

Background and Context

At around 06:00hrs, a series of explosions occurred at Buncefield Oil Storage Depot, Hemel Hempstead, Hertfordshire. At least one of the initial explosions was of massive proportions that devastated homes and business premises around the site perimeter. The explosion also created a very large fire, which engulfed 23 large fuel storage tanks over a high proportion of the site. There were 43 people injured in the incident, none seriously. There were no fatalities.

The fire burned for several days, destroying most of the site and emitting large clouds of black smoke into the atmosphere, dispersing over southern England and beyond. Large quantities of foam and water were used to control the fire, with risks of contaminating water courses and ground water. A major accident to the environment (MATTE) was notified to the EU in July 2006.

How the Topic was Handled

The emergency services (primarily the Fire and Rescue Service and the Police) led the initial response to the incident and its immediate aftermath. As a Category 1 responder under the Civil Contingencies Act 2004, Environmental Agency (EA) worked closely with the Fire and Rescue Service, the Police, the Health Protection Agency (HPA) and the Strategic Health Authorities, including advising on the water pollution aspects of the firefighting activities. The Health and Safety Executive (HSE) is a Category 2 responder, so during the early phase of the incident stood ready to provide advice and expertise on request in support of the emergency services and EA.

Immediately after the incident, HSE and EA set up a joint investigation team under the leadership of HSE. The investigation team was tasked with finding out what had happened, including the factors leading up to it and root causes. Control of the investigation was handed over by the Police to the incident team on 14 December.

On 20 December, HSE announced it would be establishing a Major Incident Investigation Board (MIIB) and that it would be independently chaired. The investigation manager was appointed immediately. On 5 January, Herts FRS handed over control of the site to the investigation team. On 12 January, the independent chairman (Lord Newton of Braintree) was appointed.

Terms of Reference

The MIIB's Terms of Reference with regard to this incident are to:

- Ensure the thorough investigation of the incident, the factors leading up to it, its impact both on and off site, and to establish its causation including root causes;
- Identify and transmit without delay to duty holders and other appropriate recipients any information requiring immediate action

- to further safety and/or environmental protection in relation to storage and distribution of hydrocarbon fuels;
- Examine the HSE's and the Environment Agency's role in regulating the activities on this site under the COMAH Regulations, considering relevant policy guidance and intervention activity;
 - Work closely with all relevant stakeholders, both to keep them informed of progress with the investigation and to contribute relevant expertise to other inquiries that may be established;
 - Make recommendations for future action to ensure the effective management and regulation of major accident risk at COMAH sites. This should include consideration of offsite as well as onsite risks and consider prevention of incidents, preparations for response to incidents, and mitigation of their effects;
 - Produce an initial report for the HSC and the Environment Agency as soon as the main facts have been established. Subject to legal considerations, this report will be made public;
 - Ensure that the relevant notifications are made to the European Commission; and
 - Make the final report public.

Progress

The Investigation Manager presented three progress reports between February and May 2006, describing what had happened and how, which the MIIB published. Overfilling of a petrol tank allowed a significant amount of flammable vapour to form and travel off site and subsequently ignite. The violence of the explosion was unexpected and remains largely unexplained.

The MIIB published its initial report on 17 July 2006 summarising the explanation of the event, and determining that primary containment – keeping hazardous substances in the vessels and pipework that are meant to contain them - is the highest priority. MIIB also set out its five main areas of concern:

- Design and operation of flammable storage sites
- Emergency preparedness and response to major incidents
- Understanding the violence of the explosion
- Land use planning in the UK
- The policy and procedures underpinning the regulatory regime for health, safety and the environment at Buncefield.

A report in March 2007 made recommendations for improving design and operation of sites. A report in July 2007 made recommendations for improving emergency preparedness and response, and also dealt with supporting the recovery of regions affected by major hazard incidents. A report in August 2007 (the MIIB's seventh report) reported on what had been discovered to date about the explosion mechanism. Further reports are anticipated but, as with all the MIIB's reports, publication will be carefully balanced against the desire to avoid prejudice to any potential criminal proceedings.

Work on the primary investigation is continuing to determine underlying causes and whether proceedings are warranted. During the investigation, three letters of advice were sent from the Investigation Manager to HSE and the EA on matters of immediate concern. These resulted in regulatory initiatives by both agencies.

The investigation, under the control of the investigation manager who is a member of the independent MIIB, is undertaken jointly by the Health and Safety Executive (HSE) and the Environment Agency (EA), who together form the joint Competent Authority (CA) responsible for regulation under the Control of Major Accident Hazards Regulations 1999 (COMAH). HSE and EA will be responsible for any decision regarding prosecution.

Lessons Identified

The MIIB strategy is to achieve independence and openness in its findings without impeding progress with the investigation into the underlying causes and accountability for the incident. MIIB has made it a priority to meet the needs of communities, academia, government and industry to see authoritative information published quickly. By utilising for the first time an independent chair and independent members of the Board, the need for an independent investigation touching on the role of the relevant regulators is also satisfied.

Important elements in achieving this strategy, in addition to the independent Board, have been the appointment of a dedicated legal advisor, a community liaison officer, and a press officer. A dedicated website and a mailing list for distributing new information have also proven to be successful in communicating with stakeholders.

MIIB has no responsibility for decisions on breaches of the law. Responsibility for taking decisions on criminal liability rests entirely with HSE and the Environment Agency. Annex 10 of the MIIB's initial report of July 2006 provides an explanation of the legal considerations that are relevant to major incident investigations.

Contacts for Further Information

Copies of the reports of the MIIB, and related material, can be found at: www.buncefieldinvestigation.gov.uk