

- unit standard 3033 replaced by unit standards 21465 and 21466; unit standards 3038 and 5869 replaced by unit standard 21454; unit standards 3044 and 4558 replaced by unit standard 21458; unit standards 3062 and 3063 replaced by unit standard 21467; unit standards 4554, 4555, 16297, 16298, and 16299 replaced by unit standards 21461, 21462 and 21463;
- unit standards 3040, 3042, 3049, 3050, 3055, 3057, 3061, 3066, 3068, 4553, 4556, 4557, 4559, 5868, and 16295, designated as expiring;
- title amended on unit standards 3032, 3035, 3036, 3037, 3045, 3047, 3048, 3051, 3052, 3053, 3054, 3058, 3060, 3064, 17603, 17604, 17605, 17606, 17608, 17610, and 17611 to better reflect domain and/or content;
- level revised from 2 to 3 on unit standard 3054 because this standard covers a wider range of contexts and more detailed explanations than the related Level 2 unit standard 19419. For this unit standard the readings are self-directed and the candidates are fully responsible for interpreting them;
- credits amended on unit standard 3032;
- assessment and moderation statements updated;
- references, legislative requirements, and definitions updated;
- editorial changes made for consistency and to meet current technical criteria;
- new unit standards developed to assess knowledge of basic thermodynamics, boiler house chemicals, and pipework and fittings.

Unit standards categorised as category C or D expire at the end of December 2006.

Impact on existing provider accreditations

Current Accreditation for			Accreditation extended to		
Nature of accreditation	Classification or Id	Level	Nature of accreditation	Classification or Id	Level
Domain	Operation of Energy and Chemical Plant	4+	Standard	3046	3
Standard	3033	4	Standards	21465, 21466	4
Standard	3039	4	Standard	21455	4
Standard	3041	4	Standard	21456	4
Standard	3043	4	Standard	21457	4
Standard	3056	3	Standard	21453	4
Standard	3062	3	Standard	21467	3
Standard	3063	3	Standard	21467	3
Standard	3065	2	Standard	21468	2
Standard	3067	2	Standard	21469	2
Standard	4555	2	Standard	21461, 21462, 21463	2
Standard	4556	2	Standard	21459	2
Standard	4558	2	Standard	21458	4
Standard	16297	2	Standards	21461, 21462, 21463	2
Standard	16298	2	Standards	21461, 21462, 21463	2
Standard	16299	2	Standard	21461, 21462, 21463	2

Impact on Accreditation and Moderation Action Plan (AMAP)

None.

Impact on existing qualifications

Qualifications that contain the reviewed standards or classifications are tabled below.

Affected	The qualification lists a reviewed classification (domain or subfield) in an elective set The qualification lists a standard that has changes to level or credits The qualification lists a C or D category standard
Not materially affected	The qualification lists a standard that has a new title The qualification lists a standard that has a new classification

In the following tables, qualifications that contain unit standards in both categories are identified in the *Affected* table with the items that generated the *Affected* status in **bold**.

The following NZ Extractive Industries Training Organisation qualifications are affected by the outcome of this review and are currently being reviewed.

Qualification title	Classification or standard in the qualification
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 [Ref: 0140]	3036, 3040, 3044 , 3045, 3046, 3047, 3048, 3052, 3053, 3054, 3055, 3056, 3057, 3059 , 3060, 3061, 3062 , 3064, 3065, 3067 , 3068, 4553, 4554, 4555, 4556, 4557, 4558, 4559, 5868, 5869 , 17603, 17604, 17605, 17606, 17608, 17610, 17611
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]	3032, 3033 , 3035, 3036, 3037, 3038, 3039, 3040, 3041, 3043, 3044 , 3045, 3048, 3049, 3050, 3051 , 3052, 3053, 3058, 3060, 3061, 3063 , 3064, 3066, 4558 , 17604, 17605, 17606, 17608, 17610, 17611
National Certificate in Energy and Chemical Plant (Process Operation – Boiler Attendant) (Level 2) [Ref: 0775]	3046, 3057, 3059, 3061, 3067, 3068, 4557, 4559, 5868, 16295, 16297, 16298, 16299

The following NZ Extractive Industries Training Organisation qualifications are affected by the outcome of this review and will be reviewed in 2005.

