

**TOWN AND COUNTRY PLANNING ACT 1990**

**A PLANNING APPLICATION BY CALA HOMES (SOUTH) LTD FOR  
THE REDEVELOPMENT OF LAND FOR MIXED USE, INCLUDING  
RESIDENTIAL, ON ALDERMASTON ROAD, TADLEY, ADJACENT TO  
THE ATOMIC WEAPONS ESTABLISHMENT AT ALDERMASTON**

**PROOF OF EVIDENCE OF  
STEPHEN SAUNDERS  
ON BEHALF OF  
THE HEALTH AND SAFETY EXECUTIVE**

**Basingstoke and Deane Borough Council  
Planning Application Ref: BDB 67609**

**Planning Inspectorate Ref: APP/H1705/V/10/2124548**

**Health & Safety Executive  
Redgrave Court  
Merton Road  
Bootle  
Merseyside L20 7HS**

**Doc Ref: TRIM 2010/ xxxxxx**

**14 September 2010**

## **Name, qualifications of Witness**

I am Stephen Saunders. This proof of Evidence has been prepared on behalf of Health and Safety Executive (HSE). I am a Principal Inspector of Health and Safety employed within Division 3 of the Nuclear Directorate as a Specialist in Fault Analysis with specific responsibility for the AWE Aldermaston and Burghfield Nuclear Licensed sites. I have an honours degree in Nuclear Physics and I am a Chartered Mechanical Engineer and Chartered Physicist.

I have been involved in fault analysis for defence sites for over 20 years, working for UKAEA, AEA Technology and Serco before joining the HSE in 2002 as an Inspector in the Nuclear Installations Inspectorate (NII). I am also responsible for the assessment of compliance with the Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPPIR) including the assessment of the Hazard Identification and Risk Evaluation (HIRE) to determine the Detailed Emergency Planning Zone (DEPZ).

## Summary

Although controls and protection measures are in place at nuclear facilities accidents can still happen, therefore emergency arrangements are put into place to deal with releases of radioactive material.

The main legislation relating to off-site nuclear emergency plans is the Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPPIR). As required by this legislation AWE plc, as the site operator, has produced a hazard analysis for the AWE Aldermaston site, which identifies potential accident scenarios and the possible extent of release of radioactive materials. From this HSE has determined a Detailed Emergency Planning Zone (DEPZ) of 3km from a central point on the Aldermaston site.

As required by REPPPIR, the 3km boundary of the DEPZ is determined as the area in which a member of the public might receive a radiation dose of 5mSv or more in the event of a nuclear accident. Potential doses are greater the closer you are to the site. The Boundary Hall development is very near to the Aldermaston site fence and approximately 1km from the centre of the DEPZ. Therefore, in the event of a release of radioactive material, the dose at the Boundary Hall location would be significantly larger than at the edge of the 3km DEPZ.

Whilst confidence in the ability of the multi-agencies to enact the Emergency Plan is gained through regular testing and review there is no acceptable methodology available to determine the effectiveness of the emergency arrangements.

Evacuation of the public around the Aldermaston site is a realistic possibility.

The key emergency responders with responsibility for delivery of the Emergency Plan in the region of Boundary Hall have objected to this proposed development for the following reasons:-

- Its close proximity to the Aldermaston site
- An increase in the number of people being put in harm's way
- An increase in the number of people who might requiring assistance
- An increase in dose to the emergency responders from dealing with these additional people
- Additional traffic from people being evacuated or self evacuation
- Impact on limited resources

HSE fully shares these concerns and objects to the grant of planning permission.

# **Nuclear Emergency Preparedness and Response (July 2010)**

## **1 Scope of Proof**

1.1 This proof discusses the Emergency Preparedness and Response requirements relating to the Atomic Weapons Establishment (AWE) at Aldermaston and the legal requirements on the relevant parties as required under the Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPIR).

1.2 In particular it will discuss the off-site emergency plan for the AWE Aldermaston site and the potential effects of the additional dwellings at Boundary Hall.

1.3 This proof will also rebut a number of the comments made by CALA Homes (South) Ltd (CALA Homes) in its Environmental Statement.

## **2 Policy and Legislation**

### **2.1 Defence in Depth – Levels of Protection**

2.1.1 International consensus is that all nuclear facilities should be designed and operated so that defence in depth against

potentially significant faults or failures is achieved by the provision of several levels of protection.

These levels are :-

- I. Prevention of abnormal operation and failures by design;
- II. Prevention and control of abnormal operation and detection of failures;
- III. Control of faults within the design basis;
- IV. Control of severe plant conditions beyond the design basis by prevention of fault progression and mitigation of consequences;
- V. Mitigation of radiological consequences by emergency control and on- and off-site emergency response.

2.1.2 This approach is intended to ensure that if one level fails, it will be compensated for, or corrected by, the subsequent level. AWE Aldermaston as a Nuclear Licensed Site follows this approach.

2.1.3 For the Level 5 defence in depth, all nuclear installation operators prepare, in consultation with local authorities, the police and other bodies, emergency plans for the protection of the public and their workforce, including those for dealing with an accidental release of radioactivity. These are regularly tested in exercises

under the supervision of HSE's Nuclear Directorate. (Subsequently referred to as HSE). As identified in the proofs of other witnesses, the ongoing restriction of significant increases in population in close proximity to the installation also forms part of this level of protection.

## **2.2 Authority/Regulation of Emergency Planning**

2.2.1 In the UK, the authority for developing, maintaining and regulating arrangements for preparedness and response for a nuclear or radiological emergency is established through the following acts and regulations:

- a. The Health and Safety at Work etc. Act (HSWA) 1974.
- b. The Nuclear Installations Act 1965 (as amended).
- c. The Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPIR).
- d. Ionising Radiation Regulations (IRR) 1999.
- e. The Civil Contingencies Act (CCA) 2004.

