



Australian Government

UEPMNT403 Maintain complex mechanical valves

Release: 2

UEPMNT403 Maintain complex mechanical valves

Modification History

Release 2. Minor release to update superseded pre-requisite units.

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 undertake fault finding, diagnosis, repair or overhaul of complex mechanical valves, excluding associated servo or actuating units.

A fault is defined as an abnormal condition or defect of a mechanical valve which may lead to a failure in power generation facility equipment, systems and/or plant. Diagnosis and repair requires the identification of the type of fault, its cause and the determination of repair actions.

Competency in this unit requires the ability to plan work, remove mechanical valves for maintenance, perform mechanical valve maintenance, replace and/or install valves and to report on all completed work tasks. Individuals will, in general, work under supervision in an electrical, electronic and/or mechanical equipment repair workshop or on site.

Power generation maintenance personnel are typically trained and authorised to receive 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 of competency may require a licence or training permit to practice in the workplace, where work is carried out on gas and electrical installations. Additional and/or other conditions may apply under state and territory legislative and regulatory licensing requirements.

Pre-requisite Unit

MEM09002 Interpret technical drawing

MEM12023 Perform engineering measurements

MEM18001 Use hand tools

MEM18002 Use power tools/hand held operations

MEM18003 Use tools for precision work

MEM18006 Perform precision fitting of engineering components

MEM18055 Dismantle, replace and assemble engineering components

UEPMNT303 Maintain mechanical valves

Competency Field

Maintenance

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan and prepare for work

PERFORMANCE CRITERIA

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

- 1.1** Requirements including scope of work and assigned roles are identified and confirmed with appropriate personnel or by site inspection, in accordance with workplace procedures
- 1.2** Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations, legislative requirements, industry standards, codes of practice, manufacturer specifications, environmental obligations and workplace procedures are reviewed in preparation for work
- 1.3** Resources are obtained and inspected for compliance with job specification
- 1.4** Relevant plans, drawings and manuals are selected and used, in accordance with workplace procedures
- 1.5** Correct materials and components for work are obtained and inspected, in accordance with workplace procedures, for compliance with job specification
- 1.6** Work is planned, sequenced and prioritised, in accordance with workplace procedures
- 1.7** Potential hazards are identified and risk control measures are selected and implemented, in accordance with the workplace procedures
- 1.8** Work area is prepared, in accordance with workplace procedures

2 Remove complex mechanical valves for maintenance

- 2.1** Isolations for work are confirmed, in accordance with workplace procedures
- 2.2** Complex mechanical valve is disconnected, in accordance with workplace procedures
- 2.3** Complex mechanical valve is removed, in accordance with workplace procedures
- 2.4** Complex mechanical valve is inspected for abnormalities, in accordance with workplace procedures

3 Perform complex mechanical valve maintenance

- 3.1** Maintenance is performed, in accordance with workplace procedures and manufacturers' specifications
- 3.2** Complex mechanical valve is dismantled, clearly marked for identification and sketches are drawn, in accordance with workplace procedures
- 3.3** Components are prepared for reassembly, in accordance with workplace procedures, manufacturers' drawings or manuals
- 3.4** New components are inspected, in accordance with workplace procedures, to ensure compliance with manufacturers' specifications
- 3.5** Dimensional inspection is performed, in accordance with workplace procedures, using precision measuring devices to ensure compliance with manufacturers' specifications
- 3.6** Components are reassembled for testing, in accordance with workplace procedures and manufacturers' specifications
- 3.7** Modifications or alterations are undertaken, in accordance with workplace procedures and manufacturers' specifications
- 3.8** Components are levelled, aligned, coupled and connected, in accordance with workplace procedures and manufacturers' specifications
- 3.9** Complex mechanical valves are pressure tested, monitored and adjusted, in accordance with workplace procedures and manufacturers' specifications

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| 4 Replace or install complex mechanical valves | 4.1 | Equipment is prepared for valve replacement, in accordance with workplace procedures |
| | 4.2 | Complex mechanical valve is replaced, in accordance with workplace procedures and manufacturers' specifications |
| | 4.3 | Complex mechanical valve is connected, in accordance with workplace procedures and manufacturers' specifications |
| | 4.4 | Final inspection is completed, in accordance with workplace procedures |
| 5 Complete work | 5.1 | Work is completed and appropriate personnel are notified, in accordance with workplace procedures |
| | 5.2 | Work area is cleared of waste, cleaned, restored and secured, in accordance with workplace procedures |
| | 5.3 | Tools and equipment are cleaned, maintained and stored, in accordance with workplace procedures |
| | 5.4 | Work completion details are finalised, 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 UEPMT403B Maintain complex mechanical valves.

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 UEPMNT403 Maintain complex mechanical valves

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 data using analysis techniques and tools
- applying Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) requirements including:
 - emergency procedures
 - hazard identification
 - risk control measures
 - safe working practices
- communicating with personnel
- completing work as per scheduled requirements
- determining permit to work requirements
- implementing legislation, industry standards, codes of practice and regulations
- interpreting manufacturers' specifications and manuals
- levelling and aligning using approved techniques
- performing complex mechanical valve maintenance using maintenance techniques and procedures
- performing dismantling and assembling techniques
- planning for maintenance of complex mechanical valve work
- reading technical drawings and data
- recognising worn or damaged components
- rectifying faults
- removing valves for complex mechanical valve maintenance using removal techniques
- replacing or installing complex mechanical valves using installation techniques and procedures
- selecting materials and components
- undertaking valve operational techniques
- utilising diagnostic and testing techniques
- working with precision measuring equipment and tools

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:

- diagnostic and testing techniques
- legislation, industry standards, codes of practice and regulations
- level and aligning techniques
- maintain complex mechanical valves plant and equipment, its location and operation
- manufacturers' specifications and manuals
- measuring equipment
- permit to work system
- technical drawings and data
- tools
- typical arrangements of power production plant
- valve materials, components and operations of
- valve operating arrangements
- WHS/OHS legislated requirements including:
 - emergency procedures
 - hazard identification
 - 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.

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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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