



Australian Government

UEPOPS073 Operate and monitor a steam turbine

Release: 1

UEPOPS073 Operate and monitor 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 operate and monitor an in-service steam turbine.

A steam turbine extracts thermal energy from pressurised steam and is particularly suited to driving an electrical generator as the high-pressure steam is used to turn electricity generators at elevated speed.

Competency in this unit requires the ability to plan work, operate steam turbine plant, test steam turbine plant, analyse steam turbine plant faults, monitor and inspect steam turbine 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

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

- | | |
|---|---|
| 1 Plan and prepare work | <p>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</p> <p>1.2 Work requirements are identified from relevant personnel and documentation in accordance with workplace procedures</p> <p>1.3 Preoperational checks are carried out on steam turbine plant in accordance with manufacturers' recommendations and specifications, and workplace procedures</p> |
| 2 Operate steam turbine plant | <p>2.1 Steam turbine output is adjusted to meet demand in accordance with workplace procedures</p> <p>2.2 Steam turbine plant is operated in accordance with manufacturers' recommendations and specifications, and workplace procedures</p> <p>2.3 Steam turbine plant is monitored and observed to detect deviations from normal operating conditions in accordance with workplace procedures</p> <p>2.4 Corrective actions are taken to rectify steam turbine plant abnormalities in accordance with manufacturers' recommendations and specifications, and workplace procedures</p> |
| 3 Test steam turbine plant operation | <p>3.1 Operational tests are performed in accordance with workplace procedures</p> <p>3.2 Steam turbine plant is observed for correct operational response in accordance with workplace procedures</p> <p>3.3 Steam turbine plant is returned to required operational status upon completion of test in accordance with workplace procedures</p> |
| 4 Analyse steam turbine faults | <p>4.1 Causes of abnormal steam turbine plant operating conditions are identified by analysing technical and operational information in accordance with workplace procedures</p> <p>4.2 Steam turbine plant integrity and personnel safety is maintained in consultation with relevant personnel,</p> |

		technical and operational documentation in accordance with workplace procedures
5 Monitor steam turbine plant	5.1	Steam turbine plant is monitored for normal operation and to detect deviations in accordance with workplace procedures
	5.2	Relevant personnel are notified when defects are detected in accordance with workplace procedures
6 Complete documentation	6.1	Steam turbine plant problems, movements and status are reported in accordance with workplace procedures
	6.2	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 UEPOPS340 Operate and monitor 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 UEPOPS073 Operate and monitor 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.

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 steam 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 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 inspecting steam turbine plant operation
- operating steam turbine plant and equipment
- organising resources
- preparing and planning work
- recognising and responding to abnormal steam turbine plant operating conditions
- testing steam turbine plant operationally using diagnostic and test techniques
- utilising permit to work system
- working with steam 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 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
- steam turbine operational processes
- steam turbine plant and equipment, location and operating parameters
- steam turbine plant status
- WHS/OHS 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.

Links

Companion Volume implementation guides are found in VETNet -

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