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| Title | Demonstrate knowledge of and control emergency and unplanned shutdowns in an energy and chemical plant | | |
| Level | 5 | Credits | 12 |

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| Purpose | People credited with this unit standard are able to: demonstrate knowledge of systems for emergency and/or unplanned shutdowns; manage an emergency or unplanned shutdown; check plant and equipment are safe following an unplanned shutdown and identify the reason or cause of the shutdown; and document the shutdown process and report any ongoing production problems, in an energy and chemical plant. |
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| Classification | Energy and Chemical Plant > Operation of Energy and Chemical Plant |
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| Available grade | Achieved |
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Guidance Information

- 1 Legislation relevant to this unit standard includes but is not limited to:
 - Health and Safety at Work Act 2015;
 - Resource Management Act 1991;
 - and any subsequent amendments.

- 2 Definitions

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

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of systems for emergency and/or unplanned shutdowns in an energy and chemical plant.

Performance criteria

- 1.1 Identify and describe events that may cause an emergency and/or unplanned shutdown.
- 1.2 Identify and describe effects of emergency and/or unplanned shutdowns in terms of their impacts on process areas and systems.
- 1.3 Identify and describe communication methods for emergency and/or unplanned shutdowns.
- Range site alarm systems, emergency systems, radio, email, telephone.
- 1.4 Identify and describe shutdown system logic in relation to the site.
- Range architecture of plant process and production systems, product specifications and tolerances, systems operating parameters, process control philosophies and strategies, panel prompts, emergency shut down procedures.
- 1.5 Describe the roles of personnel involved in the shutdown in terms of their responsibilities.

Outcome 2

Manage an emergency or unplanned shutdown in an energy and chemical plant.

Range emergency or unplanned shutdown may be simulated.

Performance criteria

- 2.1 Confirm personnel are accounted for, and their responsibilities within the emergency are defined.
- Range may include – contractors, operators/technicians, team leaders/supervisors, management, control room operators, other site staff.
- 2.2 Shutdown designated upstream and downstream plant and equipment to make the situation safe.

2.3 Demonstrate shutdown procedures and actions relevant to the emergency or unplanned situation.

Range site evacuation, service discontinuation, communications, emergency services, call out notification.

2.4 Demonstrate actions to minimise damage from any significant deviations from the norm.

Outcome 3

Check plant and equipment are safe following an unplanned shutdown in an energy and chemical plant and identify the reason or cause of the shutdown.

Performance criteria

3.1 Check and verify automatic safety systems to ensure the site has been left in a safe state.

Range trip valves, equipment status, equipment process conditions.

3.2 Identify the reason or cause of the shutdown by troubleshooting the system and utilising all available data and information systems.

3.3 Confirm information from field-based operators to verify the nature and reliability of the shutdown.

Outcome 4

Document the shutdown process and report any ongoing production problems.

Performance criteria

4.1 Complete all required logs and workplace documentation relating to the shutdown process

Range cause, actions taken, responses.

4.2 Identify and report any ongoing production problems to appropriate personnel.

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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 | 6 February 1997 | 31 December 2018 |
| Revision | 2 | 3 August 2000 | 31 December 2018 |
| Review | 3 | 24 January 2002 | 31 December 2018 |
| Review | 4 | 20 February 2009 | 31 December 2018 |
| Rollover and Revision | 5 | 20 April 2017 | 31 December 2022 |
| Review | 6 | 27 February 2020 | N/A |

Consent and Moderation Requirements (CMR) reference

0079

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

Comments on this unit standard

Please contact the Primary Industry Training Organisation standards@primaryito.ac.nz if you wish to suggest changes to the content of this unit standard.