

Recommendations on the emergency preparedness for, response to and recovery from incidents

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Figure 1 An overview of the Buncefield site and adjacent business and residential communities before the incident

Introduction

1 This report sets out recommendations to improve both planning for emergencies and the effectiveness of the response to emergencies at Buncefield-like sites and other high-hazard industrial facilities regulated under the COMAH¹ regime. The recommendations are made by the independent Investigation Board, chaired by Lord Newton of Braintree, set up to supervise the investigation into the explosions and fires at the Buncefield oil storage depot, Hemel Hempstead, Hertfordshire on 11 December 2005. The Health and Safety Commission (HSC) directed the investigation using its powers under section 14(2)(a) of the Health and Safety at Work etc Act 1974.

2 Item five of the investigation's terms of reference required us to 'make recommendations for future action to ensure the effective management and regulation of major incident risk at COMAH sites. This should include consideration of off-site as well as on-site risks and consider prevention of incidents, preparations for response to incidents and mitigation of their effects'.

3 Our initial report,^(Ref 1) published on 13 July 2006, identified four principal workstreams that would form the basis for our continuing work and developing recommendations. Those workstreams are:

- ▼ design and operations;
- ▼ emergency preparedness for, and response to, incidents;
- ▼ advice to planning authorities; and
- ▼ examination of the Health and Safety Executive's (HSE's) and the Environment Agency's (EA's) roles in regulating the activities on the Buncefield site.

4 This report concentrates on the second of these – emergency preparedness and response. It builds on the broad conclusions set out in paragraphs 78–79 of our initial report. This report also draws together information from other sources, such as the recommendations and reviews by many organisations with experience of planning for and responding to the Buncefield incident. In several areas, work is already underway that has the potential to meet these recommendations. We understand that Hertfordshire Fire and Rescue Service, Hertfordshire Resilience Forum, the Health Protection Agency and the Buncefield Standards Task Group (among others) are working on aspects of emergency preparedness and response, including aspects recommended in our initial report. We welcome the initiative of the sector, the Competent Authority and responders in taking this forward.

5 We wish to ensure that their work and experiences are shared by the widest possible audience. Our broad aim in making these recommendations is therefore to ensure that the lessons of Buncefield are used to catalyse improvement in emergency planning, response and recovery arrangements throughout Britain. We well understand that devolved administrations exist elsewhere in the UK and these regimes differ from England in some respects in relation to their legislative and structural arrangements. We expect the recommendations in this report will be

¹ The Control of Major Accident Hazards Regulations 1999 (COMAH). These Regulations are enforced by a joint Competent Authority comprising HSE and the Environment Agency in England and Wales and HSE and the Scottish Environment Protection Agency in Scotland.

fully implemented throughout the UK and we anticipate the Competent Authority (CA) will ensure there is consistency of approach across the UK in the COMAH sector. Annex 3 attempts to explain some of the differences in the devolved administrations and we have reflected these in our recommendations as far as possible without sacrificing coherence.

6 The Buncefield incident caused no fatalities, perhaps fortuitously, but it had a huge impact on local residents and businesses, as well as on communities further away. The huge scale of the devastation, plus the extent of the work required to enable full recovery, highlights the need to learn all we can from the experience. Indeed, the incident also provides insights into what might have happened but did not, particularly in potential impacts on public safety and health, and on the environment.

The Board's approach

7 We recognise that the need to reduce the risk of a major incident at fuel storage sites is the first priority. For this purpose our report on design and operation of fuel storage sites made recommendations to 'catalyse improvement in the fuel storage sector so that it is continually alert to the major hazard potential of its operations'.^(Ref 2) Therefore Recommendation 1 calls upon site operators and the Competent Authority to ensure they have identified all foreseeable major hazard incidents and associated emergency scenarios. Recommendations 2–9 address the plans and arrangements to contain a developing incident on site, should primary containment be lost.

8 The second priority is to ensure that the emergency preparedness and response arrangements are effective, because however much improvement is made in preventive measures there can be no guarantee that a major hazard incident will not occur. The recommendations in this report therefore follow closely on our design and operation recommendations. Indeed there is some overlap between them, reflecting the close relationship between planning to prevent an incident and planning to deal with its potential consequences if it occurs. There may be further overlaps with the last two workstreams mentioned in paragraph 3, on which work continues.

9 The Buncefield incident was a major test for contingency planning and for the new national arrangements introduced under the Civil Contingencies Act 2004 (CCA) from September 2005. Recommendations 10–20 deal with planning and implementing an emergency response by those concerned. The impressive emergency response to Buncefield effectively relied on initiative and good working relations of the responders in dealing with an incident that had been unforeseen and therefore not planned for. The performance of the primary responders and support was outstanding and we commend all those involved in managing the incident response. Recommendations 21–26 address the primary response to major incidents, including setting up a means of assessing the public health implications.

10 We also acknowledge the efforts of many organisations in the response to Buncefield and the great resilience of the local community and businesses in the ongoing recovery effort to bring the affected local community back to social normality. Recommendations 27–32 address the recovery from a major incident with Buncefield-like consequences.

11 Our recommendations address the need to improve emergency arrangements at local, regional and national levels. An important element is to ensure that emergency arrangements to meet the requirements of COMAH are fully integrated with those established under the Civil Contingencies Act 2004. Recommendations 10–12 deal in particular with central government leadership in the planning for and early response to a major incident.

Scope of the recommendations

12 In our report on the design and operation of fuel storage sites we said that as a minimum, the recommendations would address Buncefield-type sites as defined by the Buncefield Standards Task Group,² ie depots that store and transfer petroleum products on a large scale. However, in most areas of emergency preparedness and response, we consider that many of the lessons from this incident can be applied beyond fuel storage and distribution, including matters that should be addressed at the national level. Certainly this report should be carefully considered by all those with a responsibility for COMAH sites with a potential for violent explosions or large complicated fires. More generally, we encourage high-hazard industries, the Competent Authority and Category 1 and 2 responders³ to consider the broader relevance of our findings so far.

13 Some of the recommendations are addressed to those who have legal duties to prevent and control major incidents.⁴ In practice this will require close working with the regulators (the Competent Authority), who will also need to ensure the recommendations are implemented. Other recommendations apply to organisations, including central or equivalent government and local authorities, responsible for planning for and responding to incidents and for the maintenance and restoration of social and economic well-being. This report is mainly written in terms of the UK approach to civil contingencies and COMAH, but in places refers to bodies or approaches which reflect the arrangements in England, or England and Wales. The Board expects that the equivalent administrations will respond as appropriate in line with their responsibilities.

² The task group comprises industry, members of the COMAH Competent Authority and primary responders. It was set up in the aftermath of Buncefield to respond to the incident and to the recommendations of the Buncefield Board.

³ Category 1 responders are organisations at the core of the response to most emergencies (eg emergency services, local authorities, NHS bodies). Category 1 responders are subject to the full set of civil protection duties under the Civil Contingencies Act 2004. Category 2 responders are other organisations that are likely to be involved in emergencies, such as utilities and transport companies.

⁴ COMAH requires operators of major hazard sites subject to the Regulations to take all measures necessary to prevent major accidents and limit their consequences to persons and the environment. Operators of top-tier COMAH sites (like Buncefield) are also required to submit written safety reports to the Competent Authority, and to prepare emergency plans to deal with the consequences of a major accident. Operators and others (including contractors, designers, and suppliers) also have relevant duties under the Health and Safety at Work etc Act 1974 and related regulations and under environmental legislation.

Status of the recommendations

14 In making these recommendations we recognise that work continues within industry, the Cabinet Office Civil Contingencies Secretariat (CCS), Hertfordshire Resilience Forum, the emergency services, the Health Protection Agency, the Environment Agency, the local authorities Dacorum and St Albans, and other Category 1 and 2 responders to improve the effectiveness of emergency preparedness and response. The Buncefield Standards Task Group has worked hard to identify and address issues in preparation for this report. Our recommendations are intended to support and complement these efforts.

15 We expect our recommendations to be implemented throughout the COMAH and (where necessary) the Civil Contingencies Act sectors and elsewhere as appropriate, and the emergency planning community. The Civil Contingencies Secretariat or its equivalents in Scotland, Wales and Northern Ireland should oversee this work, working with the Competent Authority (CA) as appropriate. We envisage that the CA and other emergency planners/responders will adopt the recommendations as the minimum necessary to comply with relevant legal requirements. The recommendations do not specifically call for changes to the law on the assumption that the existing legal framework is sufficient to ensure that necessary improvements are put in place. However, if this proves not to be the case in any respect, the relevant government departments/devolved administrations should draw up proposals for the necessary legal changes.

16 Where the recommended improvements are self-evidently necessary or where implementation is already intended, we expect the recommendations to be implemented without undue delay and for the relevant authorities to see this is the case. Arrangements should be made by both the Competent Authority and the relevant devolved administrations to ensure our recommendations are implemented consistently across both the Civil Contingencies Act and COMAH legislative regimes. Some recommendations call for reviews of existing arrangements and procedures and, particularly where this involves a multi-organisational approach, as in the work of the National Recovery Working Group,⁵ this may involve longer timescales before robust plans can be implemented. It is essential to have clear timescales, understood and committed to by industry, the relevant government ministers, agencies and authorities, and emergency planners, against which progress can be measured and reported.

17 Where commitments have already been made or the improvements are unquestionably necessary we have not undertaken detailed cost–benefit analysis. This applies to most of the recommendations, since many are already in hand by the relevant authority and the Buncefield Standards Task Group. We are exploring the costs and implications of some of the recommendations, and attempting to draw economic parallels with other serious explosion incidents that massively impacted the surrounding community. This includes the Danvers chemical plant explosion, Massachusetts, in November 2006, the Toulouse chemical explosion in September 2001 and the Enschede Fireworks disaster in May 2000 (see Annex 4). We are also examining the full economic costs of the Buncefield incident from the various sources available.

⁵ The National Recovery Working Group was established by the Secretary of State for Communities and Local Government led by Government Office for the North West. See Annex 5.

The recommendations

18 Our recommendations are grouped under the following four headings:

- ▼ Assessing the potential for a major incident (Recommendation 1)
- ▼ Managing a major incident on site (Recommendations 2–9)
- ▼ Preparing for and responding to a major incident off site (Recommendations 10–26)
- ▼ Recovering from a major incident (Recommendations 27–32)



Figure 2 Looking into part of the Buncefield site before the incident. Note the ground vehicles, large storage tanks, and occupied buildings. To the right are manifolds that distributed fuel around the site

Assessing the potential for a major incident

19 The recommendations under this and the next three headings are based on the conclusions set out in paragraphs 78–79 of our initial report and on the findings of the first^(Ref 3) and third^(Ref 4) progress reports. They have also been informed by our discussions with key responders to the Buncefield incident and by several reports and recommendations (listed in *References* and *Further information*) prepared by responders on their experiences. We endorse many of those recommendations. Our design and operation report^(Ref 2) set out recommendations to prevent the recurrence of incidents like that at Buncefield. Nevertheless, however much preventive standards are improved the possibility of a major incident remains. It is essential, therefore, to have in place effective emergency arrangements in the event of an incident occurring.

20 Operators of top-tier COMAH sites are required by law to prepare adequate emergency plans to deal with the on-site consequences of possible incidents and to provide information to enable local authorities to prepare emergency plans to deal with the off-site consequences. To be effective, these plans must be based on a full appreciation of the potential for major incidents. Before Buncefield a massive vapour cloud explosion at a tank farm was not deemed a credible major incident risk. Nor is it just a matter of vapour cloud explosions, as there is also the potential for significant fires affecting multiple storage tanks.

21 The key to both effective major hazard controls and to effective emergency arrangements is the adequacy of the operator's assessment of the major hazard potential of a site. Getting this right will be reflected in relevant documentation, such as the COMAH safety report and emergency plans, and in the arrangements themselves. Operators therefore need to take an integrated approach to assessing preventive and responsive needs.

Recommendation 1 Operators of Buncefield-type sites should review their emergency arrangements to ensure they provide for all reasonably foreseeable emergency scenarios arising out of credible major hazard incidents, including vapour cloud explosions and severe multi-tank fires that, before Buncefield, were not considered realistically credible. The Competent Authority should ensure that this is done.^(Ref 5: HRF Rec 2)

Managing a major incident on site

22 A key objective of the on-site plan should be to contain an incident on the site to minimise its effects, to limit damage and to protect people and the environment. Following the identification of all emergency scenarios arising out of credible incidents (Recommendation 1), the operator must put in place arrangements to respond to those scenarios. This includes preparing and putting into effect an on-site emergency plan to specify the response of those who work on the site in an emergency. In practice this work must be closely integrated with preparing the site safety report and with providing the local authority with the information it needs to prepare an off-site emergency plan.