Qualification title	Classification or standard in the qualification
National Diploma in Extractive Industries (Mineral Processing - Metalliferous Gold) [Ref: 0475]	3067
National Certificate in Petrochemical Industry (Core) (Level 2) [Ref: 0977]	3047, 3060, 3062, 3065, 4556, 4559, 5868
National Certificate in Gas Industry (Gas Transmission) (Level 3) [Ref: 0978]	3054

Qualification title	Classification or standard in the qualification
National Certificate in Petrochemical Industry (Production) (Level 3) [Ref: 0980]	3036, 3040 , 3045, 3046, 3048, 3051 , 3052, 3053, 3054 , 3055 , 3056 , 3057 , 3059 , 3061 , 3067 , 3068 , 4554 , 4555 , 4557 , 4558 , 5869
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]	3032 , 3035, 3037, 3038 , 3039 , 3040 , 3041 , 3043 , 3044 , 3045, 3048, 3049 , 3050 , 3052, 3053, 3063 , 3066

The following NZ Extractive Industries Training Organisation qualification is not materially affected by the changes. It will be updated when it is next reviewed.

Qualification title	Standard in the qualification
National Certificate in Gas Industry (Gas Transmission) (Level 4) with strands in Pipeline Operation, and Instrumentation and Electrical [Ref: 0979]	3053

The following qualifications are also affected by the outcome of this review. The standard setting bodies (SSBs) have been advised that they require revision.

It is suggested that the following unit standards be used as replacements for expiring unit standards:

Expiring Unit Standard	Replacement Unit Standard
3043	21457
3062	21467
3063	21467
4555 and 4557	21461 and/or 21462 and/or 21463
4556	21459

Qualification title	Classification or standard in the qualification	SSB Name
National Certificate in Commercial Road Transport (Goods Service) with strands in Heavy Rigid Vehicle Driver, and Heavy Combination Vehicle Driver and optional strands in Dairy Industry Transport, Log Transport, Overdimension and Overweight Load Transport [Ref: 0680]	3062	NZ Road Transport and Logistics ITO
National Certificate in Dairy Manufacturing (Workplace Safety) (Level 3) [Ref: 0740]	3043 , 3046, 3058, 3062 , 3063	NZITO

Qualification title	Classification or standard in the qualification	SSB Name
National Certificate in Dairy Manufacturing (Environmental Systems) (Level 3) [Ref: 1062]	3062	NZITO
National Certificate in Maintenance and Diagnostics in Mechanical Engineering (Level 5) [Ref: 0718]	4555, 4557	Competenz
National Certificate in Materials Processing (Level 2) with strands in General, Plastics Injection Moulding, Plastics Extrusion, Plastics Blow Moulding, Plastics Pressure Thermoforming, Plastics Vacuum Thermoforming, Plastics Blown Film Extrusion, Plastic [Ref: 1073]	4555, 4556	PaMPITO
National Certificate in Materials Processing (Level 3) with strands in General, Expanded Polystyrene Moulding, and Paint Manufacturing [Ref: 1074]	4555	PaMPITO

The following qualifications are not materially affected by the changes. They will be updated when they are next reviewed.

Qualification title	Standard in the qualification	SSB Name
National Certificate in Electricity Supply (Thermal Plant Operator) (Level 4) with strands in Thermal Plant Operations, Combined Cycle Operations, and Co-generation Operations [Ref: 0894]	3045, 3053	Electricity Supply ITO
National Certificate in Wood Panels Manufacturing (Level 4) [Ref: 0254]	3058	Forest Industries Training and Education Council

Summary of main changes to standards' Ids, classification, titles, levels, and credits

The following summary shows the changes made to the standards as a result of the review. All changes are in **bold**.

