Emergency Planning
Statement

Town and Country Planning Act 1990
Section 78 appeal against the refusal of planning permission

Witness:	**Carolyn Richardson, BSc Hons, CIEH**
Subject of Statement:	**Emergency Planning/AWE**
Appeal:	**APP/W0340/W/23/3329567**
Site:	**Pitchkettle Farm, Goodboys Lane, Grazeley Green, Reading**
Proposal:	**Part retrospective erection of two modular buildings following demolition and removal of existing structures, and change of use of site to flexible Class B2/B8/E(g) use.**
Date:	**13 March 2024**
Council Reference:	**21 02710**

West Berkshire COUNCIL

Statement

Name: Carolyn Richardson

March 2024

West Berkshire Council
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1. Introduction

Qualifications and Experience

1.1 My name is Carolyn Richardson I have a degree in Environmental Health (BSc (Hons) 1st Class Environmental Health) and Post Graduate Diplomas in 'Meat Inspection & Other Foods', Acoustics & Noise Control and Leadership & Management.

1.2 I am a Chartered Member of the Institute for Environmental Health (CIEH) and a member of the Emergency Planning Society.

1.3 Since 2018 I have been the Service Manager for Emergency Planning for Bracknell Forest, Royal Borough of Windsor and Maidenhead and West Berkshire Councils, prior to that, from 2006 I was the Emergency Planning Manager for West Berkshire Council having previously been a Principal Environmental Health Officer for the same Council.

1.4 I have extensive and current experience in relation to Emergency Response and Recovery for all risk sites within West Berkshire area including the Atomic Weapons Establishment sites at Aldermaston and Burghfield (AWE (A) and (B) respectively.

1.5 I have been involved in the Thames Valley Local Resilience Forum (TVLRF), which is a multiagency forum of responders including the emergency services, Health agencies including the UK Health Security Agency, utility companies, MOD representatives etc. As a senior officer, I represent Berkshire on the TVLRF Delivery Group and have chaired or am the Berkshire representative on a number of risk and capability working groups including Chemical, Biological, Radiation and Nuclear (CBRN), Hazardous Materials (HAZMAT), site specific risks with hazards such as radioactive materials (REPPIR), chemicals (Control of Major Accident Hazards Regs 2015, COMAH), flooding, wildfires, human aspects, vulnerable people, recovery and event management including most recently the funeral of Her Majesty Queen Elizabeth II and King Charles III Coronation.

1.6 I have been a member of the Local Authority Nuclear Working Group, a national group involving all local authorities across the UK where there are nuclear sites since 2006. It

also includes the regulators, Office for Nuclear Regulation (ONR), UK Health Security Agency (UKHSA), Dept. of Energy Security and Net Zero and Environment Agency. I was involved in the revision of the National Nuclear Emergency Planning Guidance[1] and am currently on the National group revising this guidance in relation to the changes in the legislation.

1.7 Specific training undertaken in the emergency planning field includes Multiagency Gold Incident Command (MAGIC) by the College of Policing, Tactical and Strategic Coordinating Group training, Crisis Communications, and specific radiation training including for nuclear convoys. I have also led on exercises involving local, regional and national participants.

1.8 I also have extensive and recent strategic and practical experience in relation to response and recovery to major incidents at strategic level being the strategic Tactical Advisor to the Chief Executives for Berkshire throughout the COVID 19 response. I have also undertaken roles in rest centres, supporting vulnerable people, managing the Councils Emergency Operations Centre and attending the scenes of many incidents including fires, security incidents and flooding events. I have also led on recovery from major incidents and the debriefs from them which has included engagement with the communities affected. I therefore have a great deal of understanding of how emergencies run in a multi-agency environment, the significant impact on resources they involve and most importantly the effect they can have on the communities affected.

1.9 In both my main fields of employment in Environmental Health and Emergency Planning I have been involved in development control activities providing feedback in relation to my professional role at the time.

1.10 I have been involved with the Atomic Weapons Establishment (AWE) sites since 2004 taking part in Exercises in my capacity of Environmental Health professional, in what was known as the Health Advisory Cell (HAC), now known as the Scientific and Technical Advisory Cell (STAC). I therefore have a detailed understanding of the considerations and risks associated with the AWE sites.

[1] National Nuclear Emergency Planning and Response Guidance - GOV.UK (www.gov.uk)

1.11 Since 2006 I have worked closely with the AWE staff developing a deep understanding of the hazards, risks, on-site and off-site responses in relation to a radiation emergency.

1.12 My statement covers the matters relating to the AWE Off-Site Emergency Plan and other matters relating to emergency response and the impact this appeal site would have on the response and therefore the health and wellbeing of the 'new' community and the existing community.

1.13 In so doing my statement will:

a. explain the background to the legislation and recent changes;

b. explain the Detailed Emergency Planning Zone (DEPZ) process for determining and the implications, the development and operation of the AWE off-Site Emergency Plan including the initial response and the recovery implications.

c. provide information as to the complexities of responding to emergencies both radiation emergencies and 'normal' emergencies and therefore the impact of additional residential units within the DEPZ of AWE Burghfield.

d. detail the process for development management undertaken by Emergency Planning and therefore the considerations linked to the impact on the AWE Off Site Emergency Plan of this appeal site, including the pre-app considerations and consultations undertaken.

e. demonstrate the complex and challenging nature of responding to incidents, the added 'fear' factor relating to radiation and why the mitigation offered by the appellant is not appropriate.

1.14 In addition my statement will provide details relating to the considerations made in relation to the appeal site specifically including recent information provided by the appellant.

1.15 I confirm that this statement which I have prepared and provided for this appeal is true to the best of my knowledge and belief. I confirm that the opinions expressed are my true and professional opinions.

2. Purpose and Scope of Statement

2.1 This statement has been prepared in response to the appeal against the refusal of planning application 21 02710 by West Berkshire Council for the *Part retrospective erection of two modular buildings following demolition and removal of existing structures and change of use of site to flexible Class B2/B8/E(g) use* at Pitchkettle Farm, Goodboys Lane, Grazeley Green, Reading.

2.2 This statement addresses Reason for Refusal 6, namely, '*The application site is situated within the Detailed Emergency Planning Zone (DEPZ) surrounding the Burghfield Atomic Weapons Establishment (AWE). The use of the DEPZ in this context provides an area for development control consistent with the zone defined originally for emergency planning purposes. Off-site emergency arrangements are a requirement of the Radiation (Emergency Preparedness and Public Information) Regulations 2001 and are outlined within the AWE Off-Site Emergency Plan issue: January 2019. The purpose of the plan is to provide a detailed framework for all responding agencies to work to in order to facilitate the protection of the public and/or environment* following an event involving an on-site accident at AWE Burghfield

There is insufficient information to demonstrate that the proposed development would not result in an increase in population within DEPZ. With no individual Emergency plan in place the proposal would have an adverse impact on the AWE Off-Site Emergency Plan due to distance meaning that evacuation after a period of shelter would be necessary, and in terms of recovery implications in the longer term*.(highlighted by author for emphasis)*

According to Policy CS8 of the West Berkshire Core Strategy proposals in the consultation zones will be considered in consultation with the ONR. In the interests of public safety, development in planning consultation zone of AWE Burghfield is likely to be refused planning permission by the Council when the Office for Nuclear Regulation (ONR) has advised against that development. Both the ONR and Emergency Planning Team advise against this development because insufficient information has been received and this mean they have not been able to give consideration to the specific impacts of the development on the Off-Site Emergency Plan. As such, the proposal conflicts with the NPPF and Policy CS8 of West Berkshire Core Strategy 2006-2026.'

2.3 The reason for refusal 6 clearly sets out the that it was considered based on the information provided at the time and without further information being provided there was no confidence that the proposed development would not have implications not only to the AWE Off-Site Emergency Plan, (AWE OSEP) but consequently the risk to public health and wellbeing of those in the area and working on the appeal site.

