

## **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**

**Level** 3 or 4

**Credits** 40

### **Purpose**

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] recognises the competence, knowledge, and skills of a competent operator in the Energy and Chemical industry. The qualification has a compulsory core designed to develop a range of advanced operational skills and knowledge, required by all operators at this level in the Energy and Chemical industries. The core qualification can therefore be gained without the optional strands.

Industries including petrochemical, dairy processing, meat processing, and wood fibre manufacturing have added optional strands to this core qualification to reflect the skills and knowledge required of competent chemical plant operators in their respective industries.

### **Replacement Information**

This qualification replaced the National Certificate in Energy and Chemical Plant (Process Operation) (Level 4) with optional strands in Refrigeration, Steam Generation, Ancillary Operations, Geothermal, Waste Treatment, and Co-generation [Ref: 0141], and the National Certificate in Petrochemical Industry (Production) (Level 4) with strands in Control Room Operations; Field Operations; Steam Generation; Storage, Transmission and Transfer; and Supervision and Quality [Ref: 0981].

### **Special Notes**

Prerequisite for Steam Generation Optional Strand:

- National Certificate in Energy and Chemical Plant (Boiler Operation) (Level 2) [Ref: 1342 **and** the National Certificate in Energy and Chemical Plant (Process Operation) (Level 2) with optional strands [Ref: 1343]

OR

- the National Certificate in Energy and Chemical Plant (Process Operation – Boiler Attendant) (Level 2) [Ref: 0775], **and** the National Certificate in Energy and Chemical Plant (Process Operation) (Level 2) with the optional strand in Steam Generation, [Ref: 0140].

It is recommended that prior to achievement of the Petrochemical Field Operations Optional Strand of this qualification candidates have demonstrated competence in Petrochemical Operations. This may be evidenced by achievement of the Petrochemical Industry Optional Strand of the National Certificate in Energy and Chemical Plant (Process Operations) (Level 2) with optional strands [Ref: 1343]; or demonstration of equivalent knowledge and skills.

It is recommended that prior to achievement of the Petrochemical Control Room Operations and/or the Petrochemical Product Storage optional strands of this qualification candidates have demonstrated competence in field operations. This may be evidenced by achievement of the Petrochemical Field Operations Optional Strand of this qualification; or demonstration of equivalent knowledge and skills.

### Credit Range

	<b>Compulsory</b>
Level 3 credits	9
Level 4 or above credits	31
Minimum totals	40
Level	3

	<b>Steam Generation Optional Strand</b>	<b>Turbine Operations Optional Strand</b>	<b>Waste Treatment Optional Strand</b>
Level 2 credits	-	0-14	-
Level 3 credits	-	0-3	-
Level 4 credits	50	0-14	16
Minimum totals	50	14	16
Level with strand	4	3	4
Qualification totals	90	54	56

	<b>Refrigeration Optional Strand</b>	<b>Chemical Continuous Process Optional Strand</b>
Level 2 credits	-	8
Level 4 credits	10	9
Minimum totals	10	17
Level with strand	4	4
Qualification totals	50	57

	Chemical Batch Process Optional Strand	Solid Handling Optional Strand	Petrochemical Field Operations Optional Strand	
			C	E
Level 2 credits	4	0-2	4	0-5
Level 3 credits	10	0-14	-	0-5
Level 4 or above credits	3	0-14	6	0-5
Minimum totals	17	14	10	5
Level with strand	3	3	3	
Qualification totals	57	54	55	

	Petrochemical Control Room Operations Optional Strand		Petrochemical Production Storage Optional Strand		Kraft Cycle Operations Optional Strand	
	C	E	C	E	C	E
Level 2 credits	-	0-5	-	0-5	-	0-4
Level 3 credits	4	0-5	-	0-5	10	0-15
Level 4 or above credits	24	0-5	10	0-5	-	0-15
Minimum totals	28	5	10	5	10	15
Level with strand	4		4		3	
Qualification totals	73		55		65	