The relevant details of these regulations are summarised in Appendix O of this proof. For the off-site response at AWE Aldermaston the principle regulation enforced by HSE is the REPPIR.

2.2.2 DECC in its role as Lead Government Department for nuclear safety in England and Wales, chairs the Nuclear Emergency Planning Liaison Group (NEPLG), which brings together organisations with interests in off-site nuclear emergency planning, including the Regulatory Body. The role of the NEPLG and a summary of the structure and scope of the consolidated guidance prepared by the Group is described in Appendix P of this proof.

2.2.3 Since ND attends the NEPLG, it is able, as part of its regulatory function for enforcing REPPIR, to monitor the overall planning position - for both on-site and off-site aspects - and would intervene if not satisfied that an integrated approach was being achieved. As a result of the above involvement HSE advises the Lead Department in respect of nuclear emergency preparedness and response.

### **3 Regulation of Emergency Preparedness**

#### **3.1 Determination of the Detailed Emergency Planning Zone**

3.1.1 In order for an Emergency Plan to be prepared, Detailed Emergency Planning Zones (DEPZs) are established around



nuclear installations where there is the potential for an offsite release of radioactivity that would require implementation of countermeasures. The requirement for a DEPZ comes from REPPIR which requires the operator of the nuclear facility to produce a Hazard Identification and Risk Evaluation (HIRE) and submit it to HSE.

3.1.2 In simple terms the HIRE identifies potential accident scenarios and details their likelihood or 'chance' of occurrence as well as their potential radiation dose to a member of the public. HSE reviews this document and determines an appropriate DEPZ, which it formally communicates to the Local Authority who are legally responsible for producing the Detailed Emergency Plan to cover this area. Under REPPIR the plan is also required to have the capability of extending the emergency response beyond the DEPZ through the concept of extendibility.

3.1.3 The extent of the DEPZ from its declared centre is based upon those releases which are required to be planned for, its form of the release (radionuclide) and the distance to which it extends. It is relevant to note at this stage that the extent of the DEPZ at AWE Aldermaston exceeds that at many AGR sites. This

reflects HSE's assessment of the Hazard Identification and Risk Evaluation of the installation.

3.1.4 AWE has produced a HIRE for both of its nuclear licensed sites. Based on these documents and knowledge of the sites, HSE has determined a 3km DEPZ for AWE Aldermaston and a 1.5km DEPZ for AWE Burghfield. The difference in magnitude between the two sites is due to the nature of activities, the potential accident scenarios and the extent of any radioactive release. Further detailed comments are contained in section A4 of Appendix O.

3.1.5 For the Aldermaston site, West Berkshire Council is the local authority with responsibility for producing the Detailed Emergency Plan to cover the 3km. (See Section 4 for further detail).

### ***3.2 Review and Demonstration of On-Site and Off-Site Emergency Arrangements***

3.2.1 The requirements for the preparation and demonstration of emergency arrangements are principally covered by the Site Licence issued to a site under Nuclear Installations Act 1965 (as amended) and REPPiR. These are both regulated by HSE.

3.2.2 On-Site and Off-Site Emergency Arrangements are in place at both AWE Aldermaston and AWE Burghfield and are regularly demonstrated in accordance with the requirements of the Nuclear Site Licence.

### **On-Site**

3.2.3 On-Site Exercises are held at each nuclear installation site once a year and concentrate primarily on the operator's on-site emergency plan, however their off-site actions are also reviewed.

3.2.4 Whilst REPPiR and Licence Conditions established under the Nuclear Installations Act 1965 (as amended) both apply on site, the principal on site regulatory tool is arrangements under Licence Condition 11 which requires rehearsal of the arrangements to ensure their effectiveness.

3.2.5 Throughout the life of the nuclear installation, the on-site emergency arrangements are subject to review and, with HSE's approval, revised as appropriate. As part of the licensees' training arrangements, all staff participate in a regular programme of emergency exercises, which requires each shift at each nuclear site to exercise the arrangements at least once a year.

HSE witnesses these on-site exercises and may, when required, request re-demonstration of part or parts of the on-site response.

### **Off-Site**

3.2.6 Off-site exercises are held triennially and are aimed primarily at demonstrating the adequacy of the arrangements that have been made by the local authority to deal with the off-site aspects of an emergency.

3.2.7 The principal regulatory tool for the off site component of the Emergency Plan is REPPiR. Under these regulations West Berkshire Council is required to review and where necessary revise the plan and to test the plan at suitable intervals not exceeding 3 years.

3.2.8 Although HSE witnesses the triennial test as the enforcing authority under REPPiR, the purpose of this is to ensure that the test is done within the required timescale, that all the relevant agencies participate, and that it provides sufficient opportunity for the multi-agency responders to test their own agency arrangements and the implementation of the off-site emergency plan. The assessment of the off-site emergency plan is done by the multi-agency responders. Lessons learnt from the test with

respect to improvements that should be made to the plan or improvements that are needed to national guidance and arrangements are progressed by relevant forums (e.g. NEPLG).

3.2.9 It should be noted that, whilst the Emergency Plan is regularly tested, there is no acceptable methodology available to determine the effectiveness of the emergency arrangements, due to the uncertainties on the actual consequences on the day, and the actions that would be taken by the public in response to any accident. Consequently HSE does not make any judgements on the robustness or adequacy of the off-site emergency plan or declare a satisfactory (or not) demonstration of the effectiveness of the plan for off-site emergency exercises.

