

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

<b>Purpose</b>	<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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<b>Classification</b>	Energy and Chemical Plant > Safety and Legislation for Energy and Chemical Plant
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<b>Available grade</b>	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.

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## 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.

<b>Planned review date</b>	31 December 2024
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#### 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	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0079
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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 the Primary Industry Training Organisation [standards@primaryito.ac.nz](mailto:standards@primaryito.ac.nz) if you wish to suggest changes to the content of this unit standard.