

<b>Title</b>	<b>Describe and monitor routine energy and chemical plant operations, and carry out operational handover</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	<p>This unit standard is intended for people working as boiler operators and energy and chemical process operators in an energy and chemical plant.</p> <p>People credited with this unit standard are able to: describe energy and chemical plant monitoring requirements; describe monitoring activities, responses to alarms, and operational deviations in an energy and chemical plant; monitor routine energy and chemical plant operations and respond to operational deviations; and describe; and carry out operational handover of process plant operations in an energy and chemical plant.</p>
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<b>Classification</b>	Energy and Chemical Plant > Monitoring of Energy and Chemical Plant
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<b>Available grade</b>	Achieved
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### Guidance Information

- Legislation and regulations relevant to this unit standard include but are not limited to:
  - Health and Safety at Work Act 2015;
  - Health and Safety at Work (Hazardous Substances) regulations 2017 (HSWA);
  - Resource Management Act 1991;
  - and any subsequent amendments.
- Definitions
 

*Energy and chemical plant* may be in – petrochemical, agri-nutrient, power generation, dairy processing, meat processing, and wood fibre manufacturing, or other plants that operate with a combination of high temperatures, pressures, steam and/or chemicals in gas, liquid or solid form.

*Operational handover* - handover which is conducted after the formal shift to shift handover. Operational handover may also include handover of work controls.

*Organisational requirements* – documented policies and procedures. These may include: equipment manufacturers' procedures; plant procedures; suppliers' instructions; site signage; codes of practice; company health and safety plans; on site briefings; and supervisor's instructions. This includes all regulatory and legislative obligations that apply to the plant.

*Plant* – the operational unit, equipment and/or workplace at which the person is working.

- 3 For the purposes of assessment:
- evidence for the practical components of this unit standard must be supplied from the workplace.
  - evidence for all outcomes must be presented in accordance with organisational requirements.

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## Outcomes and performance criteria

### Outcome 1

Describe energy and chemical plant monitoring requirements.

#### Performance criteria

- 1.1 Describe the monitoring of plant equipment and processes in terms of its purpose.
- 1.2 Describe plant monitoring in terms of the role of the human senses in the process.
- 1.3 Describe the tools used for monitoring and verifying plant and process conditions in terms of use.
- Range evidence of five tools is required.
- 1.4 Describe start-up permissives and sequence, shutdown permissives and sequence, and operational interlocks and trips in terms of a site-specific logic drawing or sequence.
- 1.5 Describe the purpose of cross checking in terms of the methods used.
- Range evidence of correlating instrument readings with process conditions and at least three other methods is required.

### Outcome 2

Describe monitoring activities, responses to alarms, and operational deviations in an energy and chemical plant.

#### Performance criteria

- 2.1 Describe routine monitoring activities in terms of their purpose.
- Range activities may include but are not limited to – observations, data logging, communication, reporting actions, equipment testing; evidence of at least three activities are required.
- 2.2 Describe responses to plant process alarms.

2.3 Describe operational deviations that occur in the plant in terms of the steps to respond to each deviation.

Range evidence of five operational deviations and expected response is required.

### **Outcome 3**

Monitor routine energy and chemical plant operations and respond to operational deviations.

#### **Performance criteria**

3.1 Take, report and log equipment and process readings.

3.2 Analyse equipment and process readings, take action as required, and record actions and results.

3.3 Carry out routine testing of monitoring equipment.

Range evidence of three different tests is required.

3.4 Identify operational deviations, take corrective action, and report and log actions.

### **Outcome 4**

Describe operational handover of process plant operations in an energy and chemical plant.

#### **Performance criteria**

4.1 Describe the reasons for effective communication for handover of process plant operations and/or work controls.

Range evidence of at least five reasons is required.

4.2 Describe the handover process and documentation required.

### **Outcome 5**

Carry out operational handover of process plant operations in an energy and chemical plant.

## Performance criteria

5.1 Prioritise and communicate critical information in a structured format, using language appropriate to the situation.

Range may include but is not limited to – verbal, written, electronic, interactive;  
evidence of the use of at least two communication methods is required.

5.2 Carry out operational handover of process plant operations in a manner and which reflects the operational and work control status.

Range abnormal plant conditions, plant limiting conditions, outstanding work control documents, operational requirements, safety related issues, isolated or available plant, environmental related issues, relevant historical information.

<b>Replacement information</b>	This unit standard replaced unit standard 21452.
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<b>Planned review date</b>	31 December 2024
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### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 February 2020	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0079
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

### Comments on this unit standard

Please contact the Primary Industry Training Organisation [standards@primaryito.ac.nz](mailto:standards@primaryito.ac.nz) if you wish to suggest changes to the content of this unit standard.