Australian Government

Department of Education, Employment and Workplace Relations

NWP309B Test and commission water distribution systems

Revision Number: 2

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Modification History

NWP309B Release 2: Layout adjusted. No changes to content.
NWP309B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to plan and implement the testing and commissioning of water distribution systems. The ability to interpret technical information, identify and assess hazards and perform technical testing procedures are essential to performance.

Application of the Unit

This unit supports the attainment of skills and knowledge required for field staff and operators with specific responsibility for commissioning water distribution systems, post-installation or repair, ensuring that the functioning of the system complies with relevant specifications and organisational requirements.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and prepare for testing and commissioning.	1.1 Check plans for the section to be tested and locate features on site. 1.2 Correctly identify and interpret the ***system operation requirements***. 1.3 Check vacuum testing and commissioning tasks from ***relevant documentation*** and schedule appropriately. 1.4 Identify and assess ***potential hazards*** and take required preventative measures. 1.5 Select and use ***tools and equipment*** correctly. 1.6 Check testing equipment for accuracy and identify and correct malfunctions.
2 Maintain water system hygiene.	2.1 Arrange disinfection according to ***organisational and statutory requirements***. 2.2 Flush and/or slug clean or swab the relevant section of the distribution system according to the required standard using approved techniques. 2.3 Dispose of flushing according to organisational requirements.
3 Test the pipeline system.	3.1 Fill the distribution system slowly and flush systematically to expel air and debris. 3.2 Determine the correct test pressure for the pipeline and fit gauges of the correct range to test equipment. 3.3 Carry out testing procedures according to specifications and organisational requirements. 3.4 Accurately locate and report failed pipes, joints and fittings and reschedule testing. 3.5 Vacuum test concrete access chambers using standard techniques.
4 Commission the distribution system.	4.1 Ensure the distribution system is made operational according to specifications and organisational procedures. 4.2 Check, maintain and store equipment, tools and materials according to manufacturer's guidelines and organisational procedures. 4.3 Restore the work site to meet environmental and organisational requirements.
5 Review record and report results.	5.1 Maintain workplace records according to organisational and statutory requirements. 5.2 Maintain calibration records and certificates according to organisational and statutory requirements.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- communicate effectively and appropriately with colleagues and contractors
- communicate the implementation of OHS policies and procedures
- interpret and apply a range of technical documents including relevant:
  - regulatory, legislative, licensing and organisational requirements
  - codes and standards
  - specifications
  - plans
  - instructions
  - standard operating procedures
  - organisational policies
- conduct test procedures
- use test equipment
- monitor work processes and ensure safe work practices
- identify reports and record hazards and risks
- give and receive instructions
- test pipes
- identify system faults
- use personal protective equipment

Required knowledge:

- general occupational health and safety on work sites
- the risk factors and potential hazards of test procedures
- water hygiene and system disinfection requirements
- equipment operation
- environmental aspects of test procedures
- characteristics of pipes, materials and fittings
- an overview of the water distribution system and water industry operations
- relevant definitions, terminology, symbols and language
- testing methods used for water distribution systems

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The candidate should demonstrate the ability to test and commission water distribution systems including:

- planning the testing of water distribution systems
- identifying and analysing system requirements
- identifying and addressing hazards
- using suitable equipment
- maintaining the quality of water in the system
- commissioning the distribution system
- restoring worksite and equipment
- completing required reports and records

Context of and specific resources for assessment

Access to the workplace and resources including:

- documentation that should normally be available in a water industry organisation
- relevant codes, standards, and government regulations

Where applicable, physical resources should include equipment modified for people with disabilities.

Access must be provided to appropriate learning and/or assessment support when required.

Assessment processes and techniques must be culturally appropriate, and appropriate to the language and literacy capacity of the candidate and the work being performed.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice
- a decision of competence only taken at the point when the assessor has complete confidence in the person's competence over time and in various contexts
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence
- where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be

authenticated and show that it represents competency demonstrated over a period of time

- assessment can be through simulated project-based activity and must include evidence relating to each of the elements in this unit

In all cases where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge. Questioning will be undertaken in a manner appropriate to the skill levels of the operator, any cultural issues that may affect responses to the questions, and reflecting the requirements of the competency and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.

System operation requirements may include:	• calibration certificates • NATA certification
Relevant documentation may include:	• manufacturer's specifications • organisational procedures
Potential hazards may include:	• work in confined spaces • work involving lifting and moving materials • working in a trench
Tools and equipment may include:	• hand and power tools • lifting and winching equipment • testing equipment • communication equipment • line plugs • gauges • personal protective equipment
Organisational and statutory requirements may include:	• by-laws and organisational policies • standard operating procedures • environment standards • occupational health and safety • lifts and cranes • mines • road signage code • electrical • dangerous goods

Unit Sector(s)

Not applicable.

Competency field

Collection and distribution.