



Australian Government

UETDRSO021 Respond to protection operations

Release: 1

UETDRSO021 Respond to protection operations

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.

Application

This unit includes the skills and knowledge required to respond to protection operations in the Electrical Supply Industry (ESI).

It includes protection scheme types, principles, purpose and components.

It also includes interpreting, evaluating and responding to information about network configuration, relay operations, resource and equipment capabilities, and weather.

The application of the skills and knowledge described in this unit may require a licence/registration to practice in the workplace.

Other conditions may also apply under state and territory legislative and regulatory licensing requirements which must be confirmed prior to commencing this unit.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEECD0044 Solve problems in multiple path circuits

UEECD0046 Solve problems in single path circuits

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEEEL0020 Solve problems in low voltage a.c. circuits

UEEEL0021 Solve problems in magnetic and electromagnetic devices

UETDRSO020 Operate SCADA equipment

Competency Field

System Operations

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Prepare to respond to protection operations

- 1.1** Purpose of the response is established after data is analysed
- 1.2** Purpose of response is communicated with relevant personnel to determine the scope of work in accordance with workplace requirements
- 1.3** Hazards are identified, risks assessed, and control measures identified and applied
- 1.4** Work plan for response is confirmed and communicated with relevant personnel in accordance with workplace requirements
- 1.5** Work permits are determined in accordance with workplace requirements
- 1.6** Response is prioritised and sequenced in accordance with workplace requirements
- 1.7** Work is allocated in accordance with skills and capabilities, in accordance with workplace requirements

2 Respond to protection operations

- 2.1** Work is performed in accordance with work plan and workplace requirements
- 2.2** Purpose of response is reviewed and work plan is updated based on technical advice and data analysis, according to workplace requirements
- 2.3** Work permits are issued in accordance with workplace requirements
- 2.4** All stakeholders are updated on progress
- 2.5** Hazard control measures are monitored in accordance with workplace requirements
- 2.6** Incidents or unplanned events are responded to in accordance with workplace requirements
- 2.7** Work progress is monitored in accordance with work plan and workplace requirements

3 Complete work and documentation

- 3.1** Completed work is checked for compliance against the work plan and workplace requirements
- 3.2** Work records, reports and documentation are completed, and appropriate personnel notified in accordance with workplace requirements

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 UET Transmission, Distribution and Rail Sector Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is not equivalent to UETDRSO010 Respond to complex power system protection operations.

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=229bace1-b7bc-4653-9300-dffb13ecfad7>

Assessment Requirements for UETDRSO021 Respond to protection operations

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least two (2) separate occasions and include:

- establishing the purpose of the response
- identifying hazards, assessing risks, and identifying, applying and monitoring control measures
- confirming, reviewing, and updating workplan, based on technical advice and data analysis
- determining and issuing work permits
- prioritising and sequencing response
- allocating work in accordance with skills and capabilities
- updating stakeholders
- dealing with an unplanned event on at least one (1) occasion
- monitoring work progress in accordance with the work plan
- checking completed work for compliance against the work plan and workplace requirements
- obtaining and issuing relevant work permits
- completing relevant work records, reports and documentation
- responding on at least three (3) occasions, to all the following:
 - relay operations
 - event data
 - alarms
- interpreting on at least three (3) occasions, all of the following:
 - resource capabilities
 - equipment capabilities
 - network configuration
 - weather.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria and include knowledge of:

- response purpose, sequencing and prioritisation
- operational personnel requirements and management
- hazard, risk assessment and risk control requirements, including potential hazards
- events constituting an unplanned event or incident
- procedures for responding to an unplanned event or incident
- work records, reports and documentation
- relay operations, event data and alarms
- resource and equipment capabilities, network configuration, and weather
- stakeholder communication
- purpose of a protection scheme, including:
 - safety of persons
 - protection of plant
 - system stability
 - maintaining customer supply
 - reliability
- protection scheme principles, including:
 - purpose of protection
 - protection zones
 - duplicate protection
 - backup protection
 - selectivity
 - discrimination
 - sensitivity
 - reliability
- protection scheme components, including
 - current and potential transformers
 - relays
 - sensors
 - communication
- protection scheme types, including:
 - overcurrent
 - overvoltage
 - differential
 - biased differential
 - earth leakage
 - structure leakage
 - gas
 - restricted earth-fault
 - distance
 - auto-reclose

- pilot wire
- directional
- directional overcurrent
- phase comparison
- current comparison.

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 tools, 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, drawings and operation manuals.

Links

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