



Australian Government

Department of Education, Employment and Workplace Relations

NWP254B Repair or insert water distribution assets

Revision Number: 2

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Modification History

NWP254B Release 2: Layout adjusted. No changes to content.
NWP254B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to repair water distribution assets and insert or cut in fittings and valves.

Application of the Unit

This unit supports the attainment of skills and knowledge required for field staff with specific responsibility for ensuring that repair of water distribution assets is completed in a safe and timely manner.

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 Plan and prepare for repairs.	1.1 Determine work requirements and location for repair of assets from specifications and instructions. 1.2 Select and check equipment and tools required to meet safety requirements of task and site. 1.3 Select, fit and use personal protective equipment. 1.4 Advise customers of supply interruption. 1.5 Isolate the work area.
2 Repair or insert assets.	2.1 Repair or replace leakages and damaged pipes and fittings according to specifications. 2.2 Carry out internal and external protection of assets to meet specifications. 2.3 Pressurise and check repaired distribution assets to ensure that joints are sound.
3 Maintain system hygiene and water quality.	3.1 Store pipes and fittings clear of potential pollutants or damaging substances and remove debris or filling from pipes before use. 3.2 Sterilise fittings and repair materials, disinfect and take samples. 3.3 Keep trench water levels below pipe level.
4 Review, record and report work.	4.1 Check, maintain and store equipment, tools and materials according to manufacturer guidelines and organisational procedures. 4.2 Complete workplace records and process as required. 4.3 Restore work site to meet environmental and organisational requirements. 4.4 Determine and report apparent cause of asset failure by visual examination of removed components.

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
- use safety equipment and personal protective equipment
- use tools and machinery
- follow plans, charts, specifications and instructions
- perform work-related calculations
- apply policies and procedures
- identify hazards
- communicate with employees and customers
- work effectively as part of a team
- use communication systems
- give and receive instructions
- identify system faults
- install and repair the appropriate systems' fittings and assets
- use literacy skills in regard to verbal and written communication in the workplace
- apply appropriate surface protection and clean system and structures

Required knowledge:

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

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 conduct repair work on water distribution assets by:

- planning work and preparing work site
- performing repair tasks according to manufacturer specifications and organisational requirements
- ensuring system hygiene and water quality
- checking work, restoring work site, storing equipment and completing documentation

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.

Assets 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
 - maintenance holes
 - valve chambers
 - regulators
 - erosion barriers
 - head walls
 - thrust blocks
 - controlling equipment

Equipment used may include:

- hand and power tools
- lifting and winching equipment
- mechanical excavation equipment
- pneumatic and motorised equipment, including:
 - compressors
 - pneumatic spades and attachments
 - motorised cutting equipment
 - on- and off-road vehicles
 - portable pumps
- leak clamps
- communication equipment
- breathing apparatus
- gas detection equipment
- rescue equipment
- appropriate personal protective equipment

Fittings may include:

- hydrants
- sluices
- valves
- scours
- main taps
- jointing and repair systems for pipe types, e.g. gibault
- tapping bands
- tension bands
- solvent cement joints
- compression ring joints
- bolted flanges
- electrofusion
- butt welding
- cathodic protection

Sterilising fittings may include:

- air scouring
- sterilising pipeline and repair pieces
- sampling and testing
- scrubbing
- flushing

Unit Sector(s)

Not applicable.

Competency field

Collection and distribution.