



**Australian Government**

# **UEGNSG217A Launch and recover PIGs in a gas distribution pipeline**

**Release 1**

# UEGNSG217A Launch and recover PIGs in a gas distribution pipeline

## Modification History

This unit is a revised version of the UEG11 unit UEGNSG205B Launch and recover PIG in a gas distribution pipeline

## Unit Descriptor

### Unit Descriptor 1) Scope:

#### 1.1) Descriptor

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

It also encompasses inspecting and using various types of PIGs and PIG traps to manufacturers' requirements and reporting outcomes.

## Application of the Unit

### Application of the Unit 2)

This competency standard shall apply to any safe gas industry work site where Pigging operations occur. It is 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

### Licence to Practice 3)

#### During Training:

Competency development activities are subject to regulations directly related to licensing, 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 Health and Safety/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 those 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:

- |            |  |
|------------|--|
| UEGNSG141A | Apply Workplace Health and Safety regulations, codes and practices in the gas industry |
| UEGNSG005A | Prepare to work in the Australian gas industry   |
| UEGNSG132A | Carry out basic work activities in a   |

**Prerequisite Unit(s) 4)**

utilities industry work environment

UEGNSG140A Apply environmental policies and procedures in the utilities industry

UEGNSG134A Establish a utilities infrastructure work site

**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

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
<b>1 Prepare and plan for pigging gas distribution pipelines</b>	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 discussed with relevant persons to establish and confirm the work schedule.
	1.3 WHS, environmental and sustainable energy policies and procedures are obtained and confirmed
	1.4 Hazards are identified, WHS/OHS risks assessed and control measures are prioritized, implemented, and monitored according to established procedures.
	1.5 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
	1.6 Resources including personnel, equipment, tools and personal protective equipment required for the work are identified, scheduled and obtained and checked for operation and safety
	1.7 Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures
	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 with authorised persons, authorities, clients and land-owners is completed where necessary,
	1.10 Site preparation, safety plan and the work schedule are confirmed in accordance with

ELEMENT	PERFORMANCE CRITERIA
	established procedures.
	<p>1.11 Site PIG and pipeline is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures</p> <p>Note: This includes setting up of PIG launcher and receiver for new or decommissioned pipelines</p>
	1.12 Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed in accordance with established procedures
	1.13 Road signs, barriers and warning devices are positioned in accordance with requirements
<b>2 Launch, and recover distribution pipeline PIG</b>	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 or aloft, and use of power tools, techniques and practices are conducted safely according to given instructions and requirements
	2.4 The launch and recovery of gas distribution 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 Data/results from distribution pipeline pigging operations is gathered/retrieved and analysed to determine internal pipeline conditions in

ELEMENT	PERFORMANCE CRITERIA
	accordance with established procedures
	2.7 Testing and inspecting of the pipeline and pigging equipment is conducted in accordance with requirements and established procedures
	2.8 WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures.
	2.9 Procedures for referring non-routine events to the immediate authorized persons for direction are followed.
	2.10 Routine quality checks are carried out in accordance with work instructions
<b>3 Re-establish distribution pipeline to operational conditions and notify of completion of work</b>	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 is checked against works schedule for conformance with requirements and anomalies reported in accordance with established procedures
	3.3 Waste materials are safely disposed of and the work site is rehabilitated, cleaned up and made safe in accordance with established procedures
	3.4 Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored
	3.5 Appropriate persons are notified of work completion according to established procedures
	3.6 Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.7 Data is accurately recorded and work completion documentation is completed accurately and provided to the appropriate persons in

**ELEMENT**

**PERFORMANCE CRITERIA**

accordance with established procedures.



## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

*7) This describes the required 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 in a gas distribution pipeline.

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 required is provided below. It forms an integral part of this unit.

#### **KS01-G217A PIG launch and recovery**

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

##### T1. Pipeline preparation

- Types of pipeline materials including steel, plastic, etc.
- New pipelines
- 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

##### T2. Documentation and communication for Pigging

##### T3. Types of PIGs and applications

##### T4. OH & S and environmental requirements for using PIGs

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

##### T5. Pigging a main pipeline

- Insertion
- Monitoring and communication
- Checking the cleanliness/dryness of the pipe

- Capture
- Traps
- 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 8.2)  
of evidence  
required to  
demonstrate  
competency in  
this unit**

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

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

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Workplace Health and Safety/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 skills and knowledge 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.
  - Launch and recover PIGs in a gas distribution pipeline as described in 9.) Range Statement and including:

<b>Range of tools/equipment/procedures/workplace</b>		
<b>Group No</b>	<b>The minimum number of items on which skill is to be demonstrated</b>	<b>Item List</b>
<b>A. Preparation procedure</b>	All	<ul style="list-style-type: none"> <li>• Interpret technical drawings and symbols</li> <li>• Ensure emergency response procedures in place</li> <li>• Communicate with other authorities and stakeholders</li> <li>• Carry out job safety analysis</li> <li>• Obtain work permit</li> </ul>

		if required
<b>B. Pigging procedures</b>	All	<ul style="list-style-type: none"> <li>• Prepare pig trap for launch</li> <li>• Connections to compressors</li> <li>• Prepare trap for receiving</li> <li>• Determine volume of water /compressor requirements from chart/table</li> <li>• Install disc pig</li> <li>• Install foam pig</li> <li>• Carry out pigging operation</li> <li>• Recover pig</li> </ul>
<b>C. Unplanned event</b>	At least one occasion	<p>Apply procedures/ protocols to 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> <p>For example: identifying stuck or lost pigs, procedures for location/clearing</p>

**Context of and 8.3)  
specific  
resources for  
assessment**

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

- WHS/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.

These should be part of the formal learning/assessment environment

Assessment of this competency must be undertaken in an actual workplace. 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 Skills and Knowledge 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 skills and knowledge 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.

UEGNSG132 Carry out basic work activities in a gas industry  
A work environment

UEGNSG140 A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134 A	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 unit shall be demonstrated in relation to the launch and recovery of PIGs in new or decommissioned gas distribution main pipelines. This includes the following activities:

- Prepare pig trap for launch
- Connections to compressors
- Prepare trap for receiving
- Determine volume of water /compressor requirements from chart/table needed
- Install disc pig
- Carry out pigging operation
- Install foam pig
- Carry out pigging operation
- Recover pig
- Pressure test pipeline

Note: The de-commissioning is covered by UEGNSG203B.

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 Industry

## Competency Field

**Competency Field**      11)

Distribution.