3.2.10 For further information see Section 4 and Appendices A and B for further information.

3.2.11 These triennial tests are intended to cover all aspects of the Off-Site Emergency Plan, however in some instances this may not be practicable or feasible. One particular example of this is evacuation, where the benefits need to be balanced against the potential widespread disruption to the surrounding population and the potential introduction of additional risks. This was recognised

by Michael Barnes QC in the Hinkley Point Public Inquiries where he stated *“I do not agree that the simulation of an accident needed to test emergency preparedness requires people actually to be moved from their homes. I think that the disruption caused (assuming people could be persuaded to co-operate) would outweigh any likely gain.”* (Para. 50.428, Volume 7, Chapters 50-52).

3.2.12 Evacuation has never been tested at AWE Aldermaston as part of a triennial test of the emergency plan.

### ***3.3 Effect of Boundary Hall on the Off-Site Emergency Arrangements***

3.3.1 Although West Berkshire Council is the Local Authority required under REPPiR to produce a detailed off-site nuclear emergency plan for AWE Aldermaston to cover the 3km DEPZ, the proposed development at Boundary Hall is in the Basingstoke and Deane Borough Council (BDBC) Area. BDBC requested each of the agencies with duties under the Off-Site Plan to give their opinions on the proposed development at Boundary Hall. Those agencies that responded, including those that have the more significant roles in the off-site plan, have all raised concerns or indeed

advised against the development of Boundary Hall (See Diagram 1 below). BDBC, who has a less significant role to play, is the only responder actively to support this development.

3.3.2 The specific concerns raised against this development are detailed in Section 4 and Appendix Q of this proof and fall into the following key areas:-

- Its close proximity to the Aldermaston site
- Population density in the DEPZ
- An increase in the number of people being put in harms way
- An increase in the number of people who might require assistance
- An increase in dose to the emergency responders from dealing with these additional people
- Additional traffic from people being evacuated or self evacuation
- Impact on limited resources

HSE fully shares these concerns.

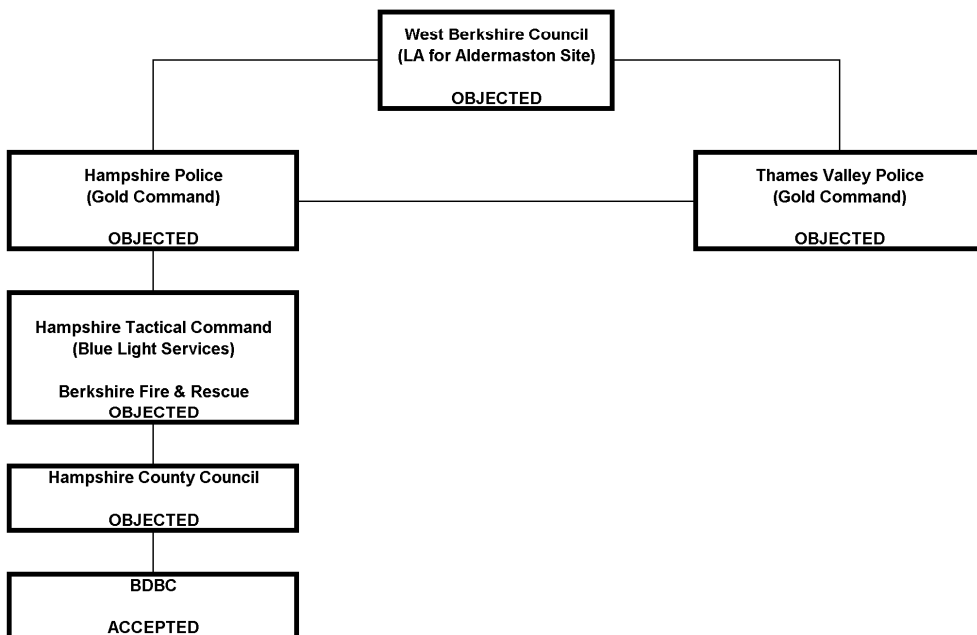


Diagram 1 - Primacy of Roles For Emergency Response in the Boundary Hall Development Area



## 4 Specific Rebuttals of Section 17 CALA Homes

### Environmental Submission

#### 4.1

CALA Homes claim that the situation around AWE Aldermaston site cannot be “bad” otherwise the existing plan is insufficient and the site should be closed.

##### 4.1.1 HSE disagree with CALA Homes for the following reason:

The terminology of “bad situation” specifically refers to the over-population around AWE Aldermaston compared to policy criteria identified by other witnesses which includes a requirement to maintain the population characteristics of a site as they were at the time of licensing. **The aim of this policy ,which is to limit those put “in harm’s way” should not be further undermined.**

## 4.2

CALA Homes also claim that the Local Authority Off-Site Plan is robust and compliant under REPPiR and capable of accommodating the extra dwellings with minimal increase on the whole population. They claim that HSE/NII witnesses the tests of the Off-Site Emergency Plans, required under Regulation 10 of REPPiR, and that HSE/NII declare a satisfactory demonstration of the effectiveness of the plan. They state that the current off-site plan was revised with the HSE site inspectors as part of a mandatory review process required under REPPiR and passed it as fit for purpose. They state that should the Off-Site plan be deemed unfit for purpose the HSE/NII should take immediate remedial action to resolve any issues of concern and consider suspension of the site licence.

### 4.2.1 HSE disagree with CALA Homes for the following reasons:

Whilst confidence in the ability of the multi-agencies to enact the Emergency Plan is gained through regular testing and review, there is no acceptable methodology available to determine the effectiveness of the implementation of the emergency arrangements. Therefore HSE do not make any judgements on the robustness or adequacy of the off-site emergency plan.

Lessons learnt from the test with respect to improvements that should be made to the plan are progressed in relevant forums.

