



Australian Government

Department of Education, Employment and Workplace Relations

NWP425B Coordinate and monitor the operation of irrigation delivery systems

Revision Number: 2

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Modification History

NWP425B Release 2: Layout adjusted. No changes to content.

NWP425B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to coordinate and monitor irrigation delivery systems to ensure system maintenance and performance standards and customer liaison.

Application of the Unit

This unit supports the attainment of skills and knowledge required for staff with a specific responsibility for ensuring that the operation of irrigation systems complies with organisational and statutory requirements. The level of responsibility will vary according to the size and complexity of the irrigation system.

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 Confirm performance measures in irrigation system's management plan.	<p>1.1 Identify customer requirements for irrigated culture.</p> <p>1.2 Identify <i>environmental factors</i> that impact on the irrigation system.</p> <p>1.3 Consult <i>historic system information</i> and <i>stakeholders</i> as appropriate</p> <p>1.4 Confirm performance requirements for an <i>irrigation system management plan</i>.</p>
2 Monitor and coordinate processes and resource targets.	<p>2.1 Correctly select, fit and use <i>equipment</i>, including personal protective equipment.</p> <p>2.2 Apply <i>monitoring and testing programs</i> and identify, investigate and report any deviations from water quantity, quality, release or flow.</p> <p>2.3 Evaluate the timeliness, volume and flow rates of water deliveries and identify, investigate and report deviations from agreed service levels.</p> <p>2.4 Evaluate maintenance budgets, activity programs and output target measures and identify, investigate and report deviations from targets.</p> <p>2.5 Identify and record links between operational problems and maintenance activities.</p>
3 Report outcomes of coordination and monitoring.	<p>3.1 Analyse, record and report coordination and monitoring data according to <i>organisational procedures and statutory requirements</i>.</p> <p>3.2 Identify and report current and potential problems according to organisational procedures.</p> <p>3.3 Make recommendations for improvements in system performance and/or customer service.</p>

Required Skills and Knowledge

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

Required skills:

- interpret and apply legislation and policies
- coordinate measuring and testing activities
- conduct investigations
- assess environmental impact
- uses safety equipment and personal protective equipment
- communicate with customers and other employees
- operate irrigation and/or domestic stock supply system
- check channel flow
- identify control system faults

Required knowledge:

- relevant legislation
- relevant enterprise policies
- range of appropriate measuring and testing procedures
- investigation procedures
- customer expectations and requirements
- operations and maintenance policies and procedures
- occupational health and safety and environmental legislation, Acts and procedures
- impact of the principles of hydraulics on the operation of flows
- coordination processes
- principles of scheduling
- system layout
- system operations
- policies and standard operating procedures
- communication systems
- lock out procedures for mechanical and electrical installations
- environmental aspects of irrigation and/or stock and domestic supply system asset infrastructure
- safety procedures
- environment, landscape and ground structure of work area
- risk factors and potential hazards of irrigation and/or domestic and stock supply systems
- equipment operation, capacity and limitations
- effects of weather and conditions on operation of site plant
- water flow calculations
- flow measurement procedures
- gravity 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 should demonstrate the ability to coordinate and monitor the operation of irrigation systems including:

- identifying customer requirements for irrigated culture and environmental factors that impact on the irrigation system
- consulting historic system information and stakeholders as appropriate
- confirming performance requirements for an irrigation system management plan
- implementing monitoring and testing programs and investigating and reporting deviations from planned parameters
- evaluating performance of water deliveries and investigating and reporting deviations from agreed service levels
- evaluating performance targets such as maintenance budgets, activity programs and output target and investigating and reporting deviations
- analysing and reporting data
- identifying and reporting problems
- making recommendations for system performance or customer service improvements

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 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, 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 of the candidate, accessibility of the item, and local industry and regional contexts.

Environmental factors may include:

- environmental flows
- chemicals
- nutrients
- salinity
- downstream requirements

Historic system information may include:

- previous studies
- impact of weather
- relevant hydrometric information
- previous system deliveries
- previous flow rates
- operational procedures

Stakeholders may include:

- customers
- government
- farmer and grower associations
- downstream land holders
- other water authorities
- employees
- customer representative committees
- land care or similar active groups
- local communities

Irrigation system management plan may include:

- service levels
- capital investment
- maintenance levels

Equipment may include:

- electronic monitoring and metering systems
- manual chart recording systems
- on- and off-road vehicles
- communication equipment
- personal protective equipment

Monitoring and testing programs may include:

- timeliness of deliveries
- flow
- input and output quality
- testing procedures
- frequency
- sampling locations
- budgets

Organisational and statutory requirements may include:

- physical achievement targets
- operational procedures
- number of complaints
- relevant federal legislation
- relevant state or territory legislation
- relevant local government by-laws or planning instruments
- board or authority by-laws

Unit Sector(s)

Not applicable.

Competency field

Collection and distribution.