



THE UK EMERGENCY RESPONSE SYSTEMS:

THE CASE OF THE BUNCEFIELD INCIDENT AND LESSONS LEARNED*

ABSTRACT

This paper describes the UK Emergency Response Systems, their application during the Buncefield incident and the lessons that can be learned from the enquiry into the incident. It describes the roles and coordinated interaction of the different agencies and the site operator both in preparation and practice for an incident and during an incident. It highlights the importance: of emergency planning as a mechanism to minimize the chance of an accident and being in the best position to respond should an accident occur; of rapid response and a robust communication network that works 24/7; of procedures to inform the public immediately and rapid public evacuation. The nature of the incident also demonstrates the need to understand, manage and monitor the impact to human health and all environmental media, namely air, land, and water.

1. INTRODUCTION

In the early hours of Sunday 11th December 2005, a number of explosions occurred at Buncefield Oil Storage Depot, Hemel Hempstead, Hertfordshire, UK. At least one of the initial explosions was of massive proportions (measuring 2.4 on the Richter scale) and there was a large fire, which engulfed a high proportion of the site. Over 40 people were injured; fortunately there were no fatalities. Significant damage occurred to both commercial and residential properties in the vicinity and a large area around the site was evacuated on emergency service advice. The fire burned for several days, destroying most of the site and emitting large clouds of black smoke into the atmosphere.

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The fire at the Buncefield oil depot represented a major challenge to the emergency response systems in the UK. It required a multi-agency, coordinated response to the fire and its aftermath. While many aspects of the response were a vindication of the emergency planning structure already in place, the scale of the incident was unforeseen and highlighted some deficiencies in the planning.

The purposes of the paper are to describe the UK Emergency Response Systems, to demonstrate how these systems worked during the Buncefield incident, and to highlight lessons that can be learned from the enquiry into the incident.

To describe the emergency response systems in the UK, it is useful to firstly consider the UK legislative and regulatory framework that dictates and shapes how emergency response is carried out. There are 2 key pieces of legislation which are briefly described in the next section - the Control of Major Accident Hazards Regulations 1999 (COMAH) and the Civil Contingencies Act 2004.

This report also describes the key bodies involved in emergency response and how the systems for emergency response are organised. How these systems are used in reality was demonstrated by the Buncefield Depot incident. This report details the chronology of the first few days to demonstrate how the agencies worked together to formulate plans for fighting the fire and dealing with evacuations and public health surveillance. Finally, some of the lessons learned from this incident to date are discussed at the end of the paper.

2. THE LEGISLATIVE FRAMEWORK

Certain industrial activities involving dangerous substances have the potential to cause accidents that give rise to serious injury to people or damage to the environment both close to and further away from the site of the accident. Such activities are known as major accident hazards.

In response to a number of previous serious industrial accidents in Europe during the 1970s, the most significant of which took place in Seveso, Italy in 1976, the European Commission proposed a Directive on the control of major industrial accident hazards. The strategy proposed in the UK was highly influential in shaping the Directive. The Directive on the Major Accident Hazards of Certain Industrial Activities (82/501/EEC) was adopted on 24 June 1982, and is generally known as the Seveso Directive.

Following a complete review of the Directive by the European Commission, a revised directive, now known as Seveso II, was adopted in 1996. The Seveso II Directive retained the basic principles of major accident hazard controls set out in the original Seveso Directive but addressed some weaknesses and omissions. The new Directive followed a review carried out by the European Commission in conjunction with the Committee of Competent Authorities for the Seveso Directive (made up of representatives of all Member States' governmental bodies enforcing the Seveso Directive). It came into force on 3 February 1997 and was implemented in Great Britain on 1 April 1999 by the COMAH Regulations.

The COMAH regulations affect any establishment where dangerous substances are stored above quantity thresholds, with exemptions for nuclear installations, temporary storage and transportation, which are governed by other statutory instruments. COMAH requires certain safety controls to be implemented and competent authorities to be notified of activities. Sites are classed as either 'upper' or 'lower' tier COMAH sites depending on maximum quantities of substances

present, with further requirements placed on upper tier sites. The Buncefield site is an upper tier COMAH site.

