



Australian Government

UEGNSG327 Coordinate transmission pipeline construction operations

Release: 1

UEGNSG327 Coordinate transmission pipeline construction operations

Modification History

Release 1. This is the first release of this unit of competency in the UEG Gas Industry Training Package.

Application

This unit involves the skills and knowledge required to coordinate gas transmission pipeline construction operations.

It includes planning, coordinating and completing gas transmission pipeline construction operations.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

Gas Transmission

Unit Sector

Gas Industry

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan for gas transmission pipeline construction activities

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | |
|------------|---|
| 1.1 | Work instructions are obtained and confirmed with relevant personnel |
| 1.2 | Work health and safety (WHS)/occupational health and safety (OHS), environmental and sustainable energy |

workplace policies and procedures are followed for gas transmission pipeline work to be performed

- 1.3** Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored, including emergency exits kept clear in accordance with workplace procedures
- 1.4** Alignment sheets are used to determine construction operations, and work schedule is checked for quality outcome and to minimise risk and damage to property, commerce and stakeholders in accordance with workplace procedures
- 1.5** Work site is inspected and assessed using appropriate resources to determine requirements in accordance with workplace procedures and relevant requirements
- 1.6** Job safety analysis (JSA)/safe work method statement (SWMS) briefing is undertaken to determine the tasks, and associated hazards, risks and controls with all relevant persons to confirm work schedule
- 1.7** Scope of responsibility in accordance with relevant work permit is determined and confirmed in accordance with workplace procedures and relevant person/s
- 1.8** Resources, relevant procedures, competent personnel, plant, equipment, tools and personal protective equipment (PPE) required for the job are obtained and in working order in accordance with workplace procedures
- 1.9** Responsibilities for first aid and other emergency incidents at the work site are checked and confirmed in accordance with job requirements and workplace emergency response procedures
- 1.10** Client issues are referred to relevant person/s in accordance with relevant industry and community standard/s

2 Coordinate gas pipeline operations

- 2.1** WHS/OHS workplace policies, procedures and SWMS are followed to eliminate or minimise workplace incidents and hazards
- 2.2** Lifting, climbing, working aloft, and use of tools and equipment, techniques and practices are safely followed in accordance with workplace procedures and JSA/SWMS

- 2.3 Work area is made safe and gas pipeline construction activities are coordinated in accordance with instructions and workplace procedures
 - 2.4 Gas pipeline construction activities are carried out to agreed timeframe, relevant industry quality standards and with a minimum of waste in accordance with job requirements and workplace procedures
 - 2.5 Operational hazards and safety risks are reported to the relevant person/s for directions in accordance with workplace procedures
 - 2.6 Unplanned events are referred to relevant person/s for directions in accordance with workplace procedures
 - 2.7 Corrective action associated with unplanned pipeline construction operations is dealt with in accordance with work instructions and workplace procedures in a manner that minimises risk to personnel and equipment
 - 2.8 Ongoing checks and data collection relating to the quality of the work are undertaken in accordance with instructions and workplace procedures
- 3 **Complete gas transmission pipeline construction operations**
 - 3.1 Gas pipeline construction operations are monitored to ensure integrity of the pipe and the coating is maintained
 - 3.2 Compliance with work schedule is maintained and anomalies are reported to relevant person/s in accordance with workplace procedures
 - 3.3 Accidents and incidents are actioned and reported to relevant person/s in accordance with workplace procedures
 - 3.4 Tools, equipment and any surplus resources and waste materials are removed, cleaned, checked and returned to storage in accordance with workplace procedures
 - 3.5 Relevant person/s are notified of work completion in accordance with workplace procedures
 - 3.6 Work completion records, report forms and data sheets are completed accurately in accordance with instructions and workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEG Gas Industry Training Package Companion Volume Implementation Guide.

gas pipeline operations must include the following:

- backfill
- clear and grade
- ditching
- hydro testing
- joint coating
- lower and lay
- mechanical (minor maintenance)
- string and bend
- welding

plant and equipment must include the following:

backfill:

- padding machine
- excavator
- grader
- dozer
- front end loader
- mitsu bucket

clear and grade:

- dozer
- excavator
- grader
- backhoe
- front end loader

ditching:

- excavator
- rock saw
- bucket wheel trencher
- general digging conditions
- hard digging conditions

hydro testing:

