



Australian Government

UEPOPS115 Operate hydroelectric generating plant and auxiliary equipment

Release: 1

UEPOPS115 Operate hydroelectric generating plant and auxiliary equipment

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 a hydroelectric power generating facility. It includes the operational and maintenance activities associated with hydroelectric operating plant and auxiliary equipment.

Auxiliary plant systems and related controls are used to support the operation of hydro generating facilities. Auxiliary plant systems include ancillary equipment such as pumps, valves, seals and screens, motors, waterwheels and generators.

Competency in this unit requires the ability to plan and prepare work; operate, test, analyse and report on hydroelectric generating plant and auxiliary equipment. 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

PERFORMANCE CRITERIA

Elements describe the essential Performance criteria describe the performance needed to

outcomes.

demonstrate achievement of the element.

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** Turbine running-up and loading schedules are ascertained from relevant documentation in accordance with workplace procedures
- 1.4** Hydroelectric generating plant and auxiliary equipment inspections, preoperational tests and field preparation for service are carried out in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 1.5** Hydroelectric generating plant and auxiliary equipment operational prerequisites are established in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 1.6** Sequence for recommissioning hydroelectric generating plant and auxiliary equipment is determined in accordance with workplace procedures
- 1.7** Work is sequenced and prioritised in accordance with workplace procedures

2 Operate and monitor hydroelectric generating plant

- 2.1** Hydroelectric generating plant is operated in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 2.2** Key indicator limits are maintained in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 2.3** Auxiliary equipment is operated in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 2.4** Hydroelectric generating plant and auxiliary equipment is monitored to detect deviations from normal operating

	conditions in accordance with workplace procedures
	2.5 Hydroelectric generating plant and auxiliary equipment is operated to gain maximum efficiency of energy conversion and to meet active and reactive despatch power outputs in accordance with legislative requirements and workplace procedures
	2.6 Corrective actions are taken to rectify any abnormalities in accordance with manufacturers' recommendations and specifications, and workplace procedures
3 Test hydroelectric generating plant and auxiliary equipment	3.1 Tests on hydroelectric generating plant and equipment are performed in accordance with workplace procedures
	3.2 Hydroelectric generating plant and equipment is observed for operational response in accordance with workplace procedures
	3.3 Hydroelectric generating plant and equipment is returned to required operational status on completion of testing in accordance with workplace procedures
4 Analyse hydroelectric generating plant and auxiliary equipment faults	4.1 Causes of abnormal operating conditions are identified by analysing technical and operational information in accordance with workplace procedures
	4.2 Hydroelectric generating plant integrity and personnel safety is maintained through consultation with relevant personnel and technical and operational documentation in accordance workplace procedures
	4.3 Relevant personnel are notified when defects are detected in accordance with workplace procedures
5 Complete documentation	5.1 Equipment 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 UEP Electricity Supply Industry – Generation Sector Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPOPS343 Operate hydroelectric generating plant and auxiliary equipment.

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 UEPOPS115 Operate hydroelectric generating plant and auxiliary equipment

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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
- completing workplace documentation
- implementing regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- inspecting and monitoring hydroelectric generating plant and auxiliary equipment
- interpreting manuals
- operating hydroelectric generating plant and auxiliary equipment
- organising resources
- planning hydroelectric generating plant and auxiliary equipment work
- recognising and responding to abnormal hydroelectric generating plant and auxiliary equipment operating conditions using diagnostic and data analysis techniques
- reporting on hydroelectric generating plant and auxiliary equipment status
- testing hydroelectric generating plant and auxiliary equipment operationally using testing and measurement instruments to identify faults and abnormalities
- 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 of power generation plant
- hydroelectric generating plant and auxiliary equipment, location and operating parameters
- hydroelectric generating plant and auxiliary equipment operation and status

- manuals
- permit to work system
- regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- WHS/OHS requirements, including:
 - emergency procedures
 - risk control measures
 - safe working practices
- workplace policies and procedures
- workplace documentation.

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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