



Fatal Accidents Involving Ignition of Flammable Vapours



INCIDENT

On 4 and 15 September 2009, there were two fatal workplace accidents involving the explosion of flammable vapours during the cutting of metal tanks. These tragic accidents highlight the dangers of working on tanks and containers that contain, or used to contain, flammable liquids.

CIRCUMSTANCES

The first fatality occurred while a person was working on top of a tank that contained heated bitumen. It is believed that flammable vapours from the tank vent were ignited by electrical equipment.

The second occurred when a worker was dismantling a tank that had contained petrol. It is believed that a gas cutter ignited flammable vapours within the empty tank.

GUIDANCE

The risks of doing "hot work" - involving torches or flame cutting equipment - on containers that previously contained flammable substances, are well known.

Examples of flammable substances are petrol, aviation fuel, diesel, and bitumen.

The Department of Labour recommends the following steps are taken before work begins on or near tanks that previously contained flammable substances:

- Realise that doing "hot work" around flammable substances creates an extreme danger of explosion or fire.
- Identify the hazards that can be created when you work on or near tanks and containers that hold, or have held flammable substances.
- Assess the hazards and ensure the correct controls are in place.
- Plan the work so you eliminate all sources of ignition from the area.
- Provide employees with appropriate information, training and supervision so they can work safely around flammable substances.

References:

- **Hot Work on Drums and Tanks**, Department of Labour (1988) <http://www.osh.dol.govt.nz/order/catalogue/229.shtml>

- **Health and Safety in Welding**, Department of Labour (2006) <http://www.osh.dol.govt.nz/order/catalogue/welding.shtml>
- **Code of Practice for the Transportation and Disposal of Underground Petroleum Storage Tanks and Related Wastes**, Department of Labour (1995) <http://www.osh.dol.govt.nz/order/catalogue/193.shtml>
- **Code of Practice for Disused Below-Ground Stationary Tanks on Farms**, Environmental Risk Management Authority New Zealand (2007) <http://www.ermanz.govt.nz/resources/publications/pdfs/COP19-1.pdf>

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Which industries/sectors or matters will this information be relevant to?

Manufacturing, Recycling, Repairs & Maintenance