4.2.2 The AWE Aldermaston off-site emergency plan was last tested on 17 November 2007 (See Appendix R). Whilst no significant issues were identified that would indicate that the plan was not fit-for-purpose, a number of areas for improvement were identified and were progressed accordingly through the process outlined above. If significant deficiencies in the plan were identified, HSE would ensure that they were suitably addressed through this process.

4.2.3 Further supporting comments are made below.

4.2.4 Chapter 5 of the NEPLG Consolidated Guidance describes the process for testing off-site preparedness at nuclear sites. It covers the programming, planning, scope, conducting, briefing and reporting on off-site emergency exercises. The arrangements for testing off-site preparedness are well established and involve the simulation of a range of accidents which may involve the release of radioactivity and off-site consequences.

- 4.2.5 All aspects of the plan cannot be tested in one exercise. The objective of the exercise testing programme should be to ensure that all relevant parts of the emergency arrangements are tested over a period of time (Ref 3, para 5.5.3).
- 4.2.6 Exercises should attempt to demonstrate a number of key activities (Ref 3, para 5.5.5) including notification, set up of the Strategic Coordination Centre (SCC), interpretation of information at the SCC, interfaces and exchanges between agencies, strategic decision making, communications and public information and the facilities and equipment.
- 4.2.7 Following an exercise, a 'hot debrief' chaired by HSE is held immediately to allow participating organisations to feedback any issues that have arisen.
- 4.2.8 Following a test of the off-site emergency plan each organisation involved should identify strengths and deficiencies in the plan which are collated in a final exercise report written jointly by the local authority and the site operator, and any changes needed to the off-site emergency plan should be identified. A 'cold debrief' is then held, chaired by the local authority, to identify improvements to the off-site emergency plan and any national

improvements that need to be made. Improvements to the off-site emergency plan are progressed via the Local Review Committee, chaired by the local authority, and national lessons learnt are progressed via NEPLG (and sub-groups).

4.2.9 In summary, the assessment of the off-site emergency plan is done by the multi-agency responders during the triennial tests, not by HSE. Lessons learnt from the test with respect to improvements that should be made to the plan or improvements that are needed to national guidance and arrangements are progressed in relevant forums.

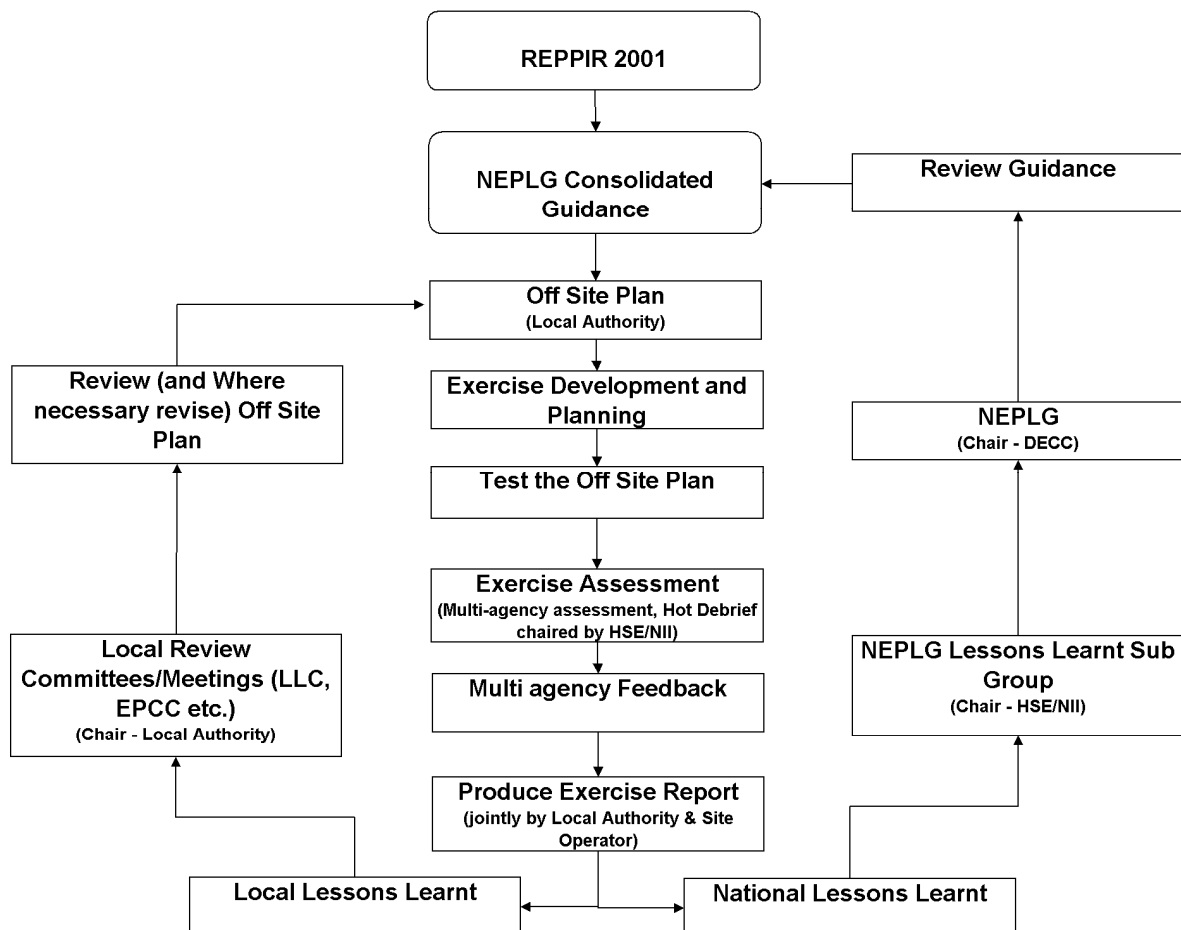
4.2.10 Whilst HSE witness the triennial test as the enforcing authority under REPPiR, the purpose of this is to ensure that the test is done within the required timescale, that all the relevant agencies participate, and that it provides sufficient opportunity for the multi-agency responders to test their own agency arrangements and the implementation of the off-site emergency plan. HSE do not make any judgements on the robustness or adequacy of the off-site emergency plan or declare a satisfactory (or not) demonstration of the effectiveness of the plan for off-site emergency exercises.

