

40443 Perform boiler plant operations

Kaupae Level	4
Whiwhinga Credit	15
Whāinga Purpose	<p>This skill standard is intended for people working towards becoming a 'Qualified Operator', responsible for the continuous or periodic supervision of limited attendance or unattended boiler operations as per the Code of Practice.</p> <p>People credited with this skill standard are able to describe: the requirements of the Code; a boiler plant; and operational procedures for a boiler plant. They are also able to operate; monitor, and control a boiler plant using safe work practices.</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
1. Describe the requirements of the Code.	a. Describe industry requirements for quality systems in accordance with the Code.
	b. Describe boiler classifications in accordance with the Code.
	c. Identify site boiler classification, compliance and site requirements to operate a limited attendance boiler in accordance with the Code.
	d. Describe the key roles of a Qualified Operator in accordance with the Code.
	e. Describe site specific safety and environmental procedures associated with the boiler in accordance with the Code.
	f. Describe on site procedures for accessing appropriate assistance in an emergency in accordance with the Code.

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
2. Describe a boiler plant.	a. Identify boiler equipment in terms of its design and describe its operating principles and purpose.
	b. Explain returned condensate systems in terms of benefits and hazards.
	c. Describe data on the boiler visual display panel in terms of the boiler and auxiliary equipment operating status.
	d. Describe inputs to the boiler alarms and trips in terms of their purpose and settings.
3. Describe operational procedures for a boiler plant.	a. Describe the operational steps and techniques used to optimise boiler efficiency in terms of responses to plant factors.
	b. Identify emergency shutdown devices and describe their use to safeguard the boiler.
	c. Describe boiler plant isolation for maintenance in terms of the process.
4. Operate a boiler plant using safe work practices.	a. Complete pre-start checks in accordance with organisational requirements.
	b. Start up the boiler plant and bring online in accordance with organisational requirements.
	c. Operate boiler gauge glasses and carry out the gauge glass blowdown procedure in accordance with organisational requirements.
	d. Carry out checks and routine procedures in accordance with organisational requirements.
	e. Manage and prepare boiler water chemicals in accordance with organisational requirements.
	f. Carry out boiler water chemical treatment in accordance with organisational requirements.

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
5. Monitor and control a boiler plant.	a. Monitor boiler and auxiliary equipment, and document and interpret information in accordance with organisational requirements.
	b. Identify and record deviations from normal operating conditions in accordance with organisational requirements.
	c. Take corrective actions to return to normal operating conditions and record actions in accordance with organisational requirements.
	d. Take, analyse and record boiler water samples in accordance with organisational requirements.
	e. Take corrective actions to return to normal operating conditions and record actions in accordance with organisational requirements for boiler water sample deviations.

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 should be aligned with the competencies outlined by the statutory safety inspector and the Approved Code of Practice.
- 1b: classifications include but are not limited to – attended, limited attendance, unattended, hot water.
- 1c: site requirements – supervisory and attendance.
- 1d: evidence of at least three (3) roles is required.
- 1f: On-Call qualified operator, approved maintenance contractor, boiler controller; evidence of at least three (3) types of assistance is required.
- 2b: evidence of two (2) benefits and two (2) hazards is required.
- 2d: evidence of five (5) critical or primary alarms is required.
- 4b: evidence of three (3) start-ups is required.
- 5b: evidence of five (5) deviations is required.

The Environmental Protection Authority (EPA) is responsible for assessing and approving hazardous substances and, where appropriate, setting controls on the way the substance is used.

Definitions:

Boiler means a device – (i) Most of which is an arrangement of pressure containment parts; and (ii) The purpose of which is to generate steam - (A) By the use of a directly applied combustion process; or (B) By the application of heated gases; and (C) Includes any of the following: (i) Boiler piping: (ii) Combustion equipment: (iii) Combustion management systems: (iv) Controls: (v) Economisers: (vi) Fans: (vii) Feed and circulating pumps: (viii) Pressure fittings: (ix) Reheaters: (x) Superheaters: (xi) Supports: (xii) Water level management systems; but does not include a hot water boiler.

Code refers to the current Approved Code of Practice for the Design, Safe Operation, Maintenance and Servicing of Boilers, Occupational Safety and Health Service, 2000.

Organisational requirements – documented policies and procedures or other directions provided to staff for boiler start up, operation, and shut down. These may include: manufacturers' procedures; plant procedures; suppliers' instructions; site signage; legislative requirements; codes of practice; company health and safety plans; on site briefings; and supervisor's instructions.

Regulations refers to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Site boiler refers to the boiler at the plant or unit at which the person is employed.

Ngā momo whiwhinga | Grades available

Achieved

Ihirangi waitohu | Indicative content

- Key roles of a 'Qualified Operator', such as – general supervision, routine testing requirements for subject boiler, feedwater quality monitoring, record maintenance, start-up and shutdown operations, and emergency procedures.
- Boiler equipment, such as – instrumentation, fuel system, burners, fans, valves, dosing system, feedwater system, combustion air system.
- Plant factors, such as – fuel supply and quality, water supply and quality, downstream demand variation, combustion, flue gas temperature and composition.
- Boiler plant isolation, such as – primary isolation points: Power, fuel, Feed, Steam and Drainage.

Rauemi | Resources

Legislation and the code relevant to this skill standard includes but is not limited to:

- Health and Safety at Work Act 2015;
 - Health and Safety in Employment Pressure Equipment Cranes and Passenger Ropeways Regulations 1999.
 - Resource Management Act 1991(RMA);
 - Hazardous Substances and New Organisms Act 1996;
 - *Approved Code of Practice for the Design, Safe Operation, Maintenance and Servicing of Boilers*, Occupational Health and Safety Service, 2000;
- and any subsequent amendments.

Pārongo Whakaū Kouna | 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	24 April 2025	N/A
Kōrero whakakapinga Replacement information	This skill standard replaced unit standard 21463.		
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.