



**Australian Government**

# **UEPOPS336 Manage, operate and monitor a gas turbine unit**

**Release: 1**

# UEPOPS336 Manage, operate and monitor a gas turbine unit

## Modification History

**Release 1.** This is the first release of this unit of competency in the UEP Generation Training Package.

## Application

This unit involves the skills and knowledge required to undertake the management of an in-service gas turbine unit.

A gas turbine is an internal combustion engine that converts natural gas or other liquid fuels to mechanical energy.

Competency in this unit requires the ability to plan work, operate gas turbine plant, test gas turbine plant, analyse gas turbine plant faults, monitor gas turbine plant and complete all documentation. Individuals will, in general, work as a frontline manager or supervisor, in a power generation facility.

Power generation plant operators are typically 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.

### **Note: Workplace practice**

The application of the skills and knowledge described in this unit may require a licence or training permit to practice in the workplace where work is carried out on gas and electrical installations. Additional conditions may apply under state and territory legislative and regulatory licensing requirements.

## Pre-requisite Unit

There are no prerequisite units.

## Competency Field

Operations

## Unit Sector

Electricity generation

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

### PERFORMANCE CRITERIA

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

#### **1 Plan and prepare work**

- 1.1** Safety issues related to managing, operating and monitoring gas turbine plant are identified in accordance with workplace procedures and Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations and legislative requirements
- 1.2** Work requirements are identified, in accordance with workplace procedures, from appropriate personnel and documentation
- 1.3** Preoperational checks are carried out on gas turbine plant, in accordance with workplace procedures, manufacturer s' recommendations and site requirements

#### **2 Operate gas turbine plant**

- 2.1** Output is adjusted to achieve required gas turbine operating conditions and demand, in accordance with workplace procedures
- 2.2** Gas turbine plant is operated within limits of its' design, in accordance with workplace procedures
- 2.3** Gas turbine plant is monitored and observed, in accordance with workplace procedures, to detect deviations from operating conditions
- 2.4** Corrective actions are taken to rectify gas turbine plant abnormalities, in accordance with workplace procedures and manufacturers' recommendations

#### **3 Test gas turbine plant operation**

- 3.1** Operational tests are performed, in accordance with workplace procedures
- 3.2** Gas turbine plant is observed for correct operational response, in accordance with workplace procedures
- 3.3** Corrective action is taken when response does not meet with documentation, gas turbine plant integrity or personnel safety requirements
- 3.4** Gas turbine plant is returned to required operational status upon completion of testing, in accordance with workplace procedures

- |                                           |            |                                                                                                                                                                                                     |
|-------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>4 Analyse gas turbine plant faults</b> | <b>4.1</b> | Causes of abnormal gas turbine plant operating conditions are identified, in accordance with workplace procedures, and by analysing technical and operational information                           |
|                                           | <b>4.2</b> | Corrective action is taken, in accordance with workplace procedures                                                                                                                                 |
|                                           | <b>4.3</b> | Gas turbine plant integrity and personnel safety is maintained, in accordance with workplace procedures, and in consultation with appropriate personnel and technical and operational documentation |
|                                           | <b>4.4</b> | Appropriate personnel are notified, in accordance with workplace procedures, when defects are detected                                                                                              |
| <b>5 Monitor gas turbine plant</b>        | <b>5.1</b> | Gas turbine plant to be monitored is identified, in accordance with workplace procedures                                                                                                            |
|                                           | <b>5.2</b> | Gas turbine plant is monitored, in accordance with workplace procedures, for normal operation or to detect deviations                                                                               |
|                                           | <b>5.3</b> | Appropriate personnel are notified, in accordance with workplace procedures, when defects are detected                                                                                              |
| <b>6 Complete documentation</b>           | <b>6.1</b> | Gas turbine plant problems, movements, and status is 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 Companion Volume Implementation Guide.

## Unit Mapping Information

This unit replaces and is equivalent to UEPOPS336B Manage, operate and monitor a gas turbine

unit.

## 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 UEPOPS336 Manage, operate and monitor a gas turbine unit

## Modification History

Release 1. This is the first release of this unit of competency in the UEP Generation Training Package.

## Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and includes:

- analysing gas turbine 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
- identifying gas turbine plant status
- implementing legislation, industry standards, codes of practice and regulations
- interpreting manufacturers' specifications and manuals
- monitoring gas turbine plant operations
- organising resources
- planning work
- preparing and operating gas turbine plant and/or equipment
- recognising and responding to abnormal gas turbine plant operating conditions
- testing gas turbine plant operationally using diagnostic and test techniques
- 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, performance criteria and range of conditions and includes knowledge of:

- gas turbine plant and equipment, its location and operating parameters gas turbine plant generator types and characteristics including:
  - system components and their interaction
  - gas turbine operational processes

- gas turbine plant status
- legislation, industry standards, codes of practice and regulations
- manufacturers' specifications and manuals
- permit to work system
- typical arrangements of power production
- WHS/OHS legislated requirements including:
  - emergency procedures
  - risk control measures
  - safe working practices
- workplace documentation
- workplace policies and procedures

## Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

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.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

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

## Links

Companion Volume implementation guides are found in VETNet -

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