

40384 Interpret and create process drawings for 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: interpret process drawings of an energy and chemical plant; and create a process drawing of a section of an energy and chemical plant.</p> <p>This skill standard can be used in the New Zealand Energy and Chemical qualifications at Level 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. Interpret process drawings of an energy and chemical plant.	a. Locate symbol legend charts related to plant drawings, and interpret symbols used on process drawings.
	b. Describe drawings in terms of type.
	c. Describe tagging conventions.
	d. Locate drawings for specified sections of plant in accordance with the plant tagging conventions and organisational requirements.
	e. Recognise plant and equipment on the drawings and relate to actual plant equipment and systems.
2. Create a process drawing of a section of an energy and chemical plant.	a. Create a process-flow drawing of a section of an energy and chemical plant.
	b. Use relevant industry-standard symbols and tagging conventions to represent equipment and processes.

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 a workplace drawing system.
- 1b: evidence of three (3) drawings is required.
- 1d: evidence of three (3) drawings is required.
- 1e: evidence is required of – two different vessels; one each of – temperature, pressure, flow and level instruments; three different services pipelines; two types of pumps; three types of – valves, fan, compressor.

Definitions:

Drawings may be – plant documents or manufacturer supplied information.

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

Suggested ranges for assessment criteria:

- Process drawings, such as – piping and instrumentation diagrams, logic drawings, process flow diagrams, vendor drawings, equipment data sheets;
- Plant equipment, such as – pumps, valves, vessels, compressors, fans, pipe work; features may include but are not limited to – instrumentation, control loops, shut down loops, temperatures, pressures, vessel details, flow directions.

Rauemi | Resources

Legislation and regulations relevant to this unit standard include but are 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 Kouna | 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 > Operation of 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	27 March 2025	N/A
Kōrero whakakapinga Replacement information	This skill standard replaced unit standard 3047.		
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.