



Australian Government

UETTDRSO51 Manage network systems power flows

Release: 1

UETTDRSO51 Manage network systems power flows

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 electrical network active and reactive power flows ensuring the network is operated within design parameters at all times. The electrical network includes feeders from distribution to transmission voltages, substation and generation assets that can influence power flows.

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

UEENEED104A Use engineering applications software on personal computers

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

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

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

UEENEEG101A Solve problems in electromagnetic devices and related circuits

UEENEEG102A Solve problems in low voltage a.c. circuits

UEENEEG149A Provide engineering solutions to problems in complex polyphase power circuits

UETTDREL11 Apply sustainable energy and environmental procedures

UETTDRREL16 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

UETTDRSO32 Manage power systems network faults

UETTDRSO41 Manage power systems transmission networks

UETTDRSO48 Respond to discrete and interdependent protection operations

UETTDRSO49 Coordinate power system operations in a regulated energy market

UETTDRSO50 Respond to complex power system protection operations

Generation/Distribution and Sub-transmission Pathway Unit Group

UETTDRSO34 Control power systems generating plant

UETTDRSO37 Develop high voltage distribution and sub-transmission switching programs

UETTDRSO40 Coordinate high voltage distribution and sub-transmission networks

Generation/Transmission Pathway Unit Group

UETTDRSO34 Control power systems generating plant

UETTDRSO38 Develop and evaluate power systems transmission switching programs

UETTDRSO47 Coordinate high voltage transmission network

Distribution and Sub-transmission Pathway Unit Group

UETTDRSO35 Manage high voltage distribution and sub-transmission network demand

UETTDRSO37 Develop high voltage distribution and sub-transmission switching programs

UETTDRSO40 Coordinate high voltage distribution and sub-transmission networks

Transmission Pathway Unit Group

UETTDRSO38 Develop and evaluate power systems transmission switching programs

UETTDRSO41 Manage power systems transmission networks

UETTDRSO42 Manage power systems transmission network demand

UETTDRSO47 Coordinate high voltage transmission network

Competency Field

System Operations

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan to manage network power flows

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 preparation of any network power flow management decisions, are reviewed and determined
- 1.2** Purpose of the management is established after data is analysed and expected outcomes of the work are confirmed with appropriate personnel
- 1.3** Organisational established policies, procedures and specifications for the management of network power flows are obtained or established with appropriate personnel
- 1.4** Network power flow management decisions are discussed with and/or directed to appropriate personnel in order to ascertain the system conditions
- 1.5** Equipment/tools and personal protective equipment (PPE) are selected based on specified performance criteria and established procedures
- 1.6** Work roles and tasks are allocated according to requirements and individual competencies
- 1.7** 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
- 1.8** Liaison and communication issues with others/authorised personnel, authorities and clients are resolved and activities coordinated to carry out work
- 1.9** Risk control measures are identified, prioritised and evaluated against the work schedule
- 1.10** Need for relevant operating procedures are identified to manage the performance of the network according to requirements and/or established procedures

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| | 1.11 | Circuit/systems modelling is used to evaluate alternative proposals in accordance with established procedures |
| 2 Carry out and management network power flow | 2.1 | Strategic plans are developed incorporating organisational initiatives in accordance with established procedures |
| | 2.2 | WHS/OHS and sustainable energy principles, functionality and practices to reduce the incidents of accidents and minimise waste are incorporated into the project in accordance with requirements and/or established procedures |
| | 2.3 | Management decisions are made on the basis of safety and effective outcomes according to requirements and/or established procedures |
| | 2.4 | Stakeholders/customers are kept informed of current status regarding plan progress and recent developments |
| | 2.5 | 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 |
| | 2.6 | Essential knowledge and associated skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the work within an agreed timeframe according to requirements |
| | 2.7 | Testing of management decisions is undertaken according to requirements and established procedures |
| | 2.8 | Work teams/groups are arranged/coordinated/evaluated to ensure planned goals are met according to established procedures |
| | 2.9 | Solutions to non-routine problems are identified and actioned, using acquired essential knowledge and associated skills, according to requirements |
| | 2.10 | Quality of work is monitored against personal performance agreement and/or established organisational and professional standards |
| 3 Complete the management of network power flow | 3.1 | Final review of management decisions is undertaken to ensure it complies with all requirements and includes all specifications and documentations needed to complete |

the work

- 3.2 Appropriate personnel are notified of completion and reports and/or completion documents (electronic/paper) are finalised/commissioned
- 3.3 Reports and/or completion documents (electronic/paper) are submitted to relevant personnel/organisations for approval and, where applicable, statutory or regulatory approval
- 3.4 Where applicable, approved copies of power flow management documents (electronic/paper) 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 UETTDRSO51A Manage network systems power flows.

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>