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| **Title** | **Prepare for and transfer energy and chemical bulk product by pipeline** | | |
| **Level** | **3** | **Credits** | **4** |

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| **Purpose** | People credited with this unit standard are able to: prepare for the transfer of energy and chemical bulk product; carry out and monitor the transfer of energy and chemical bulk product by pipeline; and shut down and document the transfer of energy and chemical bulk product by pipeline. |

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| **Classification** | Energy and Chemical Plant > Operation of Energy and Chemical Plant |

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| **Available grade** | Achieved |



**Guidance Information**

1 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.

2 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.

3 For the purposes of assessment:
- evidence for the practical components of this unit standard must be supplied from the workplace.
- evidence for all outcomes must be presented in accordance with organisational requirements.

## Outcomes and performance criteria

### Outcome 1

Prepare for the transfer of energy and chemical bulk product.

### Performance criteria

1.1 Identify information and documentation required for transfer.

Range includes but is not limited to – source, destination, route, quantity and/or volume, line clear and/or line plug volume, maximum allowable operating pressure, interface volume quality, ullage, tank level, time-frames, third parties, drawings and procedures, safety data sheets, site emergency procedures.

1.2 Select the transfer route.

Range pumps, pumping stations, block valve stations, meter systems, sampling equipment, additive injection equipment, leak detection equipment, tanks.

1.3 Identify and locate safety equipment.

1.4 Confirm availability and specification of product.

Range quality checks, volume checks, ullage, temperature, water and/or glycol draining, additives.

1.5 Confirm availability and readiness of transfer equipment.

Range flow rates, pump selection, fill rates, injection systems, metering, estimated time of completion, protection systems.

### Outcome 2

Carry out and monitor the transfer of energy and chemical bulk product by pipeline.

### Performance criteria

2.1 Assess potential hazards of the transfer operation in terms of the steps to control them.

2.2 Establish and maintain communication with all affected parties.

2.3 Start and operate transfer equipment.

2.4 Monitor pumping equipment and valves for potential problems.

Range seal leakage, overload, cavitation, lubrication, vibration, filters, winding temperatures, current draw, packing, passing.

2.5 Monitor transfer operations.

Range pressure, flow, level, temperature, density, trending, product quality, batch tracking, line clear and/or line plug calculations, interface location and control, leak detection, control and trip systems.

2.6 Identify any abnormal conditions affecting a transfer and the steps to rectify them.

Range emergency stop, power failures, communications failure, spills, contamination, control and trip systems, pump pressures, maximum allowable operating pressure, sabotage, vandalism, adverse weather conditions, unscheduled events.

**Outcome 3**

Shut down and document the transfer of petrochemical bulk product by pipeline.

**Performance criteria**

3.1 Verify equipment is shut down and the transfer as complete.

Range manual stop, auto stop, emergency stop, product change, sampling, test results, communication.

3.2 Complete and distribute documentation to appropriate personnel.

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| **Replacement information** | This unit standard was replaced by skill standard 40389. |

**This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.**

**Status information and last date for assessment for superseded versions**

| Process | Version | Date | Last Date for Assessment |
|---|---|---|---|
| Registration | 1 | 6 February 1997 | 31 December 2018 |
| Revision | 2 | 3 August 2000 | 31 December 2018 |
| Review | 3 | 24 January 2002 | 31 December 2018 |
| Review | 4 | 20 February 2009 | 31 December 2018 |
| Rollover and Revision | 5 | 20 April 2017 | 31 December 2022 |
| Review | 6 | 27 February 2020 | 31 December 2026 |
| Review | 7 | 27 March 2025 | 31 December 2026 |

| Consent and Moderation Requirements (CMR) reference | 0079 |
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This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.