

Title	Install cathodic protection in a gas network		
Level	4	Credits	10

Purpose	<p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate knowledge of company procedures, documentation, hazards, and equipment for installing and testing cathodic protection (CP) test points, anodes, and insulation joints; – prepare for and install CP test points, anodes, and insulation joints; and – complete reporting and documentation procedures.
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Classification	Gas Industry > Gas Network Operations
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Available grade	Achieved
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Guidance Information

- 1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable manufacturer specifications, company procedures, and legislative requirements.
- 2 Legislation, regulations, and standards relevant to this unit standard include:
 - Gas Act 1992;
 - Health and Safety at Work Act 2015;
 - Resource Management Act 1991;
 - Gas (Safety and Measurement) Regulations 2010;
 - *AS/NZS 4645.2: 2018 Gas distribution networks – Part 2: Steel pipe systems*; available from www.standards.govt.nz;
 - *AS 2832.1-2015 Cathodic protection of metals Part 1: Pipes and cables*
 - *AS 2885.1-2018 Pipelines – Gas and liquid petroleum, Part 1: Design and construction*;
 - *AS 2885.3-2022 Pipelines – Gas and liquid petroleum, Part 3: Operation and maintenance*; available from www.standards.org.au;
 and any subsequent amendments and replacements.
- 3 It is recommended people achieve Unit 32036, *Demonstrate knowledge of cathodic protection and carry out a reading in a gas network*; and Unit 32037 *Carry out cathodic protection system monitoring in a gas network*; or demonstrate equivalent skills and knowledge before being assessed against this unit standard.

4 Definitions

Company procedures mean the documented methods for performing work activities, and include health and safety, operational, environmental, and quality management requirements. They may refer to legislation, regulations, guidelines, standard operating procedures, manuals, codes of practice, or policy statements.

Test point refers to a physical asset containing cathodic protection test terminals, used to measure the effectiveness of cathodic protection, or level of stray current.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of company procedures, documentation, hazards, and equipment for installing and testing CP test points, anodes, and insulation joints.

Performance criteria

- 1.1 Documentation and company procedures for installing CP test points, anodes, and insulation joints are interpreted and described in terms of purpose.
- Range may include – network technical standards, safe working procedures, equipment operation manuals, work instructions, job safety analysis; evidence of three items of documentation is required.
- 1.2 Job documentation and instructions are confirmed for accuracy.
- Range may include – job card, site location, network plans, utility plans, technical specifications, easements, CP records; evidence of three items of documentation is required.
- 1.3 Potential environmental and safety hazards are described in terms of controls.
- Range hazards include – gas atmosphere, other utilities, work in excavations, traffic, public, electrical.
- 1.4 Equipment and materials for installing CP test points, anodes, and insulation joints are described in terms of function and application.
- Range equipment includes – cad welding, pin brazing, equipotential mats; materials include – flange insulation kit, monolithic insulation joint, ground bed anodes, sacrificial anodes, cables.
- 1.5 Potential faults associated with incorrect application and operation of equipment and procedures, and the steps to avoid them are described.
- Range damage to pipeline, CP interference, under-protection, over-protection, damage to CP equipment, incorrect cable identification.

Outcome 2

Prepare for and install CP test points, anodes, and insulation joints.

Performance criteria

2.1 Safety and environmental hazards are identified and controlled.

2.2 Pipework is prepared for CP connection in accordance with company procedures.

Range coating removal, pipework cleaning, pipe wall thickness checks, pipe wall condition checks.

2.3 CP is installed in accordance with company procedures.

Range must include – test point
may include – ground bed anode, sacrificial anode, flange insulation kit, monolithic insulation joint;
evidence of test point and one other is required.

2.4 CP test point is connected to the pipework in accordance with company procedures.

2.5 The installation and connections are checked for integrity and the CP levels are tested to ensure they meet specification and are recorded in accordance with job specifications.

Outcome 3

Complete reporting and documentation procedures.

Performance criteria

3.1 Records and documents are completed, and information is communicated to internal and external parties as required.

Range may include – as-built drawings, completed job card, CP test results, additional work required, installation photographs;
evidence of four records or documents is required.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 November 1997	31 December 2018
Revision	2	3 August 2000	31 December 2018
Review	3	22 October 2002	31 December 2018
Review	4	20 November 2006	31 December 2018
Review	5	17 August 2017	31 December 2025
Review	6	24 November 2022	N/A

Consent and Moderation Requirements (CMR) reference

0014

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Waihangā Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@WaihangāAraRau.nz if you wish to suggest changes to the content of this unit standard.