40383 Operate solid handling systems in an energy and chemical plant

Kaupae | Level	3
Whiwhinga | Credit	5
Whāinga | Purpose	This skill standard is intended for people working as boiler operators and energy and chemical process operators in an energy and chemical plant. People credited with this skill standard are able to: describe solid handling systems; operate solid handling systems; monitor and control solid handling systems; and shut down solid handling systems, in an energy and chemical plant. This skill standard can be used in the New Zealand Energy and Chemical qualifications at Level 3 and above.

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

Hua o te ako | Learning outcomes	**Paearu aromatawai** | Assessment criteria
1. Describe solid handling systems in an energy and chemical plant.	a. Describe the safety requirements for operating solid handling systems.
	b. Describe types of solid handling systems used at the plant in terms of the operating concepts, components and purpose.
	c. Describe the effects on the capacity and speed of conveyance of plant solid handling systems in terms of the properties of the material being moved.

Hua o te ako | Learning outcomes	**Paearu aromatawai** | Assessment criteria
2. Operate solid handling systems in an energy and chemical plant.	a. Identify solid handling equipment in accordance with the plant specific identification coding system and organisational requirements.
	b. Complete pre-start checks in accordance with organisational requirements.
	c. Complete start-up in accordance with organisational requirements.
	d. Operate solid handling equipment using safe work practices in accordance with organisational requirements.
	e. Operate solid handling protection and control systems in accordance with organisational requirements.
	f. Carry out checks and routine procedures in accordance with organisational requirements.
	g. Complete all plant documentation related to the process and equipment operation in accordance with organisational requirements.
3. Monitor and control solid handling systems in an energy and chemical plant.	a. Identify deviations from normal operating conditions in accordance with organisational requirements.
	b. Take corrective actions to return to normal operating conditions in accordance with organisational requirements.
4. Shut down solid handling systems in an energy and chemical plant.	a. Complete shutdown in accordance with organisational requirements.
	b. Complete and report post-shutdown checks to the site supervisor 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.
- 1b: evidence of one (1) system is required. Components include but are not limited to – drive, gear box, bearings, hopper, chute, batch weigher.
- 1c: evidence of an effect on speed and an effect on capacity is required.
- 3a: evidence of three (3) deviations is required.
- 3b: evidence of three (3) corrective actions is required.

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 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

- Safety requirements, such as – design safety equipment, SOPs for operation.
- Solid handling systems such as – belt conveyor, chain conveyor, screw conveyor, elevator, pneumatic system for pulverised fuel, sluice system, spreader, pulverising mill, weigh conveyor, bucket elevators, crushers, screens, dust control system, bagging system.
- Solid fuel characteristics such as – size, abrasiveness, stringiness, flow, compaction, weight.
- Solid handling protection systems, such as– tracking, overload, speed; control systems may include but are not limited to – level, flow, temperature, weight, emergency stop.
- Deviations, such as – spontaneous combustion, dust explosion, blockage, mis-tracking, slippage, under speed, ripped belt, failed drive equipment, static electricity.

Rauemi | Resources

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.

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 > 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 3045.		
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.