23 Paragraph 78 of our initial report recommended operators to review their on-site emergency plans following Buncefield, where they had not already done so. Recommendations 2 and 3 build on this early response to the incident by asking the Competent Authority to support operators in improving the quality of their on-site plans. Currently, guidance to COMAH operators on preparing on-site emergency plans is not sufficiently aligned with the guidance to the Competent Authority for assessing the plans. Therefore, firstly a review of the existing COMAH guidance on emergency planning is required; and secondly plans should be reviewed in the light of the revised guidance.

24 Recommendation 4 asks operators to ensure they have fully competent staff available 24/7 to perform the requirements of the on-site plan and should bear in mind the nature and extent of any changes to the plans as a result of Recommendations 2 and 3. If sites are inaccessible out of hours, operators should have alternative means of getting on site, providing an inventory of what is on site and maintaining communications with the site if an incident occurs.⁶

Figure 3 Surface pipelines within an oil fuel depot



⁶ The Competent Authority has published a methodology to determine if the emergency preparedness on site is sufficient.^(Ref 6)

Recommendation 2 The Competent Authority should review the existing COMAH guidance on preparing on-site emergency plans.^(Ref 7) This guidance needs to reflect the HSE's Hazardous Installations Directorate (HID)⁷ Chemical Industries Division inspection manual used by inspectors to assess the quality of the on-site plan in meeting the COMAH Regulations. In particular, reference should be made to the need to consult with health advisors and emergency responders.^(Ref 5: HRF Rec 1)

Recommendation 3 For Buncefield-type sites, operators should review their on-site emergency plans to reflect the revised guidance on preparing on-site emergency plans as per Recommendation 2. The Competent Authority will need to check that this is done.

Recommendation 4 Operators should review and where necessary revise their on-site emergency arrangements to ensure that relevant staff are trained and competent to execute the plan and should ensure that there are enough trained staff available at all times to perform all the actions required by the on-site emergency plan.^{(Ref 2: Recs 6 and 19) (Ref 8: FRS Rec 10)}

25 The Buncefield incident exceeded the assessed worst-case event of a single tank fire. The two pump houses and their associated lagoons to the north and north-west of the site were rendered unavailable for use. Recommendation 5 therefore repeats Recommendation 12 of our design and operation report, for the sake of completeness. Recommendations 6 and 7 go further to ensure operators secure alternative arrangements in the event of primary response facilities being unavailable, for example, taking account of seasonal variations in available water supply.⁸ Where operators depend on local services (eg the local Fire and Rescue Service) to provide alternative resources, they need to consult the local provider to identify any limitations on the availability of services. Any such limitations should be considered and addressed within the site's emergency planning arrangements.

Recommendation 5 For Buncefield-type sites, operators should evaluate the siting and/or suitable protection of emergency response facilities such as the emergency control centre, firefighting pumps, lagoons or manual switches, updating the safety report as appropriate and taking the necessary remedial actions.^(Ref 1: Rec 12)

Recommendation 6 Operators should identify vulnerable critical emergency response resources and put in place contingency arrangements either on or off site in the event of failure at any time of the year and make appropriate amendments to the on-site emergency plan. This should include identifying and establishing an alternative emergency control centre with a duplicate set of plans and technical information.^(Ref 8: FRS Rec 10)

⁷ HID is responsible for regulating and promoting improvements in health and safety, contributing to the overall HSC/E aim of reducing and controlling the major hazard risks present across certain high-hazard industries and sectors.

⁸ The main water source for fighting the fires at Buncefield was the Breakspear Lagoon, which may not have held sufficient water in the summer months.

Recommendation 7 For COMAH sites, if the operator relies on an off-site Fire and Rescue Service to respond, the operator’s plan should clearly demonstrate that there are adequate arrangements in place between the operator and the service provider. The Competent Authority will need to check that this is done.

Warning and informing the public

26 Communications to the local community are important to give adequate assurance that the site is well run and emergency preparations are realistic and reliable. Regulation 14 of COMAH requires the operator of an establishment to ensure that the public, in a public information zone (PIZ),⁹ is supplied with information on safety measures at the establishment and on what to do in the event of a major incident at the establishment. Communications with off-site communities are required at least every five years, while a review is required every three years. More frequent communications may be needed for larger communities or where the population is transient. It is important to pay adequate attention to this function in a consistent way. Recommendation 8 therefore asks operators to review their approach to communicating with the public, including making provision for joint communications with local authorities and others. Such joint communications would reassure the public that all parties are working together; that operators will do all they can to prevent an incident or contain it on site; and that if a major incident should occur and they are affected, the local authority has plans in place to help and support them. Where complaints or reports are made by the local community, the site operator should respond within a reasonable time. This recommendation is closely linked with Recommendation 20.

Figure 4 Inspectors discussing strategy and logistics



⁹ This area is determined by the Competent Authority by taking account of both the likelihood and effects of possible major incidents at the major hazard site. It is set on the basis that people outside it are not at significant immediate risk from major incidents (although they could be if the incident escalates). The PIZ does not cover areas where a major incident might cause only environmental damage.

27 Recommendation 9 supports this more integrated process by ensuring that the COMAH guidance on warning and informing the public^(Ref 7) is revised to give more advice on the frequency and form of communication, and that it is complemented by the CCA *Emergency preparedness* guidance on communicating with the public.^(Ref 9) This will encourage the actions of the operators to be integrated with those of Category 1 responders in their duty to warn and inform the public.

Recommendation 8 COMAH site operators should review their arrangements to communicate with residents, local businesses and the wider community, in particular to ensure the frequency of communications meets local needs and to cover arrangements to provide for dealing with local community complaints. They should agree the frequency and form of communications with local authorities and responders, making provision where appropriate for joint communications with those bodies.^(Ref 8: HRF Rec 3)

Recommendation 9 The Competent Authority should review the COMAH guidance to assist operators in complying with Recommendation 8 and should work with the Cabinet Office to integrate the COMAH guidance and the CCA *Communicating with the public*^(Ref 9) guidance, so that communications regarding COMAH sites are developed jointly by the site operator and the local emergency responders.



Figure 5 Firefighters train to assist casualties in the event of an emergency



Figure 6 An unusual shot of a section of the M1 evacuated and closed in the height of the emergency. This caused major, temporary transport disruption to this part of the UK

Preparing for and responding to a major incident off site

28 In spite of efforts to prevent a major incident or to contain an incident on site, the potential for an incident to have an impact beyond the site boundary remains. Given the scale of the Buncefield incident, the majority of our recommendations deal with the emergency response to and recovery from a major incident. Here the main focus is on the local authority, which has the legal responsibility to prepare emergency plans to deal with the off-site consequences of an incident at a top-tier COMAH site. However, other Category 1 responders under the Civil Contingencies Act 2004 – the Health Protection Agency, Health Protection Scotland (and equivalent health bodies), Regional Resilience Teams in Government Offices in the Regions, the Civil Contingencies Secretariat, equivalent administrations and the Competent Authority – also have key roles. To prepare an effective plan the local authority and others depend on accurate information from the operator about the nature of operations on site and their hazard potential. This underlines the importance of an integrated approach and close co-operation between the various parties involved.

29 The local authority also has wider emergency planning functions, particularly under the arrangements now being put in place to implement the CCA. These arrangements had a severe test at Buncefield and held up well, but there are numerous lessons to be learned on a national scale. Since incidents of this scale are rare, it is important to ensure that the learning from Buncefield is shared by everyone concerned. We are aware that several reviews have been made of the emergency response to Buncefield, but not all are widely known and there is a danger that some good points will be missed. We endorse many of these points in this report. The nationally applicable lessons of all these reviews must be brought together and made accessible to all. The Civil Contingencies Secretariat should consider publishing a consolidated summary of the lessons to emerge from major incidents of this sort and the steps that are being taken to address them.

30 Our recommendations deal mainly with the detailed planning for and implementation of emergency arrangements, including communications. First, however, Recommendations 10–12 consider general arrangements at national level. In our initial report we noted that to learn lessons on the emergency response requires input from a large number of organisations, and this work requires a clear lead if the maximum benefit from our and other recommendations is to be gained. We also said that it ‘will be part of the Board’s ongoing work to establish a clear picture of the lead provided by central [and devolved] Government for first responders’.

31 During the early days of the response to the Buncefield incident, there was a valuable ministerial role in providing a focus for informing Parliament about the progress of the response and giving public reassurance that all necessary resources were being deployed.^(Ref 10) There was, however, a perception – particularly among those directly affected – that once the spotlight had moved on, central government lost interest. This was not supported by our findings but, as different ministers became involved, it was unclear who had the responsibility to ensure that problems arising were addressed.

32 There is good sense in maintaining flexibility in central response arrangements, as well as in ministers generally stepping back from close operational involvement. We see benefit, however, in reviewing how the ministerial role may best assist and complement that of the direct responders – this is addressed in Recommendation 10.

As well as keeping Parliament informed and reassuring the public as provided for in the current arrangements, we see an important role for a minister in ensuring the response works as intended and in providing the authority to clear any bottlenecks. It is also important to ensure from the start that attention is given to the need to plan for the return to social normality, though this may mean working with a different minister who would be involved for a longer term (see Recommendation 27). Finally, while we acknowledge the efforts by many groups to implement recommendations made by other agencies, their task will be made easier if a minister is nominated to ensure that lessons arising from an emergency are implemented.

33 The CCA recognises that COMAH requires emergency response arrangements to be in place and sensibly does not duplicate these requirements. Unfortunately, we have indications that some see the arrangements to comply with the CCA and with COMAH as being separate. This was never intended and would lead to wasteful duplication and a possible loss of effectiveness. Just as emergency arrangements should be integrated with preventive measures, so should COMAH emergency arrangements be fully integrated with those under the CCA. The CCA framework and supporting guidance provides a valuable resource in preparing COMAH on- and off-site emergency plans. Recommendation 11 addresses this point.

Recommendation 10 The Cabinet Office should initiate a review of the arrangements to identify a minister (and their devolved counterparts) and their role to complement and support the emergency responders following a major incident to ensure national arrangements work as intended and there is continuity of government attention throughout the response and recovery phases. The review should include communications, public reassurance, the interface with planning for a return to social normality (Recommendation 27), and arrangements to ensure that recommendations made following major incidents are implemented.

Recommendation 11 The Civil Contingencies Secretariat, working with the Competent Authority, should ensure that COMAH emergency arrangements are fully integrated with those under the CCA with the aim of ensuring that major hazard events are dealt with consistently at all levels, from on site to national, in terms of planning, shared resources, and practical arrangements. The review should include, but not be limited to, confirmation that:

- ▼ response arrangements take account of devolved responsibilities;
- ▼ lead responsibility in government for ensuring emergency response arrangements at COMAH sites is dealt with consistently under COMAH and CCA;
- ▼ procedures and guidance are suitably aligned; and
- ▼ deployment of emergency equipment considers both COMAH and CCA sectors and sites.

34 The support to Buncefield from many parts of Britain was impressive, as was the donation of human and material resources. The firefighting, while led by the Hertfordshire Fire and Rescue Service, required a national response with a total of 32 Fire and Rescue Services attending in some capacity, building on established arrangements. Mutual aid was also required by other responders. However, initiative and generosity need to be supplemented by co-ordination at a national level for an incident of this scale to ensure the most effective deployment of resources.

Recommendation 12 deals with the need for national-level arrangements to provide emergency equipment, since a major incident will rapidly exhaust local stocks. We acknowledge the work done to date by Communities and Local Government (CLG), like the positioning of high volume pumps. This links with Recommendations 23 and 24. Further work is required to assess the cost implications of a national scheme for hardware against the benefits of greater public assurance that emergency equipment is readily available throughout the country to respond quickly to events and without randomly depleting regional resources.

Recommendation 12 Communities and Local Government should complete and, where necessary, initiate an assessment of the need for national-level arrangements to provide, fund and maintain, emergency response equipment (such as high volume pumps, firefighting foam and specialist pollution containment equipment). The review could also consider criteria for allocation and use of this equipment across the UK.

35 It was clear from the many reports from Buncefield that insufficient guidance was available to primary responders on a number of critical early issues, such as how to assess the impact of the smoke plume on air quality. This is addressed at Recommendation 13. Decisions on whether to fight the fire or to allow it to burn out in a controlled fashion depend on the availability of such assessments and we urge the Environment Agency to complete the work in hand on the controlled burn strategy guidance (see paragraph 51).

Recommendation 13 The Civil Contingencies Secretariat should review guidance to responders on assessing the extent of the impact of an incident at a COMAH site to ensure appropriate scales of response and resources are provided, at local, regional or national levels.

Review of off-site emergency plans

36 Effective emergency response depends upon a clear and concise emergency and contingency plan, trained and experienced responders and a well-informed community. Recommendations 14–26 focus on improving the off-site emergency preparedness and response. This primarily requires local authorities to review the effectiveness of their emergency plan and responders to review their training arrangements.

