Australian Government

Department of Education, Employment and Workplace Relations

UEGNSG301B Coat gas pipelines

Release: 1

UEGNSG301B Coat gas pipelines

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the undertaking of inspections, testing and coating of steel pipelines in a utilities industry workplace. It includes the use of testing and application equipment; coatings used; coating defect assessment surveys; MSDS information and handling of chemicals/flammable liquids.

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 **3.1)**

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 persons 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 Prepare pipelines for coatings, inspection and testing	1.1	Work instructions are received and confirmed
	1.2	Relevant requirements and established procedures to be followed for the work to be performed are 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 correct and safe coating of pipelines are made to others involved in the work
	1.5	Appropriate persons are consulted to ensure the work is coordinated effectively and hazards identified, risks assessed, control measures identified, confirmed and reported according to established procedures
	1.6	Pipeline coating and related inspection and tests are planned for under the relevant work permit and confirmed according to requirements and established procedures with relevant persons
	1.7	Resources including 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

ELEMENT	PERFORMANCE CRITERIA	
		ensure safety measures and followed in the instance 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 for a quality outcome and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
2 Inspect, test and coat 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 eliminate the prospects of incidents
	2.3	Operational knowledge for the coating of pipelines 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 coatings are visually inspected to determine condition in accordance with given instructions and established procedures
	2.5	Pipeline is tested to determine condition in accordance with requirements and established procedures
	2.6	Pipeline is coated where required in accordance with established procedures
	2.7	Hazard warnings and safety signs are recognised and hazards are assessed and OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.8	Non-routine events are referred to the immediate authorised persons for directions according to

ELEMENT	PERFORMANCE CRITERIA	
		established procedures
	2.9	Information related to status and any irregularities are reported and recorded using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met
	2.10	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Complete inspection/test/coating of pipeline	3.1	Work area is isolated to enable repair to proceed 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	Coating materials applied to the pipeline, 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

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 the coating pipelines.

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

G 2.1.1 Working in the gas sector

Evidence shall show an understanding of how work is conducted in the Gas Industry, specifically:

- The Gas Industry in Australia
- Australian gas resources
- Types of gas and uses
- Combustion.

G 2.1.2 Identify roles of statutory authorities

Evidence shall show an understanding of the roles of statutory authorities (government agencies, both State and Federal) that operate in the Gas Industry, including identifying:

- Statutory bodies
- Roles of statutory bodies
- Employer and employee responsibilities to statutory bodies.

G 2.1.3 Identify employment roles and responsibilities

Evidence shall show an understanding of the roles of major groups in the Gas Industry, that is employers and employees, including:

- The role of the employer
- Industry associations
- Employer obligations to safety
- Identification of disadvantaged and minority groups in Australian society
- Employers obligations to persons from disadvantaged and minority groups

REQUIRED SKILLS AND KNOWLEDGE

- Employers obligations to occupational health and safety
- The role of commonwealth and state training regulatory authorities and industry skills councils and state training advisory bodies
- Roles and responsibilities of gas industry employees
- The employment contract
- Working to safety requirements
- Work according to lawful commands
- Belonging to employee organisations
- How to work with people from disadvantaged and minority groups
- Understanding the employees obligations to occupational health and safety
- Sources of support.

G 2.1.4 Apply relevant OHS legislation, regulations, policies and procedures

Evidence shall show an understanding of the basic workplace health and safety legislation and how this applies to individuals in a Gas Industry workplace, indicated by the following:

- Employer's responsibilities to relevant OHS legislation
- Employee's responsibilities to OHS legislation and organisation's policies and procedures
- OHS policies and procedures at the worksite.
- Australian Standards, guidelines and codes of practice

G 2.1.5 Maintain safe, clean and healthy workplace

Evidence shall show an understanding of how to work safely in the gas industry indicated by the ability to:

- Correctly interpret and comply with Safety Signs including workplace Hazards, Warnings and PPE requirements
- Correctly interpret gas markers

REQUIRED SKILLS AND KNOWLEDGE

- Identify the correct PPE required for work in the Gas Industry
- Locate and comply with procedures for correctly checking, maintaining and storing PPE
- Apply the process of Hazard identification, Risk assessment and Control
- Complete Risk Assessment forms such as Work Permits and JHA's, JSA's, JSEA's, SWM's etc
- Report workplace hazards

G 2.1.6 Work safely with hazardous materials and equipment

Evidence shall show an understanding of what constitutes hazardous materials and the equipment and processes used to safely work with these indicated by the following:

- Identify hazardous materials and equipment
- Location and purpose of Material Safety Data Sheets (MSDS)
- Read, interpret and discuss MSDS
- Knowledge of methods for safe disposal of hazardous waste materials
- Read, interpret and discuss relevant manufacturer's specifications
- Use and dispose of hazardous materials and equipment safely
- Use of spill kits and PPE

G 2.1.7 Apply safe manual handling techniques in the workplace

Evidence shall show an understanding of manual handling and how to apply this knowledge to handling heavy and awkward objects in a Gas Industry workplace, specifically:

