



Australian Government

UETTDRSO49 Coordinate power system operations in a regulated energy market

Release: 1

UETTDRSO49 Coordinate power system operations in a regulated energy market

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 coordination of system operations in a regulated energy market. It includes the relevant application of knowledge of the National Electricity Market (NEM), the practices and rules used in facilitating the coordination of operations in a regulated energy market.

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

UETTDREL16 Working safely near live electrical apparatus

UETTDNIS62 Implement and monitor the power system organisational WHS/OHS policies, procedures and programs

UETTDNIS63 Implement & monitor power system environmental & sustainable energy management policies & procedures

Distribution and Sub-transmission Pathway Unit Group

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

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 coordinate system operations in a regulated energy market

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 coordination of the electricity market, are reviewed and determined
- 1.2** Energy market requirements are established after data is analysed and expected outcomes of the work are confirmed with appropriate personnel
- 1.3** Energy market and associated equipment operational prerequisites are identified and established in accordance with manufacturer and/or enterprise/site procedures

- 1.4 Electricity market coordination and control procedures are discussed with and/or directed to appropriate personnel in order to ascertain the project brief
 - 1.5 Testing parameters are ascertained from established policies, procedures 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 and clients 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 Need for relevant work permits is identified to coordinate the performance of work according to requirements and/or established procedures
 - 1.12 Circuit/systems modelling is used to evaluate alternative proposals in accordance with established procedures
- 2 **Coordinate system operations in a regulated energy market**
 - 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 Decisions concerning coordination 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 the decision to be implemented 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 coordination of system operations in a regulated energy market**
- 3.1 Final review of the coordination 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 Approved copies of coordination 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 UETTDRSO49A Coordinate power system operations in a regulated energy market.

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 UETTDRSO49 Coordinate power system operations in a regulated energy market

Modification History

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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:
 - dispatching energy to the electricity market
 - responding to electricity market fluctuations/demands
 - manipulating the system to ensure reliable operation in response to electricity market requirements
- demonstrating knowledge of all the following:
 - principals and objectives of the electricity market
 - the role of ancillary services in the operation of the electricity market
 - service provider obligations in the electricity market
 - connection and access requirements to the electricity market
 - analysis of pricing concepts
 - contractual obligations
 - scheduling of generation assets
- 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:

- generation systems encompassing:
 - methods of generating electricity - types of power stations and reasons for their location, and layout of thermal and hydroelectric power stations
 - relationship between power control and load requirements - operating speeds for thermal and hydroelectric generating sets, typical generator voltage levels and output ratings

- the purpose and features of typical types of co-generation systems
- enterprise-specific policies and procedure instructions encompassing:
 - responsibilities and duty of care of employer and employee relationship
 - methods of obtaining the up-to-date information on enterprise policies and procedures
 - rules and regulations
 - induction into workplace - location of work area and storage area, timetable, uniform, personal wellbeing, housekeeping rules, emergency procedures and evacuation procedures
 - techniques when dealing with others - working in teams, customer relation, and complaint and issues procedures
 - overview of enterprise professional development - fire-fighting procedures, fatigue management, and training and competency development - understanding and promotion
- enterprise-specific procedures and work practices relating to managing network demand encompassing:
 - Commonwealth/state/territory and local government legislation, supply authority regulations, standards, codes and/or enterprise requirements applicable to the procedures and work practices relating to managing network demand
 - requirements for the use of demand management manuals, system diagrams/plans and drawings
 - identifying and interpreting enterprise demand management procedures
 - techniques in applying enterprise demand management procedures.

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, computerised electrical plant control and monitoring facilities, and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, relevant industry standards, equipment specifications, regulations, codes of practice, relevant modelling tools, drawings and operation manuals.

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