Australian Government

Department of Education, Employment and Workplace Relations

NWP221A Operate basic flow control and regulating devices in water or wastewater treatment network systems

Release: 2

NWP221A Operate basic flow control and regulating devices in water or wastewater treatment network systems

Modification History

NWP221A Release 2: Layout adjusted. No changes to content.
NWP221A Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to operate basic flow control and regulating devices in water or wastewater treatment network systems.

Application of the Unit

This unit supports the attainment of skills and knowledge required for field and operational staff with responsibility for using flow control and metering devices according to organisational procedures.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit of competency 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 required flows in water or wastewater treatment network systems.	1.1 Apply operating parameters and requirements for flows in water or wastewater treatment network systems. 1.2 Use ***equipment*** to support the monitoring process in water or wastewater treatment network systems according to OHS, organisational and manufacturer requirements. 1.3 ***Monitor, measure and record*** flows at ***designated locations and systems*** according to agreed schedule and procedures. 1.4 Identify potential operational problems in water or wastewater treatment network systems and provide proactive advice to relevant personnel.
2 Regulate flows in water or wastewater treatment network systems.	2.1 Adjust ***flow regulation*** and control mechanisms in water or wastewater treatment network systems to increase and decrease flow according to organisational procedures. 2.2 Secure flow regulation devices in water or wastewater treatment network systems to maintain a constant flow and meet ***legislative and organisational requirements***.
3 Record and report system adjustments.	3.1 Produce information relating to flow adjustments in water or wastewater treatment network systems according to organisational procedures. 3.2 Collect, record and report information on flows and abnormalities in water or wastewater treatment network systems according to organisational requirements.
4 Respond to contingencies.	4.1 Identify and assess potential risks and contingencies in operation of flow control and regulating devices within water or wastewater treatment systems. 4.2 Identify and apply organisational standards and procedures for responding to potential and actual risks and contingencies. 4.3 Apply organisational standards and procedures for informing relevant personnel of potential risks within the organisation.

Required Skills and Knowledge

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

Required skills:

- collect and report system performance information
- adjust and maintain flow system control mechanisms
- secure flow regulation devices
- use literacy skills in regard to verbal and written communication in the workplace
- use personal protective equipment

Required knowledge:

- impact of the principles of hydraulics on the operation of flows
- system layout
- role of relevant utilities and service bodies
- risk factors and potential hazards
- equipment operation, capacity and limitations
- effects of weather and conditions on operation of system and site
- system flow control mechanisms
- relevant lock-out procedures for mechanical and electrical installations

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 in water and wastewater treatment network systems to:

- identify flow requirements
- prepare for and conduct flow monitoring
- identify and report operational problems
- adjust and regulate flows according to organisational requirements
- complete records and reports

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 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 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.

Equipment used includes:

- personal protective equipment
- electronic digital monitoring and metering systems
- basic hand and power tools
- valves, pumps and flow meters
- mechanical meters and flow devices
- hydrants
- recording systems
- communication equipment, including:
  - two-way radio
  - telephone
  - fax
- lifting and winching equipment
- on- and off-road vehicles

Processes to ensure flows are ***monitored***, ***measured and recorded*** may require:

- 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

Designated locations and systems may include:

- urban locations
- rural locations
- ground and surface water source systems
- wastewater collection and transfer systems
- trade waste systems

Flow regulation may involve operation of:

- valving systems, including:
  - sluice
  - blade
  - gate
  - non-return
  - pressure reducing
- supervisory control and data acquisition (SCADA) systems
- pumping systems, including:
  - centrifugal
  - Archimedes screw type

- submersible
- positive displacement
- electronic and manual controlling systems
- service reservoirs

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

Unit Sector(s)

Not applicable.

Competency field

Collection and distribution.