



Australian Government

UEPOPS408 Shut down a gas turbine

Release: 1

UEPOPS408 Shut down a gas turbine

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 shut down a gas turbine unit to a standby state.

Performing shut down procedures for a gas turbine unit will require the implementation of power generation facility procedures and provisions including manufacturers' recommendations and work site specific requirements.

Competency in this unit requires the ability to plan and prepare gas turbine shut down, shut down a gas turbine, test gas turbine plant operation, analyse power generation system faults and the completion of documentation. Individuals will, in general, work under supervision, in a power generation facility as an operator.

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 gas turbine shut down work

- 1.1** Safety issues are identified, in accordance with Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) and workplace procedures
- 1.2** Work requirements are identified from appropriate personnel and documentation, in accordance with workplace procedures
- 1.3** Operational checks are carried out on gas turbine plant in accordance with manufacturers' specifications and workplace procedures
- 1.4** Team and individual roles and responsibilities are identified, in accordance with workplace procedures and are recorded in the shutdown plan

2 Conduct gas turbine shut down

- 2.1** Gas turbine is unloaded and shut down, in accordance with manufacturers' specifications, workplace procedures, site requirements and shut down plan
- 2.2** Gas turbine exhaust gas flow and power output are adjusted when gas turbine is a component of a combined unit, in accordance with workplace procedures, to achieve required steam flow conditions
- 2.3** Gas turbine and associated power generation plant is placed in a safe condition, in accordance with manufacturers' recommendations, workplace procedures and shut down plan
- 2.4** Gas turbine plant is operated within limits of its' design, in accordance with workplace procedures during gas turbine shut down
- 2.5** Gas turbine plant is inspected and monitored, in accordance with workplace procedures, to detect abnormal operating conditions during shut down
- 2.6** Corrective actions are taken to rectify gas turbine plant operation abnormalities, in accordance with manufacturers' recommendations and workplace procedures

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| 3 Inspect and test gas turbine plant operation during shutdown | 3.1 Tests are performed on gas turbine plant, in accordance with workplace procedures and shut down plan |
| | 3.2 Gas turbine system and plant is observed for correct operational response, in accordance with workplace procedures |
| | 3.3 Corrective action is taken when operation response is not in accordance with shut down work plan, plant integrity or safety requirements |
| | 3.4 Gas turbine plant is returned to required operational status upon completion of testing, in accordance with workplace procedures |
| 4 Analyse system faults during gas turbine shutdown | 4.1 Causes of abnormal gas turbine plant operating conditions are identified, in accordance with workplace procedures, by analysing technical and operational information |
| | 4.2 Corrective action is taken, in accordance with workplace procedures and shut down plan |
| | 4.3 Gas turbine plant integrity and personnel safety is maintained, in accordance with workplace procedures, and through consultation with appropriate personnel and technical and operational documentation |
| | 4.4 Appropriate personnel are notified in accordance with workplace procedures, when defects are detected |
| 5 Complete documentation | 5.1 Gas turbine plant problems, movements and status are reported, in accordance with workplace procedures |
| | 5.2 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 UEPOPS408B Shut down a gas turbine

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 UEPOPS408 Shut down a gas turbine

Modification History

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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, performance criteria and range of conditions on at least two separate occasions and includes:

- analysing technical and operational information
- applying Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) legislated requirements including:
 - emergency procedures
 - risk control measures
 - safe working practices
- communicating with personnel
- completing documentation using recording procedures
- identifying gas turbine plant status
- inspecting and testing gas turbine plant operation using diagnostic and data analysis techniques and tools to determine faults
- monitoring and operating gas turbine plant and equipment
- preparing gas turbine shut down plan
- responding to abnormal gas turbine plant operating conditions
- shutting down a gas turbine plant including planning gas turbine shut down organising resources
- using permit to work system
- working with gas turbine plant and equipment

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:

- fault finding techniques
- gas turbine operating parameters
- manufacturers' specifications and manuals
- permit to work system

- principles and techniques of operation of a gas turbine and associated plant and equipment
- safety precautions associated with gas turbine shut down
- sequence of gas turbine operations
- technical and operational analysing techniques
- WHS/ OHS legislated requirements including:
 - emergency procedures
 - safe working practices
 - risk control measures
- 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.

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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

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