



Australian Government

**Assessment Requirements for
UETDRDS022 Design underground
distribution systems**

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 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:

- designing underground distribution systems, including:
 - specifications
 - requirements for site inspection
 - systems modelling to evaluate and determine best outcomes
 - sustainable energy principles and practices
 - compliance against legislation, regulations, standards and codes of practice, project and workplace requirements
 - identifying, minimising or eliminating health and safety risks by using safety and control measures
 - environmental sustainability principles
 - obtaining, inspecting and using relevant personal protective equipment (PPE) for site inspection
 - prioritising and sequencing work for completion in accordance with workplace requirements
- performing at least one (1) site inspection
- performing ongoing quality checks of work in accordance with workplace requirements
- checking final design against project and workplace requirements
- completing relevant work records, reports and documentation
- completing six (6) underground distribution or sub-transmission system designs for at least three (3) of the following:
 - residential subdivision developments
 - industrial/commercial subdivision developments
 - upgrade/alteration to existing assets
 - underground supplies to customers
- completing for each of the designs:
 - a design control checklist
 - rectifying errors.

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:

- underground distribution systems design, including:
 - project requirements
 - design specifications
 - hazard, risk assessment and risk control requirements, including potential hazards
 - types and application of PPE
 - site inspections
 - prioritisation and sequencing of work for completion
 - use of systems modelling to evaluate and determine best outcomes
 - application of sustainable energy principles and practices
 - compliance with legislation, regulations, standards, codes of practice, and project and workplace requirements
 - work records, reports and documentation
- distribution infrastructure, including:
 - manuals, diagrams and drawings
 - residential subdivision developments
 - industrial/commercial subdivision developments
 - upgrade/alteration to existing assets
 - underground supplies to customers
 - material lists, cable size, type and route length
- control procedures and documents, including:
 - design control checklists
 - common design errors
 - rectification of errors
- layout principles for underground distribution, including determination of:
 - cable size, type and route length
 - materials, equipment and tools
 - component types, quantities and costing
 - component and equipment spacing
- installation considerations for underground cable including:
 - workplace requirements
 - excavation and trench safety regulations
 - gas detection procedures
 - working in confined spaces
 - PPE requirements
 - liquified gas equipment hazards
 - testing procedures for liquified gas equipment

- buried services and other infrastructure, including:
 - telecommunications
 - power
 - water
 - sewerage
 - gas
- trench excavation and reinstatement procedures
- calculation of voltage drop in relation to length of cable run
- techniques for reducing electrical stress on cables
- cable derating factors
- methods for joining and terminating cables
- techniques for the installation of cables above and below ground
- techniques for cable testing and the location of cable faults
- techniques for cable drawing.

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 materials, 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>