



Australian Government

UEGNSG346A Launch and recover PIGs in gas transmission pipelines

Release 1

UEGNSG346A Launch and recover PIGs in gas transmission pipelines

Modification History

This unit replaces UEGNSG306B Pipeline pigging in gas transmission pipeline

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the preparation, launch and recovery of PIGs (Pipeline Inspection Gauge) in gas transmission pipelines to inspect and ensure the pipeline is clean and dry with no obstructions, in accordance with relevant legislation, standards, codes and established procedures.

It also encompasses liaising with stake holders; analysing and interpreting the pigging data; testing and inspecting; using manufacturer's and company procedures.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas transmission pipelines, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

License to practice**3)**

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace/Occupational Health and Safety, 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 persons who can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

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:

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

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 and plan for pigging gas transmission pipeline | 1.1 | WHS/OHS and environmental measures for the site are identified, obtained and understood. |
| | 1.2 | Relevant requirements and established procedures for the work are communicated to all relevant to establish and confirm the work |

ELEMENT**PERFORMANCE CRITERIA**

- schedule, including drawings, plans, requirements and established procedures
- 1.3 WHS/OHS, environmental and sustainable energy policies and procedures are obtained, confirmed and communicated
- 1.4 Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
- 1.5 Hazards are identified, WHS/OHS risks assessed and control measures are prioritized, implemented, and monitored according to established procedures
- 1.6 Scope of responsibility under the relevant work permit and/or relevant notification is obtained and confirmed with relevant persons to access, isolate/de-energise systems and perform work according to requirements and established procedures
- 1.7 Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in a safe working order
- 1.8 Relevant responsibilities associated with First Aid and other related work procedures for an incident are checked and confirmed
- 1.9 Liaison and communication issues with stakeholders are carried out effectively.
- 1.10 Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
- 1.11 Site PIG, station and pipeline are prepared according to procedures to minimise risk and damage in accordance with established procedures
- 1.12 Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where

ELEMENT	PERFORMANCE CRITERIA
2 Launch and recover transmission pipeline PIG	applicable in accordance with established procedures
	1.13 Signage, barriers and warning devices are positioned in accordance with requirements
	2.1 WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work followed.
	2.2 Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3 Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools are performed safely according to procedures, codes and legislation
	2.4 The launch, tracking and recovery of a gas transmission pipeline PIG is carried out in accordance with the work schedule and to established procedures
	2.5 Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.6 Hazards are assessed and WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.7 Data/results from transmission pipeline pigging operations is gathered/retrieved and analysed to determine internal pipeline conditions in accordance with requirements and established procedures
	2.8 Tests and inspecting of the pipeline and pigging equipment is conducted in accordance with requirements and established procedures
2.9 Procedures for referring non-routine events to the immediate authorized persons for direction	

ELEMENT	PERFORMANCE CRITERIA
	are followed.
	2.10 Known solutions to a variety of problems are applied
	2.11 Ongoing checks of quality of the work are undertaken in accordance with given instructions and procedures
3 Re-establish transmission pipeline to operational conditions and notify of completion of work	3.1 WHS/OHS risk control work completion measures and procedures are followed.
	3.2 Inspection of the received PIG is undertaken to determine the wear sustained to the PIG material and anomalies are reported in accordance with established procedures
	3.3 Accidents and injuries are reported in accordance with established procedures where applicable
	3.4 Waste materials are safely disposed of and the work site is rehabilitated, cleaned up and made safe in accordance with established procedures
	3.5 Tools, equipment and any surplus resources and materials are, cleaned, checked and securely stored.
	3.6 Appropriate persons are notified of work completion according to established procedures
	3.7 Relevant work permit(s) are signed off and equipment is returned to service in accordance with procedures
	3.8 Data is accurately recorded and work completion records, reports as modified drawings and documentation and information are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for the launching and recovering of a pig.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit

KS01-G346A PIG launch and recovery

Evidence shall show an understanding of the assembly, launch and recovery of PIGs in gas transmission pipelines to ensure the pipeline is clean and dry with no obstructions in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Types of PIGs and applications

T2. WHS/OHS and environmental requirements for using PIGs

- Risk assessment
- Hazards including high water and air pressure/velocity
- Hazardous and flammable materials
- Noise

T3. Pipeline preparation

- Relevant authorities and persons to be notified and approval requirements
- Types of pipeline materials including steel, plastic, etc.
- New and existing pipelines and stations
- Safety requirements and procedures
- Manufacturers operating instructions and established procedures
- Relevant legislation, standards and codes
- Traps launchers and receivers installed
- Water and waste disposal requirements
- Directional gates/bars installation
- PIG pushing agent (water or air) requirements
- Pipeline Pigging sequence
- Additional preparation for de-commissioned pipelines
- Purging
- De-scaling

T4. Relevant documentation, reporting and communication for Pigging

T5. Pigging a pipeline

- Required set up
- Insertion/launching

REQUIRED SKILLS AND KNOWLEDGE

- Monitoring and communication
- Checking the cleanliness/dryness of the pipe
- Capture/recovery
- Restoring receiver to normal operation
- Analysis and interpretation of data captured through the pigging process
- Traps
- Anomalies such as 'stuck pig'
- Dangers
- Waste disposal

Evidence Guide

EVIDENCE GUIDE

8) 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 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.

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 — 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 required knowledge and 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.
 - Pigging gas transmission pipelines in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	The minimum number of items on which skill is to be demonstrated	Item List
A	All	<ul style="list-style-type: none"> • Interpret technical drawings and symbols • Emergency response procedures in place • Communication with stakeholders • Coordinate work party • Carry out job safety analysis • Obtain work permit • Relevant knowledge of AS 2865

B	At least 3	<ul style="list-style-type: none"> • Demonstrate knowledge of: • Cleaning pigs • Gauging pigs • Drying pigs • Intelligent pigs • Pig travel time calculations
C	All	<ul style="list-style-type: none"> • Isolate, vent and purge gas pipeline systems • Operation of gas detector • Operate service locator • Monitor Hot work Permits
D	All	<ul style="list-style-type: none"> • Prepare station and pig trap for launch • Prepare trap for receiving • Launch pig • Receive and recover pig • Return station to normal operation
E	At least one occasion	Deal with an unplanned event by drawing on required knowledge and 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 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 of Pipeline pigging in gas transmission pipeline.

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

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 required Knowledge and 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 required knowledge and 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.

UEGNSG132A Carry out basic work activities in a gas industry work environment

UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) 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 launching and recovering PIGs in gas transmission 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:

- Equipment

Unit Sector(s)

Gas supply industry

Competency Field

Competency Field **10)**

Transmission.