6** Risk control measures are identified, prioritised and evaluated against the work schedule
- 1.7** Relevant work permits are secured to coordinate the performance of work according to requirements and/or established procedures
- 1.8** Resources, including personnel, equipment, tools and PPE, required for the job are identified, scheduled and

- coordinated and confirmed safe and in technical working order
- 1.9** Liaison and communication issues with others/authorised personnel, authorities, clients and land owners are resolved and activities coordinated to carry out work
 - 1.10** Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
 - 1.11** Personnel participating in the work, including plant operators and contractors, are fully briefed and respective responsibilities coordinated and authorised, where applicable, in accordance with established procedures
 - 1.12** Positioning of road signs, barriers and warning devices is planned in accordance with requirements
- 2 Carry out and coordinate the organisation and implementation of line and easement surveys**
- 2.1** Circuit/systems modelling is used to evaluate alternative proposals in accordance with established procedures
 - 2.2** WHS/OHS and sustainable energy principles, functionality and practices to reduce the incidence of accidents and minimise waste are incorporated into the project in accordance with requirements and/or established procedures
 - 2.3** Survey project decisions are made on the basis of safety and effective outcomes according to requirements and/or established procedures
 - 2.4** Mathematical models of the distribution system are used to analyse the effectiveness of the finished project in accordance with requirements and established procedures
 - 2.5** Technical advice is given to 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 Solutions to non-routine problems are identified and actioned using acquired 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
 - 2.9 Work teams/groups are arranged/coordinated/evaluated to ensure planned goals are met according to established procedures
- 3 Complete and coordinate the organisation and implementation of line and easement surveys**
- 3.1 Final assessment of the surveys is undertaken to ensure they comply with all requirements and include all specifications and documentations needed to complete the design brief
 - 3.2 Appropriate personnel are notified of completion and reports and/or completion documents are finalised
 - 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 survey 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 UETTD45A Organise and implement ESI line and easement surveys.

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 UETTDRDS45 Organise and implement ESI line and easement surveys

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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
- completing six (6) surveys of an overhead network relating to the following project types:
 - multi-pole extensions (distribution and sub-transmission)
 - in-line pole relocations (distribution and sub-transmission)
 - multi-circuit overhead lines (distribution and sub-transmission)
 - underground augmentation project
- completing designs, including:
 - activities that address the correction of errors in the process
 - application of a design control checklist which lists all of the required design activities to be carried out in this process
- 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:

- fundamentals of surveying for the purpose of producing an overhead or underground distribution extension encompassing:
 - Commonwealth, state/territory and local government legislation, standards, codes, supply and aviation authority regulations and/or enterprise requirements applicable to the surveying for an overhead and underground extension
 - techniques in measuring heights and distances
 - techniques in taking bearings angles of deviation using a compass
 - techniques in using a clinometer
 - techniques in recording and storage of data
 - requirements for the use of overhead line construction manuals, system diagrams/plans

- and drawings
- techniques in plotting long spans:
 - measuring stick, clinometer, trundle wheel and tapes
 - correction for sloping ground
 - distance across objects and range rods
- techniques in pegging pole positions:
 - foot path alignments, types of pegs, pegs of other authorities and locating survey pegs
- project management encompassing:
 - Commonwealth, state/territory and local government legislation, standards, codes, supply authority regulations and/or enterprise requirements, including relevant certification and licensing applicable to the duties and responsibilities for management of a project
 - analysis functions of project management to determine achievement of project objectives
 - relationship of stakeholders to the project
 - techniques in development of project plan:
 - project integration, scope, timelines, cost, quality, resources, communication/protocol requirements, risk/uncertainties and procurement and contacting
 - relationship between project processes, project life and project phases
 - planning and control procedures, resource management and risk management
 - techniques, methodologies and tools available to project managers
 - types of internal and external environmental factors that may affect the project.

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

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