



**Australian Government**

# **UETDRIS016 Install mobile generation set for synchronised HV Genset**

**Release: 1**

# UETDRIS016 Install mobile generation set for synchronised HV Genset

## 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 2.0.

## Application

This unit covers installation of temporary portable generation sets to high voltage (HV) distribution assets thereby maintaining supply in accordance with industry regulations and established procedures. It encompasses the operation, connection and disconnection of a temporary portable generator and includes the estimation of HV load and assessing the appropriateness of the generator for the required outcome and networking of generators.

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 licensing 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

UEENEEE102A Fabricate, assemble and dismantle utilities industry components

UEENEEE104A Solve problems in d.c. circuits

UEENEEE105A Fix and secure electrotechnology equipment

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

UETDREL005 Work safely in the vicinity of live electrical apparatus

### Transmission Overhead Pathway Group

UETDREL001 Apply environmental requirements

UETDREL004 Operate plant and equipment in the vicinity of live electrical apparatus

UETDRIS007 Install and maintain distribution overhead conductors and cables

UETDRIS017 Perform high voltage field switching operation to a given schedule

UETDRTO006 Install and maintain transmission conductors

UETDRTO007 Install and maintain transmission structures and hardware

Distribution Overhead Pathway Group

UETDRDO005 Maintain overhead energised low voltage distribution network

UETDREL001 Apply environmental requirements

UETDREL004 Operate plant and equipment in the vicinity of live electrical apparatus

UETDRIS007 Install and maintain distribution overhead conductors and cables

UETDRIS008 Install and maintain electrical apparatus

UETDRIS010 Install and maintain low voltage overhead services

UETDRIS012 Install and maintain poles, structures and hardware

UETDRIS018 Perform low voltage field switching operation to a given schedule

Rail Traction Pathway Group

UETDREL001 Apply environmental requirements

UETDREL004 Operate plant and equipment in the vicinity of live electrical apparatus

UETDRIS007 Install and maintain distribution overhead conductors and cables

UETDRIS012 Install and maintain poles, structures and hardware

UETDRRT002 Install overhead traction components and equipment

UETDRRT003 Install rail traction bonds

UETDRRT004 Install traction overhead wiring systems

UETDRRT009 Maintain overhead traction components and equipment

UETDRRT011 Maintain traction overhead wiring systems

UETDRRT013 Perform rail traction switching operations to a given schedule

Distribution Cable Jointing Pathway Group

UETDRDU013 Joint, terminate and maintain high voltage underground polymeric cable

UETDRDU015 Joint, terminate and maintain low voltage underground polymeric cable

UETDRDU016 Lay power cables

UETDREL001 Apply environmental requirements

UETDREL004 Operate plant and equipment in the vicinity of live electrical apparatus

UETDRIS008 Install and maintain electrical apparatus

UETDRIS011 Install and maintain low voltage underground services

UETDRIS018 Perform low voltage field switching operation to a given schedule

## Electrical Pathway Group

UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

UEENEEG006A Solve problems in single and three phase low voltage machines

UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

UEENEEG063A Arrange circuits, control and protection for general electrical installations

UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits

UEENEEG109A Develop and connect electrical control circuits

UEENEEK142A Apply environmentally and sustainable procedures in the energy sector

UETDRSB001 Perform substation switching operations to a given schedule

UETTDRIS67 Solve problems in energy supply network equipment

## Competency Field

Industry Specific Cross Discipline

## Unit Sector

Not applicable.

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### **1 Prepare/plan to install mobile generation set for synchronised HV Genset**

### PERFORMANCE CRITERIA

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

- 1.1** Work schedules, including drawings, plans, requirements, established procedures and material lists, are obtained and analysed, as necessary, by site inspection and the extent of the preparation of the work determined for planning and coordination
- 1.2** 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

- 1.3 Hazards are identified, work health and safety (WHS)/occupational health and safety (OHS) risks assessed and control measures prioritised, implemented and monitored, including emergency exits kept clear, according to established procedures
  - 1.4 Relevant requirements and established procedures for the work are to all personnel and identified for all worksites
  - 1.5 WHS/OHS policies and procedures related to the work are identified to ensure safe systems of work are followed
  - 1.6 Relevant work permits are secured to coordinate the performance of work according to requirements and/or established procedures
  - 1.7 Resources, including personnel, equipment, tools and personal protective equipment (PPE), required for the job are identified, scheduled and coordinated and confirmed safe and in technical working order
  - 1.8 Clients/customers are provided with possible solutions and/or options within the scope, acceptable cost and requirements
  - 1.9 Liaison and communication issues with others/authorised personnel, authorities, clients and landowners are resolved and activities coordinated to carry out work
  - 1.10 Personnel participating in the work, including plant operators and contractors, are fully briefed and respective responsibilities coordinated and authorised, where applicable, in accordance with established procedures
  - 1.11 Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
  - 1.12 Positioning of road signs, barriers and warning devices is planned and coordinated in accordance with requirements
- 2 Carry out the installation of mobile generation set for synchronised HV**
- 2.1 WHS/OHS and sustainable energy principles and practices to reduce the incidents of accidents and minimise waste are monitored and actioned in