37 The primary need is for better guidance for local authorities and early responders to make effective plans for dealing with major incidents such as large explosions. During the development of the off-site emergency plan for Buncefield, there seems to have been little practical support or guidance for the local authority to understand the safety reports for the site, or on whom to consult about important ‘knock-on’ effects of a major incident, such as the need for and consequences of closing schools and hospitals, threats to clean water and electricity supplies. Recommendation 14 calls for improved guidance to assist local authorities draw up effective off-site emergency plans. Recommendation 15 calls for measures to ensure arrangements are effective in practice. Both recommendations build on work already underway by the Civil Contingencies

Secretariat¹⁰ and the Emergency Planning Society.¹¹ We commend this work and encourage its completion without delay.

Recommendation 14 The Civil Contingencies Secretariat, working with the Competent Authority, should arrange for national guidance to local authorities to be prepared, addressing as a minimum the areas covered in Recommendation 15. Guidance should also address the competencies required for emergency planners, and be clear on the resources that may be demanded for an effective emergency planning function. The guidance should be a living document, ie periodically updated in the light of new knowledge of handling major emergencies.

Recommendation 15 Local authorities should review their off-site emergency response plans for COMAH sites in line with the revised guidance produced in response to Recommendations 13 and 14, and in the case of fuel storage sites, to take account of explosions and multi-tank fire scenarios. The aim is to ensure plans contain the key information from relevant COMAH safety reports (without compromising the safety reports' confidentiality), which should be provided by site operators following their reviews of arrangements under Recommendation 1. The review should include but not be limited to the following:

- ▼ input from trained and competent emergency planners following clear guidance;
- ▼ working in conjunction with Regional Resilience Forums, and their equivalents in Scotland and Wales, in preparing their off-site emergency plans to understand potential impacts on the Region.^(Ref 11) The Local Resilience Forum structure encourages multi-agency co-operation and information sharing within a county. The Regional Resilience Forum,¹² and their equivalents, should determine where further consultation is applicable and determine how this is done within and across regions;
- ▼ working in conjunction with neighbouring local authorities in developing their off-site emergency plans and involving these authorities in training and in emergency exercises;
- ▼ extending co-operation beyond the statutory consultation distance (CD) supplied by HSE to take into account the worst possible impact of a major incident, in effect re-calibrating the public information zone, which conventionally aligns with the CD;

¹⁰ The Civil Contingencies Secretariat has launched a programme of work to identify and disseminate good practice. This would be a viable route for disseminating good practice in preparing and responding to COMAH sites. For industry, the competent authorities must continue to collate and disseminate good practice nationally and internationally.

¹¹ The Civil Contingencies Secretariat and the Emergency Planning Society aim to establish a set of core competencies designed to further enhance the professionalism of the workforce in the civil protection sector. By the end of 2008 a set of core competencies for professional emergency planning practitioners working in government and in public, private and voluntary sector organisations will have been drawn up.

¹² The Regional Resilience Forums are established by each Government Office to discuss civil protection issues from the regional perspective and to create a stronger link between local and central government on resilience issues. Similar arrangements are made in the devolved administrations.

- ▼ considering with other primary responders the fitness for purpose of the plans for the different tiers of the command and control structure (gold/silver/bronze);
- ▼ taking account, with appropriate expert input, of the local environment to identify what would be at risk and to identify the potential consequences.

CCS and the Competent Authority, as the enforcing authority under COMAH, should ensure the reviews are carried out.

38 The public health impacts of Buncefield appear to have been minimal.^(Ref 12) In our initial report we welcomed the establishment of a Health Protection Agency (HPA)-led working group aiming to construct frameworks and agreed working practices for any future post-incident sampling. We continue to await the completion of this work. We understand the Environment Agency may assume lead responsibility for the co-ordination of air quality monitoring following a major incident as they currently do for surface and groundwater (the extent and longevity of ground water contamination continues to be monitored by the Environment Agency). It is sensible that both HPA and EA should be actively involved in the development of the off-site plans by local authorities.

Recommendation 16 HPA, HPS and NPHS (National Public Health Service) Wales, EA, SEPA and EHSNI (Environment and Heritage Service Northern Ireland) should provide local contact details to local authorities and Local Resilience Forums¹³ (LRFs) to facilitate emergency plan development. This will ensure local authorities have clear consultation routes for the public health and environment aspects of their off-site emergency plans.^(Ref 2: HRF Rec 4)

39 The voluntary services were invaluable in their assistance to the emergency responders. The WRVS (Women's Royal Voluntary Service) and Salvation Army provided catering and the British Red Cross supported the rest centre. Local retailers and suppliers of domestic goods are to be commended for their generosity in supporting the work of the voluntary services. The volunteer groups involved found that there is a need to raise the profile of the volunteer groups and what they can do to support an emergency response. Recommendation 17 highlights the need for emergency plans to incorporate arrangements to meet the welfare needs of responders, an area where the voluntary sector has an important contribution to make.

Recommendation 17 Local authorities should ensure their off-site emergency plans give due consideration to meeting the welfare needs of responders, including arrangements to provide food and drink and toilet and washing facilities, on all shifts. This will also need to include guidance on rest breaks and the provision of accommodation for responders from outside of the local area. Plans should make provision for the contribution of the volunteer community in attending major incidents in the welfare and other supporting roles.^(Ref 8: FRS Rec 26) (Ref 5: HRF Rec 38)

¹³ The principal mechanism for multi-agency co-operation between all Category 1 and 2 responders in a local police area is the Local Resilience Forum (LRF). The aim of LRF is to facilitate fulfilment of the statutory duties of the members. The LRF is not a statutory body, but it is a statutory process under the Civil Contingencies Act 2004.



Figure 7 WRVS providing assistance to emergency service personnel during the response to the Buncefield explosions

40 Many, perhaps most, local authorities will need to revise their off-site emergency plans for COMAH sites in the light of our recommended review. Recommendation 18 calls on local authorities to take the necessary measures to bring their revised plans into effect. In taking evidence from responders in the aftermath of Buncefield, and considering the situation in other parts of Britain it was very clear to us that regular contact between responders greatly enhances the efficacy of the immediate response. Recommendation 19 calls on local authorities to test their (revised) arrangements in a practical way.

Recommendation 18 In reviewing their off-site emergency arrangements for COMAH sites, revised in accordance with our recommendations, local authorities should identify the facilities, resources and actions that are critical to successfully respond to an emergency and should provide contingencies for Buncefield-type sites. Local authorities should review and where necessary revise emergency arrangements to ensure that relevant staff are trained and competent and that there are enough trained staff and resources to perform the actions required by the emergency plan at all times.

Recommendation 19 Local authorities should ensure their revised off-site emergency arrangements for COMAH sites are tested within 12 months of production. Exercise scenarios based on real incidents should be compiled by CCS and the Competent Authority and available for multi-agency exercise development:

- ▼ All Category 1 responders should ensure their staff are trained within six months of production to deliver the emergency response. (Ref 5: HRF Recs 7, 14 and 16)

- ▼ Local authorities should arrange for councillors and elected members to have awareness training regarding their role in planning for, responding to and recovering from emergencies to effectively represent their communities.¹⁴

41 During the early stages of Buncefield, there was some disappointment with the lack of availability of up-to-the-minute information on local radio and TV. Early advice to residents who were not evacuated was to ‘go in, stay in, tune in’, but it was not very clear where people should ‘tune in’ to, and it was also unclear to us what information was relayed to the local media by those in strategic control of the response as part of the communications function. Recommendation 20 therefore calls for an assessment of compliance with current national standards. To assist in the emergency response phase, the operator and Local Resilience Forums should seek an agreement with local media to deliver key messages during an emergency, for example, along the lines of the BBC Radio *Connecting in a Crisis* (CIC) initiative,¹⁵ where such arrangements are not already fully in place. These arrangements should be tested periodically.

42 There are no legal powers to force people to evacuate from their homes unless there is an act of terrorism.¹⁶ Providing information to explain to the community that the decision to evacuate is not taken lightly and that it is always taken to protect life may assist in gaining support for evacuation. Communications to the community should include what they have to do and where they should go, how they can keep informed and how they will be notified when it is safe to return. Local authorities, working with the police, should consider how to secure both council and privately owned properties that may be vulnerable because of smashed windows and provide the necessary information to occupiers.

Recommendation 20 Local Resilience Forums and devolved equivalents should assess and advise operators, local authorities and the Competent Authority on the effectiveness of communications with residents, local businesses, dutyholders and the wider community in the event of a major incident. The assessment should use an agreed standard in line with CCA2004 guidance *Communicating with the public*^(Ref 9) and include arrangements with local media to avoid conflicting advice being received, and to ensure key messages are transmitted.

¹⁴ Training is available at the Emergency Planning College, Easingwold www.epcollege.gov.uk/EMSEM.

¹⁵ ‘Connecting in a Crisis’ is a BBC initiative to help ensure that the public has the information it needs and demands during a civil emergency. It sets out to encourage emergency planners to work more closely with broadcasters in the preparation of strategies for communicating essential information. See www.bbc.co.uk/connectinginacrisis.

¹⁶ Generally speaking, the police do not have specific statutory powers to enforce a request or order to leave an area. The main exception to this is in relation to acts of terrorism where there are statutory powers to cordon off areas and it is an offence to fail to comply with an order to leave a cordoned area immediately. Evacuation may also be enforced under the Public Health Act 1984 if it is necessitated by infection or disease.^(Ref 13)

Responding to a Major Incident

43 Those who responded to the Buncefield incident raised three main issues in their reports and discussions with us. These were obtaining air quality information, obtaining health advice and firefighting arrangements. Recommendations 21 and 22 deal with air quality information and public health advice. Recommendations 23 to 25 deal with firefighting arrangements and endorse the recommendations made by the Hertfordshire Fire and Rescue Service fire response report.^(Ref 8) Recommendation 26 deals with communications between government and incident controllers during the emergency response.

44 The vast plume of smoke generated by the fire at Buncefield created several problems for the responders. The first issue was how to find out what was in the plume and if or where it was going to ground.^(Ref 14) The Environment Agency has identified and costed different service levels for air quality monitoring and modelling support, ranging from a 24/7 response capability to best endeavours support. The Environment Agency's proposal, including service levels, has been discussed by two Cabinet Office groups: the Interdepartmental Group on Specialist Scientific Advice; and the Official Committee on Domestic and International Terrorism (Prepare).

Figure 8 Firefighters tackle a blazing tank at Buncefield. The size of the Fire and Rescue Service response was unprecedented in modern times in the UK



45 These Cabinet Office groups endorsed the proposal and recognised the need for a 24/7 response capability. Recommendation 21 is about bringing into effect robust arrangements for air quality monitoring for the future. We commend the initiative to develop a more coherent approach to air monitoring and plume modelling during major incidents. In England, Defra has not made a decision yet on whether funding will be provided in line with the proposal from the Environment Agency. We would hope that a favourable decision is reached quickly and that Defra, as the lead department for air quality issues, ensures the new arrangements are implemented without delay.

46 The second issue was whether the plume was harmful to human health. This was a difficult question for the health advisory team¹⁷ to answer at the Strategic Co-ordinating Group (SCG) because of a lack of information to hand, and inadequate provisions at the time for dealing with this issue. The HPA have recognised the need to improve the provision of health advice to the SCG. There are two significantly different health roles required at the SCG – the co-ordination of health service resources (hospital beds, primary care etc) and the provision of specialist public health advice. The co-ordination of health service resources is the responsibility of the Primary Care Trust (PCT) and Strategic Health Authority (SHA). Most of the technical public health expertise is in the HPA. Different arrangements will be in place in devolved areas and these need to be taken into consideration in developing the health response arrangements.

47 The Department of Health and the Cabinet Office issued guidance^(Ref 15) in April 2007 outlining the replacement of the Health Advisory Team with the Scientific and Technical Advice Cell (STAC). It also summarises the roles and responsibilities of those organisations providing scientific and technical advice to the SCG. In Wales, the existing HAT arrangements currently remain. Discussions are ongoing with the National Public Health Service on taking forward similar arrangements to STAC in Wales.

48 The Environment Agency, Health Protection Agency, Met Office, Health and Safety Laboratory and Food Standards Agency have proposed that a multi-agency air quality advisory group is established in the emergency phase of a major air pollution incident to co-ordinate the provision of air quality data and advice to the STAC. This group would be chaired by the Environment Agency.



Figure 9 The smoke plume viewed above Hemel Hempstead

¹⁷ The responsibility for public health advice is shared between the PCT Director of Public Health (DPH) (statutorily responsible for the health of the local population) and the HPA (statutorily responsible for protecting the health of the community).

Recommendation 21 The CCS should conclude their review of arrangements for obtaining and using air quality data in an emergency. This revision of arrangements should be delivered no later than 2008. The review should include:¹⁸

- ▼ agreement on clear notification procedures;
- ▼ agreement on roles and responsibilities for collecting air quality data;
- ▼ arrangements to disseminate the above to all responders and include them in emergency plans;
- ▼ agreement on performance standards for quality and delivery;(Ref 5: HRF Recs 5 and 15)
- ▼ consideration for the provision of local meteorological stations in the vicinity of COMAH sites, which can provide local wind direction and speed.

