



Australian Government

Department of Education, Employment and Workplace Relations

UEGNSG315B Aerial transmission pipeline surveillance

Release: 1

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Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This Competency Standard Unit covers the aerial surveillance of transmission pipelines, easements and/or surrounding environs. The competency standard is applied against the procedures found under latest edition of AS 2885.3 Australian and New Zealand Standard. The competency standard also refers to threat mitigation through identification of system non-conformance. The competency standard outlines the areas to be monitored; inspection of areas; system's pipe work; structures; fittings; equipment; organisational and statutory requirements and recording and reporting.

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.

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, gas/petrochemical liquid/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and

License to practice**3)**

training. 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 4 Writing 4 Numeracy 4

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 to conduct aerial surveillance of transmission pipelines, easements and/or surrounding environs	<p>1.1 Routine surveillance of pipeline is conducted and faults reported in a timely manner 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</p> <p>1.3 OHS, environmental and sustainable energy policies and procedures related to requirements and established procedures for gas pipeline surveillance are obtained and confirmed for the purposes of the work performed and communicated</p> <p>1.4 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 prioritised, implemented and monitored against the work schedule</p> <p>1.6 Relevant work permits are obtained to access and perform work according to requirements and established procedures</p> <p>1.7 Resources including persons, equipment, tools and personal protective equipment required for pipeline surveillance are identified, scheduled and obtained and confirmed in working order</p>

ELEMENT	PERFORMANCE CRITERIA
	1.8 Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.9 Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
2 Conduct aerial surveillance of transmission pipelines, easements and/or surrounding environs and identify non-conformance	2.1 Analysis of information to identify key issues is undertaken as required and information is evaluated for relevance and validity to the requirements
	2.2 Dealings with customers are consistent with standard operating procedures and the special needs of customers are identified and considered in targeting client service
	2.3 Essential Knowledge and Associated Skills for the pipeline surveillance are applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.4 Leakages and damaged pipes, fittings and appurtenances are recorded in accordance with the work schedule and established procedures
	2.5 Hazard warnings and safety signs are recognised and hazards and assessed OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6 Unplanned events in pipeline surveillance are undertaken with the scope of established procedures
	2.7 System faults and the operational condition of the pipelines are identified and reported and known solutions are applied using Essential

ELEMENT	PERFORMANCE CRITERIA
	Knowledge and Associated Skills
	2.8 Works in the vicinity of the pipeline are identified and reported and known solutions are applied using Essential Knowledge and Associated Skills
3 Review, record and report on transmission pipelines, easements and/or surrounding environ work	3.1 Solutions are developed based on consideration of relevant information and options and proposed solutions are communicated and implemented as required against works schedule, anomalies are reported in accordance with established procedures
	3.2 Accidents and injuries are reported in accordance with requirements and established procedures where applicable
	3.3 Solution is implemented in accordance with standard operating procedures ensuring that action is correctly documented, the transaction is accurately processed and the customer is advised
	3.4 Work completion records, reports and documentation 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 aerial transmission pipeline surveillance.

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

KS01-G315 Transmission pipeline aerial surveillance

B

G 3.3.1 Consulting appropriate persons to coordinate work and persons

Evidence shall show an understanding of consulting appropriate persons to coordinate work and persons on Gas Industry pipeline (Transmission) systems, indicated by the following:

- personal requirements for an order
- reporting structures for equipment faults and dangerous work
- communication with appropriate persons, customers and third parties
- strategies to facilitate coordination or work with other persons
- requirements for and use of qualified specialists

G 3.3.4 Liaise and communicate with relevant authorities

Evidence shall show an understanding of liaising with the relevant authorities in relation to Gas Industry pipelines (Transmission), indicated by the following:

- legislative, OHS and environmental requirements applicable to a specific commissioning/decommissioning of a pipeline
- authorities that need to be contacted when planning the commissioning/decommissioning of pipeline
- requirements and procedures to obtain approvals/permits from relevant authorities
- requirements for advising relevant authorities of intended activities
- accurate and complete records of all communications

with relevant authorities.

G 3.3.7 Prepare reports

Evidence shall show an understanding of the preparing of reports applicable to Gas Industry pipelines (Transmission), indicated by the following:

- procedures and legislative requirements for maintaining appropriate reporting and recording systems
- job records and process information to appropriate/relevant department
- non-conformances and incidents in accordance with procedures and legislative requirements.

G 3.3.10 Notify of completion of work

Evidence shall show an understanding of the notification of completion of work procedures in Gas Industry pipelines (Transmission), indicated by the following:

- documentation to be completed and processed when the work is completed
- authorities/councils that need to be notified in relation to site reinstatement
- recording and reporting system accurately and in accordance with procedures.

G 4.1.1 Operate and supervise in the Gas Industry

Evidence shall show an understanding of supervising and operating in a Gas Industry environment, indicated by the following:

- understanding and application of enterprise applicable standard operating procedures
- understanding and application of relevant enterprise permit to work systems
- understanding and application of alarm and

- communication systems
- understanding and application of relevant OHS and environmental legislative requirements including applicable emergency procedures
- demonstrate an understanding and application of planning, prioritisation and working autonomously in the Gas Industry.