|                                                                                        |                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Genset</b>                                                                          | accordance with requirements and/or established procedures                                                                                                                                                                                                |
| <b>2.2</b>                                                                             | First aid and other related work procedures are performed according to requirements and/or established procedures                                                                                                                                         |
| <b>2.3</b>                                                                             | Lifting, climbing, working in confined spaces and aloft, and use of power tools/equipment, techniques and practices are safely exercised according to requirements                                                                                        |
| <b>2.4</b>                                                                             | Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks reported to immediate authorised personnel for directions according to established procedures                                                                      |
| <b>2.5</b>                                                                             | Remedial actions are taken to overcome any shortfalls encountered in the work schedule according to requirements and/or established procedures                                                                                                            |
| <b>2.6</b>                                                                             | Installation of mobile generation set for synchronised HV Genset is carried out in accordance with the work schedule and requirements and/or established procedures                                                                                       |
| <b>2.7</b>                                                                             | Essential knowledge and associated skills are applied in the safe installation of mobile generation set for synchronised HV Genset to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements |
| <b>2.8</b>                                                                             | Solutions to non-routine problems are identified and actioned using acquired essential knowledge and associated skills according to requirements                                                                                                          |
| <b>2.9</b>                                                                             | Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved for the client/customer and to a community/industry standard                                      |
| <b>3 Complete the installation of mobile generation set for synchronised HV Genset</b> | <b>3.1</b> Work undertaken is checked against work schedule for conformance with requirements, anomalies reported and solutions identified in accordance with established procedures                                                                      |
|                                                                                        | <b>3.2</b> Accidents and/or injuries are reported and followed up in accordance with requirements/established procedures                                                                                                                                  |
|                                                                                        | <b>3.3</b> Worksite is rehabilitated, cleaned up and confirmed safe                                                                                                                                                                                       |

in accordance with established procedures

- 3.4 Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
- 3.5 Relevant work permits are signed off and synchronised HV Genset apparatus is returned to service and client/customer advised in accordance with requirements
- 3.6 Work completion records, reports, as installed/modified drawings and/or documentation and information are confirmed, processed and appropriate personnel notified

## 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 equivalent to UETTDRI64 Install mobile generation set for synchronised HV Genset.

## 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 UETDRIS016 Install mobile generation set for synchronised HV Genset

## 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 2.0.

## 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
- completing all of the following:
  - autonomous installation of a mobile generator set for synchronised high voltage (HV) Genset incorporating operation, connection and disconnection of the generator
  - evaluating load characteristics associated with networking of generators
  - synchronisation of the generator control systems onto and off the network without interruption to supply
  - estimation of HV load and assessing the appropriateness of the generator
  - operating a generator in parallel to a single HV job
- 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:

- installation of a HV mobile generation encompassing:
  - safety precautions specific to installing mobile generators - safe working policies, practices and procedures; techniques in connecting, operating and disconnecting generators; types of tools and equipment; and safe use of tools and equipment
  - techniques in the installation of generator sets - the connection of generator onto and off the network without interruption to supply and estimation of HV load
  - assessing the appropriateness of the generator
- HV generator control systems encompassing:
  - legislation, standards, codes, supply authority regulations and/or enterprise requirements pertaining to the operation of a portable generator
  - safety precautions specific to the synchronisation of generator sets - safe working

- policies, practices and procedures; and synchronising procedures
- techniques in the installation of generator sets control systems - the synchronising of generator control systems onto and off the network without interruption to supply, estimation of HV load and assessing the appropriateness of the generator
- operating a generator in parallel to a single HV job - overhead systems, indoor systems, customer installations and kiosk substations
- HV generator set and control system to HV distribution assets
- powerline safety practices encompassing:
  - protective apparatus and apparel for linework - responsibilities for the selection, use, maintenance and storage of protective apparatus and apparel and the types of protective apparatus and apparel used for the line worker
  - requirements for the use of ladders - carrying, erecting, collapsing and lowering different types of extension ladder against a standing pole; maintenance checks on different types of ladders; renewal of extension ropes and the safety issues relating to clearances from overhead conductors
  - requirements for climbing and working aloft - methods used to identify a pole is safe to climb; methods used to inspect a line worker's body belt; application of knots and hitches appropriate to the requirements of a line worker; height safety principles, including personal fall protection, prevention and related requirements; and the practical procedures of climbing an overhead structure and fitting a pole chair
  - traffic management - purpose of traffic management and a line worker's responsibilities in accordance with relevant statutory requirements and electricity supply industry (ESI) requirements the procedures used to provide an effective traffic management scheme and the use of a two-way radio
  - control of small fires - identification, selection and operation of the appropriate extinguishing mediums for various types of fires; general fire prevention methods and the precautions for personal protection when fighting small fires
  - rescue victims from heights and confined spaces - planning and identifying procedures, establishing responses, developing techniques, involvement of external emergency services, and emergency procedures for the rescue of an electric shock victim, including cardiopulmonary resuscitation (CPR)
  - requirements for aerial linework - planning, establishing and implementing relevant aviation authority clearances, determining system requirements, aircrew familiarisation with network operations and equipment, and requirements for effective communications operations for aerial work.

## 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, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

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