Defra should ensure that financial or resource restraints do not hinder the delivery of a robust air monitoring capability.

49 Recommendation 22 is about improving the provision of public health advice during the immediate emergency phase. Relevant toxicological information on combustion and pyrolysis products of substances stored on site should be incorporated into emergency plans together with the advice which would be needed on the basis of this. This would need to consider all credible major hazard incidents (Recommendation 1). We believe this information should be readily available as public health advice for each top-tier COMAH site by the HPA, HPS, NPHS Wales and equivalents based on the worst-case emergency scenario. This could be referred to during the initial emergency response until actual data from the incident are available.

50 A critical and immediate question for the incident response controllers was the public health matter of whether or not to fight the Buncefield fires. The Strategic Co-ordinating Group is only able to take informed decisions regarding protection of public health with knowledge of the harmful nature of the plume, and where it might ground. At Buncefield this information was not available to SCG and so, faced with the sheer magnitude of the plume, it was almost inevitable that the fire would be fought. The firefighting resulted in a limited escape of contaminated firewater from the site. The consequences of this are still under investigation. The disposal of the fire water that was contained and stored in the sewage treatment works storm water storage tanks has posed significant technical difficulties, not all of which are yet solved.

¹⁸ Defra has proposed that the Environment Agency take on the co-ordinating role for air quality in a major incident, excluding radiological and nuclear incidents or those involving chemical warfare agents. The project to draw up and implement the co-ordination arrangements includes Defra, Welsh Assembly Government, Health Protection Agency, Met Office, Food Standards Agency, Government Decontamination Service, local authorities and Fire Services. SEPA and EHS (Environment and Heritage Service Northern Ireland) are due to be consulted and included.



51 Since Buncefield, the Environment Agency has revised the Pollution Prevention Guidance (PPG28)^(Ref 16) on controlled burn to help site operators, firefighters and others decide when a controlled burn strategy could be used, ideally as part of an agreed pollution response plan following an environmental risk assessment. A controlled burn strategy, where the application of firefighting water or foam is restricted or prohibited, may be used for some incidents when the environmental impact of contaminated firewater run-off to surface and/or ground waters outweighs the impact on public health or has public health benefits. We commend this work as making a significant contribution to remedy one of the larger difficulties – that of assessing the impact on public health – facing the emergency responders at Buncefield.

Figure 10 Emergency services from all over the UK assisted in the operations at Buncefield

Recommendation 22 The Civil Contingencies Secretariat and Department of Health should clarify the different roles for providing health advice at Strategic Co-ordinating Group (Gold Command and Control Centre) to local responders. Local agreements should be in place in advance to allow health agencies to decide quickly who will do what in any incident so that the SCG chair receives the support they need. Different arrangements will exist in devolved areas and planning should take account of these.^(Ref 5: HRF Rec 23) Information relevant to public health arising from the incident at the major hazard site in question should be available at the outset to enable health responders to give accurate, useful advice when first needed.

52 As we said in our initial report, the emergency services, particularly the fire and police services, responded impressively and on a massive scale that was almost certainly unprecedented in modern times. Inevitably, there are lessons to be learned from such an exceptional event. We have noted, in paragraph 34, that the response to Buncefield involved the emergency responders on a national scale. There is a role for government in the allocation of extreme emergency equipment as we make clear in Recommendation 12. However, operators of high-hazard sites must also play their part in making the national inventory more effective and efficient. Recommendation 23 calls on industry to give leadership to establishing mutual aid

arrangements for tackling major fires anywhere in Britain. A number of the lessons related to the availability of equipment and the interchangeability of components such as couplings, which proved to be a problem during the response to Buncefield.

Recommendation 23 The operators of industrial sites where there are risks of large explosions and/or large complicated fires should put in place, in consultation with fire and rescue services at national level, a national industry–fire service mutual aid arrangement. The aim should be to enable industry equipment, together with operators of it as appropriate, to be available for fighting major industrial fires.^{(Ref 8: FRS Recs 2 and 25) (Ref 17: p 5)} Industry should call on the relevant trade associations and working group 6 of the Buncefield Standards Task Group to assist it, with support from CCS. The COMAH Competent Authority should see that this is done.

53 Through the *New Dimension* programme,¹⁹ Communities and Local Government (CLG) undertakes to provide the fire and rescue authorities (FRAs) with the equipment and consumables needed to respond to the types of incident covered by the S9 Emergencies Order.²⁰ We understand the roll-out of the provisioning programme is almost complete. Recommendation 24 calls for a review of the national inventory which will include hitherto unplanned-for emergencies. This would align with the statutory obligation on FRAs to assess likely risks and determine how best these can be met. The recommendation also asks that couplings be interchangeable – which could mean carrying stocks of adaptors or providing other suitable means of achieving this effect. Communities and Local Government have advised us they believe a suitable approach would be for FRAs to arrange call-off contracts with suppliers through Firebuy²¹ for individual Fire and Rescue Services (FRS) to draw upon when needed.

Recommendation 24 Fire and rescue authorities and their equivalents in Wales, Scotland and Northern Ireland should review the availability of materials and equipment nationally and determine if they are sufficient to respond to and manage major incidents.²² (Ref 8: FRS chapter 7, and Ref 12) Critical interface components, such as foam equipment couplings used by the FRS, should be capable of use both by the FRS and with any industry the authority may call upon. The administrations of Scotland and Wales should be involved in such a review as responsibility for the FRS is devolved. Communities and Local Government and equivalent administrations should see that this is done.^(Ref 8: FRS Rec 16)

¹⁹ CLG includes the *New Dimension* programme, which supplied equipment and procedures to enhance the capability of the Fire and Rescue Service to respond to a range of incidents. The Welsh Assembly Government and Scottish Executive have responsibility for the *New Dimension* programme in Wales and Scotland to support the devolved fire and rescue authorities. The Northern Ireland Fire and Rescue Service (NIFRS) have also implemented the *New Dimension* programme.

²⁰ Section 9 of the Fire and Rescue Services Act 2004 (FRS Act) came into effect in October 2004. It enables the Secretary of State, by Order following consultation, to place functions on fire and rescue authorities concerning specified emergencies. These exclude fires and road traffic accidents.

²¹ Firebuy (www.firebuy.gov.uk) is the national procurement arm of the Fire and Rescue Service for major items such as vehicles, clothing and equipment.

²² This is being taken forward by the Fire Service Practitioners Forum ‘Buncefield Task and Finish Group’.

54 Hertfordshire Fire and Rescue Service have produced a definitive report on lessons learned from fighting the Buncefield fires. Communities and Local Government ministers and their counterparts in the equivalent administrations should ensure that the FRS recommendations that are widely applicable are brought into effect without undue delay.

Recommendation 25 The recommendations in the Hertfordshire Fire and Rescue Service report^(Ref 8) into the lessons learned from the Buncefield fires that are widely applicable, should be put into effect where it is practical to do so as soon as possible. Communities and Local Government ministers, in co-operation with the Civil Contingencies Secretariat and equivalent administrations, should see that this is done.

55 During the response to the Buncefield incident, SCG received requests for information about the emergency and its response from several parts of government. These requests appeared uncoordinated, placing unnecessary demands on SCG and potentially leading to distraction of key strategic players and misinterpretation of what information was needed. For national emergencies, the arrangement is for all communications to and from central government to be routed via an identified lead government department and a nominated liaison officer. For the Buncefield incident, a liaison officer was deployed from the Government Office for the East of England Regional Resilience Team.²³ Recommendation 26 addresses the need to ensure that this key function is resourced properly to manage communications effectively between central government and the Gold Commander. In a major incident, the lead government minister and their counterparts in the equivalent administrations referred to in Recommendation 10 should ensure that effective lines of communications are in place and established procedures are being followed.

Recommendation 26 The Civil Contingencies Secretariat should review the procedures and arrangements²⁴ in government offices in the English regions for deploying liaison staff to ensure effective communications between central government and Gold Command (Strategic Control Group) in a major emergency. The review should ensure that communications are managed in a way which minimises the demands on Gold Command and maximises efficiency. It should also ensure that the necessary level of human and technical resources can be sustained over a significant period if required by the demands of the response and recovery phases. The review should be conducted with the equivalent administrations to ensure equivalent improvements in communication arrangements for incidents in devolved areas.

²³ The regional resilience team is a small group of civil servants within a regional government office dealing with civil protection issues under the leadership of a regional resilience director. Similar arrangements will exist in the devolved administrations.

²⁴ GO East and HPA have recognised the need to deliver incident management training and to increase the number of liaison officers and assistants as part of their reviews. Cabinet Office has identified workstreams to review the central government arrangement for responding to an emergency and for the provision and management of information in support of the central response. This will address issues that arose between Gold Command and central government.



Figure 11 Maylands Business Estate, one of the largest in south-east England, located next to the Buncefield site. After this photo was taken there was further commercial development on the cleared ground at centre right

Recovering from a major incident

56 In this section ‘recovery’ means the process of returning to full social normality following a major incident. COMAH emergency plans deal with only a small part of this process, namely restoration and clean-up of the environment, not wider social and economic issues. These are covered to some extent by more general government guidance.^(Ref 18) The recovery phase may be more difficult and protracted than the immediate response phase and it is essential that planning for recovery starts at once, while the emergency response is still underway. Paragraph 79 of our initial report identified the need to consider the interests of local residents and businesses in emergency planning, particularly in ensuring a smooth transition from response to recovery.

57 Recommendation 10 on ministerial roles recognises that there may well be a transfer of lead ministerial responsibility at this stage. CLG ministers have played a key role in overseeing the recovery from Buncefield and we assume would normally play this role in the event of future incidents in England (or their devolved administration counterparts in Scotland and Wales). We welcome this clear focus and Recommendation 27 indicates that it would be helpful for government to clarify that this is the intention. We believe in most situations it would fall to CLG to take on this role. An important benefit of having such a fixed arrangement is the preparedness of the relevant minister for exercising the role. We ask that this ‘default’ position be confirmed by government. This arrangement has the additional benefit that, in the event of an agreement in a particular circumstance that another minister should take responsibility for the recovery from a specific event, a clear and public transfer of responsibility would be required.

Recommendation 27 The Cabinet Office should confirm formally, to avoid any doubt, where lead ministerial responsibility lies for the recovery phase following a major incident until the affected community has regained social normality. We believe responsibility should lie, in most foreseeable situations, with Communities and Local Government (or its successors, or in the case of Scotland and Wales, its devolved administration counterparts) supported as necessary by other central departments. In the event it is agreed that another minister should assume this role in a specific situation, the transfer of responsibility should be made clear. Emergency arrangements should take full account of the need to ensure recovery starts as soon as possible, including a smooth handover of lead ministerial responsibility where appropriate.

58 Recommendation 28 provides for a clear transition at the local planning level. Recovery groups should convene quickly and include organisations not involved in the emergency response, such as the regional development agency (RDA). No time should be lost in factoring recovery issues into the deliberations and decisions attaching to the emergency response to major incidents such as Buncefield. This was put to us very strongly by responders, including those attending the Strategic Co-ordinating Group (also known as ‘Gold’) and local authorities, notwithstanding the immense task they will have dealing with the immediate situation.

Recommendation 28 Local authorities should ensure that recovery plans dovetail with off-site emergency response plans and the Regional Economic Strategy²⁵ (and devolved equivalents) to ensure that all relevant organisations are involved at an appropriately early stage.

²⁵ The RDA would play a key role in driving economic development in the region, especially if a major incident had an economic impact across a number of local authority areas or across the whole region.

59 Recovery from a major event on the scale of the Buncefield explosion is going to require substantial investment that will be beyond the existing financial capabilities of the local RDA. Therefore, Recommendation 29 calls for additional financial support to stimulate recovery in the aftermath of an extreme event.

60 Paragraph 79 of our initial report also welcomed CLG's initiative in setting up a task force to investigate options for government support to businesses and local economies following a disaster. We understand there have been some changes in these plans and it has become clearer to us that the issue of financial aid and special status to communities stricken by major incidents such as Buncefield was added to an already fairly heavy workload of the National Recovery Working Group (NRWG)²⁶ (see paragraph 16 and Annex 5 for more information). We are aware of the core work of the working group and believe that its detailed programme of work, when delivered, will make a valuable contribution to the effectiveness of the many organisations involved in post-incident recovery. However, it is also clear that the matter of financial aid and special status to assist the redevelopment of stricken communities should be detached from the working group's programme, and be dealt with as a separate and urgent matter by the Secretary of State for Communities and Local Government. Recommendation 29 therefore repeats our view that this work is very important and should be progressed swiftly.

