

40468 Control emergency and unplanned shutdowns in an energy and chemical plant

Kaupae Level	5
Whiwhinga Credit	12
Whāinga Purpose	<p>People credited with this skill standard are able to: describe systems for emergency and unplanned shutdowns; manage an emergency and unplanned shutdown; check plant and equipment are safe following an unplanned shutdown; identify the reason or cause for an unplanned shutdown; and document the shutdown process and report any ongoing production problems, in an energy and chemical plant.</p> <p>This skill standard can be used in the New Zealand Energy and Chemical qualifications at Level 5.</p>

Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Describe systems for emergency and unplanned shutdowns in an energy and chemical plant.	a. Identify events that may cause an emergency shutdown and an unplanned shutdown.
	b. Explain emergency and unplanned shutdowns in terms of their impacts on process areas and systems.
	c. Describe communication methods for emergency and unplanned shutdowns.
	d. Describe shutdown system logic in relation to the site.
	e. Describe the roles of personnel involved in the shutdown in terms of their responsibilities.

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
2. Manage an emergency and unplanned shutdown in an energy and chemical plant.	a. Confirm personnel are accounted for, and their responsibilities during the shutdown are defined.
	b. Monitor shutdown of designated upstream and downstream plant and equipment to make the situation safe.
	c. Follow shutdown procedures and actions relevant to the emergency or unplanned situation.
	d. Take action to minimise damage from any significant deviations from expected shutdown process.
3. Check plant and equipment are safe following an unplanned shutdown in an energy and chemical plant.	a. Check and verify automatic safety systems to ensure the site has been left in a safe state.
	b. Confirm the status of equipment and plant to ensure it is secure before restarting operations.
4. Identify the reason or cause for an unplanned shutdown in an energy and chemical plant.	a. Identify the reason or cause of the shutdown by troubleshooting the system and utilising all available data and information systems.
	b. Confirm information from field-based personnel to verify the nature and reliability of the shutdown.
5. Document the shutdown process and report any ongoing production problems.	a. Complete all required logs and workplace documentation relating to the shutdown process.
	b. Identify and report any ongoing production problems to appropriate personnel.

Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

Assessment specifications:

For the purposes of assessment:

- evidence for the practical components of this skill standard may be collected in a real or simulated situation using site emergency response systems and associated documentation.
- evidence for all outcomes must be presented in accordance with organisational requirements.
- 1c: site alarm systems, emergency systems, radio, email, telephone.
- 1d: architecture of plant process and production systems, product specifications and tolerances, systems operating parameters, process control philosophies and strategies, panel prompts, emergency shut down procedures.

- 2c: site evacuation, service discontinuation, communications, emergency services, call out notification.
- 3a: trip valves, equipment status, equipment process conditions.
- 4a: cause, actions taken, responses.

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.

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.

Ngā momo whiwhinga | Grades available

Achieved

Ihirangi waitohu | Indicative content

- Personnel, such as – contractors, operators/technicians, team leaders/supervisors, management, control room operators, other site staff.

Rauemi | Resources

Legislation relevant to this skill standard includes but is not limited to:

- Health and Safety at Work Act 2015;
- Resource Management Act 1991;
- and any subsequent amendments.

Pārongo Whakaū Kouna | Quality assurance information

Ngā rōpū whakatau-paerewa Standard Setting Body	Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council
Whakaritenga Rārangi Paetae Aromatawai DASS classification	Manufacturing > Energy and Chemical Plant > Operation of Energy and Chemical Plant
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga CMR	0079

Hātepe Process	Putanga Version	Rā whakaputa Review Date	Rā whakamutunga mō te aromatawai Last date for assessment
Rēhitatanga Registration	1	24 April 2025	N/A
Kōrero whakakapinga Replacement information	This skill standard replaced unit standard 9616.		
Rā arotake Planned review date	31 December 2029		

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council at qualifications@hangaarorau.nz to suggest changes to the content of this skill standard.