



Australian Government

UEPOPS072 Operate and monitor a hydro turbine

Release: 1

UEPOPS072 Operate and monitor a hydro 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, inspect and monitor in-service hydro turbines. Turbines are a basic component in most methods of generating electricity in hydro generation power facilities.

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

Competency Field

Operations

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan and prepare work

PERFORMANCE CRITERIA

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

- 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 Hydro turbine run up and loading schedule are confirmed from relevant documentation in accordance with workplace procedures
	1.4 Inspection, preoperational tests and field preparations for hydro turbine plant service are carried out in accordance with manufacturers' recommendations and specifications, and workplace procedures
	1.5 Hydro turbine plant operational prerequisites are established in accordance with manufacturers' recommendations and specifications, and workplace procedures
	1.6 Sequence for recommissioning of hydro turbine plant is determined in accordance with workplace procedures
2 Operate hydro turbine plant	2.1 Output is adjusted to achieve required hydro turbine operating conditions and demand in accordance with manufacturers' recommendations and specifications, and workplace procedures
	2.2 Hydro turbine plant is operated within limits of design in accordance with workplace procedures
	2.3 Hydro turbine plant is monitored and observed to detect deviations from required operating conditions in accordance with workplace procedures
	2.4 Corrective actions are taken to rectify hydro turbine abnormalities in accordance with manufacturers' recommendations and specifications, and workplace procedures
3 Test hydro turbine plant operation	3.1 Operational tests are performed in accordance with workplace procedures
	3.2 Hydro turbine plant is observed for correct operational response in accordance with workplace procedures
	3.3 Hydro turbine plant is returned to required safe operational status upon completion of testing in

		accordance with workplace procedures
4 Analyse hydro turbine plant faults	4.1	Cause of abnormal hydro turbine plant operating conditions are identified by analysing technical and operational information in accordance with workplace procedures
	4.2	Actions necessary to rectify faults are correctly determined in accordance with workplace procedures
	4.3	Hydro turbine plant integrity and personnel safety is maintained in consultation with relevant personnel, technical and operational documentation in accordance with workplace procedures
5 Monitor and inspect hydro turbine plant	5.1	Hydro turbine plant is monitored and inspected 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	Hydro 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 UEPOPS360 Operate and monitor a hydro 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 UEPOPS072 Operate and monitor a hydro 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 hydro 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
- coordinating remote operation of equipment to maintain hydro turbine plant integrity
- identifying hydro turbine plant status
- implementing regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- monitoring and inspecting hydro turbine plant operation
- operating hydro turbine unit and equipment under the influence of high water pressures or flows
- organising resources
- preparing and planning work
- recognising and responding to abnormal hydro turbine plant operating conditions
- testing hydro turbine plant operationally
- using diagnostic and testing techniques
- using permit to work system
- working with hydro 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 hydro power production plant

- hydro turbine plant and equipment, location and operating parameters inclusive of the influence of high water pressure and flows
- hydro turbine plant status
- manuals
- permit to work system
- regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- WHS/OHS legislated 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>