Australian Government

Department of Education, Employment and Workplace Relations

UEGNSG202A Construct and lay distribution pipelines

Release: 1

UEGNSG202A Construct and lay distribution pipelines

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor **1**)

This Competency Standard Unit covers the construction and laying of pipelines in a utilities industry workplace. This competency standard refers to the relevant services; appropriate persons; the relevant materials required to lay distribution pipelines; tools and equipment; safe working procedures and the relevant legislative requirements.

Application of the Unit

Application of the Unit **3**)

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 **3.1**)

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training.

License to practice **3.1**)

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) **2**)

Competencies **2.1**)

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

Nil

Employability Skills Information

Refer to the Evidence Guide

Elements and Performance Criteria Pre-Content

5) 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 Prepare for the laying of a distribution pipeline	1.1 Plans, specifications and work instructions are received and confirmed
	1.2 Alignment of main and other relevant requirements are defined and established procedures are followed and the work to be

ELEMENT	PERFORMANCE CRITERIA	
		performed is discussed with all persons to establish and confirm the work schedule
	1.3	OHS, environmental and sustainable energy policies and procedures to be followed for the work to be performed are received and confirmed
	1.4	Suggestions to assist with the laying of distribution pipelines work are made to others involved in the work
	1.5	Hazards are identified, OHS risks assessed and control measures are prioritised, implemented and monitored including emergency exits kept clear according to established procedures
	1.6	Scope of responsibility under the relevant work permit is received and confirmed according to requirements and established procedures with relevant persons
	1.7	Resources and materials including, appropriately qualified persons, equipment, tools and personal protective equipment required for the job are obtained and in working order according to established procedures
	1.8	Relevant responsibilities associated with First Aid and other related work safety procedures at the worksite are confirmed in accordance with requirements and established procedures to ensure safety measures are followed in the event of an incident
	1.9	Client issues are referred to appropriate persons in accordance with industry and community standards
	1.10	Site is prepared according to given instructions and the work schedule to ensure a quality outcome and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.11	Road signs, barriers and warning devices are positioned in accordance with given instructions

ELEMENT	PERFORMANCE CRITERIA	
		and requirements including traffic management plans
2 Carry out the construction of a distribution pipeline	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces, excavations, trenches or aloft, and use of power tools, techniques and practices are safely followed in accordance with given instructions and according to requirements confirmed to minimise OHS risks
	2.3	Operational knowledge for carrying out pipeline construction work is confirmed to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements and established procedures
	2.4	Pipeline construction work is performed in accordance with given instructions and 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	Non-routine events are referred to the authorised persons for directions according to established procedures
	2.7	Problems associated with the construction of a distribution pipeline are dealt with using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met
	2.8	Ongoing checks of work quality are undertaken in accordance with given instructions and established procedures

ELEMENT	PERFORMANCE CRITERIA
3 Complete the construction of a distribution pipeline	3.1 Work undertaken is checked against work schedule and anomalies reported to authorised persons in accordance with established procedures
	3.2 Accidents and incidents are actioned and reported to authorised persons in accordance with established procedures
	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 Appropriate persons are notified of work completion according to established procedures
	3.6 Work completion records, report forms and data sheets are completed accurately in accordance with given instructions and established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

6) 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 constructing and laying distribution pipelines. The extent of the essential knowledge and associated skills (EKAS) required is given in Volume 2 - Part 2.2 EKAS. It forms an integral part of this unit.

G 2.1.1 Working in the gas sector

G 2.1.2 Identify roles of statutory authorities

G 2.1.3 Identify employment roles and responsibilities

REQUIRED SKILLS AND KNOWLEDGE

G 2.1.4 Apply relevant OHS regulations, policies and procedures

G 2.1.5 Maintain safe, clean and healthy workplace

G 2.1.6 Work safely with hazardous materials and equipment

G 2.1.7 Apply safe manual handling techniques in the workplace

G 2.1.8 Control traffic at the work-site

G 2.1.9 Respond to emergency and accident situations

G 2.1.10 Apply relevant environmental legislation, regulations and codes of practice

G 2.1.11 Protect and maintain the environment

G 2.1.12 Communicate in the workplace

G 2.1.13 Communicate effectively in a team

G 2.1.14 Read and interpret workplace documents

G 2.1.15 Complete routine workplace forms, memos and reports

G 2.1.16 Identify requirements of work activity

G 2.1.17 Apply basic planning skills

G 2.1.18 Conduct tasks to complete work activity

G 2.1.19 Review work activity

G 2.1.20 Customer relations

G 2.1.21 Problem solving

G 2.1.22 Confined spaces

G 2.1.23 Work site environmental compliance

G 2.1.24 Work site environmental impact

AND one or more of the following depending on pipe

REQUIRED SKILLS AND KNOWLEDGE

type:

If undertaking the laying of nylon pipe and PE pipe

G 2.2.12 Identify nylon pipeline, fittings and accessories

G 2.2.13 Join nylon pipeline and fittings

G 2.2.14 Repair damaged nylon pipe

G 2.2.15 Determine depth of pipeline in ground

G 2.2.16 Install nylon pipe

G 2.2.17 Identify polyethylene pipeline, fittings and accessories

G 2.2.18 Join PE pipes and fittings

G 2.2.19 Repair damaged PE pipeline

If undertaking the laying of cast iron and steel pipe

G 2.2.20 Identify cast iron pipe and fittings

G 2.2.21 Work with cast iron pipe and fittings

G 2.2.22 Repair or replace cast iron pipeline

G 2.2.23 Identify steel pipeline, fittings and accessories

G 2.2.24 Work with steel pipeline and fittings

G 2.2.25 Cut out, repair and replace steel pipeline

G 2.2.26 Determine depth of pipeline in ground

If undertaking the laying of copper pipe

G 2.2.27 Identify copper pipeline, fittings and accessories

G 2.2.28 Bend and join copper pipeline and fittings

G 2.2.29 Repair damaged copper pipe

G 2.2.30 Determine depth of pipeline in the ground

G 2.2.31 Install copper pipe

Evidence Guide

EVIDENCE GUIDE

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

Overview of Assessment

8.1)

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.