2.4 This lack of confidence and therefore the risk to the publics health and wellbeing is important when taking into account the potential of a radiation emergency at the AWE Burghfield site which would result in the triggering of the AWE Off-Site Emergency Plan (the Plan). This Plan has been developed, as legally required, to '*mitigate, so far as is reasonably practicable, the consequences of a radiation emergency outside the operators premises'* (REPPIR Reg 11). In so doing the Plan must be able to *'put into effect without delay'* (Approved Code of Practice (ACOP) 11(1), 334)[2], in order *'to prove prompt protection of the members of the public in the area'*. Therefore with no confidence there is a risk that this legal requirement cannot be achieved.

2.5 It should be noted however that the Plan is only one element of a response to a radiation emergency with links directly to other capability plans which support the response, such as humanitarian assistance, radiation monitoring units, monitoring and recovery plans to name a few, all with the aim of ensuring as far as possible public safety and well-being during and after any radiation emergency caused by an incident at either AWE site.

2.6 The legislative requirements relating to the risk and hazards associated with the AWE sites and the wide range of plans in addition to the AWE Off-Site Emergency Plan clearly demonstrate the concerns relating to these nuclear licenced sites.

2.7 This statement will therefore seek to demonstrate that these risks and hazards are not only relating to the immediacy of the incident but the longer-term impacts which can be significant.

2.8 The reason for reviewing planning applications is in relation to their impact on the AWE Off-Site Emergency Plan but also the impact on the wider response capabilities. This is essential, in order to protect and mitigate as far as possible the impact on not only the existing population but also those of the proposed new population in relation to their public health and wellbeing and that of the environment. If a proposed development is considered to have an adverse impact on the capability of responders and the AWE Off

[2] REPPIR ACOP

Site Emergency Plan and there is **no or inadequate mitigation** provided or able to be implemented then an advise against is recommended.

2.9 The points in bold in 2.8 above were significant in the reason for refusal as stated in 2.2 above.

3. AWE Off-Site Emergency Planning

3.1 The legislative background, the implications of the Detailed Emergency Planning Zone, the requirements of the AWE Off-Site Emergency Plan and the implications should it not be adequate, the emergency response and impacts on the responders and the community along with specific issues in relation an AWE Radiation Emergency are set out in **Appendix 1 and associated Annexes.**

3.2 This is an important appendix to give the background, issues and complexities in relation to a radiation emergency at either AWE site. Therefore providing the reasons why there are concerns in relation to development within the Detailed Emergency Planning Zones around the Atomic Weapons Establishment sites at Aldermaston and Burghfield, including this appeal site.

3.3 In particular **Appendix 1** highlights the impact additional developments may have on the AWE Off-Site Emergency Plan, the associated responders and therefore the potential impact on the health and wellbeing of the existing community and those associated with the application should the AWE Off-Site Emergency Plan be inadequate and the responders not be able to respond effectively.

3.4 Therefore, whilst an Appendix it is advised that this is essential information to assist in considering this application.

4. Development Management Assessment Process

4.1 Since 2010 Emergency Planning has been consultation on planning applications around the AWE sites. In recent years since the changes in legislation the process has had to change to consider the increased area of concern around the AWE Burghfield site.

4.2 The size of the DEPZ has nearly doubled and includes some densely populated areas. The result has been that the AWE Off-Site Emergency Plan is now under extreme pressure to accommodate the existing population within it. Therefore, it is clear to this Council, the other responding agencies and the regulators that any uncontrolled development or development which does not have adequate mitigation in place will place the public health and wellbeing of that community at risk.

4.3 The process has varied overtime and has become more considered and refined in relation to the risks and the impacts associated with a radiation emergency from an AWE site and the impact on the community in the DEPZ.

4.4 **Appendix 2** provides more details as to the process.

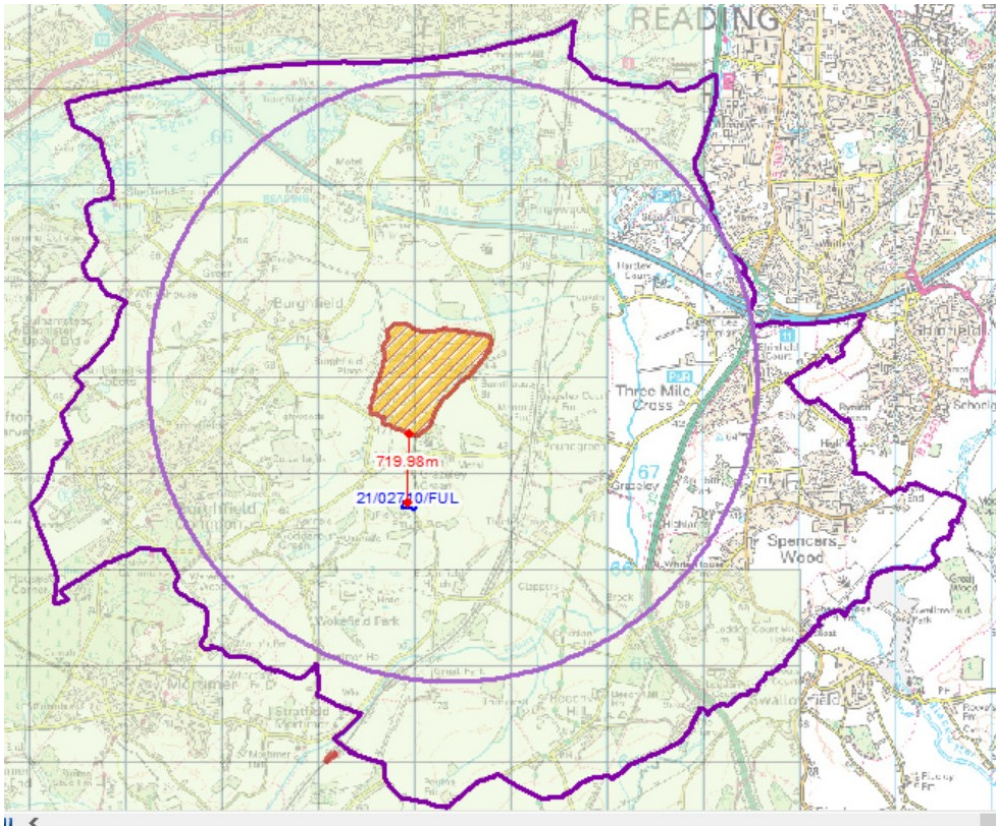
5. Appeal Site: Application 21 02710

5.1 The chronological events relating to the application subject to this appeal is set out below:

a. 15/11/2021 Receipt of application to Emergency Planning (EP).
b. 22/12/2021 Request by EP to Case Officer for a Discussion
c. 02/02/2022 Response from EP submitted to Development Management
d. 19/04/2022 Resent response from EP submitted to Development Management
e. 16/03/2023 Decision issued
f. 08/06/2023 Email feedback from applicant to EP.
g. 14/08/2023 Email response from EP to applicant.

5.2 Having regard to this specific application the following details were noted:

a. The appeal site is within the Detailed Emergency Planning Zone approximately 720m from site boundary of AWE B as shown in map 1 below. The inner circle to the DEPZ denotes the area detailed in the AWE consequence report where urgent protective actions would be required. This application is clearly within that area. Significantly, as detailed in Appendix 1, the time for anyone within the DEPZ, have less than 25mins from the start of the incident to be under adequate shelter, also noting however that the public notification may only happen 15mins after the start of the incident leaving only 10 mins to get under adequate shelter.



Map 1. Application site within DEPZ of AWE B.
Key:

- Purple Circle – urgent protective actions area
- Outer purple area- Detailed Emergency Planning Zone
- Yellow/shaded area – AWE Burghfield site
- Red dot – Application site

b. The application is for commercial use which is more acceptable than residential however the range of uses under the classes B2/B8 and E are extensive. Some of these uses would include attracting a number of people to the area such as:

i. Display or retail sale of goods, other than hot food, principally to visiting members of the public;
ii. take away premises;
iii. Indoors sports…..principally to visiting members of the public;
iv. creche, day nursery or day centre…. principally to visiting members of the public'.

