



**Australian Government**

# **UEPOPS099 Operate and monitor generator/alternator**

**Release: 1**

# UEPOPS099 Operate and monitor generator/alternator

## Modification History

Release 1. This is the first release of this unit of competency in the UEP Electricity Supply Industry – Generation Sector Training Package Release 2.0.

## Application

This unit involves the skills and knowledge required to operate, inspect and monitor a generator and/or alternator.

An alternator is an electrical generator that converts mechanical energy to electrical energy in the form of an alternating current (a.c.). In contrast, a generator can produce either a.c. or direct current (d.c.).

Competency in this unit requires the ability to plan work, operate generator and/or alternator plant, test generator and/or alternator plant, analyse generator and/or alternator plant faults, monitor and inspect generator and/or alternator plant, and complete all documentation. Individuals will, in general, work under supervision, in a power generation facility as an operator.

Power generation plant operators are trained and authorised to isolate, prepare plant and issue permits to work.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

## Pre-requisite Unit

There are no prerequisite units

## Competency Field

Operations

## Unit Sector

Electricity generation

## Elements and Performance Criteria

### ELEMENTS

### PERFORMANCE CRITERIA

Elements describe the essential Performance criteria describe the performance needed to

outcomes.

demonstrate achievement of the element.

## **1 Plan and prepare work**

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, environmental requirements and workplace procedures are identified, applied and monitored
- 1.2** Work requirements are identified from relevant personnel and documentation in accordance with workplace procedures
- 1.3** Generator and/or alternator running up and loading schedule are ascertained from relevant documentation in accordance with workplace procedures
- 1.4** Inspection, preoperational tests and field preparations for generator and/or alternator plant service are carried out in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 1.5** Generator and/or alternator plant operational prerequisites are established in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 1.6** Sequence for recommissioning of generator and/or alternator plant is determined to suit existing circumstances in accordance with workplace procedures

## **2 Operate generator/alternator plant**

- 2.1** Output is adjusted to achieve required generator and/or alternator operating requirements and demand in accordance with workplace procedures
- 2.2** Generator and/or alternator plant is operated within limits of design in accordance with regulatory requirements and workplace procedures
- 2.3** Generator and/or alternator plant is monitored and observed to detect deviations from required operating conditions in accordance with workplace procedures
- 2.4** Corrective actions are taken to rectify generator and/or alternator abnormalities in accordance with manufacturers' recommendations and specifications, and workplace procedures

## **3 Test generator/alternator**

- 3.1** Operational tests are performed in accordance with

|                                                         |                                                                                                                                                                                                                        |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>plant operation</b>                                  | workplace procedures                                                                                                                                                                                                   |
|                                                         | <b>3.2</b> Generator and/or alternator plant is observed for correct operational response in accordance with workplace procedures                                                                                      |
|                                                         | <b>3.3</b> Generator and/or alternator plant is returned to operational status upon completion of testing in accordance with workplace procedures                                                                      |
| <b>4 Analyse generator/alternator plant faults</b>      | <b>4.1</b> Cause of abnormal generator and/or alternator plant operating conditions are identified by analysing technical and operational information in accordance with workplace procedures                          |
|                                                         | <b>4.2</b> Generator and/or alternator plant integrity and personnel safety are maintained in consultation with relevant personnel and technical and operational documentation in accordance with workplace procedures |
| <b>5 Monitor and inspect generator/alternator plant</b> | <b>5.1</b> Generator and/or alternator plant to be monitored and inspected is physically identified in accordance with workplace procedures                                                                            |
|                                                         | <b>5.2</b> Generator and/or alternator plant is monitored and inspected for normal operation and to detect deviations in accordance with workplace procedures,                                                         |
|                                                         | <b>5.3</b> Relevant personnel are notified when defects are detected in accordance with workplace procedures                                                                                                           |
| <b>6 Complete documentation</b>                         | <b>6.1</b> Generator and/or alternator plant movements, abnormalities and status are reported in accordance with workplace procedures                                                                                  |
|                                                         | <b>6.2</b> Documentation is updated in accordance with workplace procedures                                                                                                                                            |

## 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 UEP Electricity Supply Industry – Generation Sector Training Package Companion Volume Implementation Guide.

## **Unit Mapping Information**

This unit replaces and is equivalent to UEPOPS362 Operate and monitor generator/alternator.

## **Links**

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8>

# Assessment Requirements for UEPOPS099 Operate and monitor generator/alternator

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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 separate occasions and include:

- analysing generator and/or alternator plant faults using data analysis techniques and tools
- applying work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
  - emergency procedures
  - risk control measures
  - safe working practices
- communicating with personnel
- completing documentation using recording procedures
- identifying generator and/or alternator plant status
- implementing regulations, legislative requirements, industry standards, codes of practice and manufacturers' specifications
- interpreting manuals
- monitoring and inspecting generator and/or alternator plant operations, including adjusting generator and/or alternator voltage, frequency and power factors, and site target values
- operating a generator and/or alternator unit
- organising resources
- preparing and planning work
- recognising and responding to abnormal generator and/or alternator plant operating conditions
- testing generator and/or alternator plant operationally using diagnostic and testing techniques
- working with generator and/or alternator plant and/or equipment
- working with permit to work system.

## 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:

- abnormal generator and/or alternator behaviour

- generator and/or alternator plant and equipment, location and operating parameters, including types and characteristics
- generator and/or alternator voltage, frequency and power factors, and site target values
- manuals
- permit to work system
- regulations, legislative requirements, industry standards, codes of practice and manufacturers' specifications
- WHS/OHS legislated requirements, including:
  - emergency procedures
  - risk control measures
  - safe working practices
- workplace documentation
- workplace policies and procedures.

## 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 workplace operational situations that replicate 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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