



Australian Government

UEPOPS139 Start and run up a hydro turbine

Release: 1

UEPOPS139 Start and run up 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 safe hydro turbine run-ups to a stable operating condition.

Run-up of a hydro turbine will involve the operator making a sequence of checks prior to and during start-up. This ensures that loading the turbine is completed in a safe and consistent manner.

Competency in this unit requires the ability to plan and prepare hydro turbine, start and run-up hydro turbine, test and analyse hydro turbine system faults, 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 | <ul style="list-style-type: none">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 monitored1.2 Work requirements are identified from relevant personnel and documentation in accordance with workplace procedures1.3 Preoperational checks are carried out on hydro turbine plant in accordance with site requirements, manufacturers' recommendations and specifications, and workplace procedures1.4 Turbine running-up and loading schedule are ascertained from relevant documentation in accordance with workplace procedures |
| 2 Run up hydro turbine | <ul style="list-style-type: none">2.1 Hydro turbine and alternator auxiliary systems are started up and hydro turbine is run up in accordance with manufacturers' recommendations and specifications, and workplace procedures2.2 Hydro turbine is monitored and observed to detect deviations from normal run-up operating conditions in accordance with workplace procedures2.3 Corrective actions are taken to rectify hydro turbine abnormalities in accordance with manufacturers' recommendations and specifications, and workplace procedures2.4 Alternator is synchronised and connected to electrical system in accordance with manufacturers' recommendations and specifications, and workplace procedures2.5 Alternator is loaded in accordance with manufacturers' recommendations and specifications, and workplace procedures |
| 3 Test and analyse hydro turbine plant operation | <ul style="list-style-type: none">3.1 Tests are performed in accordance with workplace procedures3.2 Power generation system and hydro turbine plant are observed for operational response in accordance with workplace procedures |

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|---------------------------------|------------|---|
| | 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 UEPOPS444 Start and run-up 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 UEPOPS139 Start and run up 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) legislated requirements, including:
 - emergency procedures
 - risk control measures
 - safe working practices
- communicating with personnel
- identifying hydro turbine plant status
- implementing regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- interpreting manuals
- organising resources
- planning and preparing hydro turbine plant and equipment start and run-up operations
- recognising and responding to abnormal plant operating conditions
- testing hydro turbine plant operation using diagnostic and data analysis techniques and tools to determine faults
- using recording procedures to complete documentation monitoring and operating hydro turbine plant and equipment
- 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 and performance criteria and include knowledge of:

- arrangements for power generation plant
- hydro turbine system components and interaction
- manuals
- operational processes of hydro turbine
- permit to work system

- regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- supervision and control system processes of hydro turbine
- 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

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