



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **UEGNSG207B Coordinate construction, laying and testing of gas distribution pipelines**

Release: 1

## **UEGNSG207B Coordinate construction, laying and testing of gas distribution pipelines**

### **Modification History**

Not applicable.

### **Unit Descriptor**

#### **Unit Descriptor**

#### **1) Scope:**

##### **1.1) Descriptor**

This Competency Standard Unit covers the coordination of the construction, laying and testing of gas distribution pipelines and associated equipment. The competency standard also requires that other services are notified; communication with appropriate persons; the relevant materials, tools and equipment are used; work is undertaken observing the relevant standard operating procedures and safe working practices.

### **Application of the Unit**

#### **Application of the Unit 2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

### **Licensing/Regulatory Information**

#### **License to practice**

#### **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety,

**License to practice**

3)

gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of those who can operate certain equipment.

**Pre-Requisites**

**Prerequisite Unit(s)**

4)

**Competencies**

4.1)

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

**Literacy and numeracy skills**

4.2)

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3      Writing 3      Numeracy 3

**Employability Skills Information**

**Employability Skills**

5)

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

## Elements and Performance Criteria Pre-Content

- 6) Elements describe the essential outcomes of a competency standard unit  
 Performance Criteria describe the required performance needed to demonstrate achievement of the element.  
 Assessment of performance is to be consistent with the Evidence Guide.

## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and prepare to coordinate pipeline installation	<p>1.1 Alignment of gas main and associated equipment is confirmed and location of other services verified against work schedule(s) and established procedures and confirmed if necessary by site inspection</p> <p>1.2 Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites</p> <p>1.3 OHS, environmental and sustainable energy policies and procedures related to the coordination of construction, laying and testing of gas distribution pipelines are obtained and confirmed for the purposes of the work performed and communicated</p> <p>1.4 Appropriate persons are consulted to ensure the work plan is coordinated and that work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures</p> <p>1.5 Risk control measures for identified hazards are implemented, prioritised and monitored against the work schedule</p> <p>1.6 Relevant work permits are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures</p> <p>1.7 Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained</p>

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
	and confirmed in working order
	1.8 Relevant persons at worksite are confirmed to be current in in First Aid and other related work procedures according to requirements
	1.9 Liaison and communication with authorised persons, authorities, clients and land-owners is completed so work can be carried out where necessary
	1.10 Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.11 Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
	1.12 Road signs, barriers and warning devices are positioned in accordance with requirements including traffic management plans
2 Coordinate construction, laying and insertion of pipelines and associated	2.1 OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
equipment and test pipeline for conformance to specifications	2.2 Lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed
	2.3 Essential Knowledge and Associated Skills for the coordination of construction, laying and testing of gas distribution pipelines are applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.4 Performing the coordination of construction, laying and testing of gas distribution pipelines is

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
	carried out in accordance with the work schedule and to established procedures
	2.5 Hazard warnings and safety signs are recognised and hazards are assessed and OHS risks are reported to the authorised persons for directions according to established procedures
	2.6 Unplanned events in the coordination of construction, laying and testing of gas distribution pipelines is undertaken within the scope of established procedures
	2.7 Known solutions to a variety of problems are applied using acquired Essential Knowledge and Associated Skills
	2.8 Ongoing checks of work quality are undertaken in accordance with given instructions and established procedures
3 Complete the coordination of construction, laying and testing of gas distribution pipelines	3.1 Final inspection are undertaken to ensure the construction, laying and testing conforms to requirements and anomalies reported in accordance with established procedures
	3.2 Accidents and injuries are reported in accordance with established procedures where applicable
	3.3 Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4 Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5 Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6 Work completion records, reports and information are finalised and processed and appropriate persons notified

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

Evidence shall show that knowledge has been acquired of safe working practices for coordinating construction, laying and testing of gas distribution pipelines.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

#### **KS01- G207B**            **Distribution pipeline testing**

G3.2.45 Plan and prepare coordination of pipeline installation  
Evidence shall show an understanding of the requirements to plan and prepare coordination of repairs to pipelines, facilities and equipment on a Gas Industry pipeline (Distribution), indicated by the following:

- identification of the types of problems and faults that may require repair
- obtaining, interpreting and using relevant technical drawings, plans or specifications during preparation and planning of repair work
- identification of hazards (including confined spaces) and explanation of OHS, procedures and environmental requirements that require implementation prior to and during repair work
- identification of procedures, persons, equipment and processes required for the repair work and plan the coordination of resources
- required work permits
- locating and securing of emergency equipment and ensuring all personnel are familiar with emergency plans.

G3.2.46 Secure work area and equipment prior to installation  
Evidence shall show an understanding of the requirements to secure work area and equipment prior to repair on a Gas Industry pipeline (Distribution), indicated by the following:

- discuss the requirements for and use of work permits, safety plans, non-routine procedures and safety checks

- implementation and adherence to procedures, OHS and environmental requirements to ensure a safe worksite is established and maintained
- equipment for repair work is depressurised, tagged and locked out
- routine checks and documentation of facilities/equipment and overall repair process
- verification that facilities/equipment are safe for repair work to commence by ensuring that all procedures have been followed and requirements met.

