



Australian Government

UETDRIS023 Develop and validate high voltage distribution switching programs

Release: 1

UETDRIS023 Develop and validate high voltage distribution switching programs

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 develop and validate high voltage (HV) switching programs in the electricity supply industry (ESI).

It includes HV switching principles, interconnected and radial switching programs, and types, characteristics and capabilities of electrical apparatus.

It also includes procedures for confirming, reviewing, and updating workplans, based on technical advice and data analysis, procedures for determining work permits, and writing HV switching programs for power outages.

Note: Entry into this unit is for users who:

- *hold the unit UETDREL005 Work safely in the vicinity of live electrical apparatus or equivalent*

and

- *hold a UET Certificate III Qualification or the equivalent issued in an Australian state or territory,*

or

- *hold an Electrician or Electrical Fitter licence or the equivalent issued in an Australian state or territory,*

or

- *hold an Electrician or Electrical Fitter qualification or the equivalent issued in an Australian state or territory.*

In addition, Electricians or Electrical Fitters must have completed the unit UETDRIS032 Solve problems in network equipment or equivalent to meet the requirements of working within the electricity supply industry (ESI).

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

Refer to Application.

Competency Field

Industry Specific Cross Discipline

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to develop and validate HV distribution switching programs

2 Develop and validate HV distribution switching programs

PERFORMANCE CRITERIA

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

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|------------|--|
| 1.1 | Purpose for the HV switching program is determined in accordance with the work plan, schedules and workplace requirements |
| 1.2 | Work is prioritised and sequenced for completion in accordance with work plan and workplace requirements |
| 1.3 | Hazards are identified, risks assessed, and control measures identified and applied |
| 1.4 | Work plan is developed, validated and communicated with stakeholders in accordance with workplace requirements |
| 1.5 | Operational personnel and equipment required for work are determined in accordance with work plan and workplace requirements |
| 1.6 | Work permits are determined in accordance with workplace requirements |
| 2.1 | HV switching programs are developed and validated in accordance with workplace requirements |
| 2.2 | Work plan is checked for compliance against technical advice, legislation, regulations, standards and codes of |

practice

- | | | |
|--|------------|---|
| | 2.3 | Health and safety risks are identified and minimised or eliminated by using safety and control measures |
| | 2.4 | HV switching programs are verified and approved in accordance with 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 UETDRIS003 Develop high voltage switching schedule.

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 UETDRIS023 Develop and validate high voltage distribution switching programs

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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 (2) separate occasions and include:

- applying relevant legislation, regulations, standards, codes of practice and organisational workplace requirements including:
 - work health and safety (WHS)/occupational health and safety (OHS) requirements
- establishing the purpose of the high voltage (HV) switching program
- identifying hazards, assessing risks, and identifying, applying and monitoring control measures
- confirming, reviewing, and updating workplan, based on technical advice, site inspection, and data analysis
- prioritising and sequencing work
- checking completed work for compliance against the work plan and workplace requirements
- completing relevant work records, reports and documentation
- using available data and resources to determine best outcomes
- using and interpreting single line diagrams (SLD)
- identifying work permit requirements
- developing a radial switching program including verification and approvals for one (1) of the following:
 - HV transformer
 - HV switchgear
 - HV lines and feeders
- developing an interconnected switching program including verification and approvals for one (1) of the following:
 - HV transformer
 - HV switchgear
 - HV lines and feeders
- completing all of the following checks when writing an HV switching program:
 - load management
 - voltage management
 - network component ratings

- standby generation
- paralleling
- induced back-feed
- uninterruptible power supply (UPS)
- implementing earthing procedures
- switching impact on customers.

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:

- relevant legislation, regulations, standards, codes of practice and organisational workplace requirements including WHS/OHS requirements
- purpose of the HV switching program
- data analysis
- hazard, risk assessment and risk control requirements, including potential hazards
- compliance with legislation, regulations, standards, codes of practice, workplan, and workplace requirements
- prioritisation and sequencing of work for completion
- operational personnel requirements
- application, purpose and types of permits
- work records, reports and documentation
- writing switching programs
- interconnected HV electrical networks
- fundamentals of HV single wire earth return (SWER) system
- HV switching principles, including:
 - switching operator responsibilities
 - manuals, system diagrams, plans and drawings
 - types, characteristics and capabilities of electrical apparatus
 - types, characteristics and capabilities of specialised tools and testing equipment
 - sources of possible back-feed
 - restrictions on electrical apparatus
 - isolation procedures
 - earthing procedures
 - fault levels and settings
 - load calculation
 - operating agreements.

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, equipment and PPE currently used in industry
- applicable documentation, including workplace requirements, equipment specifications, regulations, codes of practice and operation manuals.

Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=229bace1-b7bc-4653-9300-dffb13ecfad7>