As a result, there was a considerable concern in relation to the usage as a result of the wide number of possible use classes many of which would actively encourage people to come into the area including vulnerable people.

It was however noted that the application was restricting the E class to E(g).

5.3 It was noted that the site already had existing permission for business use with no emergency plan being in place.

5.4 At the time of the application no mention was made in relation to any mitigations such as limiting the class use, number of employees, more detail about the site activities, the structure of the buildings and the existence of a robust site emergency plan.

5.5 As a result questions were asked of the applicant as set out in 5.7 below in Feb and April 2022.

5.6 No feedback in relation to these questions were made until August 2023 as shown in 5.7 below, which was after the decision date.

5.7 The questions to the applicant, their response and the considerations to their response by emergency planning are detailed below:

a. **Question to Applicant:**
Reassurance on the total number of employees for the whole original site now and prior to the changes.?
Answer from Applicant:
The number of employees currently at the site is 11, which is the same as the previous use.
These are all employed in the office building.
The application/appeal does propose additional uses, but if these resulted in any further employees, they would likely require planning permission. For example, using the site for storage would not result in anyone further working at the site, but industrial use would – however this would necessitate further structures that would need planning permission.
Consideration of response:
On the basis that the proposed usage of the site is not expected to increase the number of employees from the existing usage then the risk to the response will not have changed.
Consideration should be given to ensuring this is the case and would remain the case should the application be approved on appeal.

b. **Question to Applicant**
Site activities being undertaken?
Answer from Applicant:
The only site activity at the moment is the **office** use will 11 employees.
The application seeks regularisation this use but also **storage/industrial uses on other parts of the site.** Storage uses would not require any employees, and we're now suggesting that further industrial uses would require planning permission.
Consideration of response:
The comments are noted about the number of staff both in the offices and the regularisation of the storage/industrial units.
However, as a result of the broad classes and therefore uses and in order to protect those on site and the wider community in a response then it is considered

appropriate to place a condition in relation to the limiting the class uses to ensure the numbers on site do not increase.
There are also continued concerns about the lack of detail about the storage and industrial usage to be regularised.

c. **Question to Applicant:**
Building structures?
Answer from Applicant:
The only building structures proposed as part of this application are two modular buildings in connection with the office use.
Any further buildings would require planning permission.
Consideration of response:
It is noted that the modular. As a result, consultation has taken place with UK Health Security Agency who responded as follows.

Any structure that provides the ability to significantly reduce ingress of air from the outside of the structure will offer some degree of protection against inhalation of radioactive materials. Inhalation is the primary exposure pathway of concern, from any initial release and from resuspension of radioactive material on the ground. As such the use of modular buildings is similar to static/touring caravans which UKHSA has stated can be used for sheltering (with some provisions which I'll come to in a moment) but that the population within these structures should be treated as a ***priority group*** *for any evacuation/relocation from an affected area. Any building or structure used for sheltering needs to have provision for drinking (potable) water and sanitation plus heating for up to 48 hours and be sufficient for the number of people expected to take shelter in that structure/building. It is not clear as to whether there is provision for potable water, sanitation, and heating but I would suggest that these are things which could be put in place within any site plan. UKHSA is also likely to recommend self-decontamination for anyone who was outside at the time of release, within the Urgent Protective Action Zone and in the downwind sectors. UKHSA's guidance on self-decontamination is published on gov.uk. Provision should be made within the modular buildings to be able to undertake self-decontamination and sufficient provision made for clean clothing (which could be disposable overalls).*

Taking this advice into consideration I believe that modular buildings can be suitable for sheltering with provisos as stated above.

On the basis of the above feedback there are still concerns in relation to the impact on the AWE Off-Site Emergency Plan since those on site would need to be considered as a priority group. In addition, more details would be needed in relation to the size and layout of these modules to ensure they have sufficient space and facilities to provide the assurances needed to allow the advise from UKHSA to be undertaken. Size is shown in the diagrams but no layout.

Added to the concerns are the storage units which the applicant did not mention in the feedback. It is noted that there would be 'no employees' however there would be people coming to the site to collect or store at the site. These people would need to be informed of an incident and have somewhere to go to take shelter quickly which is available 24/7. No mitigation or comments have been received in relation to this.

d. **Question to Applicant:**
Any emergency plans?
Answer from Applicant:
The applicant does have an emergency plan in place, which in the event of an alarm is to shut all the windows and await further instruction. They would of course be happy to firm this up into something more detailed if required.
Consideration of response:
Sadly, no plan was provided with the response and therefore the adequacy of the plan cannot be confirmed. In addition, it is noted that the site as a whole will include offices and storage/light industrial units and all of these would need to be included in the emergency plan.
There are therefore concerns in relation to the different elements of the application – offices, storage/light industrial, which, if under different management/operations, may not allow for an adequate robust emergency plan for the whole site to be put in place.
The purpose of such emergency plans being to protect the health and wellbeing of those on site should there be a radiation emergency and not place additional impact on the responders as a result of the proposal and taking resources away from other existing communities.
The concern is heightened since the UKHSA have advised this site would identify as a priority group which as a result of the sites proximity to the AWE Burghfield site is an additional issue to manage in an already complex situation.

5.8 Taking the feedback and considerations into account there are still concerns in relation to this application which based on the information provided at the time of the application and after the refusal decision was made have not been addressed. These include:

a. Managing the number of people who will be on site at anyone time in order to limit the impact.

b. Managing the longer-term usage on the site to ensure they do not change and allow for additional people coming to the site as a result of any change of use thus placing more people at risk.

c. Ensuring the buildings are suitable, not only in their structure but also their layout to ensure the self-decontamination and ability to shelter, with suitable provisions are in place.

d. Ensuring that any Emergency Plan(s) includes the whole site and not just the offices and are workable for all on site, both employees and visitors, all the time including out of hours, and is current.

5.9 Therefore, at the time of the application being submitted and on reviewing the feedback to the initial questions made to the applicant, the information provided is considered not to be sufficient information to assure the Emergency Planning service that this appeal site would not have an impact on the AWE Off-Site Emergency Plan, and the responders and therefore could place those on site at risk in relation to their health and wellbeing.

5.10 If further information had been provided following the initial feedback these concerns may have been overcome. However, without that evidence the refusal recommendation stands.

5.11 It is recognised that there is permission for the current business use for which there is no emergency plan, or at least none provided. Therefore, it could be considered that through conditions the issues noted above could be overcome and therefore on balance the refusal recommendation removed.

5.12 The use of conditions is a potential option***, however***, it would have to be recognised that to overcome all the concerns will not be simple and without further information it is not possible to fully consider if conditions would be appropriate if they cannot be fully met by the appellant.

5.13 Emergency Planning therefore still have significant concerns in relation to this application and on the basis of the information available would recommend the refusal decision is upheld.

5.14 If the appeal is approved, it is considered imperative that conditions are attached. However, based on the limited information an outline emergency plan for the site is recommended to be submitted in the first place. This will highlight whether the

additional construction and preoccupation conditions are likely to be met before any further costly works are undertaken.

5.15 In addition, should the appeal be upheld then the following should also be addressed by way of conditions etc. These conditions should aim to achieve the following.

a. Numbers of people on site at anyone time, which would be linked to the ability to self-decontaminate and shelter for up to 48hrs on site.

b. The uses applicable to the site such that it would not attract more people other than those working on site as stated by the applicant.

c. Robust Emergency Plan(s) would be required for the whole site taking into account all operations. The plan(s) would also be necessary different phases including:

Emergency Plan (Retrospective element) Within 3 months of the date of this decision a comprehensive Emergency Plan shall be submitted to the Local Planning Authority. Upon agreement of the Emergency Plan in writing by the Local Planning Authority it shall be implemented in full, shall be kept up-to-date by office space operator and management/owners. Thereafter, the plan should be reviewed and amended as necessary and at least annually. The Local Planning Authority may at any time require the amendment of the plan by giving notice pursuant to this condition. The Local Planning Authority may at any time require a copy of the then current Emergency Plan for the site which shall be submitted to the Local Planning Authority within 1 month of notice being given. Reason: In order to ensure that the office space has integrated emergency plans that will not have an impact on the AWE Off-Site Emergency Plan and will mitigate the risk to those people on the site. This condition is applied in accordance with the National Planning Policy Framework and Policies CS8 of the West Berkshire Core Strategy 2006-2026.
Emergency Plan (Whole site uses) Within 6 months of the date of this decision an outline Emergency Plan for the whole site shall be submitted to the Local Planning Authority. In order to provide assurance that an effective plan is possible and applicable to the site. Normally this means that only the final contact details and names are not completed. The Emergency Plan must include as a minimum the processes for:

- activation of the plan,
- sheltering,
- supporting those on site - staff and visitors whilst in sheltering conditions
- evacuation (if necessary)
- recovery

Upon agreement of the Emergency Plan in writing by the Local Planning Authority it shall be implemented in full, shall be kept up-to-date by office space operator and management/owners.