4.2.11 As well as witnessing the triennial tests to ensure they are done and are sufficient, HSE prepare an annual Lessons Learned Report summarising any improvements that have been identified throughout the year, by the multi-agencies, following off-site emergency exercises. They then present this report to the NEPLG Lessons Learned Sub-Group, which they also chair, and agree any national improvements to be implemented by NEPLG through the Consolidated Guidance.

4.2.12 As the enforcing authority for REPPiR, HSE oversees the development, planning and delivery of off-site emergency exercises, ensures that lessons are learned and improvements to the off-site emergency plan are implemented by attending the Local Review Committees, and that national lessons learned are implemented into national guidance on a continuous basis. If significant deficiencies in the plan were identified, HSE would ensure that they were suitably addressed through this process.

4.2.13 This process of continuous improvement to both the off-site emergency plan and Consolidated Guidance is outlined in the following flowchart.

## Process for Assessment and Testing of Off-Site Emergency Plans



4.2.14 The AWE Aldermaston off-site emergency plan was last tested on 17 November 2007 (See Appendix R). Whilst no significant issues were identified that would indicate that the plan was not fit-for-purpose, a number of areas for improvement were identified and were progressed accordingly through the process outlined above. The plan will be tested again on 10 November 2010.

4.2.15 The benchmark review of the AWE Aldermaston off-site emergency plan that was done by HSE was not done as part of the mandatory review process required by REPPIR. The review of all off-site plans was done for all nuclear licensed sites across the whole of the UK as a benchmarking exercise. This was done to review the content of the plans against the requirements specified in Schedule 7 or REPPIR, again to identify good practices and areas for improvement, both to individual off-site plans and to NEPLG Consolidated Guidance. Again, as a national lessons learned process that could fit into the framework outlined earlier.

4.2.16 Whilst the AWE Aldermaston off-site plan addressed all of the requirements of Schedule 7 of REPPIR, a number of specific recommendations for improvement to the plan, particularly in relation to evacuation, were made. These are summarised below (see Appendix S for details):

- Further develop early evacuation arrangements for vulnerable populations and those sheltering in work premises.
- Further develop the arrangements to plan in detail for any expected self-evacuation, and how this could challenge the



assumptions made for the evacuation plan e.g. estimation of likely number of self-evacuees, impact on traffic management and corresponding contamination spread, presentation of contaminated self-evacuees at rest centres, and provision of adequate personnel monitoring.

4.2.17 As part of the review process a number of areas of good practice were also identified and these were summarised in an annex to the letters sent to the local authorities. This included the following:

- **Plans should assume that self-evacuation is a certainty** and plan in advance how to manage those electing to leave the area. If self-evacuation does not happen then this part of the plan need not be implemented; if it is even greater than has been anticipated the bones of the strategy will have already been thought out.
- **It should be a plan objective to reduce the likelihood that off-site responders are asked go into the plume, particularly close to the site.** Planning should consider how this can be achieved – for example by pre-distribution of Potassium Iodate tablets where appropriate: enhanced use of

electronic systems to get information to those most likely to be affected e.g. within the DEPZ, registers of individuals within the DEPZ to allow checking that people have evacuated at reception centres, etc.

4.2.18 The current AWE Aldermaston off-site plan does not specify how many people the responders could accommodate should an off-site nuclear emergency occur. It does not state that it can cope with major fluctuations in population around the site.

4.2.19 Whilst HSE considers the AWE Aldermaston off-site emergency plan to be compliant with the requirements of REPIR, the assessment of the implementation of the plan is done by the multi-agencies during the triennial off-site emergency exercises. Any improvements to the plan that are identified are implemented by West Berkshire Council via the Local Review Committee. In addition, HSE carried out a benchmarking exercise to identify good practices and areas for improvement. A number of improvements to the AWE Aldermaston were identified as part of this exercise.

## 4.3

CALA Homes claim to have consulted widely amongst stakeholders, and that the traffic arising from the Proposed Development will have a limited effect on access to the AWE Aldermaston in the event of an accident, as the AWE has its own on-site fire service and emergency arrangement on site to contain and resolve any potential emergency from their activities.

### 4.3.1 HSE disagree with these statements for the following reasons:

West Berkshire Council has the responsibility to ensure that off-site emergency plans are prepared and are adequate and fit for purpose. In all cases the exchange of information between the duty holders and all the other organisations with an interest is central to the planning process and there will need to be extensive consultation with all these parties (Ref 2, para 6).