Above all, the operators of “COMAH sites” are required to take all measures necessary to prevent major accidents and minimise the impact of their operations to people and the environment. This is the general duty on all operators and underpins all the regulations. By requiring measures both for prevention and mitigation there is recognition that all risks cannot be completely eliminated. These measures must be undertaken in proportionality to the assessed risk along the lines of “all measures necessary”.

Key features of the regulations are:

- Operators are required to produce a major accident prevention policy (MAPP);
- The site operator must agree the plans for the site with the Competent Authority (CA) prior to building and agree any changes (in the case of a COMAH site the CA is the EA and EA. The CA will provide emergency plans to the local authority);
- Safety reports need to be filed with the CA;
- Operator must prepare an on-site emergency plan;
- Operator must prepare an off-site emergency plan, within 6 months, liaising with local authority¹;
- Operator must review and test emergency plans at least every 3 years, liaising with local authority;
- Operator must implement these plans without delay when an uncontrolled event or major accident occurs;
- Operator must provide information to the public and to the CA;
- The CA will inspect the site;
- The CA has the power to stop activities on site if controls are deficient or if notification was not submitted;
- Where hazards are high then high standards will be required to ensure risks are acceptably low; and
- Prevention should be based on the principle of reducing risk to a level as low as is reasonably practicable (ALARP) for human risks and using the best available technology not entailing excessive cost (BATNEEC) for environmental risks.

The MAPP will usually be a short and simple document setting down what is to be achieved proportional to the risks and it should also include further references to the safety management

¹ For definition of Local Authority, see the Annex of the paper.

system that will be used to put the policy into action. Details of the safety management system should include management of change, planning procedures, monitoring, audit and review.

The Civil Contingencies Act was introduced in 2004 in the UK to deliver a single framework for civil protection in the United Kingdom capable of meeting the challenges of the twenty-first century. The Act is separated into two substantive parts: local arrangements for civil protection (Part 1) and emergency powers (Part 2).

Part 1 of the Act and supporting Regulations and statutory guidance Emergency Preparedness establish a clear set of roles and responsibilities for those involved in emergency preparation and response at the local level. The Act divides local responders into two categories, imposing a different set of duties on each.

Those in Category 1 are those organisations at the core of the response to most emergencies (e.g. emergency services, local authorities, National Health Service (NHS) bodies). Category 1 responders are subject to the full set of civil protection duties. They will be required to:

- Assess the risk of emergencies occurring and use this to inform contingency planning;
- Put in place emergency plans;
- Put in place Business Continuity Management arrangements²;
- Put in place arrangements to make information available to the public about civil protection matters and maintain arrangements to warn, inform and advise the public in the event of an emergency;
- Share information with other local responders to enhance co-ordination;
- Co-operate with other local responders to enhance co-ordination and efficiency; and
- Provide advice and assistance to businesses and voluntary organisations about business continuity management (Local Authorities only).

Category 2 organisations include for example Health and Safety Executive, the Environment Agency, transport and utility companies. These "co-operating bodies" are less likely to be involved in the heart of planning work but will be heavily involved in incidents that affect their sector. Category 2 responders have a lesser set of duties - co-operating and sharing relevant information with other Category 1 and 2 responders.

Category 1 and 2 organisations will come together to form Local Resilience Forums (based on police areas), which will help coordination and cooperation between responders at the local level.

3. UK EMERGENCY RESPONSE SYSTEMS

The key bodies involved in providing emergency response in the UK are:

- Police force

² Business Continuity Plans are plans drawn up by a business, in this case the site operator, to resume business as soon as possible in the event of a major incident

- Fire Service
- Ambulance Service
- Health Protection Agency (HPA)
- Local Health Bodies (LH)
- Local Authorities (LA)
- Health and Safety Executive (HSE)
- National Chemical Emergency Centre (NCEC)
- Environment Agency (EA)
- Highways Agency (HA)
- Marine Coastguard Agency (MCA)

The annex of the paper contains further details on the functions and responsibilities of these bodies. Some of the responsibilities between these various bodies are overlapping. It is therefore vital that each understands the responsibilities of the others to prevent duplication of effort, conflicting response and to become more effective in both the speed of response and the eventual outcome. One of the ways in which the system is tested is by the use of desktop or full emergency exercises. These can be typically run by Local Authority Emergency Planning Officers and may involve scenarios based on emergency plans for a COMAH site within their area.