Thereafter, the plan should be reviewed and amended as necessary and at least annually.

The Local Planning Authority may at any time require the amendment of the plan by giving notice pursuant to this condition. The Local Planning Authority may at any time require a copy of the then current Emergency Plan for the site which shall be submitted to the Local Planning Authority within 1 month of notice being given.

Reason: in order to ensure that the change of use will not have an impact on the AWE Off-Site Emergency Plan and therefore place the people on the site and the response at risk should there be a radiation emergency at AWE Aldermaston. This condition is applied in accordance with the National Planning Policy Framework and Policies CS8 of the West Berkshire Core Strategy 2006-2026.

Appendix 1 AWE in relation to Development Control

Appendix 2 Development Management Process

Appendix 1

Appendix 1 AWE in relation to Development Control

Contents

1. Legislation & Risk

1.1 The Atomic Weapons Establishments (AWE) at Aldermaston and Burghfield both within the geographic area of West Berkshire Council are nuclear licenced sites. Both sites are operated by AWE plc for the Ministry of Defence in order to support the UK defence and security work, in particular the nuclear warhead activities. Both sites were previously used in World War II and have been involved in the current work since the 1950s.

1.2 The legislative basis relating to protecting the public and the environment from radiation emergencies is to be found in the Radiation (Emergency Preparedness and Public Information) Regulations 2001/2975 (REPPIR 01). Regulation 17 required the local authority to supply information to the public. Regulation 9 required there to be an off-site emergency plan prepared by the Council comprising an:

*"adequate emergency plan (in these Regulations referred to as an "off-site emergency plan") designed to secure**, so far as is reasonably practicable, the restriction of exposure to ionising radiation and the health and safety of persons who may be affected by such reasonably foreseeable emergencies as are identified in that assessment** and the plan shall be prepared in respect of such area as in the opinion of the Executive any member of the public is likely to be affected by such radiation emergencies."*

1.3 More recently, from the 22nd May 2019, those Regulations were replaced by the Radiation (Emergency Preparedness and Public Information) Regulations 2019[1] (REPPIR 19), known as REPPIR 19.

1.4 The Health and Safety Executive guidance on REPPIR 19 explains the main changes as follows:

The Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR 19) implement in Great Britain the articles on emergency preparedness and response in the Basic Safety Standards Directive 2013/59/Euratom (BSSD 2013)…

REPPIR 2019 are concerned with preparedness for radiation emergencies. The Regulations establish a framework of preparedness measures to ensure that arrangements are in place to effectively respond to that emergency, both on the site of the emergency situation and off-site where members of the public might be affected. The Regulations ensure that members of the public are provided with information, both before and during an emergency, so that they are properly informed and prepared, in advance, about what they need to do in the unlikely event of a radiation emergency occurring…

There were a number of changes in the new Regulations, with the main changes being:

a. A change to the definition of a radiation emergency. A radiation emergency is no longer defined in relation to an emergency scenario have the potential for a specific dose to a member of the public;

[1] https://www.hse.gov.uk/radiation/ionising/reppir.htm

b. *The introduction of Outline Planning, with associated Outline Planning Zones. These planning zones are in addition to Detailed Emergency Planning Zones; and*
c. *The Local Authority now determines the Detailed Emergency Planning Zones. Previously, this was done by the Regulator.*

1.5 The changes in the new regulations came about following the lessons from the radiation emergency in Japan when an earthquake and subsequent Tsunami caused the Fukushima Daiichi Nuclear Power Plant disaster (2011) and changes made to the Basic Safety Standards Directive 2013/59/Euratom[2] (BSSD 2013) which the UK government agreed to implement in order to protect the public and a reduced appetite to the risks associated with nuclear licensed sites.

1.6 The HSE Guidance at https://www.hse.gov.uk/radiation/ionising/reppir.htm also explains the main duties on the local authority that shed light on why the Appeal proposal has an impact on public safety:

Local authorities who have an HSE-enforced site with the potential for a radiological emergency are responsible for determining both a Detailed Emergency Planning Zone (DEPZ) and Outline Planning Zone (OPZ), if appropriate, following receipt of the consequence report and a discussion with the operator.

*DEPZs are about **capabilities** and consider sheltering, evacuation, iodine prophylaxis, and how to put these into effect. These capabilities are pre-planned and can be put into effect quickly once an emergency has been declared…*

1.7 Therefore, the new Regulations require two zones, DEPZ and OPZ in relation to emergency planning.

1.8 The DEPZ is a defined zone where it is proportionate to predefine protective actions which would be implemented without delay to mitigate the most likely consequence of a radiation emergency. This protective action should provide prompt protection to those who may be affected, maximising effectiveness which would be reduced if time was taken to consider and implement the action. (REPPIR Guidance 8(1) 233). This is particularly relative to the AWE sites as a result of the short time to alert those in the affected area to take the immediate protective action of shelter.

1.9 The REPPIR 19 legislation has several requirements for local authorities which have nuclear licenced sites located within their areas. In this Appeal, AWE Burghfield is one such site. The requirements include:

a. Requirement to determine a geographical area known as the "Detailed Emergency Planning Zone" (DEPZ) (Reg. 8) on the basis of the operator's "Consequence Report" under Regulation 7 and paragraph 2 of Schedule 4,
b. Prepare an Off-Site Emergency Plan (Reg. 11),
c. Review and test of emergency plans (Reg. 12),
d. Provision of information to the community within the DEPZ. These off-site arrangements link with the requirements on the site operators On-site emergency arrangements. (Reg. 21).

[2] https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31996L0029:EN:HTML

1.10 Regulation 8(1) DEPZ relates to land in this way:

(1) The local authority must determine the detailed emergency planning zone on the basis of the operator's recommendation made under paragraph 2 of Schedule 4 and may extend that area in consideration of—
(a) local geographic, demographic and practical implementation issues;
(b) the need to avoid, where practicable, the bisection of local communities; and
(c) the inclusion of vulnerable groups immediately adjacent to the area proposed by the operator.

1.11 Regulation 11 requires the local authority to prepare an Off-Site Emergency Plan in line with Schedule 7.

1.12 Within REPPIR 19, the Approved Code of Practice[3] and associated guidance documents the processes to be undertaken to achieve compliance which are clearly set out to which the Emergency Planning Service has adhered to.

1.13 Significantly the REPPIR 19 legislations ***'aim to establish a framework for the protection of members of the public and workers from and in the event of radiation emergencies that originate from premises.'*** *(*Page 1, para 1 of the ACOP). This is the golden thread throughout from determining the Detailed Emergency Planning Zone (DEPZ), developing the Off-Site Emergency Plan and therefore protecting the Off-Site Emergency Plan in order that it remains 'adequate'. More information relating to this is set out throughout this document.

1.14 Later in this appendix there is evidence as to the complexity of a radiation emergency, and other emergencies, to assist understand the challenges likely to be experienced both during the response to the emergency but also significantly in the recovery phase and therefore the challenges in relation to protecting public health and wellbeing.

