

Title	Demonstrate knowledge of and operate fire safety equipment in an energy and chemical plant		
Level	3	Credits	5

Purpose	<p>This unit standard is intended for people working as boiler operators and energy and chemical process operators in an energy and chemical plant.</p> <p>People credited with this unit standard are able to demonstrate knowledge of fire and types of fire safety equipment used in an energy and chemical plant; and operate fire safety equipment in an energy and chemical plant.</p>
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Classification	Energy and Chemical Plant > Safety and Legislation for 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;
 - Hazardous Substances and New Organisms Act 1996;
 - 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 or a simulated workplace.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of fire and types of fire safety equipment used in an energy and chemical plant.

Performance criteria

- 1.1 Describe the basic chemistry of fire in terms of the fire triangle.
- 1.2 Describe the principles of extinguishment in terms of the fire triangle.
- Range extinguishment includes but is not limited to – cooling, smothering, isolation, chemical reaction.
- 1.3 Identify and describe the classification of fires in terms of type.
- Range classifications include but are not limited to – Class A, Class B, Class C, Class D, Class E, Class F; evidence of one example for each classification is required.
- 1.4 Describe the concepts of upper and lower limits of flammability in terms of site-specific examples.
- Range evidence of one example of each is required.
- 1.5 Describe fire safety systems in terms of their function.
- Range fire safety systems include but are not limited to – extinguishers, fire ring main, sprinkler heads, alarms, pumps, deluge, foam, gas flood suppression.
- 1.6 Describe fire extinguishers in terms of their suitability for different classes of fire.
- Range fire extinguishers include but are not limited to – water, foam, dry powder, carbon dioxide.
- 1.7 Identify and describe hazard detection systems and equipment in terms of their purpose.
- Range hazard detection systems include but are not limited to – heat detectors, smoke detectors, gas detectors, flame detectors.

Outcome 2

Operate fire safety equipment in an energy and chemical plant.

Performance criteria

- 2.1 Communicate and report emergency conditions to relevant personnel in accordance with organisational requirements.
- 2.2 Assess emergency conditions to determine operating approach in accordance with organisational requirements.

 Range operating approach includes but is not limited to – equipment requirements, method of using equipment, downstream and upstream effects, personnel protection.
- 2.3 Carry out fire control techniques in accordance with organisational requirements.

 Range techniques include but are not limited to – containment, extinguishment, cooling, personnel protection.
- 2.4 Operate the hose reel and extinguisher equipment in accordance with organisational requirements.

Replacement information	This unit standard was replaced by skill standard 40370.
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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	8 November 1995	31 December 2014
Revision	2	15 December 1998	31 December 2014
Review	3	29 May 2000	31 December 2014
Revision	4	24 July 2002	31 December 2014
Review	5	27 June 2005	31 December 2014
Rollover and Revision	6	25 July 2006	31 December 2014
Review	7	22 May 2009	31 December 2016
Review	8	24 October 2014	31 December 2022
Review	9	27 February 2020	31 December 2026
Review	10	30 January 2025	31 December 2026

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>.