

FIELD MANUFACTURING**Revision and Rollover of *Energy and Chemical Plant* unit standards**

This revision report was first published in July 2006. It has been republished to correct the title of unit standard 21459, and show the changes in the title for unit standard 21460. Unit standard 21459 has been published as version 3.

Subfield	Domain	Id
Energy and Chemical Plant	Monitoring of Energy and Chemical Plant	3054, 3058, 3060, 21452, 21453
	Operation of Energy and Chemical Plant	3032, 3035-3037, 3045, 3047, 3048, 3051-3053, 17603-17611, 21454-21462, 21463*, 21464-21466
	Safety and Legislation for Energy and Chemical Plant	3046, 3064, 21467-21470

The NZ Extractive Industries Training Organisation (EXITO) has revised the unit standards listed above.

*Please see subsequent revision of 21463 also published in March 2007.

Date new version of report published	March 2007
Date originally published	July 2006
Planned review date	December 2008 (unchanged)

Reason for the revision and rollover

- Update and/or amend the unit standards as a result of industry feedback.
- The standards have been rolled over to maintain their currency until their planned review.

Main changes resulting from the revision

- The titles have been changed for unit standards 3037, 3047 and 21463.
- The version numbers have been changed.
- Special notes have been updated to include Environmental Risk Management Authority (ERMA) requirements where the Hazardous Substances and New Organisms Act 1996 is included in the unit standards, and to meet NZQA requirements.
- The titles, purpose statements, and elements have been aligned.

Impact on Accreditation and Moderation Action Plan (AMAP)

None.

Impact on existing qualifications

None.

Summary of main changes

All changes are in **bold**

Subfield Energy and Chemical Plant

Domain Monitoring of Energy and Chemical Plant

Id	Title	Level	Credit
3054	Read and interpret instruments used on energy and chemical plant	3	5
3058	Perform gas tests for energy and chemical plant	4	5
3060	Take product samples for energy and chemical plant	2	3
21452	Monitor energy and chemical plant and processes	3	5
21453	Demonstrate knowledge of control systems on energy and chemical plant	4	10

Domain Operation of Energy and Chemical Plant

Id	Title	Level	Credit
3032	Operate valves on energy and chemical plant	4	8
3035	Operate fired pressure equipment (above 20MW) on energy and chemical plant Operate fired pressure equipment (at or above 20 MW) on energy and chemical plant	4	10
3036	Operate unfired pressure equipment on energy and chemical plant	2	4
3037	Operate steam generation equipment (above 20MW) Operate steam generation equipment (at or above 20 MW)	4	14
3045	Operate solid handling systems for energy and chemical plant	3	5
3047	Interpret process drawings for energy and chemical plant Interpret, use, and sketch process drawings for energy and chemical plant	3	2
3048	Operate product storage equipment for energy and chemical plant	4	4
3051	Operate heat exchange equipment on energy and chemical plant	4	6
3052	Operate an auxiliary internal combustion engine on an energy and chemical plant	2	4
3053	Operate a gas turbine on energy and chemical plant	3	3
17603	Demonstrate knowledge of properties of raw water and its uses in energy and chemical plant	2	6
17604	Operate primary treatment systems for effluent water from energy and chemical plant	4	8
17605	Demonstrate knowledge of air conditioning systems with energy and chemical plant	2	8
17606	Operate and maintain refrigerated air conditioning equipment with energy and chemical plant	4	10
17607	Operate geothermal steamfield equipment and processes	2	9
17608	Operate sludge treatment systems for effluent water from energy and chemical plant	4	8

Id	Title	Level	Credit
17609	Operate geothermal binary turbines in the energy and chemical industry	2	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
21454	Operate refrigeration equipment with energy and chemical plant	4	10
21455	Purge a system on energy and chemical plant	4	4
21456	Operate systems for boiler feedwater treatment	4	12
21457	Isolate and reinstate a section of energy or chemical plant	4	4
21458	Operate a steam turbine	4	14
21459	Demonstrate knowledge of pipework and fittings on energy and chemical industry Demonstrate knowledge of pipework and fittings in the energy and chemical industry	2	4
21460	Meet requirements of responsible person for an unattended boiler Meet requirements of person responsible for an unattended boiler	3	8
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 20MW Operate and monitor a boiler up to 20 MW	2	6
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
21466	Operate compressors and fans on energy and chemical plant	4	8

Domain Safety and Legislation for Energy and Chemical Plant

Id	Title	Level	Credit
3046	Operate energy and chemical plant fire safety equipment	3	5
3064	Control a chemical reaction in energy and chemical plant	4	3
21467	Store and handle chemicals for energy and chemical plant	3	8
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
21470	Identify boiler house chemicals and explain their safety procedures	2	3