



**Australian Government**

# **UEPMNT422 Conduct performance testing on process plant and equipment**

**Release: 2**

# UEPMNT422 Conduct performance testing on process plant and equipment

## 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**Release 2.** Minor release to update superseded pre-requisite units.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 conduct performance testing on process plant and equipment.

Performance testing is used to determine how power generation plant and equipment performs in terms of responsiveness and stability under specified workloads. It can also serve to investigate, measure, validate or verify other attributes such as scalability, reliability and resource usage.

Competency in this unit requires the ability to plan and prepare for performance tests, undertake performance tests and collect data, evaluate and analyse information and complete documentation. Individuals will, in general, work as a maintenance operative in a power generation facility.

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

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0020 Fix and secure electrotechnology equipment

UEECD0043 Solve problems in direct current circuits

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEEEL0003 Arrange circuits, control and protection for general electrical installations

UEEEL0011 Evaluate performance of low voltage electrical apparatus

UEEEL0014 Isolate, test and troubleshoot low voltage electrical circuits

UEEEL0020 Solve problems in low voltage A.C. circuits

UEEEL0021 Solve problems in magnetic and electromagnetic devices

UEEEL0023 Terminate cables, cords and accessories for low voltage circuits

UEEEL0024 Test and connect alternating current (a.c.) rotating machines

UEEEL0025 Test and connect transformers

UEPMNT351 Test and commission electrical equipment

## Competency Field

Maintenance

## Unit Sector

Electricity generation

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### **1 Plan and prepare for performance test**

### PERFORMANCE CRITERIA

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

- 1.1** Work request is received and appropriate method of testing is determined, in accordance with legislative requirements, industry standards and workplace procedures
- 1.2** Safety and process plant issues are identified, in accordance with workplace procedures
- 1.3** Specialist assistance and personnel are arranged, in accordance with workplace procedures
- 1.4** Tools and equipment are identified and acquired, in accordance with workplace procedures
- 1.5** Test equipment is calibrated as specified in industry standards, manufacturers' specifications and workplace procedures
- 1.6** Performance test requirements are determined and planned, in accordance with manufacturers' specifications and workplace procedures

- |                                                      |            |                                                                                                                                                      |
|------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                      | <b>1.7</b> | Process plant is identified and its' status prior to the test is established, in accordance with workplace procedures and from appropriate personnel |
|                                                      | <b>1.8</b> | Authority to carry out work is obtained, in accordance with workplace procedures, process plant operating conditions and load requirements           |
| <b>2 Undertake performance test and collect data</b> | <b>2.1</b> | Process plant is coordinated to initial operating state, ready for testing, in accordance with workplace procedures                                  |
|                                                      | <b>2.2</b> | Performance tests and data collection are undertaken using appropriate techniques that ensure personnel safety and process plant integrity           |
|                                                      | <b>2.3</b> | Performance tests are carried out, in accordance with workplace procedures                                                                           |
|                                                      | <b>2.4</b> | Data is collected, in accordance with workplace procedures                                                                                           |
|                                                      | <b>2.5</b> | Performance test results are evaluated to accurately assess performance of process plant                                                             |
|                                                      | <b>2.6</b> | Process plant availability is declared, on completion of tests, in accordance with workplace procedures                                              |
| <b>3 Evaluate and analyse information</b>            | <b>3.1</b> | Process plant efficiency is evaluated, and analysed, in accordance with workplace procedures using data collected                                    |
|                                                      | <b>3.2</b> | Process plant performance is measured against criteria or specifications, in accordance with workplace procedures                                    |
|                                                      | <b>3.3</b> | Cause of abnormal process plant performance is identified by analysing technical and operational information                                         |
|                                                      | <b>3.4</b> | Process plant integrity is maintained through consultation with appropriate personnel and reference to technical and operational documentation       |
|                                                      | <b>3.5</b> | Performance test data is critiqued and validated, referencing technical information and applicable test procedure documentation                      |
| <b>4 Complete documentation</b>                      | <b>4.1</b> | Information and data is collated, in accordance with                                                                                                 |

workplace procedures

- 4.2 Reports and documentation are produced, in accordance with workplace procedures
- 4.3 Reports and documentation are presented to appropriate personnel, in accordance with workplace procedures, to facilitate implementation of recommendations

## 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 UEPMT422B Conduct performance testing on process plant and equipment

## 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 UEPMNT422 Conduct performance testing on process plant and equipment

## Modification History

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

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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) requirements including:
  - emergency procedures
  - hazard identification
  - risk control measures
  - safe working practices
- communicating with personnel
- completing documentation including writing reports
- determining permit to work requirements
- determining process plant performance
- evaluating and analysing data using data analysis techniques and tools
- identifying process plant status and operating parameters
- implementing legislation, industry standards, codes of practice and regulations
- planning and preparing for performance test
- producing reports and completing documentation
- recording, analysing and using data
- undertaking performance test and collecting data
- using manufacturers' specifications and manuals
- utilising performance testing and data collection techniques

## 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:

- evaluation and analysis methods and techniques
- legislation, industry standards, codes of practice and regulations

- manufacturers' specifications and manuals
- performance tests and data collection techniques
- permit to work system
- process plant and equipment, its location and operation
- process plant operating parameters and performance characteristics
- report and documentation requirements
- typical arrangements of power production plant including operating parameters
- 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.

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>