Key to review category	
A	Dates changed, but no other changes are made - the replacement standard carries the same Id and a new version number
B	Changes made, but the overall outcome remains the same - the replacement standard carries the same Id and a new version number
C	Major changes that necessitate the registration of a replacement standard with a new Id
D	Standard will expire and not be replaced

Subfield Energy and Chemical Plant

Id	Domain	Title	Level	Credit	Review Category
3046	Operation of Energy and Chemical Plant Safety and Legislation for Energy and Chemical Plant	Operate fire safety equipment in an energy and chemical environment Operate energy and chemical plant fire safety equipment	3	5	B

Domain Monitoring of Energy and Chemical Plant

Id	Title	Level	Credit	Review Category
3054	Read and interpret instruments used in an energy and chemical environment Read and interpret instruments used on energy and chemical plant	2 3	5	B
3055	Cross check information and monitor trends in an energy and chemical environment	3	2	D
3056 21453	Respond to process alarm systems in an energy and chemical environment Demonstrate knowledge of control systems on energy and chemical plant	3 4	6 10	C
3057	Monitor customer requirements in an energy and chemical environment	3	2	D
3058	Perform gas tests in an energy and chemical environment Perform gas tests for energy and chemical plant	4	5	B
3059 21452	Monitor plant in an energy and chemical environment Monitor energy and chemical plant and processes	2 3	3 5	C
3060	Take product samples in an energy and chemical environment Take product samples for energy and chemical plant	2	3	B
3061	Maintain record management in an energy and chemical environment	2	2	D

Domain Operation of Energy and Chemical Plant

Id	Title	Level	Credit	Review Category
3032	Operate valves in an energy and chemical environment Operate valves on energy and chemical plant	4	5 8	B

Id	Title	Level	Credit	Review Category
3033 21465 21466	Operate pumps, compressors and fans in a chemical and energy environment Operate pumps on energy and chemical plant Operate compressors and fans on energy and chemical plant	4 4 4	7 8 8	C
3035	Operate fired pressure equipment (above 20 MW) in an energy and chemical environment Operate fired pressure equipment (above 20 MW) on energy and chemical plant	4	10	B
3036	Operate unfired pressure equipment in an energy and chemical environment Operate unfired pressure equipment on energy and chemical plant	2	4	B
3037	Operate steam generation equipment (above 20MW) in an energy and chemical environment Operate steam generation equipment (above 20MW)	4	14	B
3038 and 5869 21454	Operate refrigeration equipment and control processes in an energy and chemical environment Operate refrigeration equipment in an energy and chemical environment Operate refrigeration equipment with energy and chemical plant	4 2 4	10 6 10	C C
3039 21455	Purge systems in an energy and chemical environment Purge a system on energy and chemical plant	4 4	4 4	C
3040	Operate raw water treatment systems in an energy and chemical environment	4	12	D
3041 21456	Operate boiler feed water treatment systems (above 20 MW) in an energy and chemical environment Operate systems for boiler feedwater treatment	4 4	12 12	C
3042	Operate effluent water treatment systems in an energy and chemical environment	4	8	D
3043 21457	Isolate and recommission systems in an energy and chemical environment Isolate and reinstate a section of energy or chemical plant	4 4	4 4	C
3044 and 4558 21458	Operate steam turbines in an energy and chemical environment Operate steam turbines (under 20Mw) in an energy and chemical environment Operate a steam turbine	4 2 4	14 6 14	C C
3045	Operate solid handling systems in an energy and chemical environment Operate solid handling systems for energy and chemical plant	3	4	B