All of the above agencies are fully or partly funded (in the case of the NCEC and Local Authorities) by the UK Government. Local Government is funded by a mixture of central Government funding and local taxation. The NCEC receives a contribution from central Government to fund its advice service to the Emergency Services.

Initial reporting

The sequence of emergency response is activated by the reporting of an incident to the emergency services. The UK has a dedicated emergency telephone number (usually 999 or 112 – a European standard number) for contacting the emergency services, manned 24hrs a day at 15 Operator Assistance Centres across the country. These centres have personnel who are highly trained to take information from the callers and inform the relevant emergency service. In order to provide this service there is a need for two communication networks to be in place.

The first network requires a robust telephony system capable of receiving a large volume of calls connecting the public to the trained operators. The second is a connection from the operators to the Police, Fire and Ambulance services. This communication link is required to be immediate to allow swift response to incidents.

Command and co-operation

Once informed of an incident the emergency services deploy to the scene of the incident. The amount of resources committed at this stage is based on a prior risk assessment having been carried out. For example, a COMAH site will have been inspected by the Fire Service prior to a fire certificate being issued. A 'pre determined attendance' of fire appliances would have been established. Having arrived at the scene, the emergency services set up a Forward Control Point that is known as Bronze Command. The first people in attendance are likely to be the Police and Fire Service Incident Commanders. If requested a member of the Environment Agency or a Local Authority Liaison Officer (LALO) is sent (usually by the District Council) to represent both the County and District Councils and co-ordinate requests for local authority practical assistance at or near the incident. These responders are trained to a high level in the field of incident management. Again it is vital that communications systems are set up to allow requests and information to be sent to relevant authorities.

Should the site be declared a major incident, then a silver command point is set up. When a major emergency is declared an Incident Control Post is established by the Police under the control of the Police Incident Commander. Silver Command will normally be established near to the area of the emergency though the choice of location will depend upon the type of incident. The Police try to use existing Police Stations because of their fixed communications and control capabilities but will consider other options such as a Mobile Control Unit.

Silver Command, which reports to Gold Command, is the central point of contact for support services, including local authority and other organisations such as the Environment Agency and the HSE. This ensures close liaison near to the scene. The local authority officer sent to Silver Command is of appropriate seniority to take part in the policy/decision making process. For very large incidents such as the Buncefield incident, a gold command post is set up.

The Major Incident Control Room does not need to be close to the incident but at a location, which has the necessary communications and other suitable facilities such as a press briefing room.

At the Major Incident Control Room senior representatives from local authorities and the other organisations involved, establish a strategic level of management with the Police. For local authorities, representation is usually at Chief or Senior Officer level or equivalent. The making and taking of policy decisions and forward planning is the Officers' prime function in support of the local authority Emergency Operations Centre or Crisis Management Team at the County and/or District Council.

4. EMERGENCY RESPONSE DURING THE BUNCEFIELD INCIDENT

To demonstrate how the emergency response systems described above operate and how the various bodies involved work together, the example of the Buncefield Depot incident is used, describing key events and their timing below.

Timeline of key events

Sunday 11 December 2005

Faulty equipment in a storage tank on the Buncefield site results in a storage tank becoming completely full and starting to overflow. Evidence suggests that the protection system, which

should have automatically closed valves to prevent over-filling, did not operate. The continued pumping caused fuel to cascade down the side of the tank and through the air, leading to the rapid formation of a rich fuel/air mixture about 2 metres deep that spread over a wide area, including off site into nearby car parks and towards near buildings.

At 06.01, the first explosion occurred, followed by further explosions and a large fire that engulfed over 20 large storage tanks

At 06.02 the first of over 200 calls made to the local incident control office indicating that there was an incident in progress at the Buncefield oil depot near to Hemel Hempstead.

At 06.10 the initial responding firefighters were at the scene, which was instantly declared a “major incident”. As this site had been registered as a COMAH upper tier establishment, the site’s emergency plan was initiated. The firefighters had previously trained at the site and the site held stores of emergency water and foam concentrate for immediate use in firefighting as part of the emergency plan. However these plans were directed to the ‘worst case scenario’ of a single tank blaze and in this situation 20 tanks were alight and the plan for firefighting was put on hold.

