

40370**Operate fire safety equipment in an energy and chemical plant**

Kaupae Level	3
Whiwhinga Credit	5
Whāinga Purpose	<p>This skill 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 skill standard are able to: describe 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> <p>This skill standard can be used in the New Zealand Energy and Chemical qualifications at Levels 3 and above.</p>

Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Describe fire and types of fire safety equipment used in an energy and chemical plant	a. Describe the basic chemistry of fire and the principles of extinguishment in terms of the fire triangle.
	b. Describe fire extinguishers in terms of their suitability for different classes of fire.
	c. Describe the concepts of upper and lower limits of flammability in terms of site-specific examples.
	d. Describe fire safety systems in terms of their function.
	e. Identify and describe fire hazard and leak detection systems and equipment in terms of their purpose.

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
2. Operate fire safety equipment in an energy and chemical plant.	a. Communicate and report emergency conditions to relevant personnel in accordance with organisational requirements.
	b. Assess emergency conditions to determine an appropriate response strategy in accordance with organisational requirements.
	c. Carry out fire control techniques in accordance with organisational requirements.
	d. Operate the hose reel and extinguisher equipment in accordance with organisational requirements.

Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

Assessment specifications:

- evidence for the practical components of this unit standard must be supplied from the workplace or a simulated workplace.
- 1a: extinguishment includes but is not limited to – cooling, smothering, isolation, interrupting chemical reaction.
- 1b: fire extinguishers include but are not limited to – water, foam, dry powder, carbon dioxide; classes of fire include but are not limited to – Class A, Class B, Class C, Class D, Class E, Class F; evidence of one example for each class should be supplied. 1c: requires evidence of both upper and lower limits of flammability
- 1d: fire safety systems include but are not limited to – extinguishers, fire ring main, sprinkler heads, alarms, pumps, deluge, foam, gas flood suppression.
- 1e: hazard detection systems include but are not limited to – heat detectors, smoke detectors, gas detectors, flame detectors.
- 2b: response strategy includes but is not limited to – equipment requirements, method of using equipment, downstream and upstream effects, personnel protection.
- 2c: techniques include but are not limited to – containment, extinguishment, cooling, personnel protection.

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.

Ngā momo whiwhinga | Grades available

Achieved.

Ihirangi waitohu | Indicative content

None.

Rauemi | Resources

Legislation relevant to this unit standard includes but is not limited to:

- Health and Safety at Work Act 2015;
- Health and Safety at Work (Hazardous Substances) Regulations 2017 (HSWA)
- Resource Management Act 1991;
and any subsequent amendments.

Pārongo Whakaū Kounga | Quality assurance information

Ngā rōpū whakatau-paerewa Standard Setting Body	Hanga- Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council
Whakaritenga Rārangi Paetae Aromatawai DASS classification	Manufacturing > Energy and Chemical Plant > Safety and Legislation for Energy and Chemical Plant
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga CMR	0079

Hātepe Process	Putanga Version	Rā whakaputa Review Date	Rā whakamutunga mō te aromatawai Last date for assessment
Rēhitatanga Registration	1	30 January 2025	N/A
Kōrero whakakapinga Replacement information	This skill standard replaced unit standard 3046.		
Rā arotake Planned review date	31 December 2029		

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council at qualifications@hangaarorau.nz to suggest changes to the content of this skill standard.