61 While numerous forms of support have been provided to those affected by the Buncefield incident, better integrated arrangements (possibly based on special area status) would reduce administrative complexity and provide greater certainty to those in need. There is an appearance that critical decisions affecting the recovery of the business and residential communities around Buncefield are somewhat on hold pending a number of outcomes (eg in terms of changes to planning advice) that are beyond the control of local authorities and businesses. The doubts for the future of the area among those who might stay, move in, or develop a business precisely characterise what needs to be in place in the unlikely event of another major incident.

62 We make no specific definition of 'special status'. However, we are calling for suitable and early financial provision and sufficient relaxation of planning and zoning constraints to ensure as rapid recovery of the area as can be reasonably expected. What we mean by 'social normality' should have regard to the social and economic status of the community before the major incident, and also take account of changes to its status that could be anticipated during the recovery period, as if the incident had not occurred. Therefore, we anticipate the application of practical status indicators such as relative movement of house prices and unemployment trends compared to regional norms. It would also be essential to determine at the outset the minimum initial period that special treatment should last.

63 The subject of financial aid provided by government is bound to be complicated in the context of a disaster such as Buncefield. Matters such as insured losses, liability, and compensation are not obvious risks for underwriting with public money. So we stress we are talking about recovery: kick-starting the recovery of a stricken community that would otherwise deteriorate and impose other and perhaps greater costs on the social economy. We believe the financial equity and fairness issues, while difficult, are capable of being resolved. Taken

²⁶ By autumn 2007, the NRWG is expected to deliver a suite of guidance and a set of recommendations that will need to be taken forward by the relevant lead government departments. See Annex 5.

altogether there are a number of challenges to be overcome and balances to be struck in considering additional financial provision and special status. These would appear to be matters for local government, regional assemblies, regional development agencies, chambers of commerce and equivalent administrations to take forward with CLG and other government departments without delay. In calling for the lead minister to control special funding we do not envisage replacing or marginalising the role of the RDA's and their equivalents in this regard. Clearly the local regional administrations are best placed to administer funds and to monitor the recovery and to determine when the recovery is achieved.

Recommendation 29 Communities and Local Government should review options for government support to communities affected by a disaster and produce practical recommendations without delay. The review should consider the merits and mechanisms for providing immediate, short-term financial assistance to affected communities, for instance through establishing special status, and how long the period of special treatment should last. The lead minister for recovery that we ask to be confirmed in Recommendation 27 should have responsibility for controlling special funding provided for recovery. Suitable indicators of social and economic well-being should be adopted to assist in the monitoring of the recovery. The equivalent administrations should be involved in the review to ensure that appropriate financial support arrangements are put in place in their areas.

64 Paragraph 61 draws attention to the special difficulties being faced by those in the area around Buncefield. Recommendation 30 calls on government to consider the Buncefield area as an urgent special case for central support to its recovery while the recommendations in this report are brought into effect. We feel it is vitally important that the recovery of the Buncefield region should not be put on hold while these recommendations are being considered and implemented. Our recommendations should not only support communities should a major incident occur in their vicinity in the future; practical additional support should be applied without delay in the area around Buncefield.

Recommendation 30 Central government should give urgent consideration to support to assist in the recovery of the area around Buncefield, including to both help restore business confidence and attract new workers and new employment. The aim would be to apply to the Buncefield area the principles of our recommendations right away. The Secretary of State for Communities and Local Government should see this consideration takes place.

65 Recommendation 22 refers to the need for clarity of responsibility for public health advice during an emergency response. In fact, some health concerns persisted well after the Buncefield fires were extinguished and the site made safe, particularly in relation to firefighting foam and the likely ground penetrations. Recommendation 31 therefore identifies the need for national arrangements to co-ordinate monitoring of the health impact work after the immediate response phase has ended.

Recommendation 31 The Health Protection Agency and equivalent health bodies (HPS, NPHS and DHSSPS (Department of Health, Social Services and Public Safety, Northern Ireland)) should agree a framework for continued co-ordination of health impact assessment and response after the acute incident response phase stands down.

Recovery of the environment

66 The COMAH regime joins HSE with the Environment Agency and the Scottish Environment Protection Agency because of the potential for major accidents to the environment (MATTE)^(Ref 19) arising out of an incident at a COMAH site. A MATTE arising from Buncefield was notified to the EU in July 2006. Determining the extent of damage to the environment, and dealing with it, is an essential part of the recovery phase. In terms of public health, we have called upon HPA and others to begin the assessment of potential damage to public health from the first moments of an incident (see paragraphs 43 to 49 and Recommendations 21 and 22). We welcome the work done by HPA and other relevant bodies to improve the provision of advice to primary responders, and for the setting up of monitoring arrangements specifically targeted at the type of emergency being dealt with.

67 As in the field of public health, we believe that more can be done at the beginning of an incident with potential to cause a MATTE to assess the possible nature and extent of the threat to the environment. Legal obligations rest with the relevant dutyholder under the COMAH Regulations to identify all major accident scenarios and assess the consequences for safety and the environment (Recommendation 1). Local authorities perform a similar exercise to produce an off-site emergency plan (Recommendation 15). We have not found evidence generally of adequate guidance to Environment Agency staff for making an assessment of dangerous inventories stored on site or brought to site during an emergency and for quantifying, as far as possible, the loss to the environment and likely penetrations. We are confident this was done to an extent at Buncefield but we believe the lesson to be learned is that even more can be done by relevant parties to plan and prepare for worst-case scenarios and for the Competent Authority to ensure this is the case.

68 We also believe that at the onset of an incident, better co-ordination is required between operator, COMAH regulator, the emergency services and local authorities to understand the types and quantities of harmful products escaping from site. These will include both the process materials normally in use and storage on site, substances brought in to deal with the emergency response, and the implications of the contaminated mixtures that might result. We do not underestimate the technical difficulties in achieving this but believe the benefits, to the design of the follow-up monitoring programme and in helping ensure the relevant priorities are in place, outweigh the difficulties.

69 We believe that at the onset of an incident, measures should be in place to co-ordinate the implementation of emergency plans with an assessment of the risks to the environment. This will assist provisions for giving accurate and important advice to primary responders, and for the setting up of monitoring arrangements specifically targeted at the type of emergency being dealt with. We therefore welcome the Environment Agency initiative to conduct a review of relevant procedures and guidance relating to the best means to assess the damage potential of worst-case emergencies, also taking into account harmful products that may be brought to the site. Recommendation 32 asks for this work to be completed quickly, including the production of suitable guidance for primary responders and planners. It would be helpful to co-ordinate this work with the relevant part of Recommendation 22, and bring it into the ambit of the STAC, as described in paragraph 47.

Recommendation 32 The Environment Agency (in consultation with SEPA and the Northern Ireland Environment and Heritage Service) should complete, as quickly as possible, its review of methodologies for assessing the potential harm to the environment arising out of credible major incidents at COMAH sites, and from the emergency response scenarios attaching to them. The objective is to improve information provided to aid planners and emergency responders. The work should align with the arrangements introduced for the Scientific and Technical Advice Cell (STAC).



Strategic recovery

70 High-hazard industrial sites are often national assets of strategic economic importance. Recovery from a major incident at such sites may well therefore extend to restoring the flow of products that they supply. The Buncefield incident had a major impact on fuel supplies to Heathrow. Work continues to put fuel supply to the airport onto a sustainable and resilient footing for the longer term.

71 Partly prompted by the Buncefield incident, paragraph 4.42 of the recent Energy White Paper^(Ref 20) states that ‘The Government has also established with industry an Aviation Fuel Task Group (AFTG). It will analyse future jet fuel demand at Heathrow and other UK airports up to 2030 and what fuel supply infrastructure may be needed to meet demand. We will also look at the infrastructure needed for other oil products.’

72 We understand that one workstream of the AFTG is to review the Government Pipeline and Storage System (GPSS). The GPSS infrastructure continues to be used to help boost supplies to Heathrow as a consequence of the Buncefield incident. We welcome this initiative, which on the face of it, makes sensible use of an important national asset.

Figure 12 After the fires were out: Buncefield from Boundary Way, December 2006

Annex 1

Terms of reference and progress

This annex sets out the eight terms of reference for the Investigation and explains the progress that is being made towards accomplishing each of them.

1 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

The Board has published three progress reports from the Investigation Manager. This was followed by the Board's initial report on 13 July 2006, which summarised the three preceding reports and set out the Board's four main areas of concern. These have revealed the main facts of the incident, but have not speculated on why control of the fuel was lost. The explosion mechanism, ie the means by which unexpectedly high overpressures were generated, is subject to significant further investigation. Wider expert consultation has been undertaken on whether and what further research may be required and a report of this work will be published shortly.

The criminal investigation continues to make progress in pursuing all reasonable lines of inquiry into the facts and causes of the incident to enable the Competent Authority (HSE and the Environment Agency) to take a view on legal proceedings. When a decision has been taken by the CA, it will be made public.

2 To identify and transmit without delay to dutyholders 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

The Competent Authority issued a Safety Alert to around 1100 COMAH dutyholders on 21 February 2006. Special attention was paid to 108 fuel depot owners storing COMAH quantities of fuel in Great Britain, seeking a review of arrangements for detecting and dealing with conditions affecting containment of fuel. Most dutyholders responded to the alert by the Easter deadline. Meanwhile, the Competent Authority visited all 108 depots to follow up the alert. An interim report was published on 13 June 2006 and is available at www.hse.gov.uk/comah/alert.htm.

The Environment Agency issued further advice to its inspectors to investigate secondary (bundling) and tertiary (drains and barriers) containment at depots in England and Wales in response to the Second progress report. The Environment Agency continues to monitor the effects of Buncefield on the surrounding environment and to issue updates on its website, www.environmentagency.gov.uk. The initiative is being handled separately for Scotland by the Scottish Environment Protection Agency, with joint inspections undertaken with HSE covering primary, secondary and tertiary containment, and management systems. A report by the Competent Authority on the outcome of its work was published on 29 March 2007. It is available on the websites of the members of the Competent Authority.

On 16 June 2006 investigators served two Improvement Notices on the manufacturers of the high level alarm switch installed on Tank 912, having identified a potential problem at other sites related to the setting of the switch for normal operations following testing. This was followed up by a Safety Alert from HSE on 4 July 2006 alerting operators relying on such switches of the potential problem.

The Chairman of the Buncefield Board wrote to the Chief Executive of the Health Protection Agency on 3 July 2006 enquiring into progress with informing regional resilience groups of early lessons learned from Buncefield, focusing on public health issues in the immediate aftermath of a major airborne incident, following up with a meeting in December 2006. HPA has assisted the Board with the recommendations contained within this report.

3 To examine the Health and Safety Executive'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 is progressing steadily on both parts of the review, concerning respectively HSE's and the Environment Agency's prior regulatory activities at Buncefield. The full findings of the review will be incorporated into the Board's final report (see term of reference 8). Immediate important lessons from the examination of the Competent Authority's prior role have been incorporated as appropriate into the lessons learned programme under term of reference 5. We expect to publish a report into the review of the policies and procedures of the Competent Authority later in the year, perhaps incorporating it into a further interim report under term of reference 8.

4 To 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

The ongoing impact on residents and businesses of the Buncefield incident has been reported in the three progress reports and in the initial report in which, in Part 2, the Board set out its main areas of concern. The Board has maintained an active interest in releasing as much new information as possible to the community and its elected representatives to assist in understanding the events of 11 December 2005, and to maintain public confidence that progress is being made with the Investigation. As has been reported previously, residents and businesses continue to show remarkable resilience in the difficult aftermath to the Buncefield incident. Dacorum Borough Council in particular, but also St Albans and Hertfordshire Councils, have performed extremely effectively in very difficult circumstances, and have supported the Board in its engagement with residents and businesses, as has Mike Penning MP. Local residents and the business forums in the Hemel Hempstead area have provided input to this report, and more generally. We are very grateful for all this support.

The Board has also kept key government stakeholders informed of the Investigation's progress, and has maintained its interest in developments that have taken place since Buncefield to help manage the aftermath and support a return to normality for residents and businesses. We make special reference in this report to the difficulties for recovery of the area faced by the local authorities, residents and businesses.

The Board has engaged with all the public sector agencies involved in the emergency response to Buncefield and has met with a number of the key agencies, particularly the Category 1 (Gold) responders. The Board has outlined its conclusions and recommendations within the contents of this report, and many are based on the excellent reviews made by many of the agencies that responded to the incident.

5 To make recommendations for future action to ensure the effective management and regulation of major accident risk at COMAH sites. This should include consideration of off-site as well as on-site risks and consider prevention of incidents, preparations for response to incidents, and mitigation of their effects

Staff seconded from HSE, the Environment Agency and the Health Protection Agency are assisting the Investigation Manager and the Board to make sensible, practical and affordable recommendations for improvements in the light of the Buncefield incident. Key workstreams are in environmental protection; land use planning; emergency preparedness, response and recovery; fire and explosion mechanisms; control and instrumentation; human and organisational factors; health; and regulatory impact.

