

Title	Demonstrate knowledge of and operate unfired pressure equipment in an energy and chemical plant		
Level	4	Credits	8

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: describe unfired pressure equipment used in the energy and chemical industry; demonstrate knowledge of on-site unfired pressure equipment; and locate and operate unfired pressure equipment 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

- 1 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.

- 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.

Unfired pressure equipment – equipment that is operated under pressure but is not directly fired.

- 3 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

Describe unfired pressure equipment used in the energy and chemical industry.

Performance criteria

- 1.1 Describe unfired pressure equipment in terms of type and use.
- Range unfired pressure equipment may include but is not limited to – columns, accumulators, separators, knockout drums, air receivers, storage cylinders, reactors, evaporators, digesters; evidence of five types is required.
- 1.2 Describe materials used for the construction of unfired pressure equipment in terms of process conditions and product compatibility.
- Range materials may include but are not limited to – copper, copper alloys, mild steel, alloy steels; evidence for the five types of equipment identified in 1.1 is required.
- 1.3 Describe internal features of unfired pressure vessels in terms of function and operating concepts.
- Range internal features may include but are not limited to – impingement plates, deflectors, standpipes, boots, wells, demister pads, compensation plates; evidence of the five types of equipment identified in 1.1 is required.

Outcome 2

Demonstrate knowledge of on-site unfired pressure equipment.

Performance criteria

- 2.1 Identify and describe unfired pressure equipment to be operated in terms of its function.
- 2.2 Identify and describe equipment malfunctions that can occur in unfired pressure equipment in terms of operational steps and techniques used to respond to each malfunction.
- Range evidence of one malfunction for each piece of equipment is required.

- 2.3 Identify and describe deviations from normal operating parameters that can occur in unfired pressure equipment in terms of operational steps and techniques used to respond to each deviation.

Range evidence of one deviation from normal operating parameters for each piece of equipment is required.

Outcome 3

Locate and operate unfired pressure equipment in an energy and chemical plant.

Performance criteria

- 3.1 Identify the location of unfired pressure equipment in accordance with the site-specific identification coding system and organisational requirements.

Range evidence of a minimum of two pieces of equipment is required.

- 3.2 Operate unfired pressure equipment using safe work practices in accordance with organisational requirements.

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

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

Planned review date	31 December 2024
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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	N/A

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>.

Comments on this unit standard

Please contact the Primary Industry Training Organisation standards@primaryito.ac.nz if you wish to suggest changes to the content of this unit standard.