Within an hour the local emergencies committee set up “Gold Command” at police headquarters where an action plan was discussed. Despite the incident occurring on a Sunday morning, resources were quickly mobilized from the emergency services and from the Environment Agency, who were very quick to arrive at the scene (despite not being an emergency service, the EA has staff on call at all times and uses a 24 hour call out list for responders).

The Incident Commander instigated search and rescue efforts on the site. This was required to be carried out over a large area due to the massive nature of the explosion. A three-storey building adjacent to the depot was alight and this was quickly extinguished. The area around the site including the M1 motorway was closed and evacuated by the police. Local residents were moved to sites in the area away from dangers of further explosion.

The “gold command” group of responders began to discuss health and environmental issues at this stage before any attempt to fight the main tank fires began. Foam required to fight the fires was sourced from across the country, from other Fire Services and from foam suppliers with the help of the NCEC, in preparation for the eventual firefighting effort. Large volume pumps were requested from fire services countrywide and from the Fire Service College. It became quickly evident to the incident controllers that the firefighting effort was beyond the capability of the regional resources. For the first time in its history the national firefighting command and control centre was formally used to coordinate and request resources from fire authorities.

A firefighting tactical plan was formulated led by local firefighters in conjunction with oil industry experts the owners of the site and the Environment Agency. The water used to fight the fire would have to be contained, as the release of this water into the environment would cause more severe pollution (to the groundwater) than the contents of the smoke plume (to the air quality). This meant that putting the fire out was not the first priority.

The firefight would require 32,000 litres of water per minute and silver and bronze command teams set up pumping systems in conjunction with the local authority. This required the construction of a temporary road and fitting of 14 high volume pumps.

The plan agreed was that a safe area would be set up to collect the fire water and to ensure that all contaminated water went to one secure reservoir where it would be stored, ready for treatment, after the fire was extinguished. Once the fire was extinguished, only 'clean' water would be allowed back into the rivers and streams. The contaminated water was to be passed through a treatment plant and contaminated sludge collected.

The HPA began limited air monitoring around the Buncefield site and organized air quality readings of the atmosphere around the South East region comprising over 130 local authority monitoring sites. The path of the smoke plume was modelled by the Meteorological Office (using a long range pollution dispersion model) and EA (using a short-range model). The data on likely plume direction and ground level concentrations was passed on to the HPA. On the advice of HPA, a number of schools were closed for several days as a precaution. The HPA began issuing press briefings to Local Authorities and the public on the contents of the smoke, which was not thought to be a major cause for concern.

The Environment Agency begins a sampling campaign on local rivers and soil.

12 December 2005

At 08.22 a major foam attack began on the tank fires, this continued for the remainder of the day. At the peak firefighting effort on this day, 180 firefighters from all across the UK were in attendance at the site.

The HPA release a press statement requesting that people in the area under the smoke plume remain indoors with their windows closed and listen to the local media for updates. People suffering from medical difficulties are requested to telephone a helpline for assistance and advice.

13 December 2005

In the early hours the extinguishing efforts were temporarily paused due to fears over the collapse of a tank that was on fire.

By the evening of the 13th the fires had been extinguished in all but two the tanks. Throughout the entire operation high volume pumps were used to move contaminated water around the site in order to prevent pollution of chalk ground water that acts as a source of drinking water for London drinking supplies.

The Police decided that it was safe to withdraw the safety cordon to just around the more severely affected area allowing the vast majority of the families who had been evacuated from their homes to return home. The Police decide to use the resources spared by this to enforce order in the area, preventing any looting.

14 December 2005

HPA issue advice to those people local to the fire to go immediately indoors should falling smoke particles be present in their area.

At 19.36 the fires were judged to be fully extinguished. Fire crew remained on the site until 5th January to ensure against re-ignition and assist on site.

It becomes clear that there was significant loss of secondary containment related to the bunds on the HOSL West and BPA sites. While the bunds substantially remained standing throughout the incident, their ability to fully contain the fuel and fire waters was lost as a result of the explosion and subsequent fires. Severe damage was caused to bund walls as a consequence of the incident. Pools of fuel had been burning in the bunds as a result of loss of fuel from the tanks, along with fires from the tanks themselves. Many bunds had the concrete panels joints filled with a joint sealant. This sealant has been lost as a result of the fire and/or hydraulic pressure within the bund.

