



Australian Government

UEPOPS100 Operate and monitor heat exchangers and cooling systems

Release: 1

UEPOPS100 Operate and monitor heat exchangers and cooling 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 and monitor heat exchangers and cooling systems within power generation facilities.

A heat exchanger is used in power generation facilities to maintain efficiency in the steam and water cycle. The cooling system is used to reduce the heat from power generation plant and equipment.

Competency in this unit requires the ability to plan work, operate heat exchangers and cooling system plant, test heat exchangers and cooling system plant, analyse heat exchangers and cooling system plant faults, monitor and inspect heat exchangers and cooling system plant, and complete all documentation. Individuals will, in general, work under supervision, in a power plant 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 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** Documentation to determine heat exchangers and cooling system plant status is assessed and evaluated in accordance with workplace procedures
- 1.4** Inspection and field preparation for heat exchangers and cooling system plant service is carried out in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 1.5** Heat exchangers and cooling system plant operational prerequisites are established in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 1.6** Sequence for recommissioning of heat exchangers and cooling system plant is determined in accordance with workplace procedures

2 Operate heat exchangers and cooling system plant

- 2.1** Heat exchangers and cooling system plant are operated in accordance with manufacturers' recommendations and specifications, and workplace procedures
- 2.2** Heat exchangers and cooling system plant are monitored and observed to detect deviations from normal operating conditions in accordance with workplace procedures
- 2.3** Corrective actions are taken to rectify heat exchangers and cooling system plant abnormalities in accordance with manufacturers' specifications and workplace procedures

3 Test and analyse heat exchangers and cooling system plant operation

- 3.1** Operational tests are performed in accordance with workplace procedures

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| | 3.2 | Heat exchangers and cooling system plant is tested for correct operational response observed in accordance with workplace procedures |
| | 3.3 | Heat exchangers and cooling system plant is returned to required operational status upon completion of testing in accordance with workplace procedures |
| | 3.4 | Causes of abnormal heat exchangers and cooling system plant operating conditions are identified by analysing technical and operational information in accordance with workplace procedures |
| 4 Monitor and inspect heat exchangers and cooling system plant | 4.1 | Heat exchangers and cooling system plant are monitored and inspected for normal operation and to detect deviations in accordance with workplace procedures |
| | 4.2 | Appropriate personnel are notified when defects are detected in accordance with workplace procedures |
| 5 Complete documentation | 5.1 | Heat exchangers and cooling system 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 UEP Electricity Supply Industry – Generation Sector Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPOPS330 Operate and monitor heat exchangers and cooling 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 UEPOPS100 Operate and monitor heat exchangers and cooling 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 heat exchangers and cooling system plant 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 work practices
- communicate with personnel
- completing documentation
- identifying heat exchangers and cooling system plant status
- implementing regulations, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- monitoring and inspecting heat exchangers and cooling system plant
- operating heat exchangers and cooling system plant
- organising resources
- preparing and planning work
- recognising and responding to abnormal heat exchangers and cooling system plant operating conditions
- testing heat exchangers and cooling system plant operationally using diagnostic and testing techniques
- utilising the permit to work system
- working with heat exchangers and cooling system plant and equipment for operation.

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 production plant

- heat exchangers and cooling system plant and equipment, location and operating parameters
- heat exchangers and cooling system plant 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 work 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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