

National Certificate in Energy and Chemical Plant (Boiler Operation) (Level 2)

Level	2
Credits	42

Purpose

The National Certificate in Energy and Chemical Plant (Boiler Operation) (Level 2) [Ref: 1342] is designed to meet the legal level of competency required for people operating pressure plant up to 20MW. It recognises the skills and knowledge required by people who are responsible for the operation of a boiler of limited attended, fully attended, or unattended type. The compulsory section recognises safety skills required for boiler operation and knowledge of boiler theory. The elective section enables candidates to select further supporting skills required in their workplace.

The compulsory section of this qualification shares common safety and environmental standards with the National Certificate in Energy and Chemical Plant (Process Operation) (Level 2) with optional strands in Petrochemical Industry; Kraft Pulp and Chemical Operations; and Kraft Liquor Evaporation [Ref: 1343]. This will allow the transfer of these industry generic skills into the broader Energy and Chemical industry.

People who have completed this qualification can continue on a career pathway to the National Certificate in Energy and Chemical Plant (Process Operations) (Level 2) with optional strands in Petrochemical Industry; Kraft Pulp and Chemical Operations; and Kraft Liquor Evaporation [Ref: 1343], and from that platform to the National Certificate in Energy and Chemical Plant (Process Operation) with optional strands in Steam Generation; Turbine Operations; Waste Treatment; Refrigeration; Chemical Continuous Process; Chemical Batch Process; Solid Handling; Petrochemical Field Operations; Petrochemical Control Room Operations; Petrochemical Production Storage; Kraft Cycle Operations; Kraft Bleach and Chemical Operations; and Kraft Pulping and Chemical Plant [Ref: 1344].

Special Notes

It is recommended that candidates possess knowledge in general educational areas of mathematics, chemistry, and physics. Evidence of that knowledge might be demonstrated by achievement in those subjects through credits at level 2 or above. This knowledge will allow the development of skills relating to the handling and preparation of chemicals, the relating of the knowledge to the operation of boiler systems, and the chemistry of pollutants.

Credit Range

	Compulsory	Elective
Level 1 credits	-	0-1
Level 2 credits	33	0-6
Level 3 credits	5	0-5
Level 4 credits	-	0-8
Minimum totals	38	4

Requirements for Award of Qualification

- Compulsory standards
- Elective – A minimum of 4 credits as specified

Award of NQF Qualifications

Credit gained for a standard may be used only once to meet the requirements of this qualification.

Unit standards and achievement standards that are equivalent in outcome are mutually exclusive for the purpose of award. The table of mutually exclusive standards is provided in section 7 of the New Zealand Qualifications Authority (NZQA) *Rules and Procedures* publications available at <http://www.nzqa.govt.nz/ncea/acrp/index.html>.

Reviewed standards that continue to recognise the same overall outcome are registered as new versions and retain their identification number (ID). Any version of a standard with the same ID may be used to meet qualification requirements that list the ID and/or that specify the past or current classification of the standard.

Detailed Requirements

Compulsory

The following standards are required

Manufacturing > Energy and Chemical Plant > Operation of Energy and Chemical Plant

Id	Title	Level	Credit
21461	Demonstrate knowledge of the basic principles of steam generation and of combustion theory	2	6
21462	Demonstrate knowledge of the basic equipment and systems used for steam generation	2	8
21463	Operate and monitor a boiler up to 20 MW	2	6

Manufacturing > Energy and Chemical Plant > Safety and Legislation for Energy and Chemical Plant

Id	Title	Level	Credit
3046	Operate energy and chemical plant fire safety equipment	3	5
21468	Demonstrate knowledge of energy and chemical plant pollutants and their control measures	2	5
21469	Operate energy and chemical plant personnel safety systems	2	5

Id	Title	Level	Credit
21470	Identify boiler house chemicals and explain their safety procedures	2	3

Elective

A minimum of 4 credits

Health > Occupational Health and Safety > Occupational Health and Safety Practice

Id	Title	Level	Credit
497	Protect health and safety in the workplace	1	1
20645	Describe the requirements of the HSNO Act 1996 relevant to approved handlers	3	3

Manufacturing > Energy and Chemical Plant > Monitoring of Energy and Chemical Plant

Id	Title	Level	Credit
3054	Read and interpret instruments used on energy and chemical plant	3	5
21452	Monitor energy and chemical plant and processes	3	5

Manufacturing > Energy and Chemical Plant > Operation of Energy and Chemical Plant

Id	Title	Level	Credit
3032	Operate valves on energy and chemical plant	4	8
17603	Demonstrate knowledge of properties of raw water and its uses in energy and chemical plant	2	6
21460	Meet requirements of person responsible for an unattended boiler	3	8
21464	Demonstrate knowledge of basic thermodynamics and measurement for energy and chemical plant	3	6
21465	Operate pumps on energy and chemical plant	4	8

Manufacturing > Energy and Chemical Plant > Safety and Legislation for Energy and Chemical Plant

Id	Title	Level	Credit
21467	Store and handle chemicals for energy and chemical plant	3	8

Transition Arrangements

This qualification contains standards that replace earlier standards. For the purposes of this qualification, people who have gained credit for the expiring standards are exempt from the requirement to gain credit for the replacement standards – see table below.

Credit for	Exempt from
3033	21465, 21466
3059	21452
3062, 3063	21467
3065	21468
3067	21469
4554, 4555, 16297, 16298, 16299	21461, 21462, 21463
16296	21460

NQF Registration Information

Process	Version	Date	Last Date for Assessment
Registration	1	December 2007	N/A

Standard Setting Body

NZ Extractive Industries Training Organisation
PO Box 2623
CHRISTCHURCH

Telephone 03 964 4710
Email info@exito.org.nz

Planned review

Any person or organisation may contribute to the review of this qualification by sending feedback to the standard setting body at the above address.

Next Review	2011
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Other standard setting bodies whose standards are included in the qualification

New Zealand Industry Training Organisation

Certification

The certificate will display the logos of NZQA and the awarding ITO (Electricity Supply Industry Training Organisation, Forest Industries Training and Education Council, New Zealand Extractive Industries Training Organisation, or New Zealand Industry Training Organisation).

Classification

This qualification is classified according to the NQF classification system and the New Zealand Standard Classification of Education (NZSCED) system as specified below.

NQF Classification		NZSCED	
Code	Description	Code	Description
282	Manufacturing > Energy and Chemical Plant	030301	Engineering and Related Technologies > Process and Resources Engineering > Chemical Engineering

Quality Management Systems

Providers and Industry Training Organisations must be accredited by a recognised Quality Assurance Body before they can register credits from assessment against standards. Accredited providers and Industry Training Organisations assessing against standards must engage with the moderation system that applies to those standards. Accreditation requirements and the moderation system are outlined in the associated Accreditation and Moderation Action Plan (AMAP) for each standard.