### 4.3.2 The AWE Aldermaston Offsite Plan was prepared by the Off Site Plan Working Group, chaired by West Berkshire Council and consisted of Emergency Planning Officers and professionals drawn from the following organisations whom are also copy holders of the Plan

- Thames Valley Police;
- Hampshire Constabulary;

- Royal Berkshire Fire and Rescue Service;
- Royal Berkshire Ambulance NHS Trust;
- West Berkshire Council;
- Basingstoke and Deane Borough Council;
- Wokingham Borough Council;
- Hampshire County Council;
- Health Protection Agency;
- Primary Care Trusts;
- Thames Water Company;
- AWE Plc;
- Ministry of Defence;
- HSE Nuclear Installations Inspectorate;
- Environment Agency;
- Department of the Environment Food and Rural Affairs;
- Food Standards Agency;

4.3.3 All these organisations have a role in responding to a radiation emergency and must be involved, as appropriate, in the preparation of emergency plans. Many of their interests will overlap and may, on occasion, conflict. Co-operation is essential and compromise may sometimes be necessary. Nominated

representatives of the principal organisations which could have a role to play in a radiation emergency should meet as an emergency co-ordinating group, or other similar group, to develop plans and testing regimes, and consult other organisations. This cooperation may be exchanging information or by other means and should be to the extent necessary to enable the dutyholders to fulfil their duties under REPPIR.

4.3.4 Whilst Basingstoke and Deane Borough Council have requested each of the agencies with duties under the Off-Site Plan for their opinions, those agencies (other than BDBC itself) that responded have all raised concerns or indeed advised against the development of Boundary Hall.

4.3.5 The table below gives an indication of each agency's opinion on the proposed Boundary Hall development from an emergency arrangements perspective:

## Summary of key organisations with a duty to implement the emergency plan

Organisation	Object	Support	Unknown
Thames Valley Police	✓		
Hampshire Constabulary	✓		
Royal Berkshire Fire and Rescue Service	✓		
Royal Berkshire Ambulance NHS Trust			✓
West Berkshire Council	✓		
Basingstoke and Deane Borough Council		✓	
Wokingham District Council			✓
Hampshire County Council			✓
Health Protection Agency			✓
Primary Care Trusts			✓
Thames Water Company			✓
AWE Plc	✓		
Ministry of Defence			✓
Environment Agency			✓
Department of Food and Rural Affairs			✓
Food Standards Agency			✓

4.3.6 The concerns/ objections raised by the multi-agency emergency responders include, in summary (see Appendix Q for full details):

### 4.3.6.1 West Berkshire Council

*Stated 'we have a great deal of concern regarding this application and would strongly recommend that they (their concerns) are considered in detail when making your decision'.*

Concerns –

- Proximity of proposed development to site.
- Population density within the DEPZ.
- Experienced gained during flooding of 2007.
- Burden placed upon services that will deliver the plan. States in letter that as part of review of off site plan by all partners that ‘although not conclusive until signed off by all partners, that part of the plan would recommend refusal of such a development on the basis of risk to health and the impact upon local authorities and other responders in responding and accommodating the additional population’.

#### 4.3.6.2 Hampshire County Council

Stated that *‘to allow the development as proposed would be erroneous’*.

Concerns –

- Supported the comments already made from the submissions of Thames Valley Police, West Berks Council, and HSE.
- The development is within the DEPZ for AWE Aldermaston and the maximum residential capacity within the DEPZ has already been passed.

- The potential impact on the new residential community of an incident with off site consequences

#### 4.3.7 Hampshire Constabulary

Stated that *'to allow the development as proposed would be an advise against'*.

Concerns –

- Increase in population size would place an additional demand on emergency services should an off site event occur. Primarily an increase in the numbers requiring assistance as well as increased traffic flows in the area, which may hinder both emergency services access and the safe evacuation of residents.
- Greater population could expose responders to increased levels of hazard through responders needing to operate in hazardous areas for extended durations.
- Increased resource implications for maintaining preparedness in order to deliver an effective response to the increased population

#### 4.3.8 Thames Valley Police



Stated that *'TVP has no specific objection to the planning application in question, however the TVP Contingency Planning Officer would like the planners to consider the following concerns':*

Concerns –

- Increase in population within DEPZ would result in an increase in traffic flow during 'peacetime'. However, in real event of an off site emergency there will also be self-evacuation to deal with. The increased traffic flow could lead to gridlock on the local roads around AWE Aldermaston and increase time spent by self-evacuees within potentially contaminated environment.
- Impact upon local authorities to deal with potentially increased number of contaminated individuals.
- Maximum capacity of residents has been exceeded within DEPZ of AWE Aldermaston.
- Increase in resources to deal with increased population within DEPZ.

#### 4.3.9 Royal Berks Fire and Rescue

Concerns –

- Acceptance of the development is a concern when considering its close proximity to the AWE Aldermaston site.
- Increase population size within DEPZ.

4.3.10 It is important to note, that whilst AWE Aldermaston have their own on-site Fire Service, Royal Berkshire Fire and Rescue Service and Hampshire Fire and Rescue Service are key emergency responders with clear roles and responsibilities detailed in the off-site emergency plan (page 83, Ref 1). These include saving life in conjunction with other emergency services, rescuing trapped casualties, preventing escalation of the incident by tackling the fires, dealing with released chemicals and public decontamination where required. The Royal Berkshire Fire and Rescue Service would co-ordinate assistance from other County Fire Services and the deployment of specialist equipment to enable decontamination of people affected to reduce any adverse health effects. It is clear from the off-site emergency plan that the remit of the FRS is extensive and goes beyond simply controlling and containing any incident on site.

4.3.11 The recent incident involving a fire on the AWE Aldermaston site on 3 August 2010 was substantially less than the fire for

which the off-site emergency plan is designed to cope with. Nevertheless, in addition to the 2 AWE Aldermaston Fire Service Appliances and 8 AWE firefighters, 19 Appliances and 81 firefighters from Royal Berkshire FRS, Hampshire FRS and London FRS attended the scene and Royal Berkshire FRS assumed command. In addition 14 members of the public were evacuated from the surrounding area.

4.3.12 In addition, South Central Ambulance Service (SCAT) also has key role in an emergency on the AWE Aldermaston site (page 87, Ref. 1). The off-site emergency plan states that they are responsible for the on site treatment and evacuation of casualties, including those who might be contaminated by radioactive material.

