



**Australian Government**

# **UEGNSG054 Install cathodic protection systems**

**Release: 1**

# UEGNSG054 Install cathodic protection systems

## 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 install cathodic protection systems to prevent corrosion of steel pipelines, test and commission cathodic protection system, and complete relevant documentation in accordance with relevant legislation, code, regulations and workplace procedures.

It includes the correct installation locations for cathodic protection system and system components, interpreting drawings and specifications, testing equipment and identifying cathodic protection faults.

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

## Pre-requisite Unit

Not applicable.

## Competency Field

Cathodic Protection

## Unit Sector

Gas Industry

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### **1 Plan installation of cathodic protection system**

### PERFORMANCE CRITERIA

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

#### **1.1 Workplace safety, environmental and sustainable energy practices for the site are identified, obtained and understood**

- 1.2 Job requirements are obtained and interpreted from plans, specifications and instructions
  - 1.3 Relevant job requirements and workplace procedures for work activities are discussed with relevant person/s, including third parties, to determine and confirm work schedule and respective responsibilities
  - 1.4 Hazards are identified, workplace safety and environmental risks are assessed, and control measures are prioritised, implemented and monitored in accordance with workplace procedures
  - 1.5 Scope of responsibility under the relevant job requirements, including all work permits and/or relevant notifications, is determined and confirmed to access the services and perform work in accordance with job requirements and workplace procedures
  - 1.6 Equipment, tools and personal protective equipment (PPE) needed to carry out work activities are identified, obtained and checked for correct operation and safety in accordance with workplace procedures and manufacturer instructions
  - 1.7 Technical specifications and drawings are prepared from the analysed cathodic protection survey data and approved in accordance with job requirements and workplace procedures
  - 1.8 Materials, plans, diagrams, drawings and resources required for work are confirmed and obtained in accordance with workplace procedures
- 2 **Install cathodic protection system**
  - 2.1 Workplace safety and environmental risk control measures, schedule of work and workplace procedures for carrying out work are followed
  - 2.2 Appropriate materials, tools and equipment are selected and used safely in accordance with manufacturer instructions and workplace procedures
  - 2.3 Work is completed within agreed timeframe and to industry standards in accordance with job requirements and workplace procedures
  - 2.4 Hazardous activities are conducted safely in accordance with regulatory requirements and workplace procedures

- 2.5 Alarms, codes and hazard warnings are correctly recognised, and the correct response strategy is selected and applied in accordance with workplace procedures
  - 2.6 Faults and operational conditions of the components are identified, repaired or replaced, and reported in accordance with organisational job requirements
  - 2.7 Unplanned events are referred to the relevant person/s for directions in accordance with workplace procedures
- 3 Test and commission cathodic protection system and complete relevant documentation**
  - 3.1 Installed cathodic protection system and components are commissioned and tested for conformance and anomalies reported in accordance with regulatory requirements and workplace procedures
  - 3.2 Workplace safety risk control measures for work completion are followed
  - 3.3 Quality and safety checks of the work are conducted in accordance with job requirements, workplace procedures and community and industry standards
  - 3.4 Worksite is cleaned, reinstated and made safe in accordance with workplace procedures
  - 3.5 Tools, equipment and any surplus resources/materials are cleaned, checked and securely stored in accordance with workplace procedures
  - 3.6 Relevant work permit/s are signed off and equipment is returned to service in accordance with job requirements and workplace procedures
  - 3.7 Cathodic protection system is tested and adjusted, and additional survey data collected.
  - 3.8 'As built/as-installed' drawings are checked, updated and returned to the relevant cathodic protection engineering person/s in accordance with workplace procedures
  - 3.9 Relevant person/s is notified of work completion in accordance with workplace procedures
  - 3.10 Work completion documentation is completed accurately and provided to relevant person/s in accordance with 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.

## Unit Mapping Information

This unit replaces and is equivalent to UEGNSG412 Install cathodic protection systems.

## 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 UEGNSG054 Install cathodic protection systems

## Modification History

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## Performance Evidence

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

- applying relevant workplace safety requirements, including:
  - working safely with hazardous materials and equipment
  - identifying and reporting hazards
  - implementing risk control measures
- analysing cathodic protection survey data
- applying relevant industry standards, guidelines, codes of practice and regulations
- applying sustainable energy and environmental principles and practices
- communicating effectively with others
- completing relevant records, reports and documentation
- dealing with unplanned events
- following work schedule, safety plan and job requirements
- following workplace procedures
- implementing cathodic protection tests
- installing cathodic protection sites and systems
- interpreting cathodic protection data system surveys and readings
- interpreting technical drawings, plan, maps and specifications
- planning installation of cathodic protection system
- positioning road signs, barriers and warning devices
- rehabilitating and maintaining a clean worksite
- reporting anomalies, proposed solutions, incidents and injuries
- selecting and using correct personal protective equipment (PPE)
- testing and commissioning cathodic protection system
- working in accordance with relevant work permit/notifications.

## Knowledge Evidence

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

- ‘as built/as-installed’ drawings, technical specifications, drawings, maps and plans
- cathodic protection survey data
- cathodic protection systems installation
- cathodic protection systems operation on a gas industry pipeline
- corrosion process
- effective communication techniques
- fault-finding and troubleshooting techniques
- gas system design, planning and operation
- hazardous activities, including lifting, climbing, working in confined spaces and aloft, and use of power tools
- quality and safety checks
- relevant equipment and components
- relevant gas industry documentation
- relevant industry standards, guidelines, codes of practice and regulations
- relevant stakeholders, including authorised persons, authorities, landowners and clients
- relevant workplace safety requirements, including:
  - legislated work health and safety (WHS)/occupational health and safety (OHS) requirements
  - legislated industry/technical specific requirements
  - workplace safety procedures
  - manufacturer requirements
- relevant work permits and/or notifications
- relevant workplace documentation, records and reports
- relevant workplace policies and procedures
- site preparation, safety plans, job requirements and work schedules
- testing and commissioning requirements and procedures
- traffic management plans.

## 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 PPE currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

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