



Australian Government

UEENEEK120A Maintain operation of remote area power generation plant

Release: 2

UEENEEK120A Maintain operation of remote area power generation plant

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers maintenance of remote area power generation plant where the exposed voltage is not greater than 50 V a.c. or 120 V d.c. It encompasses working safely and to maintenance standards and following maintenance routines, identifying known types of power plant faults using routine procedures and completing the necessary maintenance reporting.

Application of the Unit

Application of the Unit 2)

This unit is intended primarily for indigenous persons seeking qualifications in RAPS system servicing. The unit may also be applied to work entry qualifications in renewable energy service work in general.

Licensing/Regulatory Information

License to practice 3)

The skills and knowledge described in this unit do not require a license to practice in the workplace provided equipment is not connected to installation wiring at voltages above 50 V a.c. or 120 V d.c. However other conditions may apply in some States/Territories subject to regulations related to electrical work.

License to practice**3)**

Note.

Competency requirements to be granted a license to carry out installations, fault finding, repair or maintenance on low voltage electrical installations is incorporated in unit UEENEEG105A and all prerequisite units it specifies.

Practice in the workplace and during training is also subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Note:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control and lifting equipment. Permits may also be required for some work environments such as confined spaces, working aloft, near live electrical apparatus and site rehabilitation.

2. Compliance may be required in various jurisdictions relating to currency in First Aid, confined space, lifting, risk safety measures etc.

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

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

UEENEEK1 Maintain and repair remote area power
16A generation facilities

Literacy and numeracy skills**4.2)**

Participants are best equipped to achieve competency in 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 3 Writing 3 Numeracy 3

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 Maintain operation of remote area power generation plant | 1.1 OHS procedures for a RAPS plant are identified, obtained and understood through established routines and procedures |
| | 1.2 Established OHS risk control measures and procedures in preparation for the work are followed |
| | 1.3 Safety hazards which have not previously been identified are reported and advice on risk control measures is sought from the work supervisor |
| | 1.4 The nature and location of the power plant is obtained from documentation or from work supervisor to establish the scope of work to be |

ELEMENT	PERFORMANCE CRITERIA
	undertaken
	1.5 Advice is sought from the work supervisor to ensure the work is coordinated effectively with fellow workers and the local community
	1.6 Sources of materials that may be required for the work are identified and accessed in accordance with established routines and procedures
	1.7 Tools, equipment and testing devices needed to carry out the work are obtained and checked for correct operation and safety
2 Maintain operation of remote area power generation plant	2.1 Established OHS risk control measures and procedures for carrying out the work are followed
	2.2 Circuits/machines/plant are checked as being isolated where necessary in strict accordance OHS requirements and procedures
	2.3 Prescribed maintenance procedures are used to test and check remote area power plant
	2.4 Known types of remote area power plant functional faults are identified and repaired using routine procedures
	2.5 Maintenance, including performance measurements and repairs are carried out safely and to prescribed routines and procedures
	2.6 Procedures are followed for referring non-routine events to immediate supervisor for directions
	2.7 Maintenance and repair work is carried out efficiently without waste of materials and energy and without damage to apparatus, circuits, the surrounding environment or services
	2.8 Routine quality checks are carried out in accordance with work instructions

ELEMENT	PERFORMANCE CRITERIA
3 Complete maintenance work and report	3.1 OHS work completion risk control measures and procedures are followed
	3.2 Work site is cleaned and made safe in accordance with routine procedures
	3.3 Procedures are followed for referring maintenance issues beyond the scope of prescribed work to persons of higher authority
	3.4 Work carried out is reported to the work supervisor through the established maintenance reporting procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence must show that knowledge has been acquired of safe working practices and maintaining operation of remote area power generation plant.

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

KS01-EK120A Remote area essential services power generation plant

Evidence shall show an understanding of remote area essential services power plant maintenance to an extent indicated by the following aspects:

T1 Minor servicing of a power station's generating plant encompassing:

- Engine oil and filters
- Fuel filters
- Coolant filters
- Water trap devices
- Air cleaners

T2 Minor maintenance of a power station's generating plant encompassing:

REQUIRED SKILLS AND KNOWLEDGE

- Fan and accessory drive belts
- Repair of minor leaks: coolant, oil and fuel

T3 Servicing of a power station's generating plants battery systems encompassing:

- Starting battery set
- Switchboard (nicad) batteries

T4 Information displayed by the instruments/meters in a power station encompassing:

- Generating equipment (diesel engine)
- Engine lubrication
- System oil pressure
- Engine cooling system coolant
- Temperature (in and out)
- Fuel pressure
- Current (A)
- Voltage
- Power (kW)
- Kilowatt hours
- Frequency, hertz (Hz)
- Engine running hours
- Station services: Fuel tank dip; Lubricating oil tank level;
- Fuel flow meter

T5 Use of the information gathered from instruments/meters encompassing:

- Ordering of: Fuel; Lubricating oil; Coolant
- Schedule regular servicing and maintenance for: Engine oil and filter changes; Fuel filters; Drive belt (condition/adjustment); Valve adjustments (if applicable); Major and minor mechanical servicing by outside agents; Air cleaner (both dry paper and oil bath types)

T6 Power station log sheets and readings encompassing:

- Completed log sheets
- Forwarding information to appropriate person/location at regular intervals (weekly)

T7 General cleanliness of the power stations plant and buildings encompassing:

- Generation plant

REQUIRED SKILLS AND KNOWLEDGE

- Oil leaks
- Water leaks
- Fuel leaks
- Safety awareness
- Plant buildings
- Internal floor area
- Used consumables
- Spare parts storage
- Spider webs and other pests
- Rubbish containers
- Ventilation
- Power station compound
- Fence and gate (if applicable)
- Weeds
- Grass (if applicable)
- Rubbish containers
- Fuel and oil supply, (drums)
- Water reticulation (if applicable)
- Tools and equipment
- Location/storage
- Cleanliness
- Maintenance
- Drain/drip tins
- Safety signage
- Location
- Condition
- Suitability

Evidence Guide

EVIDENCE GUIDE

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

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all 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-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. In some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

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 issues inherent in working with electricity, electrical equipment, gas or any other hazardous substance/material present a challenge for those determining competence. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday 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 practised. 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 must be met.

Evidence for competence in this unit must be considered holistically. Each element and associated performance criteria must be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEE11'. Evidence must also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this must 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 statement
 - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
 - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
 - Demonstrate an appropriate level of skills enabling employment
 - Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
 - Maintain operation of remote area power generation plant as described in 8) and including:

A	Understanding the location and nature of the work required
B	Following prescribe procedures to testing and checking plant.

- C Identifying and repairing known functional faults
- D Carrying out maintenance and repairs effectively.
- E Identifying maintenance issues beyond the scope of prescribed work and notifying appropriate persons.
- F Documenting work activities accurately.
- G Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in a 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 work as prescribed by this unit.

These should be part of the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to maintaining operation of remote area power generation plant.

**Method of
assessment** **9.4)**

This 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 unit applies. This requires assessment in a structured environment which is intended primarily for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and 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 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 unit must be demonstrated in relation to maintaining operation of at least two different remote area power plants.

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Not applicable.

Competency Field**Competency Field** **11)**

Renewable and Sustainable Energy