Australian Government

Department of Education, Employment and Workplace Relations

NWP310B Monitor and operate water distribution systems

Revision Number: 2

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Modification History

NWP310B Release 2: Layout adjusted. No changes to content.
NWP310B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to monitor and coordinate the operation of bulkwater or water distribution systems and to measure and report on the operation of the system. The ability to interpret technical documentation, identify and investigate operational problems and to collect and analyse technical information are essential to performance.

Application of the Unit

This unit supports the attainment of skills and knowledge required for field staff and operators with a specific responsibility for inspecting and measuring the performance of bulkwater or water distribution systems and for ensuring that flow, pressure and volume parameters are regulated according to organisational specifications and system demands.

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 Monitor system performance and usage.	1.1 Select and check ***equipment*** required for monitoring system performance. 1.2 Schedule and conduct routine inspections and report any identified ***faults*** according to ***organisational procedures and statutory requirements***. 1.3 Collect, analyse and report system performance data according to organisational requirements. 1.4 Monitor sample collection and records according to organisational procedures.
2 Regulate flow, pressure and volume.	2.1 Inspect ***flow regulating systems*** and determine and apply adjustments required to meet demand. 2.2 Monitor pressures and volumes and determine and apply the adjustments required to meet system demands. 2.3 Monitor flows and determine and apply the diversions required to facilitate repair or emergency activities.
3 Operate and control distribution processes.	3.1 Control ***distribution processes*** to maintain the required parameters of operation. 3.2 Conduct flow measurements according to organisational procedures. 3.3 Identify and address ***process faults*** and operational conditions and report according to organisational requirements. 3.4 Optimise process performance according to organisational requirements.
4 Compile process reports.	4.1 Compile reports from system data to meet organisational requirements. 4.2 Record the condition of equipment and report faults or anticipated problems according to organisational 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
- respond to and correct operational problems
- produce reports, logs etc
- use safety equipment and personal protective equipment
- identify and investigate operational problems
- collect and analyse data
- interpret plans, charts, service search diagrams, instructions and specifications
- interpret policies, standard operating procedures and standards
- communicate with employees and customers
- use communication systems
- give and receive instructions
- control system operations
- identify control system faults

Required knowledge:

- system hydraulics
- coordination and control of processes
- system layout
- system processes
- environmental aspects of bulkwater and water distribution systems
- chemical use
- safety procedures
- lock out procedures for mechanical and electrical installations
- policies, standard operating procedures and legislation
- relevant utilities and service bodies
- communication systems
- risk management principles
- risk factors and potential hazards involved with water pressures and flows
- equipment operation, capacity and limitations
- effects of weather and conditions on operation of bulkwater and water distribution systems
- types of pipes and fittings
- pumping and valving systems
- control 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 will provide evidence of monitoring and coordinating the operation of bulkwater or water distribution systems:

- Interpreting a range of technical documentation,
- identifying and investigating operational problems
- collecting and analysing technical information
- conducting routine inspections
- analysing and reporting system performance data
- meeting organisation standards for optimising water distribution performance

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.

Equipment used may include:	• electronic monitoring, telemetry and metering systems • manual chart recording systems • on- and off-road vehicles • testing and sampling equipment • communication equipment • personal protective equipment • atmosphere monitoring equipment • breathing apparatus • rescue equipment • appropriate personal protective equipment • pumping systems • valving systems • communication equipment • computerised equipment
Faults may include:	• illegal usage • water quality • low pressure • flow
Organisational procedures and statutory requirements may include:	• occupational health and safety procedures, including use of personal protective equipment • by-laws and organisational policies • standard operating procedures • environment protection • hazardous substances • equal employment opportunity • occupational health and safety • relevant Australian Standards • manufacturer's standards and specifications • World Health Organisation standards • Australian Drinking Water Guidelines
Flow regulation systems may include:	• pumping systems • valving systems • gravity flow systems • service reservoirs • electronic and manual control systems

Monitoring and coordination may require:	• interaction and communication with other employees, other authorities and the general public • visual observation • implementation of reporting procedures that may also include lock out for electrical and mechanical installations and procedures for the implementation of by-laws, organisational policies, standard operating procedures and statutory requirements
Distribution processes may include:	• monitoring of system demands • monitoring pressure • attending to and recording water supply problems such as low pressure and water quality
Process faults may include:	• pressure leakage • main breaks • contamination • odour • discolouration

Unit Sector(s)

Not applicable.

Competency field

Collection and distribution.