



Australian Government

Department of Education, Employment and Workplace Relations

UETTD RIS64A Install mobile generation set for synchronised HV Genset

Release: 1

UETTDRIS64A Install mobile generation set for synchronised HV Genset

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This Competency Standard Unit covers installation of temporary portable generation sets to 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.

Application of the Unit

Application of the Unit 2)

This Competency Standard Unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice 3)

The skills and knowledge described in this unit may require a licence/registration to practice in the work place subject to regulations for undertaking of electrical work. Practice in workplace and during training is also subject to regulations directly related to Occupational Health and Safety, electricity/telecommunications/gas/water industry

License to practice**3)**

safety and compliance, industrial relations, environmental protection, anti discrimination and training.
Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment.

Pre-Requisites**Prerequisite Unit(s)****4)****Competencies****4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed plus all the competencies in one (1) of the identified Pathway Unit Group(s):

Transmission Overhead

Distribution Overhead

Rail Traction

Distribution Cable Jointing

Electrical

Common Unit Group

Unit Code

Unit Title

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,

Prerequisite Unit(s)**4)**

standards, codes and specifications

UEENEEG101A

Solve problems in electromagnetic devices and related circuits

UEENEEG102A

Solve problems in low voltage a.c. Circuits

UETTDREL16A

Working safely near live electrical apparatus

Transmission Overhead Pathway Group

Unit Code

Unit Title

UETTDREL11A

Apply sustainable energy and environmental procedures

UETTDREL12A

Operate plant and equipment near live electrical conductors and apparatus

UETTDRI64A

Perform HV field switching operation to a given schedule

UETTDRI65A

Install and maintain poles, structures, overhead conductors and cables

UETTDRT66A

Install transmission structures and associated hardware

UETTDRT67A

Maintain transmission structures and associated hardware

UETTDRT69A

Install and maintain transmission overhead conductors and cables

Distribution Overhead Pathway Group

Unit Code

Unit Title

UETTDREL11A

Apply sustainable energy and environmental procedures

UETTDRT12A

Maintain overhead energised low voltage conductors and cables

Prerequisite Unit(s)**4)**

UETTDREL12A	Operate plant and equipment near live electrical conductors and apparatus
UETTDNIS41A	Install network infrastructure electrical equipment
UETTDNIS42A	Maintain network infrastructure electrical equipment
UETTDNIS43A	Perform low voltage field switching operation to a given schedule.
UETTDNIS52A	Install and maintain poles, structures and associated hardware
UETTDNIS54A	Install and maintain poles, structures, overhead conductors and cables
UETTDNIS56A	Install and maintain low voltage overhead services

Rail Traction Pathway Group

Unit Code	Unit Title
UETTDREL11A	Apply sustainable energy and environmental procedures
UETTDREL12A	Operate plant and equipment near live electrical conductors and apparatus
UETTDNIS52A	Install and maintain poles, structures and associated hardware
UETTDNIS54A	Install and maintain poles, structures, overhead conductors and cables
UETTDNRRT21A	Install traction overhead wiring systems
UETTDNRRT22A	Maintain traction overhead wiring systems

Prerequisite Unit(s)**4)**

UETTDRT23A	Install rail traction bonds
UETTDRT27A	Install overhead traction components and equipment
UETTDRT28A	Maintain overhead traction components and equipment
UETTDRT30A	Perform to a given schedule rail traction switching operations

Distribution Cable Jointing Pathway Group

Unit Code	Unit Title
UETTDRCJ21A	Lay ESI electrical cables
UETTDRCJ26A	Install and maintain de-energised low voltage underground polymeric cables.
UETTDRCJ27A	Install and maintain de-energised high voltage underground polymeric cables.
UETTDREL11A	Apply sustainable energy and environmental procedures
UETTDREL12A	Operate plant and equipment near live electrical conductors and apparatus
UETTDRI541A	Install network infrastructure electrical equipment
UETTDRI542A	Maintain network infrastructure electrical equipment
UETTDRI543A	Perform low voltage field switching operation to a given schedule.
UETTDRI555A	Install and maintain low voltage underground services

Electrical Pathway Group

Unit Code	Unit Title
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Prerequisite Unit(s)**4)**

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 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 energy procedures in the energy sector
UETTDRIS67A	Solve problems in energy supply network equipment
UETTDRSB39A	Perform power system substation switching operation to a given schedule

Literacy and numeracy skills**4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 “Literacy and Numeracy”

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills 5)

