



Australian Government

UETTDRDS47 Review power system asset management strategies

Release: 1

UETTD RDS47 Review power system asset management strategies

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 management of assets within the transmission, sub-transmission and distribution networks. This includes plant optimisation, condition monitoring, maintenance strategies and policies and capital works planning, including recommendations for continual improvement. Cost-benefit analysis is fundamental for successful implementation of the aforementioned asset management functions.

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

All competencies in the Common Unit Group must have been completed, plus all competencies in one (1) of the identified Pathway Unit Group(s).

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

UETTDREL11 Apply sustainable energy and environmental procedures

UETTDREL16 Working safely near live electrical apparatus

UETTD RIS62 Implement and monitor the power system organisational WHS/OHS policies, procedures and programs

UETTD RIS63 Implement & monitor power system environmental & sustainable energy management policies & procedures

Testing Pathway Unit Group

UEENEED104A Use engineering applications software on personal computers

UEENEEE102A Fabricate, assemble and dismantle utilities industry components

UEENEEE124A Compile and produce an energy sector detailed report

UEENEEE125A Provide engineering solutions for problems in complex multiple path circuits

UEENEEE126A Provide solutions to basic engineering computational problems

UEENEEG149A Provide engineering solutions to problems in complex polyphase power circuits

UETTD RTS21 Maintain interdependent network protection and control systems

UETTD RTS22 Commission interdependent network protection and control systems

UETTD RTS29 Develop power systems secondary isolation instructional documents

UETTD RTS35 Maintain complex network protection and control systems

Design Pathway Unit Group

UETTD RDS39 Prepare and manage detailed construction plans for electrical power system infrastructure

Competency Field

Design

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan for and coordinate the review and implementation of asset management systems

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 asset management systems, are reviewed and determined
- 1.2** Purpose of the project 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 personal 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
- 2 Carry out and coordinate the review and implementation of asset management systems**
- 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** System design 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
3 Complete and coordinate the review and implementation of asset management systems	3.1	Final review of the project is undertaken to ensure it complies with all requirements and includes all specifications and documentations needed to complete the project 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 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 UETTD47A Review power system asset management strategies.

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 UETTDRDS47 Review power system asset management strategies

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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
- correctly interpreting three (3) existing maintenance strategies or policies that relate to electrical network components of the following types:
 - lines
 - substation primary plant
 - substation secondary equipment
 - public lighting
- preparing three (3) maintenance strategies or policies that relate to electrical network components of the following types:
 - lines
 - substation primary plant
 - substation secondary equipment
 - public lighting
- 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:

- principles of safe design encompassing:
 - Commonwealth/state/territory legislation, standards, codes, supply authority regulations and/or enterprise requirements associated with safe design principles
 - particular reference to state and territory regulations regarding working near energised conductors, electrical access, heights, confined space, testing procedures and licensing rules
 - application of safe design principles - safe design duty related information, safe design

- process related information and safe design evaluations
- enterprise-specific data management processes encompassing:
 - standards, codes, legislation, supply authority regulations and/or enterprise requirements applicable to data management
 - requirements for the use of manuals, substation diagrams/plans and drawings
 - types of enterprise-specific computer software
 - techniques in storing and retrieving data and reports from the computer
 - techniques in using the data management systems in following necessary commands and protocols in accordance with the enterprise-specific procedures
 - calculation of results and data measurements using the computer
 - techniques in the preparation of preliminary works creation and closure
- effective management and communication encompassing:
 - Commonwealth, state/territory and local government legislation, standards, codes, supply authority regulations and/or enterprise requirements applicable to assisting in effective management and communication
 - enterprise operational principles - workplace WHS/OHS enterprise plan, environmental enterprise policies and procedures, industrial relations policies and procedures and anti-discrimination policies and procedures
 - relationship between the management and employees - methods used to collate and distribute/disseminate information, responsibilities of each member of the work team, staff development activities and legislation requirements with regard to WHS/OHS training, methods of addressing barriers such as literacy and cultural differences, and provisions relating to WHS/OHS issue resolution
 - techniques associated with organisational policies and procedures related to human resources - relevant awards and certified agreements, legislation impacting on people management and range of support services and expertise available
 - techniques in managing relationships - identifying problems and methods of conflict resolution, methods of consultation, communication, negotiation and mentoring, and strategies for positive feedback
 - techniques in leadership in achieving enterprise strategic and operational plans
 - techniques in managing relationships under stress - stress management
- methodology used in writing enterprise-specific management reports encompassing:
 - Commonwealth, state/territory and local government legislation, supply authority regulations, standards, codes and/or enterprise requirements applicable to the writing enterprise-specific management reports
 - techniques in researching, collating and analysing information for the report - recording, filing, retrieving systems and storing and retrieving data from computer systems
 - relationship of management reports to enterprise policies and procedures - enterprise structure and resources, workplace WHS/OHS and risk management, enterprise data, financial and operational data, environmental enterprise policies and procedures, industrial relations policies and procedures, and anti-discrimination policies and procedures
- power distribution network documentation encompassing:

- requirements for the use of manuals, system diagrams/plans and drawings and for plans such as work method statements for the control of WHS/OHS risks
- types and application of power distribution network documentation drawings and documents - wiring and schematic diagrams, drawings and switching symbols, mechanical drawings dealing with the power distribution network, project charts, schedules, graphs, technical manuals and catalogues, and instructions/worksheets
- interpretation of different diagrams and documentation on low voltage (LV) and high voltage (HV) systems - overhead distribution extensions, underground distribution extensions, distribution substations and street lighting systems
- layout principles for overhead distribution encompassing:
 - Commonwealth, state/territory and local government legislation, standards, codes, supply authority regulations and/or enterprise requirements applicable to overhead distribution layout
 - requirements for the use of overhead line construction manuals, system diagrams/plans and drawings and for plans such as work method statements for the control of WHS/OHS risks
 - methods in determining material, equipment and tool lists - components types and quantity required, spacing of components such as equipment, poles, cross-arms, and costings of items and components
 - purchasing and contractual arrangements, including requirements to eliminate WHS/OHS hazards, minimise risks and provide residual WHS/OHS risk information
- determination of conductor size, type and route length encompassing:
 - resources needed for the stringing and maintenance of conductors
 - types of low LV and HV overhead electrical conductor connections
 - minimum clearances between overhead conductors and low LV and/HV structures
 - estimation of the duration of overhead distribution extension 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 to perform a review of asset management strategies

- applicable documentation, including workplace procedures, relevant industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

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