This report, making recommendations on the emergency preparedness, response to and recovery from incidents, is the second report under this term of reference. HSE has convened an industry-chaired task group (the Buncefield Standards Task Group) that includes the Environment Agency and the Scottish Environment Protection Agency and other primary responders, to consider emergency preparedness and response issues in parallel with the Board's work. This initiative has been welcomed by the Board in this report.

The work in producing the recommendations contained within this report has been supported by an immense amount of work undertaken by other agencies such as Hertfordshire Resilience, Hertfordshire Fire and Rescue Service, and the Health Protection Agency. With these recommendations, the Board has joined together the many strands of this subject, including issues concerning support to communities and businesses in the aftermath of an extreme incident.

The Board is close to recommending suitable arrangements for further research and modelling of explosion mechanisms in flammable vapour clouds.

HSE has completed its initial work on changes to land use planning advice and has issued a public consultation document seeking views by 22 May 2007. The Board has set out its own views to the consultation document and this may be viewed on our website. HSE has also concluded a public consultation exercise on behalf of a Cabinet Office led team on applying new knowledge of risks to society in the planning system (a subject often referred to as societal risk). The Board's response to the consultation document will be available on our website. The Health Protection Agency is consulting key agencies to improve public health advice and support during significant pollution events.

6 To produce an initial report for the Health and Safety Commission and the Environment Agency as soon as the main facts have been established. Subject to legal considerations, this report will be made public

This element is discharged by the publication of the Board's initial report on 13 July 2006.

7 To ensure that the relevant notifications are made to the European Commission

A report from the Environment Agency and HSE was made to the European Commission on 10 March 2006. Subsequently, the Environment Agency declared Buncefield a major accident to the environment (MATTE), and the Competent Authority has recently reported this to the European Commission.

8 To make the final report public

The timing for the publication of the final report remains uncertain and is of course linked to progress on the main terms of reference and to any decision on any criminal proceedings that might be considered. The possibilities include a further interim report in autumn 2007; decisions must necessarily depend on the timing of developments and consideration of the public interest.

Annex 2

Members of the independent Board

The Rt Hon Lord Newton of Braintree has been a life peer since 1997 after spending 23 years as a Conservative Member of Parliament for Braintree, Essex. From 1982 to 1988 he held ministerial positions at the Department of Health and Social Security. In 1988 he joined the Cabinet as Chancellor of the Duchy of Lancaster and Minister at the DTI. He then held the post of Secretary of State for Social Security from 1989 to 1992 when he was appointed Leader of the House of Commons, which he held until 1997. In 2002 he chaired the Committee that reviewed the operation of the Anti-terrorism, Crime and Security Act 2001.

Professor Dougal Drysdale is one of the leading international authorities in fire safety engineering. He was the Chairman of the International Association of Fire Safety Science until September 2005 and is currently the editor of the leading scientific journal in the field, *Fire Safety Journal*. His wide range of research interests includes the ignition characteristics of combustible materials, flame spread and various aspects of fire dynamics. He is a Fellow of the Royal Society of Edinburgh and a Fellow of both the Institution of Fire Engineers and the Society of Fire Protection Engineers.

Dr Peter Baxter is a Consultant Physician in occupational and environmental medicine at Cambridge University and Addenbrooke's Hospital, Cambridge. In the past, he has advised the government on the impacts on public health relating to air quality standards, major chemical incidents, natural disasters and climate change.

Taf Powell is Director of HSE's Offshore Division. He graduated in Geology and Chemistry from Nottingham University. His oil field career has been split between working in the UK and abroad in offshore exploration and development and regulation of the sector in licensing, well operations, policy and safety regulation. In 1991 he joined HSE's Offshore Division from BP and started work to develop the new offshore regulatory framework, one of Lord Cullen's recommendations following his inquiry into the Piper Alpha disaster. As HSE's Operations Manager, based in Aberdeen, he then led inspection teams and well engineering specialists responsible for enforcing the new regulations until 2000 when he took up his current role.

Dr Paul Leinster is Director of Operations at the Environment Agency. Up until March 2004 he was the Director of Environmental Protection, having joined the Agency in 1998. Before this he was the Director of Environmental Services with SmithKline Beecham. Previous employers also include BP International, Schering Agrochemicals and the consultancy firm Thomson-MTS where he was Managing Director. Paul has a degree in Chemistry, a PhD in Environmental Engineering from Imperial College and an MBA from the Cranfield School of Management. He has worked in the health and safety and environmental field for 30 years.

David Ashton is Director of HSE's Field Operations North West and Headquarters Division. He joined HSE in 1977 as an inspector in the west of Scotland where he dealt with a wide range of manufacturing and service industries, including construction, engineering and the health services. In 1986 he joined Field Operations HQ to deal with machinery safety. He then held the post of Principal Inspector of manufacturing in Preston for two years, before being appointed as a management systems auditor to examine offshore safety cases in the newly formed Offshore Division. In 1993 he became Head of HSE's Accident Prevention Advisory Unit, looking at the management of health and safety in organisations. Between 1998 and 2003 David was HSE's Director of Personnel, before being appointed to his current position.

Annex 3

Devolved and equivalent administrations

Information in this section is taken from the UK Resilience website to describe the emergency preparedness and planning arrangements in the devolved administrations (and equivalents), where they differ from UK government and local arrangements in England.

www.ukresilience.info/preparedness/devolvedadministrations.aspx

Scotland

The Civil Contingencies Act 2004 (CCA) applies to Scotland. The powers set out in Part 1 of the Act reside with Scottish ministers in line with the devolution settlement. It is supported by regulations made by the Scottish Parliament.

Scotland's principal guidance on the CCA, regulations and good practice is *Preparing Scotland*, a living document regularly updated to accommodate developments, changes in risk and their impact, and driving the development of emergency planning. Current activity to enhance *Preparing Scotland* will meet many of the objectives of the Buncefield recommendations while improving resilience, preparation and response to a wider range of risks. Since its inception, *Preparing Scotland* has recognised that the CCA regime can support activity required by COMAH and other regulations.

The Scottish government directorates are designated as leads on relevant issues in line with the 'lead department' principle at the UK level. In non-devolved areas, the Scottish government works closely with the UK government to ensure that Scottish needs are catered for.

Overall responsibility for civil protection policy in Scotland sits with the Civil Contingencies Unit (CCU) within the Scottish Government Police and Community Safety Directorate. The Scottish government chairs the Scottish Emergencies Co-ordinating Committee (SECC), which ensures that steps are taken to respond to the changing risk environment and determines the national strategy for the development of civil protection.

Scottish Executive Justice Department Civil Emergencies website:

www.scotland.gov.uk/Topics/Justice/emergencies/guidance

The Scottish Resilience Development Service has been established with a remit to address lessons identified in response to emergencies and exercises. It does so through exercising, training and by developing the competency of practitioners.

Where the Health Protection Agency (HPA) and the Environment Agency (EA) have been mentioned, the Scottish equivalents are Health Protection Scotland (HPS) and the Scottish Environment Protection Agency (SEPA).

Wales

The arrangements set out in Part 1 of the Act apply in Wales. However, there are some differences in the requirements that the Regulations place on Category 1 and 2 responders in Wales because of the unique administrative arrangements in Wales. As in England, the principal mechanism for co-operation between Category 1 and 2 responders under the Act will be the Local Resilience Forums (LRFs). The Welsh Resilience Forum (WRF) provides a national forum for multi-agency strategic advice on civil protection and emergency planning. The forum is a non-statutory advisory body.

The Welsh Assembly Government (WAG) or Wales Office, depending on the subject matter, is represented on the key committees and forums within the UK government relating to civil protection. They work closely with UK government departments to ensure that UK civil protection policy and planning is tailored to Welsh needs. A dedicated team in WAG supports multi-agency co-operation in Wales and engagement with the UK government on issues relating to civil protection and emergency preparedness.

Wales Resilience website:

<http://new.wales.gov.uk/resilience/regional-local-resilience1/?lang=en>

Where HPA and EA have been mentioned, the Welsh equivalents are the National Public Health Service Wales (NPHS) and Environment Agency Wales.

Northern Ireland

Civil contingencies in Northern Ireland are largely a devolved matter with responsibilities lying with Northern Ireland government departments. The Northern Ireland Office (NIO) in the UK government is, however, responsible for, among other things, policing, criminal justice and security in Northern Ireland.

The duties of the Act apply only to a limited number of organisations that deliver functions that are not transferred. These organisations are: the Police Service of Northern Ireland (PSNI); the Maritime and Coastguard Agency (MCA); and telecommunications operators. Because these organisations do not represent the full spectrum of response agencies in Northern Ireland, the Regulations treat these organisations in a slightly different way. In practice, it is anticipated that the PSNI, MCA and telecommunications operators in Northern Ireland will undertake their duties under the Act, but will relate to the other public service bodies listed in the Regulations in line with the arrangements in the Northern Ireland Civil Contingencies Framework and by participating in Northern Ireland co-operation, co-ordination and crisis management machinery.

The Central Emergency Planning Unit (CEPU) in the Office of the First Minister and Deputy First Minister (OFMDFM) promotes and co-ordinates civil protection arrangements in Northern Ireland. The Northern Ireland Assembly would normally have oversight of civil contingencies arrangements for transferred functions. The 'lead government department' principle applies to Northern Ireland departments as at the UK level.

The Central Emergency Management Group (CEMG) is a pan-Northern Ireland multi-agency forum for the development, discussion and agreement of civil protection policy. It is broadly analogous to the Regional Resilience Forums in England and Wales. Co-ordination at local and sub-regional levels may be facilitated by a range of organisations, with police district commanders and district council chief executives taking key roles in co-ordination. Northern Ireland has its own unique constitutional and organisational structures. Unlike in Great Britain many services are delivered on a Northern Ireland-wide (regional) basis, either by government departments or by their agencies and non-departmental public bodies.

Northern Ireland Central Emergency Planning Unit website:

<http://cepu.nics.gov.uk/>

Where HPA and EA have been mentioned, the Northern Ireland equivalents are the Department of Health, Social Services and Public Safety (DHSPS) and the Environment and Heritage Service, Northern Ireland (EHS).

Annex 4

Other major incidents causing extensive off-site damage

Three recent incidents are briefly described that show a relationship with Buncefield in that all of them caused extensive damage to the surrounding area. Two of them resulted in multiple fatalities. References are provided should further information be required.

Enschede, Netherlands

A fire broke out within the SE Fireworks depot in the eastern Dutch city of Enschede on 13 May 2000. The fire caused a massive explosion, killing 22 people and injuring over 900. Around 1500 homes were damaged or destroyed, and 1250 people were left homeless. The cost of the damage was estimated to be more than half a billion euros.

Emergency services from all around the area, including Germany, assisted at the scene. However, concern was raised that the preparedness for such a disaster was insufficient. In particular, Enschede fire brigade had insufficient information about the site, or the products stored by the company. This lack of information resulted in tactical errors that contributed to the deaths of four firemen, as well as other members of the public.

The cause of the fire has never been officially determined. The Oosting Committee, charged with investigating the incident, noted that not only had the company stored more fireworks at the depot than they had permits for, but also that most of these fireworks were wrongly classified as presenting no significant hazard (1.4G) or fire hazard (1.3G) rather than as a mass explosion hazard (1.1G). The explosives storage permits allowed only 1.3G fireworks and the lower hazard, 1.4G fireworks. The Committee's report also describes several storage issues which may have contributed to the origin and/or escalation of the fire.

However, the Committee was also critical of the role played by local and national government. The municipal administration was criticised for insufficiently inspecting the company and for not taking action against the company for a detected violation of the environmental permit in force. It was also criticised over planning issues and new development monitoring issues.

The national government was blamed for failing to act on recommendations from an investigation following the 1991 explosion of a fireworks factory in Culemborg, which showed problems with the classification of fireworks.

Sources

- ▼ Report from the Oosting Committee
- ▼ Henk Voogd *Disaster Prevention in Urban Environments*
- ▼ *Wikipedia* 'Enschede fireworks disaster'

Toulouse, France

At 10:15 am on 21 September 2001 a huge explosion occurred at the AZF (Azote de France) fertiliser factory, located about 3 km (2 miles) outside the city of Toulouse in France. The explosion shattered shop and car windows and tore doors from their hinges in the city centre. Over 500 houses became uninhabitable. At least 29 people were killed and thousands were injured.

Various hypotheses have been proposed but the exact cause of the explosion remains unknown. What is known is that at the time of the explosion, some 200–300 tons of ammonium nitrate was stored in the warehouse. This material had been classed as unsaleable; it included off-spec product and it was contaminated with oil from handling equipment, bitumen from the original floor in the building, iron oxide and sulphur. Such conditions will have increased its susceptibility to explosive initiation.

A secondary blast at a nearby explosives factory was also reported, which was believed to have been caused by sparks created by the explosion at AZF.

