



## 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 Protection Authority (2007) <http://www.epa.govt.nz/Publications/COP19.pdf>

#### Disclaimer for all Alerts/Bulletins

Note: This material has been prepared using the best information available to the Department of Labour at the time of publication. Information may change over time and it may be necessary for you to obtain an update. This material is also only intended to provide general advice and does not constitute legal advice. You should make your own judgement about action you may need to take to ensure you have complied with your workplace health and safety obligations under the law.

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

Manufacturing, Recycling, Repairs & Maintenance