	Kraft Bleach and Chemical Operations Optional Strand		Kraft Pulping and Chemical Plant Optional Strand
	C	E	
Level 3 credits	8	-	0-26
Level 4 or above credits	-	30	0-70
Minimum totals	8	30	70
Level with strand	4		4
Qualification totals	78		110

**Key:**  
 C = Compulsory  
 E = Elective

## Requirements for Award of Qualification

- Compulsory standards

The following strands are optional

- Steam Generation Optional Strand
- Turbine Operations Optional Strand
- Waste Treatment Optional Strand
- Refrigeration Optional Strand
- Chemical Continuous Process Optional Strand
- Chemical Batch Process Optional Strand
- Solid Handling Optional Strand
- Petrochemical Field Operations Optional Strand
- Petrochemical Control Room Operations Optional Strand

- Petrochemical Production Storage Optional Strand
- Kraft Cycle Operations Optional Strand
- Kraft Bleach and Chemical Operations Optional Strand
- Kraft Pulping and Chemical Plant 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**

**Compulsory**

The following standards are required

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

Id	Title	Level	Credit
18426	Demonstrate knowledge of hazards associated with confined space	3	4

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

Id	Title	Level	Credit
3058	Perform gas tests for energy and chemical plant	4	5
21453	Demonstrate knowledge of control systems on energy and chemical plant	4	10

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

Id	Title	Level	Credit
21455	Purge a system on energy and chemical plant	4	4
21457	Isolate and reinstate a section of energy or chemical plant	4	4
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
3046	Operate energy and chemical plant fire safety equipment	3	5

### Steam Generation Optional Strand

The following standards are required

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

Id	Title	Level	Credit
3035	Operate fired pressure equipment (at or above 20 MW) on energy and chemical plant	4	10
3037	Operate steam generation equipment (at or above 20 MW)	4	14
3051	Operate heat exchange equipment on energy and chemical plant	4	6
21456	Operate systems for boiler feedwater treatment	4	12
21466	Operate compressors and fans on energy and chemical plant	4	8

### Turbine Operations Optional Strand

A minimum of 14 credits

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

Id	Title	Level	Credit
3036	Operate unfired pressure equipment on energy and chemical plant	2	4
3053	Operate a gas turbine on energy and chemical plant	3	3
17607	Operate geothermal steamfield equipment and processes	2	9
17609	Operate geothermal binary turbines in the energy and chemical industry	2	8
21458	Operate a steam turbine	4	14

### 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 from energy and chemical plant	4	8
17608	Operate sludge treatment systems for effluent water from energy and chemical plant	4	8
17610	Operate pre-treatment systems for effluent water from energy and chemical plant	4	8
17611	Operate biological treatment systems for effluent water from energy and chemical plant	4	8

**Refrigeration Optional Strand**

The following standard is required

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

Id	Title	Level	Credit
21454	Operate refrigeration equipment with energy and chemical plant	4	10

**Chemical Continuous Process Optional Strand**

The following standards are required

Engineering and Technology > Petrochemical Industry > Petrochemical Process and Product Management

Id	Title	Level	Credit
19418	Demonstrate knowledge of basic chemistry used in petrochemical environments	2	4

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

Id	Title	Level	Credit
3036	Operate unfired pressure equipment on energy and chemical plant	2	4
3051	Operate heat exchange equipment on energy and chemical plant	4	6

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

Id	Title	Level	Credit
3064	Control a chemical reaction in energy and chemical plant	4	3

**Chemical Batch Process Optional Strand**

The following standards are required

Engineering and Technology > Petrochemical Industry > Petrochemical Process and Product Management

Id	Title	Level	Credit
9592	Evaluate performance of batch process and production equipment in a petrochemical environment	3	7
9607	Prepare chemicals for batch production use in a petrochemical environment	3	3
19418	Demonstrate knowledge of basic chemistry used in petrochemical environments	2	4

