



Australian Government

UEPOPS446 Operate and monitor hydro unit control and protection systems

Release: 1

UEPOPS446 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 Generation Training Package.

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 the completion of all documentation. Individuals will, in general, work under supervision, as an operator in a power generation facility.

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 related to operating and monitoring hydro unit control and protection systems are identified, in accordance with workplace procedures and Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations and legislative requirements
- 1.2 Work tasks, hydro unit control and protection system and type of start requirements are identified, in accordance with workplace procedures, from appropriate personnel and documentation
- 1.3 Hydro unit control and protection system run-up and loading schedule are ascertained from relevant documentation, in accordance with workplace procedures and site requirements
- 1.4 Inspection, preoperational tests and field preparation for hydro unit control and protection system service are carried out, in accordance with workplace procedures and manufacturers' recommendations
- 1.5 Hydro unit control and protection system operational prerequisites are established, in accordance with workplace procedures and manufacturers' recommendations
- 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, in accordance with workplace procedures, to achieve operating requirements
- 2.2 Hydro unit control and protection system is operated within limits of its' design and site requirements, in accordance with workplace procedures

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| | 2.3 | Hydro unit control and protection system is monitored and observed, in accordance with workplace procedures, to detect deviations from required operating conditions |
| | 2.4 | Corrective actions are taken to rectify hydro unit control and protection system abnormalities, in accordance with workplace procedures and manufacturers' recommendations |
| 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 correct 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, in accordance with workplace procedures, and by analysing technical and operational information |
| | 4.2 | Actions to rectify hydro unit control and protection system faults are correctly 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, in accordance with workplace procedures, for normal operation or to detect deviations |
| 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 Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPOPS446A 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 UEPOPS446 Operate and monitor hydro unit control and protection systems

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:

- 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 legislation, industry standards, codes of practice and regulations
- interpreting manufacturers' specifications and 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 test techniques

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 unit control and protection system, its location and operating parameters
- manufacturers' specifications and manuals

- legislation, industry standards, codes of practice and regulations
- typical arrangements of hydro power production plant including hydro unit control and protection system types and characteristics
- WHS/OHS legislated requirements including:
 - emergency procedures
 - risk 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.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

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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