

Title	Troubleshoot and rectify faults on a standard gas pressure control and metering station		
Level	4	Credits	15

Purpose	People credited with this unit standard are able to, for a standard gas pressure control and metering station: demonstrate knowledge of documentation, company procedures, hazards, equipment and techniques for troubleshooting and rectifying faults; prepare site for troubleshooting and rectifying faults; troubleshoot and rectify faults; recommission and test; and complete reporting and documentation.
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Classification	Gas Industry > Gas Network Operations
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Available grade	Achieved
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Pre-requisite	Unit 32041, <i>Demonstrate knowledge of standard gas pressure control equipment and metering stations</i> , or equivalent knowledge and skills.
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Guidance Information

- 1 This unit standard is intended for but is not limited to assessment by simulation, attestation, and work records. The range statements relate to enterprise specific equipment, procedures, and processes.
- 2 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable manufacturer's specifications, company procedures and legislative requirements. This includes the knowledge and use of suitable tools and equipment.
- 3 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the current version of:
 - Health and Safety at Work Act 2015;
 - Gas Act 1992;
 - Gas (Safety and Measurement) Regulations 2010;
 - NZS 5259:2015 *Gas measurement*;
 - AS/NZS 4645.1:2018 *Gas distribution networks – Network management*;
 - AS/NZS 4645.2:2018 *Gas distribution networks – Steel pipe systems*;
 - AS/NZS 4645.3:2018 *Gas distribution networks – Plastics pipe systems*;
 - and any subsequent amendments and replacements.

4 References

Australian/New Zealand standards (AS/NZS) may be found at

www.standards.org.au;

New Zealand standards (NZS) may be found at www.standards.govt.nz.

5 Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

6 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.

Standard gas pressure control and metering stations includes Pressure Reducing Stations (PRS) and Gas Measurement Systems (GMS) for single point of supply installations with 2-stage pressure reduction and installations with a meter bypass stream that is normally closed. The following installations are excluded: district regulator stations, twin stream configurations, active/ monitor configurations.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of documentation, company procedures, hazards, equipment and techniques for troubleshooting and rectifying faults on a standard gas pressure control and metering station.

Performance criteria

1.1 Documentation and company procedures for troubleshooting and rectifying faults in standard gas pressure control and metering stations are located and interpreted.

Range may include – network standard, equipment operating manuals, maintenance procedures, standard operating procedure, safe work procedure, work instruction, job hazard analysis, job risk assessment.

1.2 Documentation for a specified job is obtained.

Range documentation may include – job card, nature of fault, maintenance history, location drawing, pressure settings, hazard identification, permit, network plans, site liaison, authorisation.

1.3 Potential environmental and safety hazards and controls for troubleshooting and rectifying faults standard gas pressure control and metering station equipment are described.

Range hazards may include – gas release, pneumatic pressure, confined spaces, vehicles and public, electrical, contaminants, ignition source;
controls may include – gas detection equipment, safe access and egress, temporary traffic control, signage, barriers, personal protective equipment, continuity bond, earthing, waste removal and disposal, fire extinguisher,
evidence of four hazards and controls are required.

1.4 Types of faults found on standard pressure control and metering stations are described.

Range high and low outlet pressure, reliefs passing, leakage, seat failure, blocked filter, inadequate flow, orifice fault, oscillation, incorrect settings, tampering.

1.5 Types and function of equipment and materials for troubleshooting and rectifying faults in a standard pressure control and metering station are described.

Range leak detection equipment, calibrated gauges, spare parts, lubrication, equipment specific tools.

1.6 Troubleshooting techniques for standard pressure control and metering stations and components are described.

Range techniques – equipment functional test, let-by test, lock-up test, leakage test, flow check, pressure settings check;
components may include – meter, regulator, filter, slam shut, upso valve, opso valve, relief valve, valve.

1.7 Potential hazards of incorrect application and operation of equipment and procedures are described.

Range uncontrolled release of gas, supply interruption, damage to equipment, overpressure downstream, upstream impact, inaccurate data.

Outcome 2

Prepare site for troubleshooting and rectifying faults on a standard gas pressure control and metering station.

Performance criteria

2.1 Safety and environmental hazards are identified and controlled.

Range hazards may include – gas release, confined space, other utilities, excavations, traffic, general public, pneumatic pressure, hazardous area;
controls may include – signage, barriers, personal protective equipment, safe access and egress, temporary traffic control, environmental protection.

2.2 Equipment and materials for troubleshooting and rectifying faults in a standard pressure control and metering station are prepared, handled, and positioned.

Range may include – plant, tools, equipment, materials, documentation, personal protective equipment.

Outcome 3

Troubleshoot and rectify faults on a standard gas pressure control and metering station and ancillary equipment.

Performance criteria

3.1 Troubleshooting and rectifying of faults is carried out on a standard pressure control and metering station.

Range must include – high and low outlet pressure, reliefs passing;
must also include at least five of – leakage, seat failure, blocked filter, inadequate flow, orifice fault, oscillation, incorrect settings, tampering.

Outcome 4

Recommission and test a standard gas pressure control and metering station and ancillary equipment.

Performance criteria

4.1 Standard gas pressure control and metering station is recommissioned, purged and tested.

Range purge equipment, gas detection equipment, calibrated gauges, regulator set points, relief valve set points, flow indications, meter reading, leakage test.

Outcome 5

Complete reporting and documentation.

Performance criteria

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

Range may include – completion notice, additional work, serial numbers, meter data, pressure settings, materials used.

Replacement information	This unit standard replaced unit standard 12513 and unit standard 12516.
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Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	22 October 2002	31 December 2018
Review	2	20 November 2006	31 December 2020
Review	3	17 August 2017	31 December 2023
Revision	4	30 August 2018	31 December 2023
Review	5	27 May 2021	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 MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.