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit Performance Criteria describe the required performance needed to demonstrate achievement of the element.
Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare/plan to install mobile generation set for synchronised genset HV	1.1 Works schedule(s), including drawings, plans, requirements, established procedures, and material lists, are obtained, analysed, if 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, OHS risks assessed and control measures are 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

ELEMENT	PERFORMANCE CRITERIA
	identified for all work sites.
	1.5 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 required for the job are identified, scheduled and coordinated and confirmed in a safe and 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 other/authorised personnel, authorities, clients and land owners 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 genset HV	2.1 OHS and sustainable energy principles and practices to reduce the incidents of accidents and minimise waste are monitored and actioned in accordance with requirements and/or established procedures.
	2.2 First Aid and other related work procedures are performed according to requirements and/or

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

ELEMENT**PERFORMANCE CRITERIA**

- 3.3 Work site 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 permit(s) are signed off and, synchronised genset HV apparatus is returned to service and advised to client/customer in accordance with requirements.
- 3.6 Works completion records, reports, as installed /modified drawing(s) and/or documentation and information are confirmed, processed and appropriate personnel notified.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) Essential Knowledge and Associated Skills (EKAS): This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of installing mobile generation set for synchronised genset HV.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-TIS64A HV mobile generation set installation

Evidence shall show an understanding of the installation of mobile generation set for synchronised with HV supplies to an extent indicated by the following aspects:

T1 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, 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, estimation of HV load.
- Assessing the appropriateness of the generator

T2 HV generator control systems encompassing:

- Legislation, Standards, codes, legislation, 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, 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, assessing the appropriateness of the generator.
- Operating a generator in parallel to a single HV job - overhead systems, indoor systems, customer installations, kiosk substations.
- HV generator set and control system to HV distribution assets

T3 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,

REQUIRED SKILLS AND KNOWLEDGE

and the practical procedure 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 requirements, demonstration of the procedure 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, identifying, the procedures, and establishing responses, developing techniques, involvement of external emergency services and practical demonstration/rehearsals of rescuing a person from heights and from confined spaces and emergency procedures for the rescue of an electric shock victim including CPR
- Requirements for aerial linework - planning, establishing and implementing relevant aviation authority clearances, determining system requirements, aircrew familiarisation with network operations and equipment, requirements for effective communications operations for aerial work.

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit of competency and must be read in conjunction with the Performance Criteria and the range statement of the unit of competency and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all component parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment 9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is

recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

**Critical aspects
of evidence
required to
demonstrate
competency in
this unit**

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines – UET12". Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
 - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and

range; and

- Apply sustainable energy principles and practices as specified in the Performance Criteria and range; and
- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment; and
- Demonstrate an appropriate level of employability skills; and
- Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures; and
- Demonstrated performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/materials/procedures/workplaces/other variables		
Group No	The minimum number of items on which skill is to be demonstrated	Item List
A	All of the following:	Autonomous installation of a mobile generator set for synchronised genset HV 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
B	At least one occasion	Dealing with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items.

Context of and specific resources for assessment 9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual installation of mobile generation set for synchronised genset HV

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency working at realistic heights above ground i.e. above 3 metres, in limited spaces, with different structural/construction types and method and in a variety of environments.

Method of assessment 9.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 “Assessment Guidelines”.

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified essential knowledge and

associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

**Concurrent
assessment and
relationship with
other units**

9.5)

There are no concurrent assessment recommendations for this unit.

Range Statement

RANGE STATEMENT

10) This relates to the unit of competency as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to the installation of mobile generation set for synchronised genset HV and may include overhead systems, indoor systems, customer installations, Kiosk Substations, HV genset and control system associated with loads for networking generator sets.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section 1 of this volume and form an integral part of the Range Statement of this unit:

- Appropriate and relevant persons (see Personnel)
- Appropriate authorities
- Appropriate work platform
- Assessing risk
- Assessment
- Authorisation
- Confined space
- Diagnostic, testing and restoration
- Documenting detail work events, record keeping and or storage of information
- Drawings and specifications
- Emergency
- Environmental and sustainable energy procedures
- Environmental legislation
- Environmental management documentation
- Established procedures
- Fall prevention
- Hazards
- Identifying hazards
- Inspect
- Legislation
- MSDS
- Notification
- OHS practices
- OHS issues
- Permits and/or permits to work
- Personnel

RANGE STATEMENT

- Quality assurance systems
- Requirements
- Testing procedures
- Work clearance systems

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Industry Specific Cross-Discipline Units