

A quarterly look at the health and safety issues that matter

Lessons learnt following Buncefield explosion

Investigation reveals probable cause of oil depot fire

Investigators have shed new light on the events that led to the explosion at the Buncefield oil depot on 11 December last year. The investigation board's initial report, released on 13 July, concludes that overfilling of tank 912 led to a substantial overspill of unleaded petrol. This resulted in the formation of a vapour cloud, which subsequently ignited. It is believed that the failure of the tank's level gauge and an automatic cut-off mechanism allowed overfilling to occur.

On 4 July, the HSE responded to the investigation's findings by issuing a warning to all operators using TAV level switches manufactured by Cynergy3 that urged immediate checks on the devices. It has also served the manufacturer with an improvement notice requiring that all operators using the system be referred to the safety alert.

The investigators are now undertaking a detailed examination of computer records, and wiring and instrumentation circuits in an attempt to explain the magnitude of the explosion. Their findings will be used to inform the ongoing criminal investigation.



Following the recommendations of the initial report and feedback from an initial review that showed five instances of below-standard compliance with current safety standards at facilities similar to Buncefield, the HSE has committed to "strengthening" its operation and planning guidelines. A spokesperson commented, "It is too early to say how radical the alterations will be, but we do accept that Buncefield will have implications for the way the HSE regulates operations, and we are currently working with an industry task force to see what changes need to be made."

The report suggests that the changes should focus on tighter regulations in the design and operation of storage equipment to ensure greater reliability in primary (storage), secondary (bunds) and tertiary (drainage) containment measures. The HSE hopes to implement new guidelines by summer 2007. Advice issued by the HSE regarding land use and planning in the areas surrounding depots is also scheduled for reassessment, pending further information.

The incident has been declared a major accident to the environment. While DEFRA's initial review indicates that ground-level air quality is unlikely to have been significantly affected, the Environment Agency was informed on 21 June that the nearby River



DEFRA's initial review indicates that ground-level air quality is unlikely to have been significantly affected. (Photographs courtesy of Chiltern Air Support Unit. 2006)

Colne has been contaminated by leakage from a Thames Water storage tank. This contains water used by firefighters to quench the blaze. Although chemical levels in the river are not considered high enough to be dangerous, the incident will reflect badly on Hertfordshire Oil Storage Ltd and the Health Protection Agency, who share responsibility for the safe disposal of the fire water, which has remained in storage since December.

"We do accept that Buncefield will have implications for the way the HSE regulates operations"