



Australian Government

Department of Education, Employment and Workplace Relations

NWP256B Monitor and report water distribution systems

Revision Number: 2

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Modification History

NWP256B Release 2: Layout adjusted. No changes to content.

NWP256B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to inspect water distribution systems, detect faults and report on water distribution system performance.

Application of the Unit

This unit supports the attainment of skills and knowledge required for field staff with responsibility for ensuring that water distribution system performance complies with legislative 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 <i>bold italicised</i> text is used, further information is detailed in the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Monitor distribution system performance.	1.1 Conduct <i>routine inspections</i> of <i>supply networks</i> and report faults according to organisational procedures. 1.2 Select <i>equipment</i> and inspection methods to meet task and site safety requirements. 1.3 Collect data on system performance and usage and report according to <i>legislative and organisational requirements</i>.
2 Monitor water quality.	2.1 Collect and record water samples according to organisational requirements. 2.2 Monitor water quality according to organisational requirements.
3 Identify system non-conformance .	3.1 Investigate and report consumer complaints according to organisational requirements. 3.2 Record and report leakages, and damaged pipes and fittings according to organisational requirements. 3.3 Identify and report <i>system faults</i> and operational condition of network according to organisational requirements. 3.4 Investigate and report pressure and flow fluctuations outside acceptable limits according to organisational requirements.

Required Skills and Knowledge

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

Required skills:

- identify and respond to operational problems
- produce reports and logs
- use safety and personal protective equipment
- use tools and machinery
- follow plans, instructions and policies
- perform system calculations
- apply inspection and testing procedures and standards
- communicate with employees and customers
- use communication equipment
- give and receive instructions
- work effectively as part of a team
- identify system faults
- use literacy skills in regard to verbal and written communication in the workplace
- identify hazards

Required knowledge:

- system hydraulics basics
- system layout
- system calculations
- environmental aspects of maintenance
- lock-out procedures for mechanical and electrical installations
- relevant utilities and service bodies
- communication systems
- hazardous materials handling
- landscape and ground structure of work area
- risk management principles
- risk factors and potential hazards of inspection processes
- equipment operation, capacity and limitations
- effects of weather and conditions on system operation and plant
- control systems
- pipes and fittings

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 inspect water distribution systems, detect faults and report on water distribution system performance including:

- monitoring and reporting on performance of water distribution systems, including water quality
- identifying and reporting leakages or damage to system components
- identifying and reporting operational conditions falling outside performance specifications
- processing consumer complaints

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 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 should only be made 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 and cultural issues that may affect responses to the questions, and will reflect 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 of the candidate, accessibility of the item, and local industry and regional contexts.

Routine inspections may include:

- interaction and communication with other employees, other authorities and general public
- visual observation
- implementation of reporting procedures that may also include procedures for implementation of by-laws, organisational policies and statutory requirements

Supply networks may include:

- distribution system pipe work, including:
 - polyvinyl chloride (PVC)
 - polyethylene
 - mild steel cement lined
 - ductile iron cement lined
 - cast iron cement lined
 - asbestos cement
 - copper
 - glass reinforced piping
- structures, including:
 - meter pits
 - person access chambers or pits
 - valve chambers
 - regulators
 - erosion barriers
 - head walls
 - thrust blocks
 - pumping stations
 - consumer services
 - meters
- fittings, including:
 - hydrants
 - sluices
 - valves
 - scours
 - main taps
 - jointing systems for pipe types, e.g. gibault
 - tapping bands

- tension bands
- solvent cement joints
- compression ring joints
- bolted flanges
- electrofusion
- butt welding
- backflow prevention devices
- cathodic protection

Equipment may include:

- hand and power tools
- lifting equipment
- mechanical excavation equipment
- electronic monitoring and metering systems
- recording systems
- motorised equipment
- on- and off-road vehicles
- communication equipment
- breathing apparatus
- gas detection equipment
- rescue equipment
- appropriate personal protective equipment

Legislative and organisational requirements

may include:

- relevant federal and state or territory legislation and regulations
- codes of practice, associated standards and guidance material
- documented organisational policies, manuals and induction programs
- relevant community planning and development agreements, such as land care agreements

System faults may include:

- loss of pressure
- leakage
- odour
- turbidity and colour
- loss of flow

Unit Sector(s)

Not applicable.

Competency field

Collection and distribution.