Sources

- ▼ www.unep.fr 'Ammonium Nitrate Explosion in Toulouse – France' 21 September 2001
- ▼ Frédéric Borrás *Bombs in the Heart of Cities*
- ▼ *HInt Dossier* 'AZF Ammonium Nitrate Explosion' 18 May 2005

Danvers, Massachusetts

A massive chemical explosion occurred at a factory in Danvers, Massachusetts in the early morning of 22 November 2006. The factory, which produced solvent-based commercial printing inks, was destroyed and more than 100 homes and businesses up to one mile away were damaged, some beyond repair. As of early May 2007, over 50 families were still unable to return to their homes. No one was killed in the incident, but ten members of the local community were injured.

Investigators from the US Chemical Safety Board (CSB) believe that the explosion was caused by 'the inadvertent overheating of solvents left stirring overnight in an unsealed mixing tank, releasing flammable vapor which accumulated and ignited'.

Minor concerns were expressed regarding the environmental impact of the incident. It was noted that the water runoff from the water used by firefighters had left a purple sheen on the river. Tests carried out by the US Environmental Protection Agency following the incident showed low levels of the solvent toluene. This was not seen to be a significant risk, as the chemical evaporates quickly, and the water was not a local drinking water supply. Danvers' Fire Chief also stated that there was no risk of toxic fumes getting into the air.

Sources

- ▼ US Chemical Safety Board (CSB) news release 'In Preliminary Findings, CSB Investigations Say 2006 Danvers, Massachusetts, Explosion Caused by Solvent Vapor Accumulation...' 9 May 2007
- ▼ *Wikinews* 'Chemical plant fire decimates Danvers, Massachusetts neighbourhood' 22 November 2006
- ▼ Boston.com 'Explosion heard over 20 miles away destroys homes in Danvers' 22 November 2006

Annex 5

National Recovery Working Group terms of reference

Background to the Working Group

Following a number of recent incidents, it has become apparent that local responders would appreciate more comprehensive guidance to support them in dealing with the recovery stage of emergencies. This was most recently raised as an issue following the Buncefield fire, which led Ruth Kelly, Secretary of State for Communities and Local Government, to agree to investigate options for government support to businesses and local economies in the period following an exceptional disaster.

TIDO (Prepare), the Official Committee on Domestic and International Terrorism (Preparedness), at their meeting on 6 November 2006 therefore agreed that a National Recovery Working Group should be established to identify the gaps in information and support and to produce a single point of reference for recovery guidance for local responders.

Objectives of the Group

- 1 To investigate the recovery options for mitigating the short, medium and longer-term economic, social (including health) and environmental impacts of emergencies on communities.
- 2 To provide a single point of reference for recovery guidance to local responders.¹
- 3 To identify gaps in recovery support and guidance, and propose options for further work to fill these gaps to be fed into the relevant Capability Workstreams or other government programmes (this includes making proposals for what further support and funding options are required for businesses and the local economy).

Deliverables

Objective 1

- ▼ Case studies from recent incidents and exercises (national and international) on what recovery issues were faced and how they were handled, with good practice examples.

Objective 2

- ▼ Web-based advice (possibly on UK Resilience) on how and where local responders (particularly local authorities) can obtain assistance or advice on recovery issues. This will include a list of roles and responsibilities of each government department and other organisations, a list of recovery contacts, and a glossary of terms. Any differences that exist in guidance for devolved

¹ While local authorities normally take the lead on recovery issues, the guidance will be aimed at all agencies involved in the recovery process.

administration areas will be clearly flagged. Arrangements will also be put in place for the long-term management and updating arrangements for these website pages.

- ▼ To map out and link to existing government and other sources of guidance and support.
- ▼ Feed into the revision of *Emergency Response and Recovery* guidance.
- ▼ Work with the Emergency Planning College in review of the Community Recovery course.

Objective 3

- ▼ Recommendations to address gaps, including those in economic and local business support, to be taken forward by the relevant lead government departments.

All of the above will be consistent with the Civil Contingencies Act framework and its supporting documentation *Emergency Preparedness and Emergency Response and Recovery*.

Membership

Core membership

Recovery is by nature a cross-cutting subject and relates to a wider area of responsibilities and capabilities than is represented by the Capabilities Programme. As a result, a wide range of government departments will need to be represented on the Group. These departments will include:

- ▼ Communities and Local Government (CLG)
- ▼ Department for Culture, Media and Sport (DCMS)
- ▼ Department for the Environment, Farming and Rural Affairs (DEFRA)
- ▼ Department of Trade and Industry (DTI)
- ▼ Department for Transport (DfT)
- ▼ Her Majesty's Treasury (HMT)
- ▼ Department for Education and Skills (DfES)
- ▼ Department for Constitutional Affairs (DCA)
- ▼ Department of Health (DH)
- ▼ Home Office (HO)
- ▼ Cabinet Office (CO)
- ▼ Ministry of Defence (MOD)
- ▼ Government Decontamination Service (GDS)
- ▼ Government Offices (GOs)
- ▼ Welsh Assembly Government (WAG)
- ▼ Scottish Executive
- ▼ Northern Ireland
- ▼ Foreign and Commonwealth Office
- ▼ DfID [to be invited if they wish to attend]
- ▼ Health Protection Agency
- ▼ Environment Agency
- ▼ Department for Work and Pensions

Many of these departments have links with a series of government agencies. It is expected that these departments will represent those agencies at the meetings and provide communication links as necessary.

In addition, the Group will require representation from a wide range of other organisations. These will include:

- ▼ Local Government Association (LGA)
- ▼ Association of Chief Police Officers (ACPO) (representing all UK forces)
- ▼ Chief Fire Officers' Association (CFOA) (representing all UK services)
- ▼ Ambulance Service Association (ASA) (representing all UK services)
- ▼ Regional Development Agencies (RDAs)
- ▼ Confederation of British Industry (CBI)
- ▼ Association of British Insurers (ABI)
- ▼ Health and Safety Executive (HSE)
- ▼ Food Standards Agency (FSA)
- ▼ Coroners' Society for England and Wales
- ▼ Convention of Scottish Local Authorities (COSLA)
- ▼ Welsh Local Government Association (WLGA)

Wider stakeholders

The Group will also require input from wider stakeholders, including those organisations who have been involved in the recovery stages of recent incidents. In keeping the numbers on the Group manageable, it will not be possible for all these organisations to be personally represented. However, the Group will ensure that their views are captured through use, for example, of electronic stakeholder surveys and other consultation exercises, building on existing networks (eg Local and Regional Resilience Forums) where possible.

Chair and Secretariat

GONW Head of Regional Resilience (Kathy Settle) will chair the group. Contact details are: Kathy.settle@gonw.gsi.gov.uk or Tel 0161 952 4146 (office) or 07771 978920 (mobile).

Rhiannon Harries, Regional Resilience Division, Communities and Local Government, will provide secretariat support. Contact details are: Rhiannon.harries@communities.gsi.gov.uk or Tel 0207 944 8575 (office).

Scope

The guidance will be made as comprehensive as possible, commensurate with the time-limited nature of the Working Group. In the longer term, the website could be used to disseminate further guidance and case studies as they occur. The separate 'Grouping of Topics' paper lists some of the issues that have been raised by recent emergencies which will be considered for inclusion in the guidance, although this should not be viewed as comprehensive and will be amended and added to as the Project progresses.

Should the Group identify areas for further work, either in relation to providing or clarifying guidance, or filling gaps in support, then it will make recommendations on how these should be taken forward.

Timescale

The Group will be time-limited and will aim to complete its tasks within nine months of the first meeting.

Accountability and reporting processes

The Group is accountable to TIDO (Prepare) and will submit the deliverables outlined above to that body for sign-off. The documents will also be submitted to DOP (IT) (PSR)² for their acknowledgement prior to publication. In addition, the Group will provide regular progress reports (quarterly) to the Capabilities Programme Board via the Civil Contingencies Secretariat (CCS).

Definitions

Emergency

An event or situation that threatens serious damage to human welfare in a place in the UK or the environment of a place in the UK, or war or terrorism that threatens serious damage to the security of the UK. To constitute an emergency an event or situation must additionally require the implementation of special arrangements by one or more Category 1 responder. (*Emergency Response and Recovery*)

Recovery

The process of rebuilding, restoring and rehabilitating the community following an emergency. (*Emergency Response and Recovery*)

Response

Response encompasses the actions taken to deal with the immediate effects of an emergency. In many scenarios it is likely to be relatively short and to last for a matter of hours or days – rapid implementation of arrangements for collaboration, co-ordination and communication are, therefore, vital. Response encompasses the effort to deal not only with the direct effects of the emergency itself (eg fighting fires, rescuing individuals) but also the indirect effects (eg disruption, media interest). (*Emergency Response and Recovery*)

² The Ministerial Committee of Defence and Overseas Policy (Sub-committee on International Terrorism) (Ministerial Group on Protective Security and Resilience).

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- 2 *Recommendations on the design and operation of fuel storage sites* Buncefield Major Incident Investigation Board March 2007 www.buncefieldinvestigation.gov.uk
- 3 *The Buncefield Investigation: First progress report* Buncefield Major Incident Investigation Board 2006 www.buncefieldinvestigation.gov.uk
- 4 *The Buncefield Investigation: Third progress report* Buncefield Major Incident Investigation Board 2006 www.buncefieldinvestigation.gov.uk
- 5 *Buncefield Multi-agency Debrief Report and Recommendations* Hertfordshire Resilience Forum March 2007
- 6 *Performance indicators for the assessment of emergency preparedness in major accident hazards* CRR345 HSE Books 2001 ISBN 978 0 7176 2038 8
- 7 *Emergency planning for major accidents: Control of Major Accident Hazards Regulations 1999 (COMAH)* HSG191 HSE Books 1999 ISBN 978 0 7176 1695 4
- 8 *Buncefield: Hertfordshire Fire and Rescue Service's review of the fire response* Hertfordshire Fire & Rescue Service 2006 ISBN 978 0 11 703716 8
- 9 *Civil Contingencies Act 2004: Part 1 Emergency Preparedness, Chapter 7: Communicating with the public* Cabinet Office 2004
- 10 *The Lead Government Department and its Role: Guidance and Best Practice* Civil Contingencies Secretariat 2004
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- 12 *The public health impact of the Buncefield oil depot fire* HPA 2006
- 13 *Evacuation and Shelter Guidance. Non-statutory guidance to complement Emergency Preparedness and Emergency Response and Recover* HM Government Crown Copyright 2006
- 14 *Dispersion modelling studies of the Buncefield Oil Depot* Incident Hadley Central technical note 69 Met Office 2006
- 15 *Scientific and technical advice in the Strategic Co-ordination Centre, Guidance to local responders* Department of Health/Cabinet Office 2007
- 16 *Pollution Prevention Guidelines* Environment Agency www.environment-agency.gov.uk/ppg (work in progress)
- 17 Niall Ramsden report, issues identified for further consideration post-Buncefield (excluding those specifically addressed in 'review of Buncefield TOR 5 lessons learnt – phase 1 issue mapping'), P748 Other Issues, October 2006 not printed

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19 DETR Guidance on the interpretation of major accidents to the environment for the purposes of the COMAH Regulations The Stationary Office 1999

20 *Meeting the Energy Challenge, A White Paper on Energy* May 2007
Department of Trade and Industry 2007

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The Civil Contingencies Act and COMAH Regulations:
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www.ukresilience.info/publications/epo_competency_framework_bulletin.pdf
www.ukresilience.info/preparedness/training/index.shtml

Introduction to the New Dimension programme:
www.communities.gov.uk/index.asp?id=1123766

New Dimension Water rescue and safety, and high volume pumping:
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Bellwin:
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Issues and lessons for the future arising from the explosion and fire at Buncefield Oil Storage Depot – restricted Government Office for the East of England (GO East)

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Ian Churchill *Northgate Information Solutions Business Continuity*
www.hertsdirect.org

Tim Hutchings *The Buncefield Incident from a business perspective* Chamber of Commerce www.hertsdirect.org

Report of Mass Casualty Workshop Bedfordshire & Hertfordshire Ambulance and Paramedic Service [2006] (Restricted) not printed

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Summary of key resilience workstreams arising from issues identified following the fire at the Buncefield fuel depot Cabinet Office 2005

SQW Buncefield social impact assessment: Final report January 2007 Major Hazard Action Plans for HOSL, HOSL no 13 Ref. Code CR1 10, 6 January 2006 [author] not printed

A guide to the Control of Major Accident Hazards Regulations 1999 (as amended). Guidance on Regulations L111 HSE Books 2006 ISBN 978 0 7176 6175 6

Preparing safety reports: Control of Major Accident Hazards Regulations 1999 (COMAH) HSG190 HSE Books 1999 ISBN 978 0 7176 1687 9