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

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
3064	Control a chemical reaction in energy and chemical plant	4	3

**Solid Handling Optional Strand**

A minimum of 14 credits

Engineering and Technology > Electricity Supply > Electricity Supply - Thermal Operations and Control

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
17904	Operate coal plant from control room in a thermal electricity generation power station	4	6
17905	Operate coal handling equipment in a thermal electricity generation power station	3	6
17906	Store coal in a thermal electricity generation power station	3	3
17907	Conduct coal sampling in a thermal electricity generation power station	2	1
17908	Operate a weighbridge in a thermal electricity generation power station	3	3
17909	Operate coal and ash plant electrical systems in a thermal electricity generation power station	4	5
17910	Operate an ash plant control room and pump house in a thermal electricity generation power station	4	5
17911	Conduct ash handling in a thermal electricity generation power station	3	5
17912	Operate ash ponds in a thermal electricity generation power station	3	2
17913	Operate a vacuum cleaning plant in a thermal electricity generation power station	2	1

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

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
17599	Plan a confined space entry	4	5

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

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
3045	Operate solid handling systems for energy and chemical plant	3	5
3048	Operate product storage equipment for energy and chemical plant	4	4

**Petrochemical Field Operations Optional Strand**

Meet the requirements of all of the following sets

- Petrochemical Field Operations Optional Strand Compulsory
- Petrochemical Field Operations Optional Strand Elective

**Petrochemical Field Operations Optional Strand Compulsory**

The following standards are required

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

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
3036	Operate unfired pressure equipment on energy and chemical plant	2	4
3051	Operate heat exchange equipment on energy and chemical plant	4	6

**Petrochemical Field Operations Optional Strand Elective**

A minimum of 5 credits

Community and Social Services > Community and Workplace Fire and Emergency Management > Workplace Emergency Risk Management

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
17279	Demonstrate knowledge of the coordinated incident management system (CIMS)	2	2

Community and Social Services > Community and Workplace Fire and Emergency Management > Workplace Fire and Emergency Response

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
16803	Coordinate workplace emergency response team activities in an emergency	5	6

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

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
19341	Demonstrate knowledge of Hazard and Operability (HAZOP) studies in the workplace	4	6

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

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
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

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
3064	Control a chemical reaction in energy and chemical plant	4	3

Field	Subfield	Domain
Engineering and Technology	Petrochemical Industry	Petrochemical Cathodic Protection
		Petrochemical Operations Communication and Responses
		Petrochemical Process and Product Management
		Petrochemical Product Transmission and Transfer

**Petrochemical Control Room Operations Optional Strand**

Meet the requirements of all of the following sets

- Petrochemical Control Room Operations Optional Strand Compulsory
- Petrochemical Control Room Operations Optional Strand Elective

**Petrochemical Control Room Operations Optional Strand Compulsory**

The following standards are required

Engineering and Technology > Petrochemical Industry > Petrochemical Process and Product Management

Id	Title	Level	Credit
9616	Control emergency and unplanned shut downs in a petrochemical environment	5	12
18422	Utilise distributed control systems in a petrochemical environment	3	4
18725	Monitor and analyse processes and respond to deviations in a petrochemical environment	5	12

**Petrochemical Control Room Operations Optional Strand Elective**

A minimum of 5 credits

Community and Social Services > Community and Workplace Fire and Emergency Management > Workplace Emergency Risk Management

Id	Title	Level	Credit
17279	Demonstrate knowledge of the coordinated incident management system (CIMS)	2	2

Community and Social Services > Community and Workplace Fire and Emergency Management > Workplace Fire and Emergency Response

Id	Title	Level	Credit
16803	Coordinate workplace emergency response team activities in an emergency	5	6

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

Id	Title	Level	Credit
19341	Demonstrate knowledge of Hazard and Operability (HAZOP) studies in the workplace	4	6