EVIDENCE GUIDE

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

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 UEG06'. 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 skills enabling employment
  - 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.

Range of tools/equipment/materials/procedures/ workplaces/other variables		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**

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A	All	Interpret technical drawings and symbols Isolate, vent and purge gas pipeline systems Operation of gas detector Emergency response procedures Operate service locator Use and interpret Dial Before You Dig report or its equivalent
B	At least 2	Excavation Trenching Stich bore Horizontal drilling Directional drilling
C	At least 3	Nylon (Polyamide) pipeline laying techniques Nylon gluing Connection of Nylon to PE Practical application of AS3723 'installation and maintenance of plastic pipe systems for gas'
D	At least 3	PE pipeline laying techniques PE Electrofusion PE Butt Fusion Compression couplings or flanges Connection of PE to Nylon Practical application of AS3723 'installation and maintenance of plastic pipe systems for gas'
E	At least 3	UPVC pipeline laying techniques UPVC solvent cemented joints

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		UPVC moulded joints UPVC compression couplings or flanges Connection of UPVC to steel Practical application of AS3723 'installation and maintenance of plastic pipe systems for gas'
F	At least 2	Steel pipeline coating repair Steel pipeline coating testing (Jeeper) Steel field joint coating
G	At least 3	Connection of PE to Steel mains Steel mains welding Steel mains repair Sleave application Clamp application Hot tap and stopple Working knowledge of AS1697 Working knowledge of AS2885
H	All	Work utilising relevant OHS legislation, regulations, codes of practice, policies and procedures Working knowledge of AS2865 Maintain a safe and clean workplace Work safely with hazardous materials and equipment Apply safe manual handling techniques Communicate effectively in the workplace Apply basic planning skills

EVIDENCE GUIDE

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

8.3)

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 constructing and laying 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 key competencies.

EVIDENCE GUIDE

Method of assessment

8.4)

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

8.5)

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.

UEGNSG102A	Carry out work activities in a utilities industry work environment
UEGNSG103A	Comply with workplace OHS procedures and practices
UEGNSG104A	Comply with environmental policies and procedures
UEGNSG105A	Establish the work site

Key Competencies

8.6)

Evidence that particular key competencies have been achieved within this Competency Standard Unit is in the context of the following Performance Criteria of evidence. See Volume 2, Part 4 for an explanation of Key Competencies and levels of this Training Package.

Key Competencies	Example of Application	Performance Level
How are ideas and information communicated within this	Refer to the following Performance Criteria for examples of application: 1.4; 2.6; 3.5	1

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competency?		
How can information be collected, analysed and organised?	Refer to the following Performance Criteria for examples of application: 1.5; 2.5; 3.1; 3.6	2
How are activities planned and organised?	Refer to the following Performance Criteria for examples of application: 1.2	1
How is team work used within this competency?	Refer to the following Performance Criteria for examples of application: 1.2; 1.4	2
How are mathematical ideas and techniques used?	Refer to the following Performance Criteria for examples of application:	N/A
How are problem solving skills applied?	Refer to the following Performance Criteria for examples of application:	N/A
How is use of technology applied?	Refer to the following Performance Criteria for examples of application:	N/A

EVIDENCE GUIDE

Skills Enabling Employment **8.7**)

Evidence that competency in this unit incorporates skills enabling employment is in the context of the following performance. See Volume 2, Part 5 for definitions and an explanation of skills enabling employment.

Skills for Employment		**Example of Application**
1	Developing and using skills within a real workplace	Refer to the following Performance Criteria for examples of application: All
2	Learning to learn in the workplace	Refer to the following Performance Criteria for examples of application: 1.1; 1.5
3	Reflecting on the outcome and process of work task	Refer to the following Performance Criteria for examples of application: 3.1; 3.6
4	Interacting and understanding of the context of the work task	Refer to the following Performance Criteria for examples of application: 1.2; 2.5; 2.8; 3.3
5	Planning and organising the meaningful work task	Refer to the following Performance Criteria for examples of application: 1.4; 1.5; 1.7
6	Performing the work task in non-routine or contingent situations	Refer to the following Performance Criteria for examples of application: 2.6; 2.7

Range Statement

RANGE STATEMENT

7) 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/may be demonstrated in relation to the construction and laying of 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:

Services (2)

Appropriate persons (2)

Materials (2)

Tools and equipment (2)

Safe working procedures (2)

Legislative requirements (2)

Unit Sector(s)

Not Applicable

Literacy and numeracy skills

Literacy and numeracy skills	**2.2**) 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

Competency Field

Competency Field **4**)

Distribution.