



Australian Government

UEPOPS445 Shut down a hydro turbine

Release: 1

UEPOPS445 Shut down a hydro 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 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 shut down, conduct a shutdown, test hydro turbine plant operation during shut down, 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 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 are identified, in accordance with workplace procedures and Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations

1.2 Work requirements are identified from appropriate 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 shut down

2.1 Hydro turbine load is reduced, in accordance with workplace procedures and manufacturers' recommendations

2.2 Hydro turbine and alternator are removed from the system, in accordance with workplace and manufacturers' operating procedures

3 Test hydro turbine plant operation during shut down

3.1 Tests are performed, in accordance with workplace procedures

3.2 Power generation system and hydro turbine plant are observed, in accordance with workplace procedures for correct operational response

4 Analyse system faults during hydro turbine shut down

4.1 Causes of abnormal hydro 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

5 Complete documentation

5.1 Hydro 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 UEPOPS445A 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 UEPOPS445 Shut down a hydro 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) including:
 - emergency procedures
 - risk control measures
 - safe working practices
- communicating with personnel
- conducting safe and controlled shut down of hydro turbine plant and equipment
- identifying hydro turbine plant status
- implementing legislation, industry standards, codes of practice and regulations
- 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, performance criteria and range of conditions and includes knowledge of:

- hydro turbine operational processes
- hydro turbine plant and equipment, its location and operating parameters
- hydro turbine plant system components and their interaction
- hydro turbine supervision and control systems
- legislation, industry standards, codes of practice and regulations
- manufacturers' specifications and manuals
- on-line condition monitoring equipment and trends
- permit to work system

- power generation plant status
- typical arrangements of hydro power production plant
- Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) legislation including:
 - emergency procedures
 - risk mitigation 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.

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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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