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

Id	Title	Level	Credit
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
3064	Control a chemical reaction in energy and chemical plant	4	3

Field	Subfield	Domain
Engineering and Technology	Petrochemical Industry	Petrochemical Cathodic Protection
		Petrochemical Operations Communication and Responses
		Petrochemical Process and Product Management
		Petrochemical Product Transmission and Transfer

**Petrochemical Production Storage Optional Strand**

Meet the requirements of all of the following sets

- Petrochemical Production Storage Optional Strand Compulsory
- Petrochemical Production Storage Optional Strand Elective

**Petrochemical Production Storage Optional Strand Compulsory**

The following standards are required

Engineering and Technology > Petrochemical Industry > Petrochemical Product Transmission and Transfer

Id	Title	Level	Credit
9583	Manage product storage and transfer facilities in a petrochemical environment	4	6

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

Id	Title	Level	Credit
3048	Operate product storage equipment for energy and chemical plant	4	4

**Petrochemical Production Storage Optional Strand Elective**

A minimum of 5 credits

Community and Social Services > Community and Workplace Fire and Emergency Management > Workplace Emergency Risk Management

Id	Title	Level	Credit
17279	Demonstrate knowledge of the coordinated incident management system (CIMS)	2	2

Community and Social Services > Community and Workplace Fire and Emergency Management > Workplace Fire and Emergency Response

Id	Title	Level	Credit
16803	Coordinate workplace emergency response team activities in an emergency	5	6

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

Id	Title	Level	Credit
19341	Demonstrate knowledge of Hazard and Operability (HAZOP) studies in the workplace	4	6

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

Id	Title	Level	Credit
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
3064	Control a chemical reaction in energy and chemical plant	4	3

Field	Subfield	Domain
Engineering and Technology	Petrochemical Industry	Petrochemical Cathodic Protection
		Petrochemical Operations Communication and Responses
		Petrochemical Process and Product Management
		Petrochemical Product Transmission and Transfer

**Kraft Cycle Operations Optional Strand**

Meet the requirements of all of the following sets

- Kraft Cycle Operations Optional Strand Compulsory
- Kraft Cycle Operations Optional Strand Elective

**Kraft Cycle Operations Optional Strand Compulsory**

The following standard is required

Manufacturing > Wood Fibre Manufacturing > Pulp and Paper Technology

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
17866	Explain fundamentals of kraft pulps and pulping processes	3	10

**Kraft Cycle Operations Optional Strand Elective**

A minimum of 15 credits

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

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
3048	Operate product storage equipment for energy and chemical plant	4	4
3052	Operate an auxiliary internal combustion engine on an energy and chemical plant	2	4

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

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
3064	Control a chemical reaction in energy and chemical plant	4	3

Manufacturing > Wood Fibre Manufacturing > Pulp and Paper - Chemical Plants

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
3617	Clarify liquor for wood pulp manufacturing	3	3
3618	Slake lime and regenerate liquor for wood pulp manufacturing	3	5
3619	Control chemical recovery boiler systems for wood pulp manufacturing	5	20
3625	Operate and acid wash a white liquor pressure filter for wood pulp manufacturing	3	8
3626	Manufacture burnt lime for kraft liquor production in a pulp and paper plant	3	5
3627	Filter lime mud for burnt lime manufacture in a pulp and paper plant	3	3
21495	Operate a waste gas system in a kraft pulp chemical plant	3	5

Manufacturing > Wood Fibre Manufacturing > Pulp and Paper Manufacturing Skills

<b>Id</b>	<b>Title</b>	<b>Level</b>	<b>Credit</b>
3509	Clean furnish	3	5
3518	Control a pulp storage system in the pulp and paper manufacturing industry	3	5

Id	Title	Level	Credit
15829	Screen furnish	3	5

Manufacturing > Wood Fibre Manufacturing > Pulp Making

Id	Title	Level	Credit
3559	Delignify wood pulp with oxygen	4	10
21486	Wash wood pulp	3	5

