

## 40445 Operate compressors in an energy and chemical plant

<b>Kaupae   Level</b>	4
<b>Whiwhinga   Credit</b>	8
<b>Whāinga   Purpose</b>	<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 compressors used in an energy and chemical plant, and compressor operational deviations; and operate compressors in an energy and chemical plant.</p> <p>This skill standard can be used in the New Zealand Energy and Chemical qualifications at Level 4 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 compressors used in an energy and chemical plant, and compressor operational deviations.	a. Describe types of compressors in terms of method of operation and design concepts.
	b. Describe components of compressors in terms of their function.
	c. Describe compressor systems in terms of their design concepts.
	d. Describe compressor operational deviations in terms of their causes.
2. Operate compressors in an energy and chemical plant.	a. Identify control and protection systems for compressors and describe their purpose in accordance with organisational requirements.
	b. Identify the location of compressors in accordance with the site-specific identification coding system and organisational requirements.
	c. Operate compressors using safe work practices in accordance with organisational requirements.
	d. Start up and shut down compressors in accordance with organisational requirements.
	e. Carry out plant checks, preventative maintenance and routine procedures on compressors in accordance with organisational requirements.
	f. Complete all plant documentation related to the process and equipment operation 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 skill standard must be supplied from the workplace.
- 1a: types include but are not limited to – centrifugal, reciprocating, single stage, multistage, axial flow.
- 1b: components include but are not limited to – drive motor, coupling, casing, shaft, impeller, bearings, seals, instrumentation.
- 1c: design concepts include but are not limited to – filtration, pulsation dampers, lubrication system, cooling system, minimum flow, duty or standby system, drain.
- 1d: operational deviations include but are not limited to – vibration, stall, overload, low discharge pressure, surge.
- 2a: evidence of two (2) control systems and four (4) protection systems for a specific site is required.

## Definitions:

*Energy or 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 skill 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.

**Pārongo Whakaū Kouna | Quality assurance information**

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

<b>Hātepe  </b> Process	<b>Putanga  </b> Version	<b>Rā whakaputa  </b> Review Date	<b>Rā whakamutunga mō te aromatawai  </b> Last date for assessment
<b>Rēhitatanga  </b> Registration	1	24 April 2025	N/A
<b>Kōrero whakakapinga  </b> Replacement information	This skill standard replaced unit standard 21466		
<b>Rā arotake  </b> Planned review date	31 December 2029		

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