

Title	Demonstrate knowledge of gas pressure control and metering station design		
Level	5	Credits	10

Purpose	<p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate knowledge of design specifications for gas pressure control and metering stations in a gas network; and – demonstrate knowledge of and interpret design drawings for gas pressure control and metering stations for a gas network.
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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 for 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 2885.1-2018 Pipelines – Gas and liquid petroleum Design and construction*; available from www.standards.org.au;
 - *AS/NZS 4645.1: 2018 Gas distribution networks – Part 1: Network management*;
 - *AS/NZS 4645.2: 2018 Gas distribution networks – Part 2: Steel pipe systems*;
 - *AS/NZS 4645.3: 2018 Gas distribution networks – Part 3: Plastic pipe systems*;
 - NZS 5259: 2015 *Gas measurement*; www.standards.govt.nz;
 - ISO 9000; available from www.iso.org;
 - and any subsequent amendments and replacements.
- 3 Definitions

Company procedures refers to 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.

OPSO refers to Over Pressure Shut Off.

Symbols refers to the shape used in an engineering drawing to symbolise gas pressure control and metering equipment.

UPSO refers to Under Pressure Shut Off.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of design specifications for gas pressure control and metering stations in a gas network.

Performance criteria

- 1.1 Gas delivery requirements for gas pressure control and metering stations are explained.
- Range maximum and minimum pressures, demand/flow profiles, temperature, security of supply, data and monitoring, upstream network.
- 1.2 Methods and requirements for pressure protection are described.
- Range OPSO, UPSO, token/creep relief, full relief, pilot operated relief, slam shut, monitor regulator.
- 1.3 Pressure regulator selection criteria are described.
- Range lock-up capability, seat balance, noise levels, accuracy range, flow capacity, droop, pilot operated versus direct, maintenance, life-cycle, temperature, composition material, coating.
- 1.4 Typical station designs are described in terms of their configuration and operation.
- Range single stream, twin stream, monitor-active, active-slam, monitor-active-slam, staged pressure reduction.
- 1.5 Factors to consider for the location of gas pressure control and metering stations are described.
- Range security, environmental, safety, access, effect on the network, hazardous areas, aesthetics, land use, ground stability, earthing and bonding.
- 1.6 Design of pressure control and gas metering stations are described in terms of their requirements.
- Range equipment and material specifications, pipe sizing, meter, vent discharges, sensing lines, inlet/outlet connection location and size, filtration, heating, isolation valves, corrosion protection, pressure and temperature gauges.

Outcome 2

Demonstrate knowledge of and interpret design drawings for gas pressure control and metering stations for a gas network.

Performance criteria

- 2.1 Symbols used in design drawings for gas pressure control and metering stations are identified in terms of their purpose and application to gas network operations.
- 2.2 Design drawings are assessed for the inclusion of safety and environmental factors applicable to a gas network.

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	20 November 2006	31 December 2020
Review	2	17 August 2017	31 December 2025
Revision	3	30 August 2018	31 December 2025
Review	4	24 November 2022	N/A

Consent and Moderation Requirements (CMR) reference	0014
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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.