



Australian Government

UEPOPS335 Operate a hydro generator synchronous condenser pump unit

Release: 1

UEPOPS335 Operate a hydro generator synchronous condenser pump unit

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 start up, maintain a steady state of running and then shutdown a hydro unit operating either as a generator, synchronous condenser or pump.

Using synchronous condenser operations in hydro generation facilities can improve the quality of electric power being supplied, and it assists in stabilising the network during faults.

Competency in this unit requires the ability to plan and prepare work and to operate, test, analyse and report on hydro generator synchronous condenser plant. 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

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** Safety issues are identified in accordance with Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations, industry standards and workplace procedures
- 1.2** Work, hydro generator synchronous condenser plant and type of start requirements are identified from appropriate personnel and documentation, in accordance with workplace procedures
- 1.3** Turbine running up and loading schedule are ascertained from relevant documentation, in accordance with workplace procedures
- 1.4** Hydro generator synchronous condenser plant inspection, preoperational tests and field preparation for service are carried out, in accordance with manufacturers' recommendations and workplace procedures
- 1.5** Hydro generator synchronous condenser plant operational prerequisites are established, in accordance with manufacturers' recommendations and workplace procedures
- 1.6** Sequence for recommissioning of hydro generator synchronous condenser plant is determined, in accordance with workplace procedures

2 Operate hydro generator synchronous condenser plant

- 2.1** Hydro generator synchronous condenser plant is operated, in accordance with workplace procedures and manufacturers' recommendations
- 2.2** Hydro generator synchronous condenser plant is monitored, in accordance with workplace procedures, to detect deviations from normal operating conditions
- 2.3** Corrective actions are taken to rectify abnormalities, in accordance with manufacturers' recommendations and workplace procedures

3 Test hydro generator synchronous condenser

- 3.1** Tests are performed on hydro generator synchronous condenser plant, in accordance with workplace

plant operation	procedures
	3.2 Corrective action is taken when response does not meet with documentation, hydro generator synchronous condenser plant integrity or personnel safety requirements
	3.3 Hydro generator synchronous condenser plant is returned to required operational status upon completion of testing, in accordance with workplace procedures
4 Analyse hydro generator plant faults	4.1 Cause of abnormal hydro generator synchronous condenser plant operating conditions are identified by analysing technical and operational information, in accordance with workplace procedures
	4.2 Hydro generator synchronous condenser plant integrity and personnel safety is maintained, in accordance with workplace procedures, through consultation with appropriate personnel and technical and operational documentation
	4.3 Appropriate personnel are notified when defects are detected, in accordance with workplace procedures
5 Complete documentation	5.1 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 UEPOPS335B Operate a hydro generator synchronous condenser pump unit.

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 UEPOPS335 Operate a hydro generator synchronous condenser pump unit

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:
 - risk control measures
 - emergency procedures
 - safe working practices
- communicating with personnel
- identifying and responding to abnormal plant operating conditions
- implementing legislation, industry standards, codes of practice and regulations
- interpreting manufacturers' specifications and manuals
- monitoring and inspecting hydro generator synchronous condenser pump unit plant operations
- operating hydro generator synchronous condenser pump unit plant completing workplace documentation
- organising resources
- planning hydro generator synchronous condenser pump unit plant work
- recognising hydro turbine generator/pump unit plant status
- reporting on hydro generator pump unit plant status
- testing hydro turbine generator synchronous condenser pump unit plant operationally using diagnostic and data analysis techniques
- utilising measuring and testing instruments to identify faults and abnormalities

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 generator synchronous condenser pump unit plant and equipment, its location and operating parameters
- hydro turbine generator synchronous condenser pump unit plant operation

- manufacturers' specifications and manuals
- typical arrangements of power production plant
- 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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