15 December 2005

The incident investigation is handed over to 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, EA and the Police continue to work together during the phased handover period to ensure minimal disruption and to also safeguard the site, the public interests and the gathering of evidence for the investigation

16 December 2005

HPA release information that all sampling of the air quality in the local area and beyond, apart from very close to the Buncefield site, has not revealed any results that are different from normal levels. Air quality sampling will continue at a number of fixed sites and these will be regularly reviewed.

HSE issued formal notices on the two operators of the part of the depot that had suffered the greatest damage prohibiting operations on site under their control, unless appropriate risk assessments had been agreed with HSE. They were also required to leave the depot area undisturbed to allow evidence gathering by the investigation team and clear up operations to be carried out in a safe manner.

20 December 2005

The Health and Safety Commission (HSC) formally asked the Health and Safety Executive (HSE) and the Environment Agency to investigate the incident at the Buncefield oil depot; and to appoint an Investigation Board with an independent chair and to make a special report to the HSC as soon as possible.

24 December 2005

Security of the site is handed back to depot operators from police control.

Aftermath of the Incident and Observations

Pre-planning on the Buncefield site concentrated on a single tank – the largest – being involved in a fire. Foam concentrate, emergency water supplies and foam making equipment were already on site for immediate use by the local Fire Service (Hertfordshire), but proved inadequate for the scale of the incident.

The contained contaminated firewater was removed and is now stored at a number of sites around the country, while a mechanism for its disposal is agreed as no environmentally satisfactory disposal route has been found to date. The sheer scale of the fire and the amount of foam

concentrate used to fight the fire (over 600,000 litres) meant that a number of different grades of concentrate were used. Some contain substances which are known to pose a major environmental hazard if released, specifically those containing perfluorooctane sulphonate (PFOS). Many of the problems that now remain in disposing of the fire water, could have been avoided by the exclusive use of foam concentrates that do not contain agents that harm the environment (those passing European standards EN1568 parts 3 and 4).

The EA maintain a presence at the site to ensure that the potential for environmental problems is controlled. They supervise the pumping of oil from the drains and the taking of samples to see if the groundwater has been polluted. These showed that low levels of pollution after the incident in a nearby river, returned to normal within 2 months.

Rainwater and water used in the site clean up continues to be sampled and transferred off site for treatment and disposal.

The groundwater is being continually monitored for contamination by the EA. No adverse effects were found for 3 months. In April however, water monitoring confirmed oil contamination of groundwater around the site. Drinking water was not affected, however the drinking water inspectorate confirmed that the water sources were being monitored closely. In May, the EA confirmed that Fluoro-surfactants (chemicals that are added to firefighting foam to help it spread over the surface of fuels) which may be associated with the incident have been detected in the River Ver at low concentrations.

The Major Incident Investigation Board set up to investigate the Buncefield oil depot incident, produced a third report issued on the 9th May 2006, detailing the cause of the explosion.

In the same month, HPA issue a press release stating that currently no evidence of a lasting public health risk from the exposure to the plume has been found.

Following the issuing of the 3rd report into the incident, which highlighted the significant failure of the containing bunds due to the conditions following the explosion, the HSE advised all storage site operators to note this failure and consider the adequacy of their own bunds. The existing guidance on bunds (secondary containment walls around primary containers) is that they should be able to hold 110% of the volume of the largest container being stored. The lessons from Buncefield are that the use of firewater and foam will overwhelm the bunds. It is therefore necessary to consider increasing the capacity of the bunds or at least the likely path of the overflowing liquids.

Following loss of containment, fuel and fire water found numerous pathways into the environment. These included a number of shallow boreholes and one deep borehole within the site that allowed escaping liquids to flow across the site roadways and overtopp kerbs and flow onto public roads and consequently escape via surface water gullies.

The response of the Category 1 responders (emergency services) was effective, with the Bronze, Silver and Gold Commands coordinating well. Of the Category 2 responders, those that are not currently 24 hour responders (e.g., HSE) experienced some initial difficulties in mobilising a response during non core hours.

