

National Certificate in Energy and Chemical Plant (Process Operation) (Level 2) with optional strands in Steam Generation, Ancillary Operations, Geothermal, Waste Treatment, and Co-generation

Level	2
Credits	59

This qualification is **expiring**. The last date to meet the requirements is 31 December 2010.

Purpose

The holder of this qualification has the background knowledge and competence to operate and monitor equipment (up to 20 Megawatts) used in an energy and chemical environment in a safe manner.

It recognises the skill and expertise of those working in roles such as boiler operators and petrochemical process operators. Those roles can include all or some of the following: steam generation (up to 20 Megawatts), water treatment, hydrocarbon processing, and electrical generation in industries including petrochemical, power generation (up to 20 Megawatts), dairy processing, meat processing, timber processing and other steam users.

The limitation of up to 20 Megawatts, applicable to steam and power generation, is applied to enable those persons who work with *low pressure* vessels and *lower power generation* equipment in this industry to achieve a qualification.

The qualification stands in its own right and is intended to lead to the National Certificate in Energy and Chemical Plant (Process Operations) (Level 4) with optional strands in refrigeration, Steam Generation, Ancillary Operations, Geothermal, Waste Treatment, and Co-generation [Ref: 0141].

Replacement Information

This qualification and the National Certificate in Petrochemical Industry (Core) (Level 2) [Ref: 0977] have been replaced by the National Certificate in Energy and Chemical Plant (Process Operation) (Level 2) with optional strands in Petrochemical Industry; Kraft Pulp and Chemical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].

Credit Range

	Core Compulsory	Steam Generation Optional Strand	Ancillary Operations Optional Strand
Level 2 credits	37	20	0-45
Level 3 credits	22	-	0-7
Level 4 credits	-	-	0-43
Minimum totals	59	20	6
Qualification total with strands	-	79	65

	Geothermal Optional Strand	Waste Treatment Optional Strand	Co-generation Optional Strand
Level 2 credits	19	-	26
Level 3 credits	-	-	3
Level 4 credits	14	16-32	-
Minimum totals	33	16	29
Qualification total with strands	92	75	88

Requirements for Award of Qualification

This qualification will be awarded to people who have met the requirements of the core compulsory section. The following optional strands will be awarded to people who also meet the strand requirements.

- Steam Generation Optional Strand
- Ancillary Operations Optional Strand
- Geothermal Optional Strand
- Waste Treatment Optional Strand
- Co-generation Optional Strand

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

Core Compulsory

The following standards are required

Humanities > Communication Skills > Interpersonal Communications

Id	Title	Level	Credit
1277	Communicate information in a specified workplace	2	3

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

Id	Title	Level	Credit
3054	Read and interpret instruments used in an energy and chemical environment	2	5
3055	Cross check information and monitor trends in an energy and chemical environment	3	2
3056	Respond to process alarm systems in an energy and chemical environment	3	6
3057	Monitor customer requirements in an energy and chemical environment	3	2
3059	Monitor plant in an energy and chemical environment	2	3
3061	Maintain record management in an energy and chemical environment	2	2

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

Id	Title	Level	Credit
3046	Operate fire safety equipment in an energy and chemical environment	3	5
3047	Interpret process drawings in an energy and chemical environment	3	2
4553	Operate common pumps, compressors and fans in a chemical and energy environment	2	5
4556	Operate pipework and fittings in an energy and chemical environment	2	4
4559	Operate common valves in an energy and chemical environment	2	3
5868	Operate two way communication equipment in an energy and chemical environment	2	1

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

Id	Title	Level	Credit
3062	Identify, handle and store chemicals in an energy and chemical environment	3	5
3065	Demonstrate knowledge of pollutants and their control measures in an energy and chemical environment	2	3

Id	Title	Level	Credit
3067	Operate personnel safety systems applying to hazardous areas in an energy and chemical environment	2	4
3068	Demonstrate knowledge of specified legislation in an energy and chemical environment	2	4

Steam Generation Optional Strand

The following standards are required

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

Id	Title	Level	Credit
4554	Operate fired pressure equipment (under 20Mw) in an energy and chemical environment	2	6
4555	Operate steam generation equipment (under 20Mw) used in an energy and chemical environment	2	8
4557	Operate boiler feed water treatment systems (under 20Mw) in an energy and chemical environment	2	6

Ancillary Operations Optional Strand

A minimum of 6 credits

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

Id	Title	Level	Credit
3060	Take product samples in an energy and chemical environment	2	3

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

Id	Title	Level	Credit
3036	Operate unfired pressure equipment in an energy and chemical environment	2	4
3040	Operate raw water treatment systems in an energy and chemical environment	4	12
3044	Operate steam turbines in an energy and chemical environment	4	14
3045	Operate solid handling systems in an energy and chemical environment	3	4
3048	Operate product storage equipment in an energy and chemical environment	4	4
3052	Operate auxiliary internal combustion engines in an energy and chemical environment	2	4
3053	Operate gas turbines in an energy and chemical environment	3	3
4558	Operate steam turbines (under 20Mw) in an energy and chemical environment	2	6
5869	Operate refrigeration equipment in an energy and chemical environment	2	6