- Principles for managing manual handling
- Characteristics and types of safe manual handling
- Safe manual handling techniques
- Manual handling and risk management

REQUIRED SKILLS AND KNOWLEDGE

G 2.1.8 Control traffic at the work-site

Evidence shall show knowledge and skills in coordinating traffic flow at a workplace where traffic control is required, that is, where work is conducted on or near a road, indicated by the following:

- Read and interpret relevant traffic authority regulations for traffic control at a worksite
- Identify signs and devices required to control pedestrians and traffic at a worksite depending on traffic flow volumes
- Apply techniques for controlling pedestrians and traffic at various worksites
- Use procedures for monitoring traffic controls
- Set up and monitor pedestrian and traffic controls

G 2.1.9 Respond to emergency and accident situations

Evidence shall show knowledge and skills in dealing with emergency or accident situations at a Gas Industry workplace, indicated by the following:

- Situations of accidents and emergency
- Comply with procedures for accidents and incidents
- Correct use of emergency equipment and procedures for a fire
- Correct use of breathing apparatus
- Correct use of gas detectors/oxygen monitoring devices
- Correct use of emergency equipment and procedures for a gas leak or vapour emission
- Report emergencies and accidents

G 2.1.14 Read and interpret workplace documents

Evidence shall show an ability to read and interpret Gas Industry documents indicated by the following:

- Understand and use signs, symbols terminology and legends as used in gas industry procedures and documents

REQUIRED SKILLS AND KNOWLEDGE

- Identify, locate and implement gas industry standards, policies and procedures
- Interpret and read basic drawings and diagrams

G 2.1.15 Complete routine workplace forms, memos and reports

Evidence shall show an ability to complete routine Gas Industry forms, memos and reports either written or electronic, indicated by the following:

- Identify, locate, interpret and use workplace forms, and reports
- Enter the required information accurately on gas industry forms and reports

G 2.1.16 Identify requirements of work activity

Evidence shall show ability to:

- Clarify expected outcomes of a work activity in a Gas Industry workplace
- Receive, clarify and respond to verbal work instructions for work activity
- Interpret and discuss an organisation's policies, quality requirements and specifications for work activity

G 2.1.17 Apply basic planning skills

Evidence shall show a demonstrated ability to apply basic planning skills in a Gas Industry workplace, indicated by the following:

- Develop checklists of tasks
- Prioritise tasks
- Identify resources required to complete tasks safely and efficiently
- Identify resource or scheduling conflicts and apply solutions
- Develop time lines to complete tasks

G 2.1.18 Conduct tasks to complete work activity

Evidence shall show ability to organise the activities to complete a job in a Gas Industry workplace, indicated by the following:

- Locate and organise equipment, tools and

REQUIRED SKILLS AND KNOWLEDGE

machinery required to complete tasks safely and efficiently
- Complete tasks according to planned sequences and within appropriate timeframes
- Understand quality assurance and work according to established and standard operating procedures

G 2.1.19 Review work activity

Evidence shall show an ability to review work activities undertaken in a Gas Industry workplace, indicated by the following:

- Check work activities against a work plan
- Seek feedback on the outcome of work activities with appropriate persons
- Report outcomes of work activities in writing or orally according to enterprise procedures

G 2.1.20 Customer relations

Evidence shall show an understanding of the requirements for providing good customer relations to Gas Industry stakeholders, indicated by the following:

- Notify stakeholders of activities
- Communicate with stakeholders within scope of responsibilities
- Refer stakeholders to appropriate parties
- Demonstrate understanding of ring fencing requirements (if applicable)
- Keep the customer informed on job progress
- Provide good customer relations

G 2.1.21 Problem solving

Evidence shall show an understanding of the requirements to undertake basic problem solving in a Gas Industry workplace, indicated by the following:

- Demonstrate problem solving and diagnostics methodology
- Identify possible solutions

REQUIRED SKILLS AND KNOWLEDGE

- Recommend probable solutions and
- Apply basic problem solving techniques

G 2.1.22 Confined spaces

Evidence shall show an understanding of the requirements to recognise and operate in confined spaces in a Gas Industry workplace, indicated by the following:

- Knowledge of the requirements of Legislation, Regulations, Australian Standards and enterprise specific procedures for safe working in confined spaces
- Ability to recognise what a confined space is and the entry safety requirements
- Ability to understand and comply with manufacturers' guidelines for the safe use of PPE used in confined spaces
- Understand how and when to use gas detectors for confined spaces entry
- Understand how and when to use breathing apparatus and rescue and recovery equipment

Note: A confined spaces entry ticket would satisfy and exceed the requirements of this EKAS clause

REQUIRED SKILLS AND KNOWLEDGE

G 2.1.25 Protect the environment

G 2.1.26 Evidence shall show an understanding and ability to perform work in the gas industry in a manner that protects the environment indicated by the following:

