

<b>Title</b>	<b>Select methods of fighting petrochemical tank fires</b>		
<b>Level</b>	<b>6</b>	<b>Credits</b>	<b>8</b>

<b>Purpose</b>	<p>This unit standard is for people directing fire and rescue operations involving fires in petrochemical storage tanks.</p> <p>People credited with this unit standard are able to: analyse fire situations; select strategies and tactics; and action post fire suppression and recovery.</p>
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<b>Classification</b>	Fire and Rescue Services > Fire and Rescue Services - Generic Fire Fighting
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 Recommended: Unit 3321, *Lead a petrochemical emergency response team*; or demonstrate equivalent knowledge and skills.
- 2 Compliance with the fire and rescue service provider's Health and Safety policy and procedures is mandatory.
- 3 *Fire and rescue service provider's requirements* or *Standard Operating Procedures* (SOPs) refer to policies and procedures on safety and operation set down by each fire and rescue service employer or host organisation.
- 4 Assessment against this unit standard may take place under real or practical simulated conditions.
- 5 A reference for this unit standard is *The New Zealand Coordinated Incident Management System* (CIMS), 1998, New Zealand Fire Service Commission. This reference is available from the NZFS, PO Box 2133, Wellington 6140.

### Outcomes and performance criteria

#### Outcome 1

Analyse fire situations.

Range type of product and number of tanks involved, construction styles and diameter and height of tank(s), ground fires, status of tanks and tank valves, exposure risks, type and status of any fixed extinguishment system(s), tank bunding capability and draining and isolation ability, water and fuel run-off routes.

**Performance criteria**

- 1.1 Fire protection is prioritised in accordance with the requirements of the fire and rescue service provider.
- Range lives, property.
- 1.2 Consultation of company pre-plans for the type of fire is in accordance with the requirements of the fire and rescue service provider.
- 1.3 The amount of time available for selecting strategy and tactics is estimated against the potential loss in value to product and plant caused by the fire in accordance with the requirements of the fire and rescue service provider.

**Outcome 2**

Select strategies and tactics.

**Performance criteria**

- 2.1 Selected strategy prevents escalation of the emergency in accordance with the requirements of the fire and rescue service provider.
- Range prevention of flame impingement and radiated heat upon other tanks, protection of the most vulnerable areas of the affected tank(s);  
avoidance of – slop-over, froth-over; boil-over, formation of heat waves, cooling exposures, activation of fixed water deluge systems;  
prioritising by – proximity to burning tank, product height in surrounding tanks.
- 2.2 Strategy allows the fire to be extinguished with a quantity of product rather than solids and waste remaining in the tank in accordance with the requirements of the fire and rescue service provider.
- 2.3 Value of product saved is greater than the combined cost of extinguishment operations plus tank repairs in accordance with the requirements of the fire and rescue service provider.
- 2.4 Tactics involving the use of fixed control systems are applied in accordance with the company pre-plan.
- 2.5 Foam is proportioned to suit the burning product in accordance with the requirements of the fire and rescue service provider.
- Range allowance for expansion, impact of application.
- 2.6 Selected strategy and tactics demonstrate that consideration has been given to minimising environmental impact and the use of resources, commensurate with the overall objectives of the operation.

2.7 Selection of tactics allows the extinguished fire to be overhauled without re-ignition in accordance with the requirements of the fire and rescue service provider.

Range maintenance of foam blanket over surface of fuel until it can be recovered.

2.8 Removal of fuel from burning tank to alternative containment prevents gas release, spills and ignition in accordance with the requirements of the fire and rescue service provider.

### Outcome 3

Action post fire suppression and recovery.

### Performance criteria

3.1 Adequate fire fighting and safety resources to ensure suppression of the incident are maintained in accordance with the requirements of the fire and rescue service provider.

Range may include but is not limited to – foam, hose, personnel, suitable safety equipment to comply with site and regulatory requirements.

3.2 Incident control measures are maintained throughout operation in accordance with the requirements of the fire and rescue service provider.

Range may include but is not limited to – CIMS process is being fully maintained with evidential handovers; or agencies not using the CIMS process are to demonstrate incident control and handover.

3.3 All aspects of environmental controls are maintained to meet relevant local and central governmental acts and by-laws.

**This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.**

### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	16 March 1995	31 December 2025
Review	2	27 May 1998	31 December 2025
Review	3	25 March 2004	31 December 2025
Review	4	20 November 2009	31 December 2025
Review	5	30 September 2021	31 December 2025

### Consent and Moderation Requirements (CMR) reference

0039

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.