



Australian Government

UEPOPS419 Shut down a steam turbine

Release: 1

UEPOPS419 Shut down 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 conduct a shut down of a steam turbine to where it is placed at rest.

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

Competency in this unit requires the ability to plan and prepare steam turbine shut down, conduct a shut down, test steam turbine plant operation during shut down, analyse system faults during shut down and completing 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.

1 Plan and prepare steam turbine shut down work

PERFORMANCE CRITERIA

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

- 1.1** Safety issues are identified, in accordance with Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations, industry standards and workplace procedures
- 1.2** Work requirements are identified from appropriate personnel and documentation, in accordance with workplace procedures
- 1.3** Turbine shut down schedule is identified from relevant documentation, in accordance with workplace procedures and site requirements
- 1.4** Pre-shut down checks are carried out on steam turbine plant, in accordance with manufacturers' recommendations and workplace procedures
- 2.1** Steam turbine load is reduced, in accordance with and manufacturers' recommendations and workplace procedures
- 2.2** Steam turbine and generator are removed from the steam generation system, in accordance with manufacturers' recommendations and workplace procedures
- 2.3** Steam turbine is placed on turning gear, in accordance with manufacturers' recommendations and workplace procedures
- 2.4** Steam turbine is cooled down on turning gear, in accordance with manufacturers recommendations and workplace procedures
- 3.1** Tests are performed, in accordance with workplace procedures
- 3.2** Steam generation system and steam turbine plant is observed, in accordance with workplace procedures, for correct operational response
- 3.3** Corrective action is taken, in accordance with workplace procedures, when response does not meet

2 Conduct steam turbine shutdown

3 Test steam turbine plant operation during shut down

		documentation, plant integrity or personnel safety requirements
	3.4	Steam turbine plant is returned to operational status upon completion of testing, in accordance with workplace procedures
4 Analyse and report on system faults or status during steam turbine shutdown	4.1	Causes of abnormal steam 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
	4.3	Steam turbine plant integrity and personnel safety is maintained, in accordance with workplace procedures, 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	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 Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPOPS419B 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 UEPOPS419 Shut down 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:

- 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 legislation, industry standards, codes of practice and regulations
- monitoring and operating steam turbine plant and equipment
- organising resources
- recognising and responding to abnormal plant operating conditions
- shutting down steam turbine plant and equipment planning steam turbine plant work
- 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, 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 system components and their interaction with other power generation plant and equipment
- turbine operations
- typical arrangements of power production plant
- Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) legislation including:
 - emergency procedures
 - risk control measures
 - safe working procedures
- 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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