



Australian Government

UEGNSG059 Maintain cathodic protection systems

Release: 1

UEGNSG059 Maintain cathodic protection systems

Modification History

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

Application

This unit involves the skills and knowledge required to maintain cathodic protection systems to prevent corrosion of steel gas pipelines.

It includes identifying the type and location of the cathodic protection fault, using the correct electrical equipment, maintaining and adjusting cathodic protection system and equipment, re-establishing the system and completing relevant documentation.

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 Prepare and plan to maintain cathodic protection systems

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 Readings from cathodic protection monitoring equipment and anode beds are taken at regular intervals and data collected in accordance with workplace procedures and industry standards
 - 1.5 Hazards are identified, workplace safety and environmental risks are assessed, and control measures are prioritised, implemented and monitored in accordance with workplace procedures
 - 1.6 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
 - 1.7 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
 - 1.8 Materials, plans, diagrams, drawings and resources required for work are confirmed and obtained in accordance with workplace procedures
- 2 **Maintain and adjust cathodic protection system equipment**
 - 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 Cathodic protection system is inspected, adjusted and maintained correctly and safely in accordance with job requirements, workplace procedures and industry standards
 - 2.4 Work is completed within agreed timeframe and to industry standards in accordance with job requirements and workplace procedures
 - 2.5 Hazardous activities are conducted safely in accordance

- with regulatory requirements and workplace procedures
- 2.6 Alarms, codes and hazard warnings are correctly recognised, and the correct response strategy is selected and applied in accordance with workplace procedures
 - 2.7 Faults and operational conditions of the components are identified, repaired or replaced, and reported in accordance with organisational job requirements
 - 2.8 Unplanned events are referred to the relevant person/s for directions in accordance with workplace procedures
- 3 Re-establish system and complete relevant documentation**
- 3.1 Cathodic protection system is re-established, work undertaken is checked against work schedule for conformance and anomalies, and proposed solutions reported to relevant person/s in accordance with workplace procedures
 - 3.2 Workplace safety risk control measures for work completion are followed
 - 3.2 Quality and safety checks of the work are conducted in accordance with job requirements, workplace procedures and community and industry standards
 - 3.3 Worksite is cleaned, reinstated and made safe in accordance with workplace procedures
 - 3.4 Tools, equipment and any surplus resources/materials are cleaned, checked and securely stored in accordance with workplace procedures
 - 3.5 Incidents are reported and followed up as required in accordance with workplace procedures
 - 3.6 Relevant person/s is notified of work completion in accordance with workplace procedures
 - 3.7 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 UEGNSG411 Maintain 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 UEGNSG059 Maintain 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
 - selecting and using correct personal protective equipment (PPE)
- applying environmental principles and practices
- applying problem-solving techniques
- applying relevant industry standards, guidelines, codes of practice and regulations
- communicating effectively with others
- conducting quality and safety checks
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- determining types of faults
- following work schedule, safety plan and job requirements
- following workplace procedures
- inspecting, maintaining and adjusting cathodic protection system and equipment
- interpreting readings and collecting data from equipment and anode beds
- interpreting technical drawings, plans and maps
- locating and repairing faults
- obtaining relevant resources, tools, equipment and materials to conduct the work
- positioning road signs, barriers and warning devices
- preparing and planning to maintain cathodic protection systems
- re-establishing cathodic protection system and completing relevant documentation
- rehabilitating and maintaining a clean worksite
- reporting anomalies and proposed solutions
- 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:

- anode beds
- cathodic protection system design, components, operation, types and applications
- cathodic protection systems maintenance and monitoring requirements
- corrosion process and cathodic protection on a gas industry pipeline
- effective communication techniques
- electrical fundamentals, equipment, risks and licensing requirements relevant to the gas industry
- fault-finding and repair/replacement requirements
- hazardous activities, including lifting, climbing, working in confined spaces and aloft, and use of power tools
- quality and safety checks
- relevant cathodic protection monitoring equipment
- relevant documentation, records and reports
- relevant gas industry documentation
- relevant gas systems design, planning and operations
- relevant industry standards, guidelines, codes of practice and regulations
- relevant manufacturer specifications
- relevant technical drawings, diagrams, plans and maps
- 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 policies and procedures
- requirements and procedures for referring low voltage (LV) electrical work to relevant licensed persons
- requirements and procedures for referring major repairs to supervisor
- site preparation, safety plans, job requirements and work schedules
- techniques to identify system faults and operational conditions
- third-party issues.

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.

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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.

Links

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