

Title	Monitor, analyse, and respond to process deviations in an energy and chemical plant		
Level	5	Credits	12

Purpose	People credited with this unit standard are able to: maintain energy and chemical process conditions by monitoring and adjusting equipment and processes, and describe consequences of deviation from stable operating parameters; and describe, respond to, and restore process conditions in an energy and chemical plant.
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Classification	Energy and Chemical Plant > Monitoring of Energy and Chemical Plant
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Available grade	Achieved
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Guidance Information

- Legislation and regulations relevant to this unit standard include but are not limited to:
 - Health and Safety at Work Act 2015;
 - Health and Safety at Work (Hazardous Substances) Regulations 2017 (HSWA);
 - Approved Code of Practice for the Design, Safe Operation, Maintenance and Servicing of Boilers*, Occupational Health and Safety Service, 2000;
 - Resource Management Act 1991; and any subsequent amendments.
- Definitions

Distributed control system includes – Supervisory Control and Data Acquisition (SCADA), Man Machine Interfaces (MMI).

Energy and chemical plant may be in – petrochemical, agri-nutrient, power generation, dairy processing, meat processing, and wood fibre manufacturing, or other plants that operate with a combination of high temperatures, pressures, steam and/or chemicals in gas, liquid or solid form.

Organisational requirements – documented policies and procedures. These may include: equipment manufacturers' procedures, plant procedures, suppliers' instructions; site signage; codes of practice; company health and safety plans; on site briefings; and supervisor's instructions. This includes all regulatory and legislative obligations that apply to the plant.

Plant – the operational unit, equipment and/or workplace at which the person is working.

- 3 For the purposes of assessment:
- evidence for the practical components of this unit standard must be supplied from the workplace.
 - evidence for all outcomes must be presented in accordance with organisational requirements.
 - the candidate must control a complex process that uses several systems and plant that has some complex equipment.

Outcomes and performance criteria

Outcome 1

Maintain energy and chemical process conditions by monitoring and adjusting equipment and processes, and describe consequences of deviation from stable operating parameters.

Performance criteria

- 1.1 Obtain and record process data at scheduled times.
- Range may include – sampling, plant logs, product data, distributed control system.
- 1.2 Identify, monitor and, where required, adjust operating parameters for each process to ensure plant safety and product specifications are met.
- 1.3 Describe consequences of deviation from stable operating parameters in terms of effects on product, equipment, and production schedules.
- 1.4 Identify and analyse trends and adjust equipment and processes where necessary to maintain stable operating parameters.

Outcome 2

Describe, respond to, and restore process conditions in an energy and chemical plant.

Performance criteria

- 2.1 Describe circumstances in which emergency shutdowns are automatically initiated.
- 2.2 Describe circumstances in which emergency shutdowns are manually initiated.
- 2.3 Report situations which cannot be remedied within the operator's authority to the appropriate personnel for escalation.
- 2.4 Take corrective actions in the event of a continuing deviation.
- 2.5 Restore stable process conditions without delay while minimising loss and without compromising safety.

- 2.6 Identify and diagnose any faults to determine causes.
- 2.7 Record and communicate problems and corrective actions to appropriate personnel.

Replacement information	<p>This unit standard replaced unit standard 9593 and unit standard 9594.</p> <p>This unit standard was replaced by skill standard 40363.</p>
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This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 January 2002	31 December 2018
Review	2	20 February 2009	31 December 2018
Rollover and Revision	3	20 April 2017	31 December 2022
Review	4	27 February 2020	31 December 2027
Review	5	30 January 2025	31 December 2027

Consent and Moderation Requirements (CMR) reference	0079
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.