



Australian Government

UEPMNT402 Conduct complex levelling and alignment

Release: 2

UEPMNT402 Conduct complex levelling and alignment

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 Minor release to update superseded pre-requisite units.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 levelling and the advanced alignment of power generation plant and machinery, this may include high speed rotating plant.

Levelling is the process in which differences in height between two or more points are determined. Alignment is placing or arranging in a straight line, this can include adjusting parts of a mechanism to produce a required relationship or orientation.

Competency in this unit requires the ability to plan and prepare work, perform alignments and complete all work tasks. 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

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

MEM18009 Perform levelling and alignment of machines and engineering components

MEM18055 Dismantle, replace and assemble engineering components

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, manufacturers' specifications, environmental obligations and workplace procedures are reviewed in preparation for work
- 1.3** Resources are obtained and inspected, in accordance with workplace procedures for compliance with job specification
- 1.4** Relevant plans, drawings and manual 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 the 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 workplace procedures
- 1.8** Work area is prepared, in accordance with workplace procedures

2 Perform alignment

- 2.1** Isolations for work are confirmed, in accordance with workplace procedures
- 2.2** Measurements are taken, and recorded, to facilitate compliance with manufacturers' specifications and job requirements
- 2.3** Levelling and alignment calculations are performed, and sketches are made, in accordance with workplace procedures
- 2.4** Power generation plant and machinery is levelled and aligned, and adjustments are made, in accordance with workplace procedures, to ensure compliance with manufacturers' specifications
- 2.5** Final alignment inspections are undertaken, and fastenings are torqued, in accordance with workplace procedures and manufacturers' specifications
- 2.6** Power generation plant and machinery is test run, monitored and adjusted, in accordance with workplace procedures and manufacturers' specifications

3 Complete work

- 3.1** Work is completed and appropriate personnel are notified, in accordance with workplace procedures
- 3.2** Work area is cleared of waste, cleaned, restored and secured in accordance with workplace procedures
- 3.3** Tools and equipment are maintained and stored in accordance with workplace procedures
- 3.4** 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 UEPMNT402B Conduct complex levelling and alignment

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 UEPMNT402 Conduct complex levelling and alignment

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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
 - identifying hazards
 - risk control measures
 - safe working practices
- calculating and applying adjustment techniques
- communicating with personnel
- completing work as per scheduled requirements
- determining permit to work requirements
- implementing legislation, industry standards, codes of practice and regulations
- operating precision measuring equipment
- performing alignment
- performing complex levelling and aligning principles whilst working to precise tolerances
- planning to conduct complex levelling and alignment work
- undertaking isolations
- using manufacturers' specifications and manuals
- utilising testing and inspection techniques
- working with technical drawings

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:

- calculations for alignment and levelling adjustments
- complex levelling and aligning practices

- inspection and testing methods
- isolations
- legislation, industry standards, codes of practice and regulations
- manufacturers' specifications and manuals
- permit to work requirements
- power generation plant and equipment, its location and operation
- precision measuring equipment
- technical drawings
- tolerances
- typical arrangements of power production plant
- WHS/OHS legislated requirements including:
 - emergency procedures
 - identifying hazards
 - 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.

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