



Australian Government

UEPOPS103 Operate and monitor hydro unit control and protection systems

Release: 1

UEPOPS103 Operate and monitor hydro unit control and protection systems

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 a hydro unit control and protection system.

Hydro unit controls and protection systems provide operators with the facilities to control and supervise plant and equipment. Hydro unit control and protection systems help to ensure efficiency in critical applications such as turbine control, energy management and equipment protection.

Competency in this unit requires the ability to plan work, carry out operation of hydro unit control and protection system, test hydro unit control and protection system operation, analyse hydro unit control and protection system faults, inspect and monitor hydro unit control and protection system, and complete all documentation. Individuals will, in general, work under supervision, as an operator in a power generation facility.

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 outcomes.

Performance criteria describe the performance needed to 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** Hydro unit control and protection system run-up and loading schedule are ascertained from relevant documentation in accordance with workplace procedures
- 1.4** Inspection, preoperational tests and field preparation for hydro unit control and protection system service are carried out in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 1.5** Hydro unit control and protection system operational prerequisites are established in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 1.6** Sequence for recommissioning of hydro unit control and protection system is determined in accordance with workplace procedures

2 Operate hydro control and protection system

- 2.1** Hydro unit control and protection system is adjusted to achieve operating requirements in accordance with workplace procedures
- 2.2** Hydro unit control and protection system is operated within limits of design in accordance with workplace procedures
- 2.3** Hydro unit control and protection system 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 unit control and protection system abnormalities in accordance with manufacturers' recommendations and specifications, and

		workplace procedures
3 Test hydro unit control and protection system operation	3.1	Operational tests are performed in accordance with workplace procedures
	3.2	Hydro unit control and protection system is observed for operational response in accordance with workplace procedures
4 Analyse hydro unit control and protection system faults	4.1	Cause of abnormal hydro unit control and protection system operating conditions are identified by analysing technical and operational information in accordance with workplace procedures
	4.2	Actions to rectify hydro unit control and protection system faults are determined in accordance with workplace procedures
5 Monitor and inspect hydro unit control and protection system	5.1	Hydro unit control and protection system to be monitored and inspected is physically identified in accordance with workplace procedures
	5.2	Hydro unit control and protection system is monitored and inspected for normal operation and to detect deviations in accordance with workplace procedures
6 Complete documentation	6.1	Hydro unit control and protection system 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 UEPOPS446 Operate and monitor hydro unit control and protection systems.

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 UEPOPS103 Operate and monitor hydro unit control and protection systems

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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:

- analysing operational 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
- identifying and operating hydro unit control and protection system and using operational requirements
- identifying hydro unit control and protection system status
- implementing regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- interpreting manuals
- monitoring and inspecting hydro unit control and protection system operation
- organising resources
- preparing hydro unit control and protection system for operation
- recognising and responding to abnormal hydro unit control and protection system operating conditions
- testing hydro unit control and protection system operationally using diagnostic and testing techniques.

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:

- hydro unit control and protection system, location and operating parameters
- 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 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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