4.3.13 HSE believe that for any emergency incident on site, assistance from Blue Light services will be required and would be substantial. Boundary Hall is adjacent to the main artery road leading to the main access gate to site. HSE believe that any congestion on this main artery road leading to site would hinder any emergency response by Blue Light services required of them under the off-site emergency plan.

4.3.14 Based on the evidence presented, HSE do not believe that BDBC satisfactorily addressed the extensive concerns/objections raised by the multi-agencies with duties under the off-site emergency plan, or cooperated fully with West Berkshire Council who are responsible for the off-site emergency plan, to the extent necessary to gain confidence that the off-site emergency plan could accommodate and protect the additional 268 residents of Boundary Hall prior to the approved planning application. HSE also believe that the increase in the population by the proposed development would make traffic management more difficult around the main access point to site and result in delays in the assistance of emergency services on site.

#### 4.4

CALA Homes claims that the Local Authority Off-Site Plan confirms that evacuation from the area would not be necessary within 24 hours of an incident. They state that the new residents (of the proposed development) would be indoors or have refuge where sheltering is seen as a highly efficient protection factor.

4.4.1 HSE disagrees with this statement as this does not reflect the full content of the off-site plan or what could happen in reality and that evacuation of the public around the Aldermaston site is a realistic possibility.

4.4.2 The off-site emergency plan states that the countermeasures recommended for a release of plutonium (the most hazardous material on the AWE Aldermaston site) are described below:

- “Sheltering” is the most effective countermeasure that can be adopted while the release is actually taking place and in its immediate aftermath.
- There would normally be no need for the urgent evacuation of areas outside of the site and unnecessary movement in the open would be likely to hazard the public more than if they remained inside.
- Once the release has ceased, the temporary evacuation of limited areas outside of the site might be required in order to reduce the time that an individual might be in contact with the deposited or re-suspended material and facilitate decontamination and clean up operation.

4.4.3 The off-site emergency plan also recognises that actual countermeasures recommended might include any of the following:

- Sheltering (as described above);
- Evacuation. Exceptionally, evacuation, within the first twenty four hours might be necessary for vulnerable persons.
- Subsequent Evacuation. Subject to the findings of ground monitoring, after a few days it might be necessary to evacuate further areas, to reduce contact with deposited material and facilitate clean-up work. As a guideline only, temporary evacuation in limited downwind areas might be necessary in the sheltering zone of the site involved.

4.4.4 Other countermeasures could include advice and restriction on the consumption, sale and marketing of foodstuffs with a defined area. Other measures might include the establishment of emergency centres, the control of access to the affected area, control of agricultural operations and environmental monitoring within a delineated area.

4.4.5 Therefore, even if urgent evacuation of areas outside of the site boundary may not required within the first 24 hours, subsequent

evacuation of the public in some areas outside the incident site boundary might be necessary.

4.4.6 The possibility of self-evacuation by members of the public at any time cannot be ignored. As stated earlier, emergency plans should assume that self-evacuation of the population is inevitable and plan accordingly.

4.4.7 Whilst sheltering of the public is the immediate protective measure taken, AWE would in conjunction with the MOD Coordinating Authority make recommendations as appropriate to the Thames Valley Police and Hampshire Constabulary as to whether any subsequent evacuation of the general public was required. This would depend on a number of factors including the amount of radioactive material released, the meteorological conditions at the time, and the presence of any vulnerable people in the affected area.

4.4.8 Vulnerable people would be evacuated as a priority and include school children, medically impaired or requiring home care assistance, and those residing closest to the site boundary. In fact the decision taken during the fire on the 3 August 2010 was

to evacuate 14 nearby residents even though this was not a large fire nor in a nuclear facility.

4.4.9 If any evacuation did occur, transport if required would be provided by the Local Authority (or Ambulance Service for people with severe disability or illness). The Police would be responsible for advising residents in the affected area that they should evacuate and would direct them to assembly points or rest centres set up by the appropriate Councils.

4.4.10 Whilst sheltering is recognised as providing a highly efficient protection factor, it is only effective for a limited number of hours. It is also not feasible to maintain sheltering for prolonged time periods due to human health care requirements e.g. food and water, anxiety etc.

4.4.11 HSE recognise that sheltering would be the immediate protection measure implemented during an off-site nuclear emergency, however, evacuation of the population in the affected area within the DEPZ may be required either during the emergency to protect the public from health effects, or after the emergency to assist in monitoring and clean-up of the area. Those to be evacuated would be prioritised on a risk basis and



the residents of the proposed development would be a high priority due to their immediate vicinity to the site boundary, and their potential to receive a dose close to the level at which the Health Protection Agency recommend consideration of evacuation as the appropriate countermeasure. Food restrictions and other protective measures may be required in the affected area for a long time after any incident. This coupled with the disruption of being re-homed, even if for a short period of time, is a significant consequence that should not be dismissed.

