



Australian Government

UEPOPS316 Operate and monitor boiler steam/water cycle

Release: 1

UEPOPS316 Operate and monitor boiler steam/water cycle

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 boiler steam and/or water cycle.

The relationship of components within the boiler and steam and/or water cycle in a power generating unit system, and the effect of adjustments made to components, can impact the efficiency and safety of a power generating facility's operation.

Competency in this unit requires the ability to plan work, operate boiler steam and/or water cycle plant, test boiler steam and/or water cycle plant, analyse boiler steam and/or water cycle plant faults, monitor and inspect boiler steam and/or water cycle plant and the completion of all documentation. 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 practices

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.

1 Plan and prepare for boiler steam water cycle operation

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1.1 Safety issues related to operating and monitoring boiler steam and water cycle 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, including permits to work, are identified, in accordance with workplace procedures, from appropriate personnel and documentation

1.3 Documentation to determine boiler steam and water cycle plant status is assessed and evaluated, in accordance with workplace procedures

1.4 Inspection, preoperational checks and field preparations for boiler steam and water cycle service are carried out, in accordance with workplace procedures and manufacturers' recommendations

1.5 Boiler steam and water cycle plant operational prerequisites are established, in accordance with workplace procedures and manufacturers' recommendations

1.6 Sequence for recommissioning of boiler steam and water cycle plant is determined, in accordance with workplace procedures and site requirements

2 Operate boiler steam/water cycle plant

2.1 Boiler steam and water cycle plant is operated, in accordance with workplace procedures and manufacturers' operating recommendations

2.2 Boiler steam and water cycle 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 abnormalities, in accordance with workplace procedures and industry standards

2.4 Boiler steam and water cycle plant is identified and removed from service, in accordance with workplace

- procedures
- 2.5** Corrective actions are taken, in accordance with workplace procedures when boiler steam and water cycle plant abnormalities are identified during removal from service
- 3 Test boiler steam/water cycle plant operation**
- 3.1** Operational tests are performed, in accordance with workplace procedures
- 3.2** Boiler steam and water cycle plant is observed for correct operational response, in accordance with workplace procedures
- 3.3** Corrective action is taken, in accordance with workplace procedures, when response does not meet with documentation, boiler steam and water cycle plant integrity or personnel safety requirements
- 3.4** Boiler steam and water cycle plant is returned to required operational status upon completion of testing, in accordance with workplace procedures
- 4 Analyse boiler steam/water cycle plant faults**
- 4.1** Causes of abnormal boiler steam and water cycle 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
- 4.3** Boiler steam and water cycle plant integrity and personnel safety are maintained, in accordance with workplace procedures, and in consultation with appropriate personnel and technical and operational documentation
- 5 Monitor and inspect boiler steam/water cycle plant**
- 5.1** Boiler steam and water cycle plant to be monitored and inspected is physically identified, in accordance with workplace procedures
- 5.2** Boiler steam and water cycle 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** Boiler steam and water cycle plant problems, movements, abnormalities 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 UEPOPS316B Operate and monitor boiler steam/water cycle.

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 UEPOPS316 Operate and monitor boiler steam/water cycle

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 boiler water and/or steam cycle 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
- communicating with personnel
- completing documentation using recording procedures
- identifying boiler water and/or steam cycle plant status
- implementing legislation, industry standards, codes of practice and regulations
- interpreting manufacturers' specifications and manuals
- monitoring and inspecting boiler water and/or steam cycle plant operations
- operating boiler water and/or steam cycle plant
- organising resources
- performing isolations
- preparing and planning work
- preparing boiler water and/or steam cycle plant and/or equipment for operation
- recognising and responding to abnormal boiler water and/or steam cycle plant operating conditions
- testing boiler water and/or steam cycle plant operationally using diagnostic and test techniques
- using permit to work system

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:

- boiler steam and/or water systems, types and characteristics including steam temperature controls, economisers and superheaters
- boiler water and/or steam cycle plant and equipment, its location and operating parameters
- boiler water and/or steam cycle plant status
- isolations
- 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.

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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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