Id	Title	Level	Credit	Review Category
3047	Interpret process drawings in an energy and chemical environment Interpret process drawings for energy and chemical plant	3	2	B
3048	Operate product storage equipment in an energy and chemical environment Operate product storage equipment for energy and chemical plant	4	4	B
3049	Carry out controlled start up and shut down procedures in an energy and chemical environment	4	6	D
3050	Operate control systems in an energy and chemical environment	4	7	D
3051	Operate heat exchange equipment in an energy and chemical environment Operate heat exchange equipment on energy and chemical plant	4	10 6	B
3052	Operate auxiliary internal combustion engines in an energy and chemical environment Operate an auxiliary internal combustion engine on energy and chemical plant	2	4	B
3053	Operate gas turbines in an energy and chemical environment Operate a gas turbine on energy and chemical plant	3	3	B
4553	Operate common pumps, compressors and fans in a chemical and energy environment	2	5	D
4554 and 4555 and 16297 and 16298 and 16299	Operate fired pressure equipment (under 20Mw) in an energy and chemical environment Operate steam generation equipment (under 20Mw) used in an energy and chemical environment Demonstrate knowledge of the basic principles of, and equipment used for, steam generation Demonstrate knowledge of the basic auxiliary equipment and systems used for steam generation	2 2 2 2 2	6 8 6 6 6	C C C C C
21461	Operate and monitor a 1.2 megawatts to 6 megawatts boiler and auxiliary plant	2	6	
21462	Demonstrate knowledge, of the basic principles of steam generation, and of combustion theory	2	8	
21463	Demonstrate knowledge of the basic equipment and systems used for steam generation Operate and monitor a boiler up to 20 MW	2	6	
4556	Operate pipework and fittings in an energy and chemical environment	2	4	D

Id	Title	Level	Credit	Review Category
4557	Operate boiler feed water treatment systems (under 20Mw) in an energy and chemical environment	2	6	D
4559	Operate common valves in an energy and chemical environment	2	3	D
5868	Operate two way communication equipment in an energy and chemical environment	2	1	D
16295	Operate boiler house fire and safety systems	2	3	D
16296 21460	Supervise and monitor an unattended boiler Meet requirements of responsible person for an unattended boiler	2 3	4 8	C
17603	Demonstrate knowledge, in an energy and chemical environment, of properties and uses of raw water Demonstrate knowledge of properties of raw water and its uses in energy and chemical plant	2	6	B
17604	Operate primary treatment systems for effluent water in an energy and chemical environment Operate primary treatment systems for effluent water from energy and chemical plant	4	8	B
17605	Demonstrate knowledge of air conditioning systems in an energy and chemical environment Demonstrate knowledge of air conditioning systems with energy and chemical plant	2	8	B
17606	Operate and maintain refrigerated air conditioning equipment in an energy and chemical environment Operate and maintain refrigerated air conditioning equipment with energy and chemical plant	4	10	B
17607	Operate geothermal steamfield equipment and processes	2	9	B
17608	Operate sludge treatment systems for effluent water in an energy and chemical environment Operate sludge treatment systems for effluent water from energy and chemical plant	4	8	B
17609	Operate geothermal binary turbines in the energy and chemical industry	2	8	B
17610	Operate pretreatment systems for effluent water in an energy and chemical environment Operate pretreatment systems for effluent water from energy and chemical plant	4	8	B
17611	Operate biological treatment systems for effluent water in an energy and chemical environment Operate biological treatment systems for effluent water from energy and chemical plant	4	8	B
21464	Demonstrate knowledge of basic thermodynamics and measurement for energy and chemical plant	3	6	New

Id	Title	Level	Credit	Review Category
21459	Demonstrate knowledge of pipework and fittings on energy and chemical plant	2	4	New

Domain Safety and Legislation for Energy and Chemical Plant

Id	Title	Level	Credit	Review Category
3062 and 3063	Identify, handle and store chemicals in an energy and chemical environment	3	5	C
	Explain chemical spill contingency procedures in an energy and chemical environment	3	3	C
21467	Store and handle chemicals for energy and chemical plant	3	8	
3064	Control chemical reactions in an energy and chemical environment	4	3	B
	Control a chemical reaction in energy and chemical plant			
3065	Demonstrate knowledge of pollutants and their control measures in an energy and chemical environment	2	3	C
21468	Demonstrate knowledge of energy and chemical plant pollutants and their control measures	2	5	
3066	Operate anti-pollution control systems in an energy and chemical environment	4	4	D
3067	Operate personnel safety systems applying to hazardous areas in an energy and chemical environment	2	4	C
21469	Operate energy and chemical plant personnel safety systems	2	5	
3068	Demonstrate knowledge of specified legislation in an energy and chemical environment	2	4	D
21470	Identify boiler house chemicals and explain their safety procedures	2	3	New