**G3.2.47** Coordinate construction, laying and insertion of pipelines and associated equipment

Evidence shall show an understanding of the requirements to coordinate the construction, laying and insertion of pipelines and associated equipment on a Gas Industry pipeline (Distribution), indicated by the following:

- management plans and construction and installation procedures are understood for communication to all persons affected
- procedures to monitor persons, systems, equipment and environmental conditions to ensure procedure, OHS and environmental requirements are maintained during the construction, laying and insertion of pipeline process
- coordination techniques for construction of pipeline ensuring that all procedures, OHS and environmental requirements are met
- assessment of the identification and location of pipelines requiring renewal
- verification that the required pipe laying and pipe joining techniques and supervision of procedures for compliance is met and understood
- coordination for the monitoring and installation and/or insertion of pipeline and validation of the standard to ensure it meets OHS, environmental and legislative requirements
- assessment of progress of installation/insertion to evaluate and implement required amendments or modifications and communication of changes to appropriate persons
- dangerous and/or emergency situations in accordance with procedures, OHS and environmental requirements.

**G3.2.48** Test pipeline for conformance

Evidence shall show an understanding of the testing procedures for a Gas Industry pipeline (Distribution), for conformance, indicated by the following:



- identification of the most appropriate techniques for testing and inspecting gas pipelines
- types of faults and their associated characteristics which could be encountered during inspection and testing procedures
- selection of pipeline testing equipment and substances
- pipeline inspection and testing procedures and compliance with procedures, OHS and environmental requirements
- documentation and confirmation to test results and implement procedures to determine appropriate action
- communication of required results, findings and actions using appropriate reporting and recording systems.

#### G3.2.49 Conduct final inspection

Evidence shall show an understanding of the requirements to conduct final inspection procedures, indicated by the following:

- new pipeline locations are correctly recorded in accordance with procedures and legislative requirements
- site reinstatement and notification of authorities is performed correctly in relation to completion of work procedures
- all documentation is inspected in relation to pipeline construction, laying and testing to ensure correct and accurate completion for processing
- coordination of the clearing of work area of equipment, tools, materials is understood and applied in accordance with OHS and environmental requirements.

## Evidence Guide

### EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

#### Overview of Assessment 9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best

utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

**Critical aspects of evidence required to demonstrate competency in this unit** 9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise.

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner’s performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.

<b>Range of tools/equipment/procedures/workplace</b>		
<b>Group No</b>	<b>The minimum number of items on which skill is to be demonstrated</b>	<b>Item List</b>
A	All	Interpret technical drawings and symbols Ensure emergency response procedures in place Communicate with other authorities and stakeholders Communicate schedules/coordinate to persons Carry out job safety analysis Obtain work permit Use and interpret Dial Before You Dig report or

		its equivalent
B	At least 3	Excavation Trenching Shoring Stitch bore Horizontal drilling Directional drilling
C	At least 4	Nylon (polymide) pipeline laying techniques Nylon gluing Connection of Nylon to other materials Nylon stop off UPVC pipeline laying techniques UPVC solvent cemented joints UPVC moulded joints UPVC stop off UPVC couplings or flanges Connection of UPVC to other materials Practical application of AS3723 Installation and maintenance of plastic pipe systems
D	At least 5	PE pipeline laying techniques Large diameter PE PE electro fusion PE butt fusion Saddle fusion Socket fusion PE stop off Compression couplings or flanges Connection of PE to other materials Practical application of AS3723 Installation and Maintenance of plastic pipe systems and AS 2865 Safe working in confined spaces

E	At least 2	Steel pipeline coating repair Steel pipeline coating testing (Jepper) Steel, field joint coating
F	At least 3	Connection of PE to steel mains Steel mains welding Steel mains repair Sleeve application Clamp application Hot tap and stopple
G	All	Isolate, vent and purge gas pipeline systems Operation of gas detector Operate service locator Where relevant, calculate nitrogen volume needed
H	At least 2	High pressure stop off 312 Bagtube Squash off jacks Squash off pliers
I	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

**Context of and specific resources for assessment 9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in coordinating construction, laying and testing of gas distribution pipelines.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

**Method of assessment**

**9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

**Concurrent assessment and relationship with other units**

**9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG102B Carry out work activities in a utilities industry

work environment

UEENEEE101 A Apply Occupational Health and Safety regulations, codes and practices in the workplace

UEGNSG104B Comply with environmental policies and procedures

UEGNSG105B Establish the work site

BSBFLM312B Contribute to team effectiveness

BSBFLM303C Contribute to effective workplace relationships

## Range Statement

### RANGE STATEMENT

**10)** This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to the coordination construction, laying and testing of gas distribution pipelines.

The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Other services (3)

Appropriate persons (3)

Materials (3)

Tools and equipment (3)

Safe working procedures (3)

Standard operating procedures (3)

## Unit Sector(s)

Not applicable.

## **Competency Field**

**Competency Field**      **11)**

Distribution.