Select methods of fighting petrochemical tank fires

Level 6
Credits 8

Purpose
This unit standard is for people directing fire and rescue operations involving fires in petrochemical storage tanks.

People credited with this unit standard are able to: analyse fire situations; select strategies and tactics; and action post fire suppression and recovery.

Subfield Fire and Rescue Services
Domain Fire and Rescue Services - Generic Fire Fighting
Status Registered
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Entry information
Recommended: Unit 3321, Lead a petrochemical emergency response team; and Unit 22445, Describe the roles and functions of a CIMS Incident Management Team (IMT) at an incident; or demonstrate equivalent knowledge and skills.

Accreditation Evaluation of documentation and visit by NZQA and industry.

Standard setting body (SSB) Fire and Rescue Services Industry Training Organisation

Accreditation and Moderation Action Plan (AMAP) reference 0039
This AMAP can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Special notes
1 Compliance with the fire and rescue service provider's Health and Safety policy and procedures is mandatory.
2 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.
3 Assessment against this unit standard may take place under real or practical simulated conditions.

4 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.

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**Elements and performance criteria**

**Element 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.

**Element 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.

Element 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 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 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.

Please note

Providers must be accredited by NZQA, or an inter-institutional body with delegated authority for quality assurance, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by NZQA before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact the Fire and Rescue Services Industry Training Organisation info@frsito.org.nz if you wish to suggest changes to the content of this unit standard.