

40459 Manage product storage and transfer facilities in an energy and chemical plant

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| Kaupae Level | 4 |
| Whiwhinga Credit | 6 |
| Whāinga Purpose | <p>People credited with this skill standard are able to: describe energy and chemical plant storage facilities and associated equipment; manage energy and chemical plant product storage and transfer facilities and monitor conditions and products; and document and communicate product storage and transfer facility details 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 |
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| 1. Describe energy and chemical plant storage facilities and associated equipment. | a. Describe site storage facilities for the management of energy and chemical plant products in terms of their functions. |
| | b. Describe energy and chemical plant blending and transfer systems in terms of their functions. |
| | c. Describe energy and chemical plant product additive systems in terms of their functions. |
| | d. Identify and describe the products and additives stored and transferred within the site in terms of the potential hazards. |
| | e. Locate and interpret documentation for controlling the hazards of stored products and additives. |
| | f. Describe energy and chemical plant product and storage fire and safety protection equipment in terms of their operation. |

| Hua o te ako Learning outcomes | Paearu aromatawai Assessment criteria |
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| 2. Manage energy and chemical plant product storage and transfer facilities and monitor conditions and products. | a. Carry out routine checks and log keeping duties. |
| | b. Carry out routine sampling and testing of contents. |
| | c. Maintain product specifications to organisational requirements. |
| | d. Dip tanks to measure and determine capacities. |
| | e. Confirm safety interlocks and product readiness with control room before commencing product transfer. |
| | f. Identify deviations from normal operating conditions and take corrective actions in accordance with organisational requirements. |
| 3. Document and communicate product storage and transfer facility details in an energy and chemical plant. | a. Complete documentation. |
| | b. Communicate product storage and transfer details to appropriate personnel. |

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.
- evidence for all outcomes must be presented in accordance with organisational requirements.
- 1a: pressure vessels, floating roof tanks, fixed roof tanks, bins, bullets, pressure relief valves, vacuum breaker valves, other valves, manifolds, pumps, lines, bund, tank compounds, drains, heating equipment, refrigeration equipment, mixers, spheres, vent systems, tank blanketing systems, sampling equipment, instrumentation, leak detection systems.
- 1b: computerised blending controllers, in line mixers, lines, pumps, flow control equipment.
- 1c: injection pumps, heaters, computerised additive injection controllers, weigh scales, tanks, drums, meters, valves, sample points.
- 1f: signage, barriers, fire extinguishers, hoses, fire monitors, fire hydrants, foam systems, fire water main, fire alarms, fire detector, gas detectors, inert gas systems, deluge systems, water sprays, personal protective equipment, breathing apparatus, emergency shutdown systems, pressure protection systems, spill kit, bunding.
- 2c: temperature, pressure, level, chemical composition, moisture, specific gravity, Reid Vapour Pressure (RVP).
- 2d: capacity, verification of remote indicating systems, loss control, custody transfer, stock taking, ullage charts, strapping tables.
- 2f: contamination, off specification product handling, leaks, spills, unscheduled transfers, operator error, returns.

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

- Potential storage and transfer hazards for products and additives, such as – high vapour pressure, flammability, temperature, toxicity, phase, viscosity, density, corrosiveness, contamination, simultaneous operations.
- Routine checks, such as – equipment operation and integrity, pumps, tanks, housekeeping, checklists, standing instructions, safety systems
- Product storage documentation, such as – logs, laboratory analyses, test results, blend sheets, safety data sheet, computer records.

Rauemi | Resources

Legislation relevant to this skill 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

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| 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 | 24 April 2025 | N/A |
| Kōrero whakakapinga Replacement information | This skill standard replaced unit standard 9583. | | |
| 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.