Id	Title	Level	Credit
17603	Demonstrate knowledge, in an energy and chemical environment, of properties and uses of raw water	2	6
17605	Demonstrate knowledge of air conditioning systems in an energy and chemical environment	2	8
17606	Operate and maintain refrigerated air conditioning equipment in an energy and chemical environment	4	10
17609	Operate geothermal binary turbines in the energy and chemical industry	2	8

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

Id	Title	Level	Credit
3064	Control chemical reactions in an energy and chemical environment	4	3

Geothermal Optional Strand

The following standards are required

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

Id	Title	Level	Credit
3036	Operate unfired pressure equipment in an energy and chemical environment	2	4
3044	Operate steam turbines in an energy and chemical environment	4	14
4558	Operate steam turbines (under 20Mw) in an energy and chemical environment	2	6
17607	Operate geothermal steamfield equipment and processes	2	9

Waste Treatment Optional Strand

A minimum of 16 credits

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

Id	Title	Level	Credit
17604	Operate primary treatment systems for effluent water in an energy and chemical environment	4	8
17608	Operate sludge treatment systems for effluent water in an energy and chemical environment	4	8
17610	Operate pretreatment systems for effluent water in an energy and chemical environment	4	8
17611	Operate biological treatment systems for effluent water in an energy and chemical environment	4	8

Co-generation Optional Strand

The following standards are required

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

Id	Title	Level	Credit
3053	Operate gas turbines in an energy and chemical environment	3	3
4554	Operate fired pressure equipment (under 20Mw) in an energy and chemical environment	2	6
4555	Operate steam generation equipment (under 20Mw) used in an energy and chemical environment	2	8
4557	Operate boiler feed water treatment systems (under 20Mw) in an energy and chemical environment	2	6
4558	Operate steam turbines (under 20Mw) in an energy and chemical environment	2	6

Transition Arrangements

Version 4 was issued to indicate that this qualification is expiring. This qualification and the National Certificate in Petrochemical Industry (Core) (Level 2) [Ref: 0977] have been replaced by 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].

For detailed information see [Review Summaries](#) on the NZQA website.

Previous versions of the qualification

Version 3

This qualification was issued as version 3 in July 2002 to take into account the change of responsibility for the Energy and Chemical Plant unit standards and qualifications from the New Zealand Industry Training Organisation to the Gas and Petrochemical Industry Training Organisation. No changes were made to the structure and content of the qualification.

Version 2

This qualification was reviewed and issued as version 2 in May 2001 to take into account the review of the Energy and Chemical Plant unit standards and to include new strands in the structure of the qualification.

Changes to structure and content

- new strands in Ancillary Operations, Geothermal, Waste Treatment, and Co-generation added, as reflected by the title;
- Refrigeration strand removed and unit standard 5869 has become part of the Ancillary Processes strand;
- titles and credit values of reviewed Energy and Chemical Plant unit standards updated;
- minimum credit total increased from 53 to 59;
- entry information updated;
- transition arrangements updated.

People working towards version 1 of this qualification could have either completed the requirements for that version or transferred existing credits to version 2 of the qualification. The last date for people to have completed version 1 was 31 December 2002.

Any person who seeks further clarification of these transition arrangements should contact either:

NZ Extractive Industries Training Organisation
 PO Box 2623
 CHRISTCHURCH
 Telephone: 03 964 4710
 Email: info@exito.org.nz

or

Department of Labour
 Occupational Safety and Health Service
 PO Box 3705
 WELLINGTON
 Telephone: 04 915 4433
 Fax: 04 915 4370
 Email: bryn.george@osh.dol.govt.nz

Version 1

Non National Qualifications Framework transition

The National Certificate in Energy and Chemical Plant (Process Operation) (Level 2) [Ref: 0140] and the National Certificate in Energy and Chemical Plant (Process Operation) (Level 4) [Ref: 0141] replaced the Boiler Attendant's Certificate, the Second Class Engine Driver's Certificate, and the First Class Engine Driver's Certificate in 1996.

Transition arrangements from the former to the replacement qualifications expired in December 1998.

NQT Registration Information

Process	Version	Date	Last Date for Assessment
Registration	1	January 1996	December 2002
Review	2	May 2001	December 2010
Revision	3	July 2002	December 2010
Review	4	December 2007	December 2010

Standard Setting Body

NZ Extractive Industries Training Organisation
 PO Box 2623
 CHRISTCHURCH

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

Other standard setting bodies whose standards are included in the qualification

NZQA

Certification

The certificate will display the logos of NZQA and the NZ Extractive Industries 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	0303	Engineering and Related Technologies > Process and Resources 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.