**Kraft Bleach and Chemical Operations Optional Strand**

Meet the requirements of all of the following sets

- Kraft Bleach and Chemical Operations Optional Strand Compulsory
- Kraft Bleach and Chemical Operations Optional Strand Elective

**Kraft Bleach and Chemical Operations Optional Strand Compulsory**

The following standard is required

Manufacturing > Wood Fibre Manufacturing > Pulp and Paper Technology

Id	Title	Level	Credit
17867	Explain fundamentals of kraft pulp bleaching	3	8

**Kraft Bleach and Chemical Operations Optional Strand Elective**

A minimum of 30 credits

Manufacturing > Wood Fibre Manufacturing > Pulp and Paper - Chemical Plants

Id	Title	Level	Credit
16292	Manufacture sodium chlorate in a pulp and paper chemical plant	4	15
21492	Generate chlorine dioxide for wood pulp bleaching	4	15

Manufacturing > Wood Fibre Manufacturing > Pulp Making

Id	Title	Level	Credit
3547	Bleach kraft pulp in wood pulp manufacturing	4	30
3559	Delignify wood pulp with oxygen	4	10
21488	Empty and restart a kraft bleach plant in a pulp manufacturing operation	5	30

## Kraft Pulping and Chemical Plant Optional Strand

A minimum of 70 credits

### Manufacturing > Wood Fibre Manufacturing > Pulp and Paper - Chemical Plants

Id	Title	Level	Credit
15823	Prepare, test, and wash electrolyzers for pulp and paper chemical plant production	4	10
16287	Prepare purified brine for electrolysis in pulp and paper chemical plants	4	10
21493	Manufacture sodium hydroxide and chlorine products for pulp bleaching	4	30
21494	Shut for maintenance and restart a chlorine-based chemical plant in pulp manufacturing	5	20

### Manufacturing > Wood Fibre Manufacturing > Pulp and Paper Technology

Id	Title	Level	Credit
17866	Explain fundamentals of kraft pulps and pulping processes	3	10
17867	Explain fundamentals of kraft pulp bleaching	3	8

### Manufacturing > Wood Fibre Manufacturing > Pulp Making

Id	Title	Level	Credit
3555	Digest wood chips	4	30
21486	Wash wood pulp	3	5
21487	Empty and restart a continuous digester in a pulp manufacturing operation	5	30
22983	Troubleshoot pulp making operations	4	20

### Manufacturing > Wood Handling and Distribution > Wood Preparation

Id	Title	Level	Credit
3544	Wash wood chips for further processing	3	3

## Transition Arrangements

This qualification replaced the National Certificate in Energy and Chemical Plant (Process Operation) (Level 4) with optional strands in Refrigeration, Steam Generation, Ancillary Operations, Geothermal, Waste Treatment, and Co-generation [Ref: 0141], and National Certificate in Petrochemical Industry (Production) (Level 4) with strands in Control Room Operations; Field Operations; Steam Generation; Storage, Transmission and Transfer; and Supervision and Quality [Ref: 0981].

There are differences between the new and replaced qualifications. Changes include:

- the compulsory section is common to all industries in the new qualification
- further optional strands in Chemical Continuous Process, Chemical Batch Process, Kraft Bleach and Chemical Operations, and Kraft Pulping and Chemical Plant have been added to the new qualification.

### **Steam Generation Optional Strand**

- replaces the Steam Generation Optional Strand of the National Certificate Energy and Chemical Plant (Process Operation) (Level 4) with optional strands [Ref: 0141], and the Steam Generation Strand of the National Certificate in Petrochemical Industry (Production) (Level 4) with strands [Ref: 0981]
- standards 3051 and 21466 have been added to the strand
- standard 3041 was replaced by standard 21456
- the elective section in this strand of the National Certificate in Petrochemical Industry (Production) (Level 4) with strands [Ref: 0981] is replaced by other strands on the new qualification.