1.15 In addition to the REPPIR 19 legislation and guidance, there is also the National Nuclear Emergency Planning and Response Guidance[4] which, although published in 2015, and therefore prior to REPPIR 19, has, in the majority, still relevant content.

1.16 REPPIR 19 is not the only legislation relevant to emergency response and recovery in relation to any emergency including a radiation emergency. Other legislation which also applies includes the Civil Contingencies Act 2004[5] (CCA) and associated guidance.

1.17 A requirement of the CCA is to assess risk. In order to do so the National Risk Register 2023 edition[6] is considered which clearly takes into account and captures the impact of emergencies into 7 areas as set out below:

a. The *impact on human welfare*, including fatalities directly attributable to the incident, casualties resulting from the incident (including illness, injury and mental health impacts), and evacuation and shelter requirements.
b. Behavioural impacts, including changes in individuals' behaviour or levels of public outrage.

[3] https://www.onr.org.uk/documents/2020/reppir-2019-acop.pdf
[4] https://www.gov.uk/government/publications/national-nuclear-emergency-planning-and-response-guidance
[5] https://www.legislation.gov.uk/ukpga/2004/36/contents
[6] NATIONAL RISK REGISTER 2023 Edition

c. The impact on essential services, including disruption to transport, healthcare, education, financial services, food, water, energy, emergency services, telecommunications and government services.
d. Economic damage, including numbers of working hours lost.
e. Environmental impact, including damage to the environment.
f. The impact on security, including on law enforcement agencies, armed forces, border security, and the criminal justice system.
g. International impacts, including damage to the UK's international relations and ability to project soft power, disruption to international development, violation of international law and norms, and international displacement and migration.

1.18 In relation to the impact from a radiation emergency at a nuclear facility then it has been considered that the impacts would include all the above impacts with significantly an impact on human welfare, the environment – in the short and long term, and have a financial cost by way of billions of pounds. Therefore, the national risk register has assessed that a civil nuclear accident, although unlikely, would have a **catastrophic impact–** the highest impact category.

1.19 The actual impact, it is recognised, will be variable as a result of the scenario at the time including the weather conditions and the cause of the radiation emergency. However, whilst the scale of the impact may reduce there will be an impact and significantly it should be noted that it is not just in the immediacy of the radiation emergency that there will be an impact but in the recovery which may be prolonged and include long-term health, environmental and economic impacts requiring sustained recovery.

1.20 It is hoped that the likelihood of a radiation emergency arising at an AWE site remains very low, due to the layers of safety put in place and regulatory inspections. However, any suggestion that a radiation emergency is almost impossible and that if it did happen the impact would be limited is wholly misconceived and potentially dangerous, by giving people a false state of security.

1.21 The recently issued National Risk Register 2023 refers to a number of emergencies where there *have been* radiation emergencies in the UK and overseas. These have included Windscale (UK) in 1957, Three Mile Island (US) in 1979, Chernobyl (Ukraine) in 1986 and Fukushima (Japan) in 2011. Therefore, regrettably and notwithstanding safeguards which continue to improve being applied no doubt diligently by all concerned, radiation emergencies can and do happen and therefore remain a credible scenario. There has also been the recognition of the potential for a catastrophic impact.

1.22 In summary there is clear legislation which relates to nuclear licenced sites where there is a risk which requires West Berkshire Council as the AWE Off-Site Emergency Plan owner to have an adequate plan in place to protect the public. Therefore, to maintain an adequate plan which will protect the health and wellbeing of those living, working and visiting the area, consideration is given to any proposed development near the AWE sites, in particular those developments within the Detailed Emergency Planning Zone.

2. Detailed Emergency Planning Zone (DEPZ)

2.1 Regulation 8 of REPPIR 19 sets out a requirement on the local authority to delineate a Detailed Emergency Planning Zone. This was a new obligation on the relevant local authority under REPPIR 19 with the activity previously undertaken by the Regulators. The DEPZ determination for the AWE sites is now undertaken by West Berkshire Council.

2.2 Prior to determining the DEPZ, information is provided by the operator of the nuclear site, in this case AWE, in the form of a "Consequence Report". AWE provide two reports, one for each nuclear site, both of which are publicly available on the West Berkshire Councils website[7].

2.3 The Consequence Report not only provides the information in relation to the minimum geographical distances for setting the DEPZ but also provides the justification behind the recommendation including response times to put in place **urgent protective actions**.

2.4 Of note in relation to this appeal is the AWE Burghfield Consequence Report[8] and the associated decision reports from March 2020 when the DEPZs were originally determined and subsequently in January 2023. **Annexes 1, 2, 3 and 4**.

2.5 Some key points to note from the operator's current Consequence Report relate to:

Its evaluation of the *minimum* distance for the DEPZ for AWE Burghfield is 3160m, known as the "Urgent Protection Actions" (UPA) area, with an outer "Outline Planning Zone" (OPZ) of 12km. The Outline Planning Zone is set by the Ministry of Defence.

2.6 Its recommendation '*that people are instructed, as soon as is practical, to immediately take-cover in a suitable building and to stay inside with the windows and doors all properly shut*.' (this is the "sheltering" and it is required to be immediate).

'*this 'sheltering' action may be necessary for a period of up to two days, or at least until the initial contaminated plume has passed and monitoring of the ground contamination has been undertaken to determine the level of groundshine; and subsequent potential for further dose uptake, (e.g. from contaminated locally produced foodstuffs).*' Thus, the period of time for sheltering may be extended, or it is more likely that due to the reduced benefit of sheltering in place then 'subsequent' evacuation may be necessary to protect public health.

2.7 In relation to the time to get people under shelter to benefit from dose save is likely to be greater if there is any advance warning of an incident however assuming no early warning of the incident starting, and that the Site Response Group could take up to an estimated **15 minutes** to set up and formally notify the Local Authority, there could be no time available to inform the public, and for the public to find suitable shelter to obtain any dose saving in relation to the AWE Aldermaston site. Therefore, anyone in the area at the time

[7] Atomic Weapons Establishment (AWE) - West Berkshire Council
[8] https://www.westberks.gov.uk/media/48825/AWE-Burghfield-Consequences-Report/pdf/REPPIR_B-Site_ConsequencesReport_web_version1.pdf?m=637256670105370000

of an incident will immediately be at risk and adding more into the area places more people at risk. In relation to the AWE Burghfield Site then **25 minutes** is the time for the Site Response Group could take up to an estimated 15 minutes to set-up and formally notify the Local Authority, there remains approximately 10 minutes to inform the public, and for the public to find suitable shelter, in order to realise any substantive benefit from the sheltering action.

2.8 Therefore, anyone in the area at the time of an incident will immediately be at risk and adding more into the area places more people at risk. The above is based on a no notice accident which is the most likely type of event for either AWE site, should there be warning then getting into shelter early will provide a dose saving.

2.9 The report also details the evaluative rationale behind the respective exposure pathways and that shelter is the recommended *urgent* protective action.

2.10 AWE nuclear sites are very different to the many of the other nuclear licenced sites around the UK. Many of these other sites are very remote locations with very limited communities in the vicinity of the site. They are often on a coastal area and many of them have nuclear reactors which are different to the processes undertaken at the AWE sites. Therefore, the area for Urgent Protective Actions, the DEPZ and the response time scales for these other sites are often different to those around AWE. Significantly is the time to respond and put in place the urgent protective actions which are often hours and not minutes as is the case for the AWE sites.

2.11 An example of such a difference is Hunterston B Power Station which states in its Consequence Report that sheltering out to ~2km from the site is recommended, that Stable iodine can be administered up to *5-8 hours* following exposure for averting iodine inhalation dose, advise should be issued within 24hr regarding consumption of leafy green vegetables, milk etc downwind of the site along with a 'conservative time factor for implementing the protective measure of 2 hours'. These measures are significantly different to the AWE sites where the time to put measures in place from start of incident is *13 minutes* for AWE Aldermaston and *25 minutes for AWE Burghfield*. Stable iodine tablet distribution is not applicable for AWE sites due to the different materials used, in addition countermeasures such as, *not* eating vegetables and milk, will be put in place almost *immediately*.

