



Australian Government

UEPOPS136 Shut down a hydro turbine

Release: 1

UEPOPS136 Shut down 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 conduct a shutdown of a hydro turbine to where it can be placed at rest safely.

Shutdown of a hydro 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 plan and prepare hydro turbine shutdown, conduct a shutdown, test hydro turbine plant operation during shutdown, analyse hydro turbine 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 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 Hydro turbine running-up and loading schedule are ascertained from documentation in accordance with workplace procedures |
| 2 Conduct hydro turbine shutdown | 2.1 Hydro turbine load is reduced in accordance with manufacturers' recommendations and specifications, and workplace procedures |
| | 2.2 Hydro turbine and alternator are removed from the system in accordance with manufacturers' recommendations and specifications, and workplace procedures |
| 3 Test and analyse hydro turbine plant operation during shutdown | 3.1 Tests are performed in accordance with workplace procedures |
| | 3.2 Power generation system and hydro turbine plant are observed for correct operational response in accordance with workplace procedures |
| | 3.3 Causes of abnormal hydro turbine plant operating conditions are identified by analysing technical and operational information in accordance with workplace procedures |
| 4 Complete documentation | 4.1 Hydro turbine plant problems, movements and status are reported in accordance with workplace procedures |
| | 4.2 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 UEPOPS445 Shut down 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 UEPOPS136 Shut down a hydro 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) requirements, including:
 - emergency procedures
 - risk control measures
 - safe working practices
- communicating with personnel
- conducting safe and controlled shutdown of hydro turbine plant and equipment
- identifying hydro turbine plant status
- implementing regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- interpreting manuals
- preparing hydro turbine plant and equipment for operation
- recognising and responding to abnormal plant operating conditions
- testing hydro turbine plant operationally using diagnostic and analysis techniques and to determine faults
- using recording procedures to complete documentation
- working with the 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 hydro power production plant
- hydro turbine operational processes
- hydro turbine plant and equipment, location and operating parameters
- hydro turbine plant system components and interaction
- hydro turbine supervision and control systems
- manuals

- online condition monitoring equipment and trends
- permit to work system
- power generation plant status
- regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- shutdown procedures
- WHS/OHS requirements, including:
 - emergency procedures
 - risk mitigation 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>