



Australian Government

UEPOPS340 Operate and monitor a steam turbine

Release: 1

UEPOPS340 Operate and monitor a steam 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 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 the completion of all 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 work

- 1.1 Safety issues related to operating and monitoring steam 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 steam turbine plant, in accordance with workplace procedures, manufacturers' recommendations and site requirements

2 Operate steam turbine plant

- 2.1 Steam turbine output is adjusted to meet demand, in accordance with workplace procedures
- 2.2 Steam turbine plant is operated, in accordance with workplace procedures and manufacturers' operating recommendation
- 2.3 Steam turbine plant is monitored and observed, in accordance with workplace procedures, to detect deviations from normal operating conditions
- 2.4 Corrective actions are taken to rectify steam turbine plant abnormalities, in accordance with workplace procedures and manufacturers' recommendations

3 Test steam turbine plant operation

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

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

Unit Mapping Information

This unit replaces and is equivalent to UEPOPS340B 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 UEPOPS340 Operate and monitor a steam 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 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 legislation, industry standards, codes of practice and regulations
- interpreting manufacturers' specifications and 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, performance criteria and range of conditions and includes knowledge of:

- legislation, industry standards, codes of practice and regulations
- manufacturers' specifications and manuals
- permit to work system

- steam turbine plant and equipment, its location and operating parameters
- steam turbine plant status
- typical arrangements of power production plant
- steam turbine operational processes
- 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

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