



Australian Government

Department of Education, Employment and Workplace Relations

NWP234B Locate, identify and protect utility services

Revision Number: 2

NWP234B Locate, identify and protect utility services

Modification History

NWP234B Release 2: Layout adjusted. No changes to content.

NWP234B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to work near utility services during the construction, repair or installation of utilities' infrastructure. Work activities may involve trench excavation or the application of trenchless technologies for installation or repair.

Application of the Unit

This unit supports the attainment of skills and knowledge required for workers involved in the construction, repair or installation of underground utility infrastructure. Typically workers are involved in locating, identifying and protecting existing utilities' infrastructure to prevent damage, injury, death or loss of service.

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.
---	---

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and prepare to locate utility services at work site.	1.1 Determine work site boundaries and requirements from plans, specifications and instructions. 1.2 Obtain plans and relevant information from specific <i>utility service</i> owners using <i>appropriate information sources</i>. 1.3 Determine <i>alignment of services</i> on site according to <i>utility locating procedures</i>. 1.4 Determine <i>type, size and likely configuration</i> of all underground and overhead services from plans and typical or local installation practices. 1.5 Identify hazards and precautions associated with excavating or working near utilities' apparatus. 1.6 Review and apply safe work method statements associated with work activity and incorporate into job planning according to <i>legislative and organisational requirements</i>.
2 Locate utility apparatus by excavation.	2.1 Select and safely use <i>appropriate tools and equipment</i> for location of all apparatus. 2.2 Identify <i>apparatus</i> and indicators of apparatus presence. 2.3 Determine full extent of apparatus in the ground.
3 Operate plant in close proximity to underground or overhead utility apparatus.	3.1 Monitor plant during work activities and identify potential or actual encroaches of plant on minimum clearances to apparatus. 3.2 Give instructions to plant operator using agreed signals.
4 Protect and support utility apparatus during excavation and backfilling.	4.1 Protect apparatus according to utility owner requirements to prevent damage. 4.2 Support apparatus along or across excavation according to utility owner requirements or engineering advice to prevent damage. 4.3 Report damage to apparatus to utility owner according to agreed protocols. 4.4 Reinstate apparatus during backfill according to utility owner's requirements.
5 Initiate emergency procedures.	5.1 Recognise emergency situations or events. 5.2 Implement emergency response according to procedures for particular infrastructure involved.

Required Skills and Knowledge

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

Required skills:

- locate and identify utilities
- assess and identify risk of potential hazards associated with each utility
- respond to all types of emergencies relating to utility services
- use basic mathematics for calculations and measurement
- use safety equipment and personal protective equipment
- use tools and equipment
- follow policies, procedures and standards
- communicate with employees, other service providers and customers
- work effectively as part of a team
- use literacy skills in regard to verbal and written communication in the workplace
- use communication systems

Required knowledge:

- published guidelines for working near utility services in the State or Territory in which work is being undertaken
- system layout
- environmental aspects of excavation
- relevant utilities and service bodies
- communication systems
- landscape and ground structure of work area
- risk assessment and identification of potential hazards associated with each utility
- emergency response procedures for all types of utility services
- equipment operation, capacity and limitations
- effects of weather and conditions on site or plant

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 work near utility services during the construction, repair or installation of utilities' infrastructure including:

- gathering information regarding location of utilities at a particular site
- gathering and applying safe work methods for locating and protecting utilities at or near a work site
- selecting appropriate tools and equipment
- monitoring use of equipment and using agreed procedures and signals to ensure timely warnings of proximity to utilities' apparatus
- protecting and supporting apparatus during performance of work tasks and during site restoration
- applying emergency procedures in response to a range of specific incidents

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.

Utility service may include:

- electricity
- gas
- fuel and oil
- water
- sewer and stormwater
- communication lines
- pay television
- road traffic control
- power cables
- steam pipes
- relevant surface fittings
- cathodic protection cables

Appropriate information sources may include:

- 'Dial Before You Dig' national call centre for subscribing utilities (note: not all underground utility services are listed with 'Dial Before You Dig')
- local agencies, which should also be contacted following 'Dial Before You Dig' enquiries

Alignment of services refers to:

- location of utilities' assets at a certain or agreed distance from property boundaries in the road reserve

Utility locating procedures may include locating utility apparatus using:

- utility plans
- surface fittings
- indicators or markers
- standard allocations
- on-site features
- manual location

Type, size and likely configuration of utility apparatus may include:

- colour
- materials
- appearance
- dimensions
- installation practices
- arrangement of apparatus

Legislative and organisational requirements may include:

- relevant federal and state or territory legislation and regulations
- codes of practice, associated standards and guidance material

Appropriate tools and equipment may include:

- documented organisational policies, manuals and induction programs
- relevant community planning and development agreements, such as land care agreements
- personal protective equipment
- shovels with insulated handles
- crow bars with insulated handles
- air or water vacuum potholing equipment
- 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
- communication equipment

Apparatus may include:

- pipes, including:
 - vitrified clay
 - reinforced concrete
 - polyvinyl chloride (PVC)
 - polyethylene
 - cast iron cement lined
 - ductile iron cement lined
 - glass reinforced piping
 - mild steel cement lined
- structures, including:
 - meter pits
 - valve pits
 - drop structures
 - regulators
 - erosion barriers
 - person access chambers and pits
 - head walls
 - thrust blocks
 - inspection shafts

Unit Sector(s)

Not applicable.

Competency field

Common.