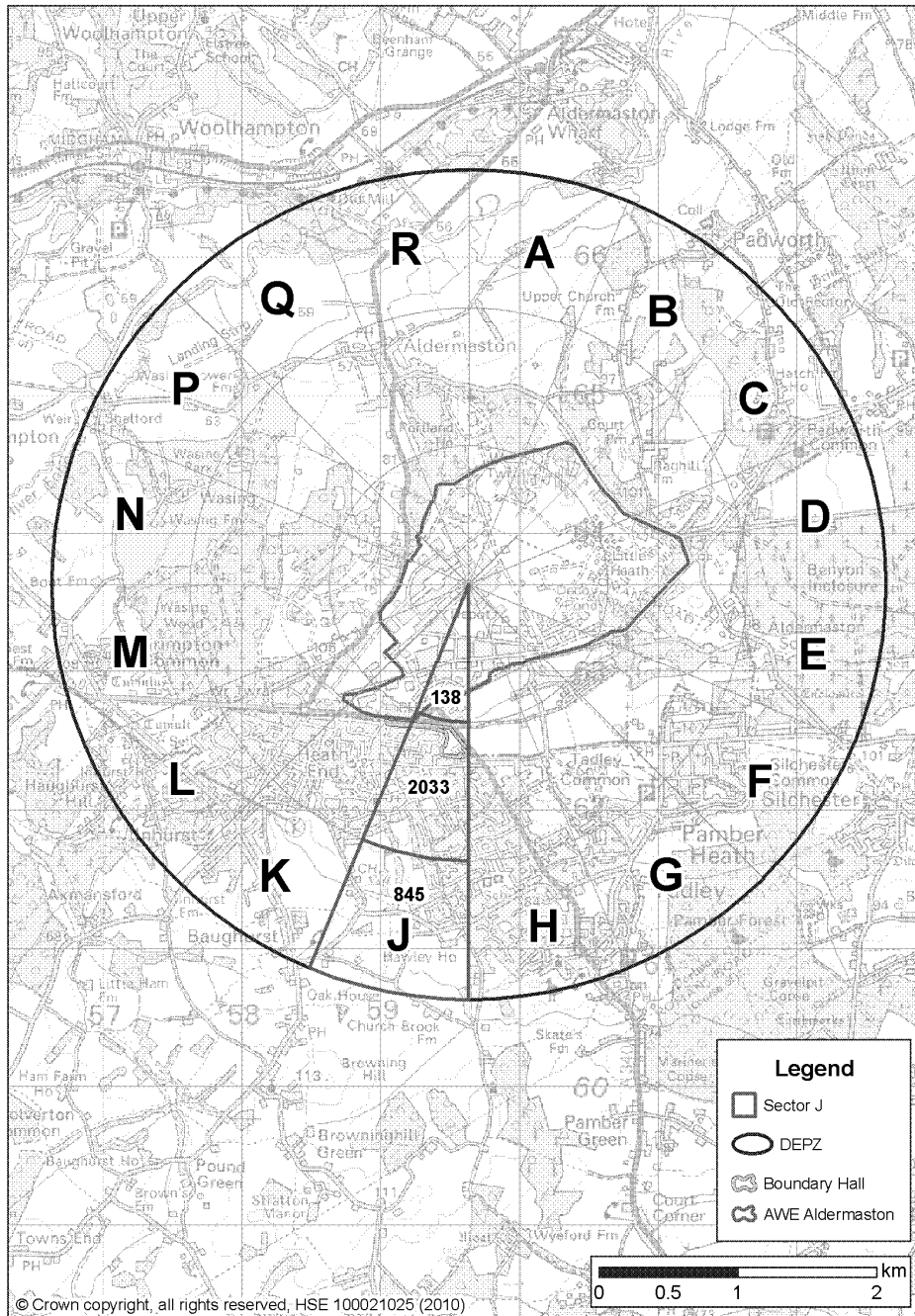
#### 4.5

CALA Homes claim that the proposed development will increase the population within the DEPZ by some 268 people, compared with an existing population in the order of 15,000. This is an increase of circa 2%, and would not be a material factor in traffic management controls during an off-site nuclear emergency.

##### 4.5.1 HSE disagree with this statement for the following reasons:

If an off-site nuclear emergency were to occur due to the release of radioactive material, this material would be dispersed into the atmosphere. Public protection measures would be implemented in the relevant sectors. Since the DEPZ is divided

into 16 equal sectors the increase in population for emergency planning purposes should be based on an analysis of sector populations rather than the full 360° DEPZ. This gives a much clearer indication of the proportional impact of the proposal. It means that the increase in population in the Boundary Hall sector (Sector J) is actually almost 12.5% to a distance of 2km based upon the percentage increase of the Boundary Hall residents compared to the current population. (See Map 1 below).



Map 1 – Current Population in Sector J Where Proposed Development would be Located

## 5 Conclusions

5.1 Although controls and protection measures are in place at nuclear facilities accidents can still happen, therefore

emergency arrangements are put into place to deal with releases of radioactive material.

5.2 Whilst the Emergency Plan is regularly tested there is no modelling available to determine the effectiveness of the emergency arrangements, due to the uncertainties on the actual consequences on the day, and the actions that would be taken by the public in response to any accident.

5.3 Evacuation of the public around the Aldermaston site is a realistic possibility.

5.4 The proximity of the proposed development at Boundary Hall to the Aldermaston site boundary means that that the radiological doses to those people would be significantly higher than those living further from the site.

5.5 The key contingency officers with responsibility for delivery of the emergency plan in the region of Boundary Hall have objected to this proposed development for the following reasons:-

- Its close proximity to the AWE Aldermaston site and hence
- An increase in the number of people being put in harms way

- An increase in the number of people requiring assistance
- An increase in dose to the emergency responders from dealing with these additional people
- Additional traffic from people being evacuated or self evacuation
- Impact on limited resources

HSE fully shares these concerns which are wholly consistent with the relevant sitting policy for developments very close to nuclear licensed installations.

### References

1. Atomic Weapons Establishments Off-Site Contingency Arrangements, West Berkshire Council, Version 1/2009.
2. A guide to the Radiation (Emergency Preparedness and Public Information) Regulations 2001, Health and Safety Executive, L126.
3. Nuclear Emergency Planning and Liaison Group, Consolidated Guidance, Department of Energy and Climate Change, URN 10D/708