- crane truck
- side boom
- rough terrain crane
- pumps
- dead weight tester
- temperature probes and sensors
- headers
- drying plant
- after cooler
- pig
- chart recorder
- lighting towers
- gauging plate

joint coating:

- grit blasting rig (skid steer)
- wrapping machine
- thermal coil
- temperature probes and sensors

lower and lay:

- side boom with roller cradles
- excavator

mechanical (minor maintenance):

- excavator and vacuum lift
- bending machine and mandrels
- internal line up clamp
- tack rig
- side boom
- roller cradles
- rock saw
- bucket wheel trencher
- thermal coil
- over ditch wrapping machine
- padding machines
- mitsu bucket

string and bend:

- excavator
- bending machine with mandrels
- side boom
- pipe truck
- vacuum lift

welding:

- side boom
- internal line up clamp
- tack rig
- temperature probes and sensors
- headers

Unit Mapping Information

This unit replaces and is equivalent to UEGNSG327A Coordinate transmission pipeline construction operations.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6a6c032e-ffcb-4f3d-8063-415efbd261e8>

Assessment Requirements for UEGNSG327 Coordinate transmission pipeline construction operations

Modification History

Release 1. This is the first release of this unit of competency in the UEG Gas Industry Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements
- completing gas transmission pipeline construction operations
- coordinating gas transmission pipeline construction operations, including:
 - backfill:
 - ensuring that bedding material meets specified requirements
 - ensuring the soil compaction meets specified requirements
 - correct placement of marker tape
 - clear and grade:
 - managing survey marker placement procedures
 - ensuring environmental and cultural compliance
 - ditching:
 - ensuring compliance with regulations and industry standards related to excavation
 - selecting and ensuring correct operation of required plant, tools and equipment for various ground conditions
 - hydro testing:
 - ensuring the suitability and/or availability of water source for testing and practicable disposal
 - ensuring effective safety controls are in place, particularly at public access points
 - industry standards requirements
 - ensuring relevant WHS/OHS procedures are applied, particularly in relation to working out of normal hours
 - joint coating:
 - ensuring applicators follow manufacturer guidelines
 - ensuring effective joint coating testing techniques are applied
 - lower and lay:
 - ensuring crew correctly places pipe string

- ensuring pipe coating integrity is maintained
- communicating effectively to coordinate multi-point lift of the pipe string
- effectively coordinating with as built survey
- mechanical (minor maintenance):
 - ensuring that pipeline construction plant, equipment and tools are effectively maintained to meet construction schedule
- welding:
 - ensuring welding joints are performed in accordance with welding procedures
 - ensuring welding plant, equipment and tools are suitable to produce welded joints that meet specified requirements
 - ensuring relevant WHS/OHS procedures are applied, particularly in relation to working with potentially dangerous tools and equipment in a high temperature environment
- planning for gas transmission pipeline construction activities.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- communicate effectively in the gas industry
- gas transmission pipeline construction operations
- methods of protecting the pipeline from third party interaction, including use of marker tape, bedding materials and marker post signage
- on-site pipeline construction communication strategies, including:
 - hand signals,
 - satellite phones
 - radios
- operation of portable high-pressure equipment
- pipeline protective systems, including bedding and padding materials
- problem solving, decision making and conflict resolution techniques
- relevant industry standards including gas pipeline operations standards
- relevant manufacturer specifications
- relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes, including:
 - basic first aid
 - confined spaces awareness
 - emergency response
 - high risk plant and equipment licenses and tickets
 - how to apply control measures
 - manual handling

- risk assessment forms, such as work permits and job hazard analysis (JHA), job safety analysis (JSA), job safety and environment analysis (JSEA), SWMS
- hazard identification
- safety data sheets (SDS)
- signage
- working at heights
- relevant WHS/OHS and environmental legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures, including:
 - exclusion zone awareness
 - high pressure equipment hoses and whip checks
 - safe operation
 - specific signage requirements for using high pressure equipment
- right of way set out and ditch line
- string and bend:
 - capabilities of stringing plant, equipment and tools
 - limitations of the vacuum lift and consequences of incidents
 - appropriate motor vehicle license and skills training for row driving
 - accurate calculations for determining sequence of delivery of pipes
 - bending procedures
 - capabilities of bending plant, equipment and tools
 - consequence of shifting centres of gravity
 - trigonometric calculations for bending procedures
- translation of survey techniques into the right of way environment, including survey markers and off-set markers, their meaning and relevant work applications.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations

- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

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