



Australian Government

UEPOPS137 Shut down a steam turbine

Release: 1

UEPOPS137 Shut down a steam turbine

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 conduct a shutdown of a steam turbine to where it is placed at rest.

Shutdown of a steam turbine will involve the operator making a sequence of checks prior to and during shutdown. This ensures that the shutdown of the turbine is completed in a safe and consistent manner.

Competency in this unit requires the ability to plan and prepare steam turbine shutdown, conduct a shutdown, test steam turbine plant operation during shutdown, analyse system faults during shutdown and complete 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

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

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| 1 Plan and prepare steam turbine shutdown 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 Turbine shutdown schedule is identified from relevant documentation in accordance with workplace procedures |
| | 1.4 Pre-shutdown checks are carried out on steam turbine plant in accordance with manufacturers' recommendations and specifications, and workplace procedures |
| 2 Conduct steam turbine shutdown | 2.1 Steam turbine load is reduced in accordance manufacturers' recommendations and specifications, and workplace procedures |
| | 2.2 Steam turbine and generator are removed from the steam generation system in accordance with manufacturers' recommendations and specifications, and workplace procedures |
| | 2.3 Steam turbine is placed on turning gear in accordance with manufacturers' recommendations and specifications, and workplace procedures |
| | 2.4 Steam turbine is cooled down on turning gear in accordance with manufacturers' recommendations and specifications, and workplace procedures |
| 3 Test steam turbine plant operation during shutdown | 3.1 Tests are performed in accordance with workplace procedures |
| | 3.2 Steam generation system and steam turbine plant is observed for operational response in accordance with workplace procedures |
| | 3.3 Steam turbine plant is returned to operational status upon completion of testing in accordance with workplace procedures |
| 4 Analyse and report on | 4.1 Causes of abnormal steam turbine plant operating |

system faults or status during steam turbine shutdown	conditions are identified by analysing technical and operational information in accordance with workplace procedures
	4.2 Corrective action is taken in accordance with workplace procedures
	4.3 Steam turbine plant integrity and personnel safety is maintained through consultation with relevant personnel and technical and operational documentation in accordance with workplace procedures
	4.4 Relevant personnel are notified when defects are detected in accordance with workplace procedures
5 Complete documentation	5.1 Steam 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 UEP Electricity Supply Industry – Generation Sector Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPOPS419 Shut down a steam 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 UEPOPS137 Shut down a steam turbine

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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:

- applying work health and safety (WHS)/occupational health and safety (OHS) regulations, including:
 - emergency procedures
 - risk control measures
 - safe working practices
- communicating with personnel
- completing documentation using recording procedures
- identifying steam turbine plant status
- implementing regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- interpreting manuals
- monitoring and operating steam turbine plant and equipment
- organising resources
- planning steam turbine plant work
- recognising and responding to abnormal plant operating conditions
- shutting down steam turbine plant and equipment
- testing plant operationally
- testing steam turbine plant operations using diagnostic and data analysis techniques and tools to determine faults
- using steam turbine cooling techniques and procedures
- 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:

- arrangements of power production plant
- manuals

- permit to work system
- regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- shutdown procedures
- steam turbine plant and equipment, location and operating parameters
- steam turbine system components and interaction with other power generation plant and equipment
- turbine operations
- WHS/OHS requirements, including:
 - emergency procedures
 - risk control measures
 - safe working procedures
- 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.

Links

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