2.12 The relevance of the contents of the Consequence Reports relating to any nuclear licenced site is that it forms the basis under REPPIR 19 as to the minimum size of the DEPZ and therefore the main area of interest for the AWE Off-Site Emergency Plan to cover.

2.13 The DEPZs for both Nuclear Licenced sites in the West Berkshire Council area, AWE Aldermaston and AWE Burghfield, were first determined under this legislation in *March 2020*. The considerations relating to the size of the DEPZ are set out in the legislation and ACOP which states that the DEPZ should be set taking consideration of:

a. local geographic, demographic and practical implementation issues;
b. the need to avoid, where practicable, the bisection of local communities and

c. the inclusion of vulnerable groups immediately adjacent to the area proposed by the operator'
d. the DEPZ *cannot be smaller* than the UPA as detailed in the Consequence Report.

2.14 The procedures undertaken by West Berkshire Council to determine the DEPZ in March 2020 were upheld in January 2021 following a Judicial Review which was unsuccessfully challenged the process undertaken by the Council.

2.15 The DEPZs for both AWE nuclear sites have been reviewed and re-determined in January 2023. There have been two minor changes made to the AWE Burghfield DEPZ with the addition of two small areas to include properties within communities which had previously been excluded, no changes were made to the AWE Aldermaston site. Further information is in **Annexes 1, 2, 3 and 4.**

2.16 Prior to REPPIR 19 the determination process was undertaken by the regulators, ONR, however the regulators were involved with the determination undertaken by West Berkshire Council in 2020 and 2023 in their role as members of the AWE Off-Site Planning Group and as the regulator under REPPIR 19.

2.17 The DEPZ is reviewed and re-determined every 3 years, unless there is a change in operations on the AWE sites and /or the local authority considers there is a change in the local area which necessitates a re-determination. Therefore, any new improved facilities and/or closure of old facilities in the AWE sites may reduce the size of the DEPZ. Equally, as happened in 2020, the *methodology* for calculation of the UPA may change based on new evidence which may mean it increases. In addition, over time different *parts* of the AWE site may be used for new nuclear facilities, subject to the normal planning and various consenting processes but that may result in changes in the risk profile and therefore changes in the DEPZ. Therefore, it is not a given that the DEPZ will reduce.

2.18 The DEPZ and the process of determination is undertaken carefully and reservedly by West Berkshire Council, not only for the impact on the community, but also in relation to ensuring compliance with REPPIR 19. Including the provision of the public information and the development and implementation of the AWE Off-Site Emergency Plan.

2.19 The significance in relation to planning applications of the DEPZ is that the local authority is required to make an adequate Off-site Emergency Plan based on the DEPZ.

2.20 Therefore if there is additional development within the DEPZ such that it cannot be accommodated with in the AWE Off-Site Emergency plan then not only would the council likely to be non-compliant with the legislation but should a radiation emergency arise then it could also place those within the DEPZ already and those within any new development at risk 'of serious consequences that might arise from the release of radiation including consequences to human life, health and safety , quality of life, property and the environment'. (REPPIR 19 Reg 2(1)).

3. AWE Off-Site Emergency Plan

3.1 As required under REPPIR 19 legislation, the operator is required to have an adequate on-site emergency plan (Reg.10) and the local authority must make an adequate off-site emergency plan covering the DEPZ and OPZ. (Reg. 11).

3.2 Whilst the two nuclear sites of AWE Aldermaston and Burghfield are within the geographic area of West Berkshire Council (WBDC) the development of the plan requires coordination of a wide range of stakeholders who would be involved in a response relating to a radiation emergency at either site. The development of the most recent plan involved over 27 agencies ranging from the emergency services in the Thames Valley and Hampshire; several government departments and agencies including the Environment Agency and Food Standards Agency, four local authorities due to the cross border nature of the DEPZs and OPZs, health services including Integrated Care Boards and hospitals, utility companies and transport companies (Rail and Road). Therefore, the role of this local authority in developing the plan is coordination and ensuing compliance with the legislation, as set out in Chapter 1 of part 2 of Schedule 6, Chapter 2 of part 2 of Schedule 6, Chapter 3 of part 2 of Schedule 6 and the principles and purposes of Schedule 7.

3.3 The focus of the Plan is in relation to responders actions and not that of the public which is covered in a public information booklet.

3.4 The first revision of the AWE Off-Site Emergency Plan post REPPIR 2019 was developed by May 2020 following the changes to the DEPZ around AWE Burghfield. Since that date there have been a further 5 updates to the plan as a result of agency updates, changes in procedures, lessons identified following 6 focused exercises on 5 themes undertaken over 2021/2022 and more detailed reviews of specific actions in the plan which had changed due to REPPIR 19. The latest 'live' approved version of the plan issued in March 2023 is currently being revised. This review process can take some time depending on the updates to be put in place. The Plan is therefore a living document being amended as necessary with regular training and exercising undertaken with the other responders in order to test the adequacy of the Plan, or elements of it. This is recognised in the ACOP as normal practice.

3.5 It should however be noted that there has been an AWE Off-Site Emergency Plan in place for many years from the 2001 Regulations that involved the term DEPZ and at that time an area known as the 'area of extendibility'.

3.6 The AWE Off-Site Emergency Plan (the Plan) is a detailed document for all responding agencies to use in a coordinated way and in order to facilitate the protection of the public and/or environment following an emergency involving an on-site release of radiation which is having an effect outside the AWE Aldermaston or Burghfield site boundaries – a 'RADIATION EMERGENCY'.

3.7 The **aim** of the Plan (2023 version) is to enable an effective response to an incident at either of the Atomic Weapons Establishments which has or could have an impact on the community surrounding the sites.

3.8 The **objectives** of the Plan are to provide:

a. Information about the sites and their hazards
b. The roles and responsibilities of each responding agency
c. The activation, command & control and coordination procedures
d. Protective actions to implement.
e. Warning and Informing, including communication procedures
f. Information about recovery
g. Where to find more information.

3.9 Note the plan aims to support responders to act effectively and promptly in order to protect the public.

3.10 West Berkshire Council has a requirement under REPPIR 19 to have an 'adequate Off-site emergency plan covering that zone or zones' (the zones being the DEPZ and Outline Planning Zone (OPZ)) (Reg. 11) 'and have the capability available to ensure this happens without unnecessary delay' (Para 238 of ACOP). As set out in the ACOP, Para 338 the process for making an adequate plan involves:

a. writing the plan, including the minimum content required by Schedule 6 and meeting the principles and purposes in Schedule 7;
b. ***implementing the necessary requirements (or seeking confirmation of this) to ensure the plan is capable of being put into effect without delay when required***; and
c. testing the plan to demonstrate its adequacy and making any necessary improvements to the plan as identified by the test.

3.11 The key point in relation to development control and the above requirements relate to para b. above which if the Plan is not capable of implementing the effect, then the Plan could be deemed to be inadequate and therefore West Berkshire Council being non-compliant. Thereafter there could be consequences for AWE.

3.12 The Plan in place is detailed but it does not cover everything and does not provide all the answers in one document. Instead, each agencies' own response plans and expertise are essential along with other supporting plans and frameworks, as stated in previously. The AWE Off-Site Emergency Plan does give the overall response framework and some specific information in relation to the site, countermeasures and mitigation options in order to support responders in the response.

3.13 The above statements may appear to give the complete assurance that the Plan and all the supporting plans mean that there are no issues in the ability to respond to an AWE incident at both sites and that it can flex and accommodate everything. Whilst that is the aim with the continual revision and improvement of the Plan, and associated plans, along with the regular testing of not only the Plan and the other supporting documents by this local authority and/or in a multi-agency environment, but the Plan is also not infinitely scalable. The reality of managing an off-site radiation emergency is likely to be very

difficult and challenging due to the nature of the emergency, the existing population density, the resource intensity of the response and longevity of the response and thereafter the recovery to return to a form of 'normality'.

3.14 The Plan is based on the data at the time of writing. The data being the number of existing and occupied residential, commercial and other communities (schools, care homes, caravan sites etc) at the time and not those which have not been built.