The Environment Agency has a 24 hour capability and was able to attend the scene within 2 hours. They continued to play a key in the initial incident response with EA staff joining an expert team at a multi-agency command centre. With the fire extinguished, the EA focus turned to advising on

the clearing of the site, continuing to protect the surrounding environment and investigating the incident with the Health and Safety Executive.

The HSE are still investigating the incident. Their investigations are likely to have consequences for other similar storage facilities (there are around 100 of these on the UK Mainland) that have consent to store fuel under the COMAH regulations. According to the HSE, “this incident has demonstrated the capability of a very large hydrocarbon leak to create a massive explosion with a very destructive power beyond the typical ‘worst case’ normally used for on- and off-site emergency planning, and as the basis for advice to planning authorities on off-site development”. In other words, this could have consequences not only for the siting of these installations, but the planning conditions imposed upon them.

5. LESSONS TO BE LEARNED FROM THE BUNCEFIELD DEPOT INCIDENT

The investigations into the Buncefield Depot incident have highlighted some lessons that can be learned for other oil installations throughout the world. Equally there are observations about the emergency response system in the UK that can be of assistance to the Chinese Authorities in setting up their own emergency response systems.

These include:

- The unforeseen will always occur. Therefore, to be prepared for an emergency entails a combination of reducing the risk of a serious accident and then mitigating its impact should it occur.
- The COMAH regulations lay out the requirement of site operators to have emergency plans in place, to coordinate the response with local agencies (e.g. Local Authorities, Police, Fire Service, EA) and to provide information for local residents. All of these plans were vital in setting up the response to the incident.
- Regular testing of the emergency plans through the use of emergency exercises, ensures the lines of communication remain clear and open. This is a requirement of the COMAH Regulations.
- The ‘worst case scenario’ included in the emergency plans for the Buncefield site was inadequate and did not foresee the scale of the incident in this case. Therefore careful consideration needs to be made when assessing this scenario to ensure the emergency plans are fully effective.
- Coping with the truly ‘worst case scenario’ must be built into the design of the site (eg. Adequate bunding and run-off water containment systems as well as adequate firefighting equipment provided on site and regular training).
- Firefighting foam concentrate stored on site should confirm to the latest environmental standards.
- Bunds should be designed for greater capacity and should not use materials that may be compromised in the event of a fire.

- The likely paths of run-off water (or other liquids) from the site, should be mapped out and means of containment designed in.
- Once an incident occurs, the longer term environmental consequences of dealing with it must be considered from the very early stages. In this case, the environmental consequences (water pollution) of fire water escaping were deemed greater than the smoke coming from the fire, therefore fighting the fire was not the first priority.
- The hierarchy of incident management within the Emergency Services allows for more effective and clear lines of communication between the various services and to the media and general public (through Gold Command in this case).
- Once the immediate incident has been dealt with, there is a requirement for on-going monitoring of the surrounding environment (air, land and water) to assess its impact and allow effective mitigation steps to be taken.

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ANNEX: UK Emergency Response Agencies

In the event of an incident the response will include many parties. Brief reviews of their roles are listed below.

Police Forces

For most major emergencies the Police assume the overall co-ordinating role for operations, taking responsibility for communications, protection of the site, investigation of the incident and any criminal enquiry. They also process casualty information and act on behalf of the Coroner in identifying and arranging for the removal of the dead.

The first Police officer(s) arriving at the scene of an emergency will maintain a radio link with their control until a comprehensive communications system can be set up. They will also control traffic so that emergency service vehicles can access the scene. The Police have an important role in both co-ordinating the scene of the emergency and preserving evidence. They may establish cordons as a way of achieving these tasks.

Fire Authorities

The Fire and Rescue Service is, in many circumstances, likely to be the first emergency service at the scene of an emergency. If the emergency is of major proportions the Fire and Rescue Service will initiate local authority assistance by contacting the County Council's duty Emergency Planning Officer.

The Fire and Rescue Service's role is to:

- Rescue people trapped in a fire, wreckage or debris
- Make sure that the emergency does not escalate by extinguishing fire, undertake measures to prevent fire and deal with other hazardous situations such as chemical leaks
- Assume responsibility for the command, control and safety of all personnel within the inner cordon of a fire or chemical related emergency
- Help the Police recover bodies

The Fire and Rescue Service will also provide an Incident Commander to liaise and co-operate with the Police and the Ambulance Service in assessing the need for, and means of, public evacuation, casualty removal and site security.

