

Title	Demonstrate knowledge of and operate solid handling systems in an energy and chemical plant		
Level	3	Credits	5

Purpose	<p>This unit 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 unit standard are able to: demonstrate knowledge of solid handling systems; operate solid handling systems; monitor and control solid handling systems; and shut down solid handling systems and carry out post-shutdown checks, in an energy and chemical plant.</p>
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Classification	Energy and Chemical Plant > Operation of Energy and Chemical Plant
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Available grade	Achieved
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Guidance Information

- 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.
- 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.
- For the purposes of assessment:
 - evidence for the practical components of this unit standard must be supplied from the workplace.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of solid handling systems in an energy and chemical plant.

Performance criteria

- 1.1 Describe the safety requirements for operating solid handling systems in terms of the safety requirements.
- 1.2 Identify and describe types of solid handling systems used at the plant in terms of the operating concepts.
- Range systems may include but are not limited to – 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; evidence of one system is required.
- 1.3 Describe the components of each type of solid handling system identified in 1.2 in terms of purpose, and operating concepts.
- Range components include but are not limited to – drive, gear box, bearings, hopper, chute, batch weigher.
- 1.4 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.
- Range properties may include but are not limited to – size, abrasiveness, stringiness, flow, compaction; evidence of an effect on speed and an effect on capacity is required.

Outcome 2

Operate solid handling systems in an energy and chemical plant.

Performance criteria

- 2.1 Identify the location of solid handling equipment in accordance with the plant specific identification coding system and organisational requirements.
- 2.2 Operate solid handling equipment using safe work practices in accordance with organisational requirements.
- 2.3 Complete pre-start checks in accordance with organisational requirements.
- 2.4 Complete start-up in accordance with organisational requirements.

- 2.5 Operate solid handling protection and control systems in accordance with organisational requirements.

Range protection systems may include but are not limited to – tracking, overload, speed;
control systems may include but are not limited to – level, flow, temperature, weight, emergency stop.

- 2.6 Carry out checks and routine procedures in accordance with organisational requirements.

- 2.7 Complete all plant documentation related to the process and equipment operation in accordance with organisational requirements.

Outcome 3

Monitor and control solid handling systems in an energy and chemical plant.

Performance criteria

- 3.1 Identify and record deviations from normal operating conditions in accordance with organisational requirements.

Range deviations may include but are not limited to – spontaneous combustion, dust explosion, blockage, mis-tracking, slippage, under speed, ripped belt, failed drive equipment, static electricity; evidence of three deviations is required.

- 3.2 Take corrective actions to return to normal operating conditions in accordance with organisational requirements.

Range evidence of three corrective actions is required.

Outcome 4

Shut down solid handling systems and carry out post-shutdown checks in an energy and chemical plant.

Performance criteria

- 4.1 Complete shutdown in accordance with organisational requirements.

- 4.2 Complete and report post-shutdown checks to the site supervisor in accordance with organisational requirements.

Replacement information	
	This unit standard was replaced by skill standard 40383.

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	8 November 1995	31 December 2014
Revision	2	15 December 1998	31 December 2014
Review	3	29 May 2000	31 December 2014
Revision	4	24 July 2002	31 December 2014
Review	5	27 June 2005	31 December 2014
Rollover and Revision	6	25 July 2006	31 December 2014
Review	7	22 May 2009	31 December 2016
Review	8	24 October 2014	31 December 2022
Review	9	27 February 2020	31 December 2026
Review	10	27 March 2025	31 December 2026

Consent and Moderation Requirements (CMR) reference

0079

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.