



Australian Government

UEGNSG411 Maintain cathodic protection systems

Release: 1

UEGNSG411 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 Work schedule/s, job requirements, drawings, plans and maps are identified and examined to identify the system maintenance work in accordance with workplace procedures
- 1.2 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

- 1.3** Work schedules and job requirements for the maintenance are identified for all work sites and communicated to all relevant person/s in accordance with workplace procedures
- 1.4** Relevant work health and safety (WHS)/occupational health and safety (OHS) workplace procedures, and environmental and sustainable energy policies and procedures are obtained and applied
- 1.5** Work is prioritised and sequenced for completion within acceptable timeframes following consultation with relevant person/s in accordance with workplace procedures
- 1.6** WHS/OHS risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule in accordance with workplace procedures
- 1.7** Relevant work permits are obtained to access and perform work in accordance with job requirements and workplace procedures
- 1.8** Person/s, equipment, tools and personal protective equipment (PPE) required for the job are identified, scheduled, obtained and checked for correct operation and safety in accordance with workplace procedures
- 1.9** Relevant person/s at work site are suitably trained and qualified for the work to be performed
- 1.10** Communication issues with relevant stakeholders are resolved, as required, and work coordinated in accordance with work schedule and workplace procedures
- 1.11** Site is prepared to minimise risk and damage to property, commerce and individuals in accordance with the work schedule and workplace procedures
- 1.12** Third-party issues are referred to appropriate person/s in accordance with workplace procedures
- 1.13** Person/s participating in the work are briefed and responsibilities coordinated and confirmed in accordance with job requirements and workplace

- procedures
- 1.14** Road signs, barriers and warning devices are positioned in accordance with job requirements, workplace procedures and traffic management plans
- 2 Maintain and adjust cathodic protection system equipment**
- 2.1** WHS/OHS, risk control measures and environmental policies and procedures are followed in accordance with workplace procedures
- 2.2** Hazardous activities are conducted safely in accordance with workplace procedures and job requirements
- 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** Hazard warnings and safety signs are recognised, hazards and WHS/OHS risks assessed and reported to authorised person/s for directions in accordance with workplace procedures
- 2.5** Unplanned events and non-routine problems are identified and actioned in accordance with workplace procedures
- 2.6** Fault-finding and troubleshooting techniques are applied to identify any repairs or maintenance required in accordance with job requirements and workplace procedures
- 2.7** Data is collected and analysed and quality checks of the work undertaken in accordance with workplace procedures and industry standards
- 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** Accidents, injuries and non-conformances are reported, as required, in accordance with workplace procedures
- 3.3** Work site is rehabilitated, cleaned up and made safe in accordance with workplace procedures
- 3.4** Tools, equipment and any surplus resources and materials are cleaned, checked and returned to storage in

accordance with workplace procedures

- 3.5** Relevant work permit/s are signed off and system is returned to service in accordance with job requirements and workplace procedures
- 3.6** Work completion records, reports, documentation and as installed/modified drawings are completed, processed and appropriate person/s notified 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.

types of faults must include at least eight (8) of the following:

- coating damage/deterioration
- interference from other systems
- anode not working
- equipment fault/failure
- earth faults
- transformer failure
- anode bed deterioration
- anode cable failure
- telluric effects on cathodic protection systems
- isolated/insulation joint (IJ) failure and testing
- flange insulation kit (FIK) failure and testing
- cathodic protection potential surveys
- on/off potential surveys
- coating defect assessment surveys (direct current voltage gradient (DCVG) method, Pearson technique/method, over pipeline potential method)
- loop impedance testing
- anode bed testing

checks and tests on cathodic protection systems must include at least four (4) of the following:

- soil resistivity testing
- interference testing
- trad unit commissioning and testing

Unit Mapping Information

This unit replaces and is equivalent to UEGNSG411A 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>