Ambulance Service

The Ambulance Service is responsible for the treatment and care of those injured and their delivery to hospital, designating which receiving hospitals will take casualties during a major emergency and for the deployment and overall co-ordination of all on scene medical resources

Local Authorities

The structure of Local Authorities varies depending on location within the UK. Some areas have 3 levels of Local Authority, with County Councils at the highest level having responsibilities which include highways, emergency services, waste disposal and education within their areas. District Councils have responsibility for environmental health (noise pollution monitoring) and waste collection. Town or Parish Councils are at the lowest of the 3 levels and have minor local responsibilities (eg upkeep of open spaces). Other areas of the UK have just one (unitary) Local Authority, which encapsulates all of the areas of responsibility mentioned above.

In terms of the definition of ‘Local Authority’ mentioned in this paper, this refers to County and District Councils, or unitary authorities where appropriate. The initial role of the local authorities in responding to major emergencies is to support the emergency services and then, later, to lead the recovery. When an emergency is serious (but not of major proportions) or very localised, the District Council will provide the local authority co-ordinating function with County Council support. As District Council resources are likely to be deployed from the outset, the District will normally provide a Local Authority Liaison Officer (LALO) to attend the on-scene control point to liaise with the emergency services. However, should an incident have widespread effects (e.g. involving more than one District), or be large enough to overwhelm District Council resources, then the County Council will fulfil the principal co-ordinating function. In these circumstances the County Council may also deploy a LALO.

Local Health Bodies

Those hospitals which have Accident and Emergency Departments, and which can provide a Mobile Medical Team to attend the scene of a major emergency, are designated as “receiving hospitals”. Each receiving hospital maintains a Major Incident Plan which, when activated, provides for additional staff and the suspension of routine surgical care to allow for large numbers of incoming casualties.

Health Protection Agency

The Health Protection Agency provides authoritative scientific and medical advice to the NHS and other bodies about the known health effects of chemicals, poisons and other environmental hazards. This advice covers clinical issues such as:

- personal protective equipment
- decontamination and evacuation
- toxicological and epidemiological advice on impact on public health
- clinical advice on antidotes and medical treatment
- the public health impact of industrial sites
- health effects from chemicals in the environment (including water, soil, waste)

Health and Safety Executive

The HSE enforce health and safety regulation within the UK. Following incidents they lead investigations as to their cause.

National Chemical Emergency Centre

The National Chemical Emergency Centre (NCEC), based at Harwell, Oxfordshire, provides a 24-hour expert response service to the Emergency Services as a back up to company safety procedures, providing telephone advice (Level 1 response) in the CHEMSAFE scheme of chemical incident response. It is also a commercial provider of Level 1 response services.

Environment Agency

The Environment Agency (EA) is the lead regulator in England and Wales with responsibility for protecting and enhancing the environment. It was set up by the Environment Act 1995 and is a non-departmental public body, largely sponsored by the Department for Environment, Food and Rural Affairs (DEFRA) and the National Assembly for Wales (NAW). EA's prime responsibilities include flood risk management, tackling pollution incidents, reducing industry's impact on the environment, restoring and improving rivers, coastal waters, contaminated land, and wildlife habitats. They assist the emergency service in making sure that the best environmental courses of action are taken when reacting to emergencies and to prevent further damage during remedial actions.

Highways Agency

The Highways Agency has responsibility for managing the network of motorways and trunk roads in England (other parts of the UK have different agencies that carry out the same responsibility). The Agency operates a network of regional control centres from which they manage the supply of traffic information to the motoring public (including the use of electronic traffic signs) and coordinate the response of their Traffic Officers. Traffic Officers are on duty 24 hours every day and will attend the scene of road traffic accidents supporting the police in their duties, removing damaged and abandoned vehicles and have the authority to close roads and divert traffic.

Maritime and Coastguard Agency

The Maritime and Coastguard Agency (MCA), through its Search and Rescue (SAR) Branch – HM Coastguard – and its Counter Pollution Branch, and by close association with the salvage control functions of the Secretary of State's Representative (SOSREP), is deeply involved in the response to all emergencies occurring around the coasts of the UK, leading the response in most cases.

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