- Understanding of the relevant Commonwealth/State/Territory environmental legislation, regulations and codes of practice
- Understanding of employee's and employer's responsibilities to relevant environmental legislation, regulations and codes
  - Understanding and compliance with enterprise procedures for flora control
  - erosion control
  - fauna control
  - the protection of indigenous and cultural heritage sites
- Understanding the role of regulatory bodies in monitoring environmental activities, risk and incident compliance
- Understanding community expectations for protecting the environment
- Correct use of environment protection procedures, records, inspections and incident reporting
- Identifying environmental hazards
- Assessing environmental risks
- Implementing environmental control measures
- Ability to respond to workplace environmental incidents

Note: Environmental damage can be caused by chemicals, oil, water contamination, carcinogenic agents, gases, dusts, waste contamination and noise

Communicate in the workplace

Evidence shall show an understanding and ability to communicate effectively in a Gas

REQUIRED SKILLS AND KNOWLEDGE

Industry work team indicated by the following:

- Effective use oral and written communications methods to achieve work related outcomes and solutions.
- Effectively receive, interpret and respond to workplace information and instructions
- Effectively convey and report work related information to fellow workers and customers
- Interact with fellow workers in a socially and culturally appropriate manner

G 2.3.1 Identify pipeline coatings

Evidence shall show an understanding of the requirements to identify pipeline coating on a Gas Industry pipeline, indicated by the following:

- Pipeline coatings which include petroleum based wraps, epoxy, paints, PE jackets and sleeves
- Characteristics of various pipeline coatings

REQUIRED SKILLS AND KNOWLEDGE

- Reasons for using various pipeline coatings
- Reading and interpreting MSDS for related chemicals or flammable liquids
- Techniques for using chemical types safely

G 2.3.2 Describe OHS and environmental requirements

Evidence shall show an understanding of the OHS and environmental requirements associated with coating a Gas Industry pipeline, indicated by the following:

- OHS obligations and procedures for preparing and handling various pipeline coatings
- environmental regulations and requirements for preparing and handling various pipeline coatings
- OHS and Environmental regulations and procedures for disposing of waste pipeline coating materials.

G 2.3.3 Apply and test new coating

Evidence shall show an understanding of the application and testing of new coatings applied to a Gas Industry pipeline, indicated by the following:

- Manufacturer's specifications and organisation's procedures for coating pipelines which include petroleum based wraps, epoxy, paints, PE jackets and sleeves
- Materials and equipment required for coating pipelines
- Procedures for applying coating to pipeline
- Procedures for testing new coating

G 2.3.4 Determine pipeline locations

Evidence shall show an understanding of determining the pipeline locations for a Gas Industry pipeline, indicated by the following:

- Reading, interpreting and discussion of maps, plans, reports and/or specifications concerning the site location
- Topographical and geographical design

REQUIRED SKILLS AND KNOWLEDGE

principles
- Environmental information

G 2.3.5 Operate tools and equipment for testing/inspecting pipelines

Evidence shall show an understanding of the operation of tools and equipment for the testing and inspecting of pipeline on a Gas Industry pipeline, indicated by the following:

- tools and equipment used in inspecting/testing pipeline coatings
- functions and purpose of tools and equipment
- standard operating procedures and safety requirements for using tools and equipment.

G 2.3.6 Establish and reinstate work site for pipeline inspection and coating

Evidence shall show an understanding of the establishing and reinstating of a worksite for the inspection and coating of a Gas Industry pipeline, indicated by the following:

- safety requirements for establishing and reinstating worksite for pipeline inspection and coating
- environmental requirements for establishing and reinstating site
- equipment required for establishing and reinstating a site
- procedures for establishing and reinstating a worksite.

G 2.3.7 Inspect pipeline coating

Evidence shall show an understanding of the inspecting of pipeline coatings on a Gas Industry pipeline, indicated by the following:

- standard operating procedures for testing pipeline coatings
- coating defect assessment survey methods
- basic electrical principles and measurements
- irregularities, deviations or problems in pipeline coatings

REQUIRED SKILLS AND KNOWLEDGE

- writing of simple reports on status of pipeline.

Evidence Guide

EVIDENCE GUIDE

9) 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

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

9.2)

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

competency in this unit

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**
A	At least 7	Abrasive blasting equipment Compressors Low voltage/high voltage holiday detectors Paint thickness coating gauges and meters

		Pipe wrapping machines Spray painting equipment Abrasive blast comparators and standards Densitometers Coating defect assessment survey equipment (DCVG method equipment, person technique method equipment) Hand/power tools Heating torch
B	All	Inspection of pipeline coatings Testing pipeline coatings Safe handling procedures for a range of dangerous and toxic chemicals and compounds OHS and environmental legislative requirements associated with the use, application and disposal of coating materials Coating defect assessment and application methods
C	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 contains Employability Skills

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 coating gas 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 .

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
UEENEEE101A	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/may be demonstrated in relation to the coating of gas 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:

Testing and application equipment (2)

Coatings (2)

Coating defect assessment surveys (2)

MSDS (2)

Unit Sector(s)

Not Applicable

Competency Field

Competency Field **11)**

Transmission.

Custom Content Section

Competency Field 12)

Transmission.