



Australian Government

UEPOPS330 Operate and monitor heat exchangers and cooling systems

Release: 1

UEPOPS330 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 Generation Training Package.

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/or 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 the completion of all documentation. Individuals will, in general, work under supervision, in a power plant 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

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 heat exchangers and cooling system plant 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 requirements are identified, in accordance with workplace procedures, from relevant personnel and documentation
- 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 workplace procedures and manufacturers' recommendations
- 1.5** Heat exchangers and cooling system plant operational prerequisites are established, in accordance with workplace procedures and manufacturers' recommendations
- 1.6** Sequence for recommissioning of heat exchangers and cooling system plant is determined, in accordance with workplace procedures and site requirements

2 Operate heat exchangers/cooling system plant

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

3 Test heat exchangers/cooling system

- 3.1** Operational tests are performed, in accordance with

plant operation	workplace procedures
	3.2 Heat exchangers and cooling system plant is observed, in accordance with workplace procedures for correct operational response
	3.3 Corrective action is taken when heat exchangers and cooling system plant response does not meet with documentation, plant integrity or personnel safety requirements
	3.4 Heat exchangers and cooling system plant is returned to required operational status upon completion of testing, in accordance with workplace procedures
4 Analyse heat exchangers/cooling systems plant faults	4.1 Causes of abnormal heat exchangers and cooling system plant operating conditions are identified, in accordance with workplace procedures, and by analysing technical and operational information
	4.2 Corrective action is taken, in accordance with workplace procedures
5 Monitor and inspect heat exchangers/cooling system plant	5.1 Heat exchangers and cooling system plant to be monitored and inspected is physically identified, in accordance with workplace procedures
	5.2 Heat exchangers and cooling system plant is monitored and inspected, in accordance with workplace procedures, for normal operation or to detect deviations
	5.3 Corrective action is taken, in accordance with workplace procedures
	5.4 Appropriate personnel are notified, in accordance with workplace procedures, when defects are detected
6 Complete documentation	6.1 Heat exchangers and cooling 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 UEPOPS330B Operate and monitor heat exchangers.

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 UEPOPS330 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 Generation Training Package.

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 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 legislation, industry standards, codes of practice and regulations
- 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/or 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, performance criteria and range of conditions and includes knowledge of:

- heat exchangers and cooling system plant and equipment, its location and operating

parameters

- heat exchangers and cooling system plant status
- legislation, industry standards, codes of practice and regulations
- manufacturers' specifications and manuals
- permit to work system
- typical arrangements of power production plant
- WHS/OHS legislated requirements including:
 - emergency procedures
 - risk control measures
 - safe work 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

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8>