### **Petrochemical Field Operations Optional Strand**

- replaces the National Certificate in Petrochemical Industry (Production) (Level 4) with the Field Operations Strand [Ref: 0981]
- standards 3049, 3063, 3066, 8085, 9696, and 11101 were deleted
- standards 9518, 9603, and 9624 were moved to the strand elective section
- standard 3032 was moved to the National Certificate in Energy and Chemical Plant (Process Operation) (Level 2) with optional strands [Ref: 1343]
- standards 3033, 3039, 3043, and 3050 were replaced by standards 21465, 21455, 21457, and 21453 respectively
- the elective section in this strand of the National Certificate in Petrochemical Industry (Production) (Level 4) with strands [Ref: 0981] is replaced by other strands in the new qualification.

### **Petrochemical Control Room Optional Strand**

- replaces the National Certificate in Petrochemical Industry (Production) (Level 4) with the Control Room Operations Strand [Ref: 0981]
- standards 3049, 3063, 3066, 8085, 9696, and 11101 were deleted
- standards 9518, 9603, 9617, and 9624 were moved to the strand elective section
- standard 3032 was moved to the National Certificate in Energy and Chemical Plant (Process Operation) (Level 2) with optional strands [Ref: 1343]
- standards 3033, 3039, 3043, and 3050 were replaced by standards 21465, 21455, 21457, and 21453 respectively
- the elective section in this strand of the National Certificate in Petrochemical Industry (Production) (Level 4) with strands [Ref: 0981] is replaced by other strands in the new qualification.

### **Petrochemical Production Storage Optional Strand**

- replaces the National Certificate in Petrochemical Industry (Production) (Level 4) with the Storage, Transmission and Transfer Strand [Ref: 0981]
- standards 3049, 3063, 3066, 8085, 9696, and 11101 were deleted
- standards 9518, 9603, 9617, and 9624 were moved to the strand elective section
- standard 3032 was moved to the National Certificate in Energy and Chemical Plant (Process Operation) (Level 2) with optional strands [Ref: 1343]

- standards 3033, 3039, 3043, and 3050 were replaced by standards 21465, 21455, 21457, and 21453 respectively
- the elective section in this strand of the National Certificate in Petrochemical Industry (Production) (Level 4) with strands [Ref: 0981] is replaced by other strands in the new qualification.

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

People currently working towards either of the replaced qualifications may complete the requirements for that qualification by 31 December 2010 or transfer their results to the new qualification. The last date for entry to training programmes or courses for the replaced qualifications is December 2008. Assessments for the new qualification can start immediately. The new qualification does not include an optional strand in Supervision and Quality. People working towards the National Certificate in Petrochemical Industry (Production) (Level 4) [Ref: 0981] with the Supervision and Quality Strand will need to complete the requirements for that qualification by 31 December 2010.

It is anticipated that no existing trainees will be disadvantaged by these transition arrangements. Any person who feels they have been disadvantaged by these transition arrangements should contact the New Zealand Extractive Industries Training Organisation at the address below. Appeals will be considered on a case by case basis.

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.

<b>Credit for</b>	<b>Exempt from</b>
3033	21465, 21466
3038	21454
3039	21455
3041	21456
3043	21457
3044, 4558	21458
3056	21453
3556, 15828	21486
4554, 4555, 16297, 16298, 16299	21463
5869	21454
9593, 9594	18725
9595	18422
15822, 15824, 16288, 16290, 16291	21494
16293, 16294	21492

## 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](mailto: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

Electricity Supply Industry Training Organisation  
Fire and Rescue Services Industry Training Organisation  
Forest Industries Training and Education Council (FITEC)  
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