3.15 The requirement of the Local Authority under REPPIR 19, Regulation 11 and the ACOP are:

Reg 11 (1) Where premises require a planning zone under either or both of regulations 8 or 9, the local authority must make an adequate off-site emergency plan covering that zone or zones.
Reg 11 (2) The plan required by paragraph (1) must be designed to mitigate, so far as is reasonably practicable, the consequences of a radiation emergency outside the operator's premises.

3.16 The AWE OSEP cannot simply be amended to accommodate every new development. There is not an infinite number of reception centres, rest centres, radiation monitoring units to accommodate and process the number of people in the DEPZ in the immediate and short-term recovery timeframe nor in the long term. Even if there were then the resourcing of all these locations by way of staff would be a significant pressure, taking into account the shrinking size of such organisations and other agencies and reliance on the voluntary sector cannot be guaranteed. Noting also that some of these assets are national capabilities and not just local capabilities, again they too have limitations.

3.17 Therefore, additional residential or commercial properties regardless of scale could have an adverse effect on the effectiveness of the AWE Off-Site Emergency Plan.

3.18 It is considered that the adequacy of the plan is at significant risk and the local authority, and other responders will not be able have an adequate plan by mitigating the consequences of a radiation emergency, particularly in the longer term response and recovery phase and therefore are at risk not only of failing to comply with the legislation but also failing to protect the health and wellbeing of those living and working in the area.

3.19 The adequacy of the AWE OSEP was borne out recently in the evidence provided by the Regulators, the Office of Nuclear Regulation at the recent Public Inquiry[9] (APP/W0340/W/22/3312261 – 22/00244/FULEXT – The Hollies, Reading Road, Burghfield Common).

3.20 In addition the outcome of tabletop exercises and workshops undertaken in 2021/2022 and a full 'Level 2'[10] exercise in April 2023 demonstrated that the initial response of alerting the public and advising everyone to go inside and shelter, the coordination processes,

[9] The Hollies Appeal - CD12
[10] Level 2 exercises test to the command, control and coordination of a response in the local area with Level 1 exercises testing onsite arrangement and level 3 the national arrangements.

monitoring capabilities and longer term recovery would be significantly challenged with the view that ANY additional development in the areas where there is already a large population as is the case for this application would place the responders at risk of not being able to support the community. Through these recent exercises it was also identified that other risks associated with the response and recovery included the scale of road closures to be put in place due to the size of the DEPZ, the challenges in relation to evacuation or displacing people away from their homes and indeed providing support for those who lived or worked in the area and were not in at the time of the radiation emergency, the time period to undertake the monitoring of the environment and therefore the time lag to confirm the scale of the incident, and the assets required to undertake people reassurance monitoring are all at risk of being as a result of the increased development within the DEPZ. All this learning challenging the adequacy of the current plan with the current population with very few, if any additional options to improve the adequacy of the plan in relation to such matters.

3.21 In addition to the challenges to the adequacy of the plan significantly in the case of the AWE Burghfield site there is the added complication of the timings from the very start of a radiation emergency starting with respect to alerting the public and informing them to go inside and take cover which ideally they should do within 25 minutes but the alert is likely to be issued following checks from AWE in approximately 15 minutes therefore providing only 10 minutes to take shelter for people to be afforded the best protection from the risk of inhalation and /or contamination by radioactive material.

3.22 There is therefore no doubt in my mind and understanding of the hazards and the plans available that responders would be under exceptional pressure, not only in the immediate response but just as importantly in relation to what happens afterwards in the medium (24-48hrs) and long term (days, weeks, months or years).

3.23 The challenges, complexities and impacts for communities and responders in relation to the initial response, subsequent actions and recovery to a Radiation Emergency sections and ‘ordinary’ emergencies are set out in sections 6, 7, and 8 of this statement.

3.24 In summary the addition of any new development cannot be understated even small numbers, in addition to all the others already in the area. This was recognised by the planning inspector for the Boundary Hall site (APP/H1705/V/10/2124548) when he recommended that planning permission be refused. This incremental impact is also recognised by the changes made in REPPIR 19 which places more emphasis on the adequacy of the plans and the ability of responders to demonstrate and ensure that they have the capabilities available to undertake their roles as one example.

3.25 The resources are not infinitely available in particular, specialist equipment and people and therefore without clear and robust mitigation, which is not always possible for developments, there is a real risk to the adequacy of the plan.

4. Emergency Response and Impacts on Responders and the Community

4.1 In order to understand more fully the implications on responders and the community when an emergency happens I have set out below a variety of incidents, many of which I have been involved with directly and therefore have direct experience of the challenges and different levels of complexities or have been involved in the scrutiny of the debriefs and lessons identified as chair of the Thames Valley Local Resilience Forum Organisational Learning Group.

4.2 There has not been an off-site radiation emergency from a site in the UK since 10 October 1957 at the Windscale site, Cumbria. Therefore, there are no recent radiation emergencies in the UK to compare with directly. However, what can be drawn from it is that, in comparison to the AWE sites is that the location of the site was quite remote from communities and the communications by way of social media etc. were very different to those now. Lessons were learnt from that incident. However, the fact there has not been a radiation emergency since 1957 in the UK does not mean it is not possible and the impact of radiation emergencies can be drawn from more recent radiation emergencies elsewhere and indeed other 'normal' emergencies. All of which demonstrate the reason why placing people in a known risk area is not appropriate.

4.3 There are examples of more recent radiation emergencies where learning can be drawn from in relation to the impact both short and long term on the community including the radiation emergencies at:

Three Mile Island, **USA** 1979 (Reactor Accident). Feedback from some of the community living near the site at the time reported they had thought it was safe to live near the site. However, when things went wrong thousands of people evacuated from the area with subsequent concerns such as whether they could have children, would any children born to them in the future be normal, what would happen to their homes and their pets. They did not know who to trust since they had been assured it was safe and it wasn't. This fear was elevated for them at the time since they recalled Hiroshima, Japan in 1945. Therefore, whilst the risk of contamination in itself was low, the fear factor – the fear of irradiation effects on people, property and food – and related mental health concerns and trust relating to the radiation emergency during the incident and following the incident caused significant and far longer-term impacts on the community that was required to be displaced as a result of the incident.

Chernobyl Nuclear Power plant, Ukraine, 1986. The resulting steam explosion and fires were not only experienced in Ukraine where workers and those in the local community were directly affected and are still by the radiation but also across northern areas of the UK. 9800 farms across North West Scotland, Wales, Northern Ireland and Cumbria had controls placed on them by the Food Standards Agency with the final controls only being lifted as recently as 2012 in those geographic locations, no less than 26 years after the event as a result of radioactive particles in the upland peat. This meant that livestock in the area had to be tested prior to moving from the affected areas until 2021 in order to ensure that

contamination levels were actually at safe levels. Whilst the AWE sites do not have reactors, they remain munitions factories and the potential implications in the local areas for landowners and farmers in the event of a radiation emergency is likely to be significant with long term monitoring and controls required.

Fukushima Daiichi Nuclear Power Plant, Japan (2011). This radiation emergency was a result of earthquakes and subsequent Tsunami in 2011 but it is still having an effect in the Country over 12 years later. Whilst the situation in Japan was complex at the time since there had been earthquake and Tsunami damage too, the site was a nuclear reactor site (which AWE sites are not) and the scale and contamination have different impacts. Whilst the scale of a radiation emergency at AWE may not be the same the recent IAEA report 'Ten Years of Remediation Efforts in Japan' [11] does demonstrate learning and impacts for the recovery phase of any radiation emergency by way of expectations of the communities being 'as low as possible' clean ups; the extensive different types of remedial actions to put in place; the perception in relation to health impacts, similar to those from Three Mile Island; the waste management challenges; the specialist contractors required and the impact on responders in addition to the community. In addition, the IAEA reported that the other knock-on consequences of this emergency were the reduction in power after the incident and the reduced trust in nuclear safety which had a ripple affect across the world. These are examples of the genuine fears and concerns that arise for people who are displaced by an ionising incident, as well as the long period of time during which those fears and real concerns subsist. The report also stated that 'the initial relocation of thousands of people, leads to impact of social dimensions' with suggestions by the authors that 'management of social identity, in addition to social support is important for mitigating psychological distress after a nuclear accident, and the support for individuals should be focused on the management of both host and evacuee communities in relation areas'.

