Australian Government

UEGNSG412 Install cathodic protection systems

Release: 1

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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	PERFORMANCE CRITERIA
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1 Plan installation of cathodic protection system	**1.1** Work schedule/s, job requirements, drawings, plans and maps are identified and examined to identify the cathodic protection system installation in accordance with workplace procedures

1.2 Job requirements and workplace procedures for the work are identified for all work sites and communicated to all relevant person/s

1.3 Relevant work health and safety (WHS)/occupational health and safety (OHS) workplace procedures and environmental and sustainable energy policies and procedures are obtained, applied and communicated to relevant person/s

1.4 Data from completed cathodic protection surveys is analysed and work prioritised and sequenced for completion within acceptable timeframes following consultation with relevant person/s in accordance with workplace procedures and industry standards

1.5 WHS/OHS risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule in accordance with workplace procedures

1.6 Relevant work permit/s are obtained to access and perform the installation work, in accordance with job requirements, workplace procedures and industry standards

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 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 Communication is established with relevant stakeholders to carry out the installation work in accordance with work schedule and workplace procedures

1.10 Site is prepared to minimise risk and damage to property, commerce and individuals in accordance with the work schedule and workplace procedures

1.11 Third-party issues are referred to appropriate person/s in accordance with workplace procedures

1.12 Person/s participating in the work are briefed and responsibilities coordinated and confirmed in

		accordance with job requirements and workplace procedures
	1.13	Road signs, barriers and warning devices are positioned in accordance with job requirements, workplace procedures and traffic management plans
2 Install cathodic protection system	**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	Approved specifications and drawings are reviewed and the cathodic protection system installed in accordance with the work schedule, 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 in the installation are identified and actioned in accordance with workplace procedures
	2.6	Fault-finding and troubleshooting techniques are applied to identify any problems with the installation in accordance with job requirements and workplace procedures
	2.7	Quality and safety checks of the work are conducted in accordance with job requirements, industry standards and 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	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 stored in accordance

with workplace procedures

3.5 Relevant work permit/s are signed off and equipment is returned to service in accordance with job requirements and workplace procedures

3.6 Cathodic protection system is tested and adjusted, additional survey data collected, and work completion records and documentation completed, processed and appropriate person/s notified in accordance with workplace procedures

3.7 As built/as installed drawings are checked, updated and returned to the relevant cathodic protection engineering 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.

types of components and systems must include at least five (5) of the following:	• solar powered supply systems • 240 Volt power supply systems • insulation, flange insulation kit (FIK's) and monolithic joints • sacrificial and impressed current anode beds • battery banks — acid and lead acid battery maintenance including sg measurement • transformer rectifiers and central processing units (CPUs) • lighting protection equipment • cathodic protection test points • installation of insulated joint protectors and testing
checks and tests on cathodic protection systems must include at least four (4) of the following:	• potential surveys • trad unit commissioning and testing • interference testing • 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
- soil resistivity testing
- interference testing

Unit Mapping Information

This unit replaces and is equivalent to UEGNSG412A 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