Emergency Planning for major accidents: Control of Major Accident Hazards Regulations 1999 (COMAH) HSG191 HSE Books 1999 ISBN 978 0 7176 1695 9

The planning (Control of Major Accident Hazards) Regulations 1999 SI 1999/981 The Stationary Office 1999 ISBN 978 0 11 082367 6

The Control of Major Accident Hazards (COMAH) Regulations 1999 Buncefield Complex Inter-agency Off-site Emergency Plan Issue 1 HESMIC October 2005 not printed

Hertfordshire Constabulary Headquarters Operational Planning Unit Operation Derrick Buncefield Oil Terminal D1-11 Green Lane, Hemel Hempstead, HP2 6HE December 2005 not printed

On-site emergency response inspection guidance: Draft version 3 HID Chemical Industries Forum www.hse.gov.uk

The Seveso directive and hazards of major accidents decree The Netherlands Ministry of Housing, Spatial Planning and the Environment 2006 www.vrom.nl/international

Lessons learnt from explosion of an unconfined cloud of vapour coming from a tank storing drain water mixed with hydrocarbons (Italy) 1999 Feedback seminar – IMPEL/ICPE inspectors. Reims, June 12-13 2001

Changes in risk prevention and control New legislative tools in France 30 July 2003

Direction De La Prevention Des Pollutions Et Des Risques 10th CCA meeting in Cagliari, October 15-17 2003

P Fewtrell and I L Hirst 'A Review of High-Cost chemical/petrochemical accidents since Flixborough 1974' Loss Prevention Bulletin no 140 IchemE 1998

Occupational health surveillance following deployment of the Buncefield oil depot fire, Hemel Hempstead, Hertfordshire 11 December 2005 on behalf of the Buncefield Fire Occupational Health Working Group revised February 2007

Glossary

Bronze Command The working name for the operational command level during a Major Incident

Buncefield Standards Task Group The joint Competent Authority/industry standards working group set up to review safety and environmental protection standards at fuel storage sites following the Buncefield incident. The Task Group published its initial recommendations on 12 October 2006

Civil Contingencies Act (CCA) The Civil Contingencies Act was set up in order to deliver a single framework for civil protection in the United Kingdom. The act is divided into two parts. The first sets out the roles and responsibilities for those involved in emergency preparation and response at a local level, whilst the second updates the 1920 Emergency Powers Act, taking into account the developments over the years, as well as potential risk factors faced in the 21st century

Civil Contingencies Secretariat (CCS) The Civil Contingencies Secretariat is housed within the Cabinet Office, and works alongside other Government departments, the devolved administrations and key stakeholders to assist with emergency preparation, response and recovery in the UK

COMAH See Control of Major Accident Hazards Regulations 1999

COMAH Regulations The Control of Major Accident Hazards Regulations 1999 (COMAH)

COMAH site A site to which the Control of Major Accident Hazards Regulations 1999 apply

Competent Authority The Control of Major Accident Hazards Regulations (COMAH) are enforced by a joint Competent Authority comprising the Health and Safety Executive (HSE) and the Environment Agency in England and Wales, and HSE and the Scottish Environment Protection Agency in Scotland

Control of Major Accident Hazards Regulations 1999 The main aim of these Regulations is to prevent and mitigate the effects of those major accidents involving dangerous substances, such as chlorine, liquefied petroleum gas, and explosives which can cause serious damage/harm to people and/or the environment. The Regulations treat risks to the environment as seriously as those to people. They apply where threshold quantities of dangerous substances identified in the Regulations are kept or used

controlled burn A strategy used to reduce the risk of the run-off of contaminated firewater, by limiting or prohibiting the application of fire fighting water or foam

Environment Agency The Environment Agency 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 and the National Assembly for Wales

firewater Water stored for use during, and used during, firefighting operations

foam In the context of this report, a foam used during operations to extinguish hydrocarbon fires

Gold Command The working name for the strategic command centre during a Major Incident – also known as the Strategic Co-ordinating Group (SCG)

groundwater All water below the water-table, as opposed to ‘ground waters’, which include groundwater but also sub-surface water above the water-table. The term ‘ground water’, where used in the previous progress reports, should normally have read ‘groundwater’

hazard Anything with the potential to cause harm

Health and Safety Commission The Health and Safety Commission is a statutory body, established under the Health and Safety at Work etc Act 1974, responsible for health and safety regulation in Great Britain

Health and Safety Executive The Health and Safety Executive is a statutory body, established under the Health and Safety at Work etc Act 1974. It is an enforcing authority working in support of the HSC. Local authorities are also enforcing authorities under the Health and Safety at Work etc Act 1974

HSC See Health and Safety Commission

HSE See Health and Safety Executive

hydrocarbon An organic chemical compound of hydrogen and carbon. There are a wide variety of hydrocarbons such as crude oil (basically a complex mixture of hydrocarbons), methane, propane, butane, etc. They are often used as fuels

Local Resilience Forum The Local Resilience Forum (LRF) is the principal mechanism for multi-agency co-operation between Category 1 responders. The LRF is not a statutory body, but it is a statutory process under the Civil Contingencies Act 2004

on- and off-site emergency plans Operators of top-tier COMAH sites must prepare adequate emergency plans to deal with the on-site consequences of possible major accidents and to assist with off-site mitigation. Local authorities for areas containing top-tier COMAH sites must prepare adequate emergency plans to deal with the off-site consequences of possible major accidents, based on information supplied by site operators

primary containment The tanks, pipes and vessels that normally hold liquids, and the devices fitted to them to allow them to be safely operated

public information zone (PIZ) An area around a COMAH site, in which site operators are obliged to inform, without request, those who live and/or work within the zone with information on safety measures at the establishment and on the requisite behaviour in the event of a major accident at the establishment. This is in accordance with regulation 14 of COMAH

pyrolysis The decomposition or transformation of a compound caused by heat

Regional Resilience Forum The Regional Resilience Forums are established by each Government Office to discuss civil protection issues from the regional perspective and to create a stronger link between local and central government on resilience issues. Similar arrangements are made in the devolved administrations

Regional Resilience Team The Regional Resilience Team is a small group of civil servants within a regional government office dealing with civil protection issues under the leadership of a regional resilience director. Similar arrangements will exist in the devolved administrations

responder Under the Civil Contingencies Act 2004, EA is a Category 1 responder, and HSE is a Category 2 responder. These categories define the roles played by each body in response to a major incident

risk The likelihood that a hazard will cause a specified harm to someone or something

run-off Uncontained liquid, either deposited on-site as rain, or in the context of the Buncefield incident, fuel and/or firewater not contained as part of the operation to control the incident

safety reports The COMAH Regulations require operators of top-tier sites to submit written safety reports to the Competent Authority

SCG See Strategic Co-ordinating Group

Silver Command The working name for the tactical command centre during a Major Incident

Strategic Co-ordinating Group Representation of all agencies deployed to resolve the Buncefield incident was established through a meeting process known as the Strategic Co-ordinating Group, also known as Gold Command

tank farm A facility where hazardous substances, very often petroleum products, are stored in tanks

tier The COMAH Regulations apply where threshold quantities of dangerous substances identified in the Regulations are kept or used. There are two thresholds, known as 'lower-tier' and 'top-tier'

top-tier See tier

Further information

Buncefield Major Incident Investigation
Marlowe Room, Rose Court 2 Southwark Bridge London SE1 9HS
Tel: 020 7717 6909
Fax: 020 7717 6082
E-mail: buncefield.inforequest@hse.gsi.gov.uk
Web: www.buncefieldinvestigation.gov.uk

Community/business support

Dacorum Business Contact Centre
Tel: 01442 867 805
Business Link Helpline Tel: 01727 813 813

Hertfordshire Chamber of Commerce
Tel: 01727 813 680

Dacorum Community Trust Mayor's Fund
To apply, call the freephone helpline on 0800 131 3351. Lines are open 9.30 am to 4.30 pm, Monday to Friday

Dacorum Borough Council
Tel: 01442 228 000
Web: www.dacorum.gov.uk

Hemel Hempstead Citizens Advice Bureau
19 Hillfield Road, Hemel Hempstead HP2 4AA
Tel: 01442 213368

Local authorities and emergency services

Dacorum Borough Council
Tel: 01442 228 000
Web: www.dacorum.gov.uk

St Albans District Council
Tel: 01727 866 100
Web: www.stalbans.gov.uk

Hertfordshire County Council
Tel: 01483 737 555
Web: www.hertsdirect.org

Hertfordshire Fire and Rescue Service
Web: www.hertsdirect.org/yrccouncil/hcc/fire/buncefield

Hertfordshire Constabulary
Web: www.herts.police.uk/news/buncefield/main.htm

Hertfordshire Chamber of Commerce
Tel: 01727 813 680
Web: www.hertschamber.com

Government links

Cabinet Office
Web: www.cabinetoffice.gov.uk

Department for Communities and Local Government
Fire and Resilience Directorate
Web: www.communities.gov.uk

Government Office for the East of England
Web: www.goeast.gov.uk

Environment Agency
Web: www.environmentagency.gov.uk

Department of Trade and Industry
Oil and Gas Directorate
Web: www.og.dti.gov.uk

Health and Safety Executive
Hazardous Installations Directorate
Web: www.hse.gov.uk/hid

Control of Major Accident Hazards
Web: www.hse.gov.uk/comah

Department for the Environment, Food and Rural Affairs
Web: www.defra.gov.uk

Health Protection Agency
Web: www.hpa.org.uk

Food Standards Agency
Web: www.food.gov.uk

Drinking Water Inspectorate
Web: www.dwi.gov.uk

Scottish Environment Protection Agency
Web: www.sepa.ork.uk

UK Resilience
Web: www.ukresilience.info

Scottish Executive Justice Department – Civil Emergencies
Web: www.scotland.gov.uk/Topics/Justice/emergencies/guidance

Wales – Local Resilience
Web: <http://new.wales.gov.uk/resilience/regional-local-resilience1/?lang=en>

Northern Ireland Central Emergency Planning Unit
Web: <http://cepu.nics.gov.uk>

Buncefields Standards Task Group (BSTG) –
superseded by: Petrochemical Process Standards Leadership Group (PPSLG)
Contact: colette.fitzpatrick@hse.gsi.gov.uk

National Recovery Working Group
Contact: Rhiannon.harries@communities.gsi.gov.uk

Industry links

United Kingdom Petroleum Industry Association (UKPIA)
Tel: 020 7240 0289
Web: www.ukpia.com

Chemical Industries Association
Tel: 020 7834 3399
Web: www.cia.org.uk

Three Valleys Water
Tel: 0845 782 3333
Web: www.3valleys.co.uk

United Kingdom Onshore Pipeline Operators' Association (UKOPA)
Tel: 01773 852003
Web: www.ukopa.co.uk

Tank Storage Association
Tel: 01244 335627
Web: www.tankstorage.org.uk

Investigation reports

Buncefield Major Incident Investigation:

- ▼ *The Buncefield Investigation: Progress report* 21 February 2006
- ▼ *The Buncefield Investigation: Second progress report* 11 April 2006
- ▼ *The Buncefield Investigation: Third progress report* 9 May 2006
- ▼ *The Buncefield Investigation: Initial report* 13 July 2006
- ▼ *Recommendations on the design and operation of fuel storage sites* 29 March 2007

Available from www.buncefieldinvestigation.gov.uk

Defra:

Initial review of Air Quality aspects of the Buncefield Oil Depot Explosion

Main report:

<http://www.defra.gov.uk/environment/airquality/publications/buncefield/buncefield-report.pdf>

Appendices:

<http://www.defra.gov.uk/environment/airquality/publications/buncefield/buncefield-append.pdf>

Buncefield:

Hertfordshire Fire and Rescue Service's review of the fire response

Hertfordshire Fire and Rescue Service November 2006 ISBN 978 0 11 703716 8

Angus Fire, Buncefield Oil Terminal Incident December 2005: Review of part played by Angus Fire and lessons learned

www.angusfire.co.uk

Other related reports/information

Report by SQW, Economic Developments Consultants *The Buncefield Oil Depot Incident: Economic and Business Confidence Impact Study* East of England Development Agency June 2006 www.eeda.org.uk

Quick Look Report – Buncefield Fire Swiss Fire Service 11 December 2005

Buncefield social impact report Dacorum Borough Council January 2007
www.dacorum.gov.uk/default.aspx?page=4191

Contract research reports for HSE

Derivation of fatality probability functions for occupants of buildings subject to blast loads: Phase 4 CRR151 HSE Books 1997 ISBN 0 7176 1451 4

Review of blast injury data and models CRR192 HSE Books 1998 ISBN 0 7176 1617 7

Government Advisory Bodies

Committee on mutagenicity of chemicals in food, consumer products and the environment (COM)

Committee on carcinogenicity of chemicals in food, consumer products and the environment (COC)

Committee on toxicity of chemicals in food, consumer products and the environment (COT)

www.advisorybodies.doh.gov.uk/coc/



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