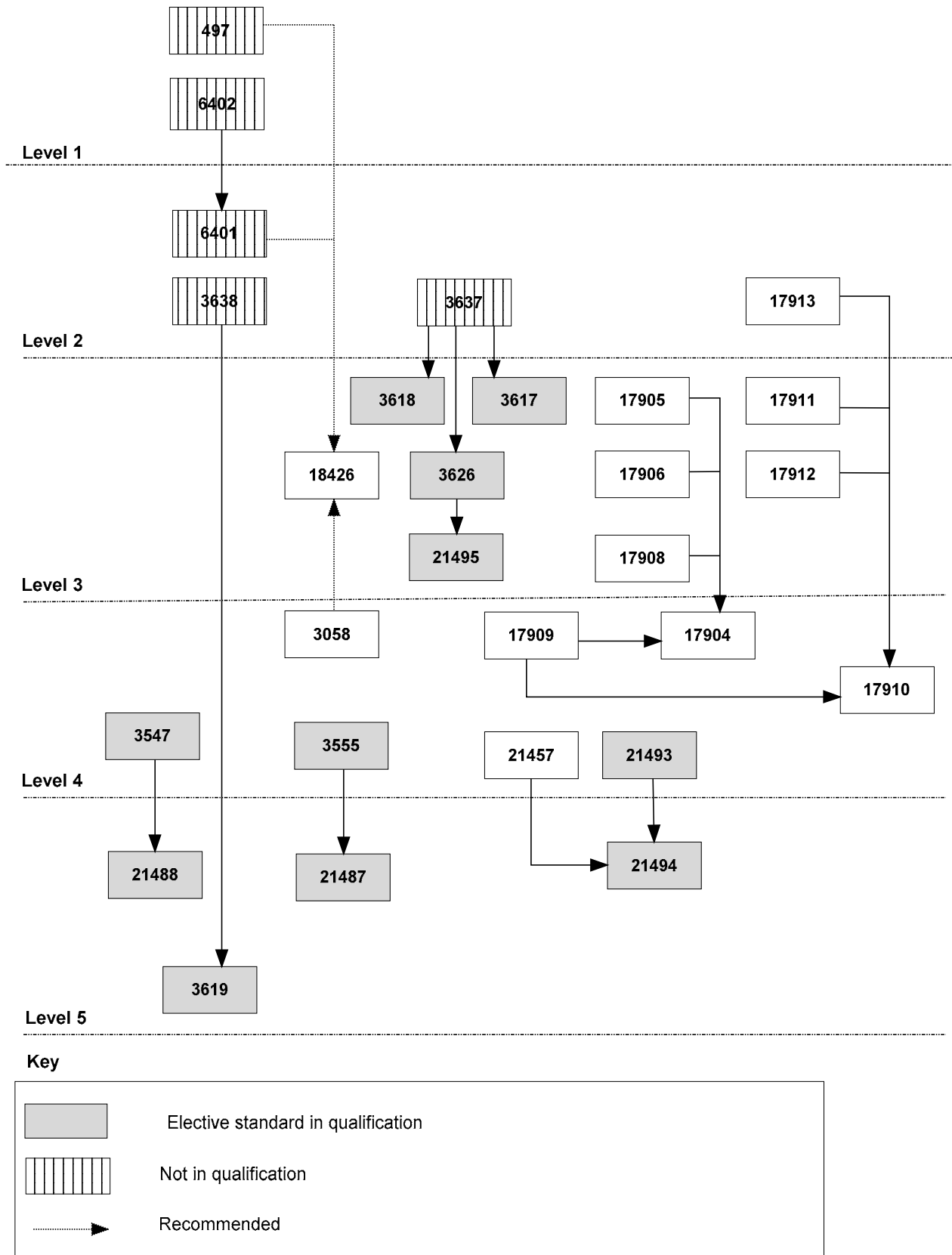
This qualification is classified according to the NQF classification system and the New Zealand Standard Classification of Education (NZSCED) system as specified below.

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.

# Prerequisite Diagram



## Pathways Diagram – Energy and Chemical Plant