G 4.1.3 Communicate effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
 - workplace colleagues
 - workplace managers
 - relevant customers and suppliers
 - regulatory bodies
 - property/land owners (including traditional land owners) and tenants
 - emergency response organisations

G 4.1.4 Understand Gas Industry products, processes and characteristics

Evidence shall show a comprehensive understanding of Gas Industry products and characteristics, indicated by the following:

- understand the Gas Industry products and the characteristics and tolerances of the product including:
 - principles of applicable gas laws
 - gas pressure
 - gas temperature
 - compressibility
 - relative density – specific gravity
 - hydrocarbon and water dew points
 - components of applicable natural gases including LPG
 - standard gas conditions
 - combustion

- venting and purging principles
- Effects of temperature and pressure on infrastructure

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
 - Process and Instrumentation Diagrams (PID)
 - Facility and pipeline construction and as-built drawings
 - Geographical Information System (GIS) drawings and data
 - Electrical drawings
 - Survey maps
 - Pipeline route maps and alignment sheets

G 4.1.6 Understand OHS and First Aid requirements for Gas Industry supervisors

Evidence shall show an understanding of OHS and First Aid requirements for gas industry supervisors and autonomous working staff, indicated by the following:

- understanding of applicable enterprise Occupational Health and Safety systems and procedures
- understanding of requirements and reasons for providing First Aid equipment and training for employees in the gas industry

G 4.1.7 Create Gas Industry reports and documentation

Evidence shall show an understanding and application of completing and interpreting enterprise-specific supervisory level Gas Industry reports including ,but not limited to:

- periodic operational reports
- budget reports and summaries
- regulatory reporting requirements

G 4.1.8 Use a personal computer

Evidence shall demonstrate requirements to use personal computer and undertake fundamental tasks, indicated by the following:

- send, answer and manage emails
- access the Internet for research purposes
- write documents using a word processing program
- develop a basic spreadsheet using a spreadsheet program

- apply formatting including cutting and pasting across a variety of computer applications (eg from excel to word)

G 4.1.10 Understanding security breach procedures

Evidence shall show an understanding required to identify security breaches and the required action in dealing with such breaches, indicated by the following as applicable:

- identification of different types of security incidents including but not limited to:
 - physical security breaches at gas infrastructure
 - threat assessment and management
 - confidential information security
- communication with applicable emergency service and regulatory organisations
- compliance with applicable enterprise security policies and procedures

G 4.1.15 Drive Gas Industry vehicles

Evidence shall show an understanding of requirements and capability of driving applicable Gas Industry vehicles including but not limited to:

- Driving vehicles appropriate to the organisation. Vehicles may include any of the following (dependent on the needs of the organisation):
 - sedan
 - four wheel drive vehicles
 - trucks
 - buses
 - excavation and construction equipment such as backhoes and excavators.

Note: All vehicles included in this clause have licence or ticket requirements. The licence or ticket will need to be issued to the learner for completion of relevant sections of the EKAS Clause.

G 4.1.20 Understand and implement transmission pipeline environmental protection processes

Evidence shall show an understanding on environmental impacts of a gas transmission pipeline, indicated by the following:

- understanding of relevant environmental legislation and environmental regulations

- understanding of the effects a pipeline can have on flora and fauna
- understanding of the effects a pipeline can have on agriculture
- understanding of the effects a pipeline can have on erosion to soil.
- Understanding of the effects a pipeline can have on air quality and waterways
- application of relevant policies and procedures

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, all summative (or final) assessment is to include the application of the competency in the normal work environment or, at a minimum, its application in a realistically simulated work environment. 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 assessors to consider when choosing an assessment method and developing assessment instruments. Sample 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 work performance 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, policies and workplace procedures
 - Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	The minimum number of items on which skill is to be demonstrated	Item List
A	All	Identify threats to the integrity of transmission pipelines Evaluate threats to the integrity of transmission pipelines Control of the escalation of threats to the public, environment, transmission pipelines and facilities Working knowledge of relevant sections of latest edition of AS2885.3 Pipelines-Gas and Liquid Petroleum Gas Operations

		<p>and Maintenance: Sections 3, 4.3, 5.3.6.1, 5.4.1, 5.4.3, 5.5 section 6 threat mitigation</p> <p>Demonstration of the practical use of communication equipment</p> <p>Identifying faults</p> <p>Recording information</p>
B	All	<p>Interpret technical drawings and symbols</p> <p>Work using relevant OHS and legislation, regulations, codes of practice, policies, procedures</p> <p>Maintain a safe and clean workplace</p> <p>Work safely with hazardous materials and equipment</p> <p>Apply safe manual handling techniques</p> <p>Communicate effectively in the workplace</p> <p>Practical knowledge of the properties of product being transported</p> <p>Apply basic planning skills</p> <p>First Aid certificate level 1</p>
C	At least one occasion	<p>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</p>

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 aerial transmission pipeline surveillance.

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.

UEGNSG302B Maintain pipeline easements

UEGNSG329 Gas transmission pipeline surveillance
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UEGNSG308B Identify, evaluate and control threats to
transmission pipelines

UEGNSG309B First on site emergency response on a
transmission pipeline

UEGNSG310B Supervise and monitor contract work

UEGNSG311B Site control of third party works in the vicinity of
a transmission pipeline

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 aerial transmission pipeline surveillance. 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:

Areas to be monitored

Inspection of areas

Systems pipe work

Structures

Fittings and appurtenances

Organisational and statutory requirements (3)

Recording and reporting

Tools and equipment (4)

Maps and drawings

Established procedures

PPE and First Aid equipment

External interference

Aerial

Aerial hazards

Transmission pipeline standards

Maps and drawings

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Transmission.