

Title	Coordinate an outage in a complex energy and chemical plant		
Level	5	Credits	30

Purpose	<p>This unit standard is intended for experienced people working as supervisors of boiler and energy and chemical process operators or advanced technical personnel in an energy and chemical plant.</p> <p>People credited with this unit standard are able to: contribute to a plan for the outage; coordinate the operational shutdown and plant isolation; coordinate operational components during the execution of the outage plan; coordinate the commissioning and testing of equipment and plant; coordinate the plant handover and start-up; contribute to the outage debriefing; and evaluate own performance in coordinating operational components of the outage plan, in a complex energy and chemical plant.</p>
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Classification	Energy and Chemical Plant > Operation of Energy and Chemical Plant
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Available grade	Achieved
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Guidance Information

1 Legislation relevant to this unit standard includes but is not limited to:

- Hazardous Substances and New Organisms Act 1996;
 - Health and Safety at Work Act 2015;
 - Resource Management Act 1991;
- and any subsequent amendments.

2 Definitions

Complex energy and chemical plant – a plant with a number of integrated pieces of equipment that collectively provide a product or a range of products to internal and/or external customers.

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.

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.

Outage – the planned shutdown and maintenance or inspection of equipment and

plant and the re-establishment of plant operation.

Outage stakeholders – staff in other parts of the plant that are involved or impacted by the outage, and external suppliers, contractors and customers.

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.

Outcomes and performance criteria

Outcome 1

Contribute to a plan for the outage in a complex energy and chemical plant.

Performance criteria

- 1.1 Identify operational activities intended to be completed in the outage and collate detail for the outage plan.
- Range operational activities may include but are not limited to – shutdown equipment, isolations, housekeeping, equipment preparation, hand over, inspections, de-isolation, re-commissioning, testing, start-up.
- 1.2 Collate information relating to the planned operational activities.
- Range information may include but is not limited to – activity timeframes, personnel requirements, materials, equipment, activity start conditions, other resources.
- 1.3 Provide operational input into the management, performance, and implementation of the outage plan.
- 1.4 Liaise with outage stakeholders to confirm operational aspects of the outage plan.
- 1.5 Identify and resolve any conflicts arising in operational activities.
- 1.6 Liaise with and collate information from outage stakeholders for the outage plan.
- 1.7 Communicate the outage plan to outage stakeholders.

Outcome 2

Coordinate the operational shutdown and plant isolation in a complex energy and chemical plant.

Performance criteria

- 2.1 Monitor activities in the shutdown plan and take action to maintain the required progress.
- 2.2 Monitor activities in the isolation plan and take action to ensure the safety of personnel and plant.
- 2.3 Complete checks to confirm equipment and plant are safe to hand over to relevant work groups.
- 2.4 Complete equipment and plant handover procedures in accordance with the shutdown plan.
- 2.5 Complete communication and reporting requirements for the shutdown and isolation plans.

Outcome 3

Coordinate operational components during the execution of the outage plan in a complex energy and chemical plant.

Performance criteria

- 3.1 Implement and monitor safe work management system requirements for the daily work plans to ensure a safe work environment.
- 3.2 Review human and physical resources required for daily work plans and take action to ensure timely progress against the outage plan.
- 3.3 Communicate progress of operational components of the outage plan and report to outage stakeholders.
- 3.4 Maintain an overview of the outage progress through liaison with outage stakeholders and communicate any amendments to the outage plan to outage stakeholders.

Outcome 4

Coordinate the commissioning and testing of equipment and plant in a complex energy and chemical plant.

Performance criteria

- 4.1 Review human and physical resource plans for commissioning and testing and take action to ensure scheduled activities are completed as planned.
- 4.2 Implement and monitor safe work management system requirements for the scheduled commissioning and testing to ensure a safe work environment.
- 4.3 Communicate and report commissioning and testing progress to outage stakeholders.

Outcome 5

Coordinate the plant handover and start-up in a complex energy and chemical plant.

performance criteria

- 5.1 Confirm completion of the outage work plan with outage stakeholders.
- 5.2 Complete operational acceptance of equipment.
- 5.3 Monitor activities in the plant de-isolation plan and take action to ensure personnel and plant safety.
- 5.4 Monitor activities in the pre-start and start-up plan and take action to maintain progress.
- 5.5 Communicate and report progress of the start-up to outage stakeholders.

Outcome 6

Contribute to the outage debriefing in a complex energy and chemical plant.

Performance criteria

- 6.1 Analyse operational personnel, resource and timeframe overruns to determine the root cause.
- 6.2 Communicate outcomes of the analysis to outage stakeholders.
- 6.3 Recommend modifications to the methodology, tasks, activities, personnel, resources, timeframes and safe work management system to improve future outage planning.

Outcome 7

Evaluate own performance in coordinating operational components of the outage plan in a complex energy and chemical plant.

Performance criteria

- 7.1 Evaluate own performance incorporating a balance of positive and negative experiences related to coordinating operational components of the outage plan.
- 7.2 Review own actions and decisions to determine the cause of positive and negative experiences.
- 7.3 Develop and record recommendations for improvement.

Planned review date	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	24 October 2014	31 December 2022
Review	2	27 February 2020	N/A

Consent and Moderation Requirements (CMR) reference	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 if you wish to suggest changes to the content of this unit standard.