The report provides details in relation to the public expectations in relation to remediation which included:

a. Confusion by the meaning of the Government long term remediation goal and how it would be achieved
b. Increased distrust in the government by the residents
c. Shortage of labour for the recovery activities
d. Volume of contaminated waste and its storage
e. Communications in particular the post–accident reality including the impact of perception on health. It was noted that despite the knowledge, people living in the contaminated environments will be anxious about radiation related diseases and in particular cancer, although it was noted that their public information in advance was limited.
f. Evacuation and time periods.

   The incident happened in March 2011 however the lifting of the evacuation orders in the 'difficult to return zones' may be lifted in 2023 – 12 years later. Part of the reason for this time period was the lack of maintenance of infrastructure in that time period caused by the long-term evacuation. Therefore, the area not only required

[11] https://www.iaea.org/publications/15193/ten-years-of-remediation-efforts-in-japan

decontamination but repairs to properties and infrastructure to ensure it was habitable prior to occupation. In addition, it has been highlighted in a recent IAEA report that 'many former residents of the evacuated zone in Fukushima have significant fears about moving back, even after decontamination'.

g. Environmental clean-up – including agricultural fields, forests, reservoirs, lakes and matters relating to food safety.
h. Financial and reputational damage

Whilst the report can be used to influence the AWE off-Site Plan and therefore learn the lessons there are some elements which are unlikely to be resolved including the perception on long term health impacts; the impacts of evacuation on the community affected and the responding agencies as a result and the time periods which could be involved.

4.4 The impacts on responders and the community can also be drawn from more conventional emergencies as set out below are examples of such incidents:

Buncefield explosion and fire in 2005, (an upper tier Control of Major Accident Hazard (COMAH)[12] site), This incident caused a change in planning legislation as a result of the 'domino' effect with a large petrol distribution site being adjacent to other businesses and a residential area. The incident is reported to have cost in the order of £100m to local companies, with an increase in unemployment as companies relocated or folded, increased debt in the community, psychological impacts relating to the unemployment, being displaced from homes. 2000 people were evacuated in the initial response with some still not back in their homes a year later due to the damage and remained living in hotels. Reports highlight the emotional and mental health stresses of the incident along with financial concerns.[13] By contrast with a radiation emergency, this was an incident where you could move around relatively freely after the event of the explosion incident and where the damage to property could be seen after the initial fire was extinguished. This is not going to be the case in a radiation emergency at AWE. The very invisible nature of radioactive contamination is what makes it so genuinely fearful and so significant a cause for real concerns for a population living within a risk area.

In 2015 reporting of the 'Buncefield' fuel depot (COMAH site) explosion and as reported by the BBC relating to 10 years post the accident residents stated that 'The damage to Mr Mitchell's house took about six months to repair at a cost of about £200,000 but the psychological impact was even more significant, with his family developing post-traumatic stress disorder (PTSD).'[14] This is relevant since they knew they lived near a fuel depot but the long term psychological effects including flashbacks and the individual financial effect of the explosion was significant for years afterwards.

The wider implications of Buncefield were changes in development control such that there are now strict limits as to what can be build adjacent to COMAH sites in order to protect the community.

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[12] https://www.hse.gov.uk/comah/

[13] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/78983/Buncefield-Social-Impact-Assessment-Final_20Report_0.pdf

[14] https://www.bbc.co.uk/news/uk-england-beds-bucks-hers-34919922

Flooding in West Berkshire. The impact of your home being at risk or actually flooded has been experienced in West Berkshire several times. There was flash flooding in 2007 when a 1:300yr event affected over 2500 properties by internal flooding. The impact on the responders was significant in that when it was raining it was not safe and /or very difficult to move around the area since vehicles were being stranded. However, the impact on the communities affected was much more with people having 1m of water coming through their home destroying everything inside, all to be seen by everyone in days to come when drives and gardens became full of the contents of these homes. This early clear up whilst significant was not the end of the recovery, instead the reality of the whole family living in a family home upstairs for several months, or people moved out until the works were completed which for many was at least 6 months to a year. School work suffered for children living in smaller areas in their homes or due to longer travel times if they had to move out; people also struggled with work again often since they had longer travel times. Many people lived in caravans on their drives over the winter period to save money or due to insurance issues. However, the additional hidden impact was the fear of it happening again with anxiety levels increasing every time there was a period of heavy rain. The impact of flooding whether you can expect it if you live next to a river or not as a result of flash flooding is generally the same. With an initial removal of the obvious damage and muck in the homes but with a very long recovery by way of drying out and repairing the physical damage but with the ongoing mental health concerns. The impact on responders is also great by way of support with the clean-up and through the health system. I have been involved with many of those affected through the Flood Forums in place in Berkshire and have seen the stress and strain on people with some breaking down into tears as a result of the pressures. Following the floods in 2013/2014 West Berkshire Council undertook a survey of those affected. During the floods approximately 181 properties were flooded internally. Of those 36 responders to the survey confirmed that they had moved *out* of their property. A significant percentage, approximately 31%, *left their homes* and had to move *outside* West Berkshire administrative area. The reason given by survey respondents was that the lack of availability of the type of home they needed for their family in the administrative area of West Berkshire.

The table below shows where they moved to:

	Within West Berkshire	Outside West Berkshire
Lived with friends/family	68.4%	31.6%
Rented a house	61.5%	38.5%
Lived in a hotel/B&B	77.8%	22.2%

These events in West Berkshire demonstrate that *without* it being a radiation emergency the impact of flooding on the community in the short term can be, and here was, significant.

But the impact is even more so in the longer term by way of housing availability because evacuated people have to reside in dwellings *somewhere* as each day passes and, in the case of radioactive contamination, for a likely considerable long period before it is confirmed as safe to return and also a person feels sufficiently comfortable returning to a residence that has been subject to ionisation or a risk of the same.

In addition, the stresses placed on families when living away when work is being done on their homes, or their homes are being made safe for their return, or indeed the stresses related to being out of their homes and outside the area due to the shortages of temporary / rental accommodation in the area cannot be underestimated.

The above flooding evacuation related to only 181 households whereas within the DEPZ area the numbers of properties are significantly more.

Grenfell Tower Fire in 2017. The fire in the 120 flat tower block resulted in 72 lives being lost. However, it *also* resulted in longer term residential issues arising from over 200 people being made homeless and having no residence.

In 2021, over 4 years later it was reported that all but 6 households had been rehoused into permanent housing. Therefore, even with the type of tangible incident such as a fire, it can be seen for a relatively small number of people (200) it can take many years (here, 4 years) to find permanent housing for those displaced.

In the interim period the 'community' of residents were rehoused over a wide area of London and the Home Counties as a result the community was split up too.

This event also demonstrates the impact of housing availability and the loss of community and related harm to well-being because of being moved or having to move away from the area which added to the physiological recovery.

Salisbury nerve agent poisonings in 2018. This incident more closely demonstrates the similarities to an AWE radiation emergency in that the nerve agent could not be seen or smelt by a person.

There are a number of points which can be drawn from this incident to demonstrate the longer term impacts on recovering from such an incident including:

a. How far the incident was spreading without it being seen. It was not just a town centre incident but the homes of both sets of victims created new incident scenes.

b. The fear across the community was significant, particularly after the two local people were affected and one person sadly died.

c. The impact on responders, not only as a result of the police officer who became very ill, but the hospital setting and the removal of emergency vehicles from being used again due to potential contamination.

d. The community seeing emergency services and the military in full personal protective equipment (PPE).

e. The effect on businesses with perhaps the most recognised one being 'Zizzi' where two of the victims had been which was only able to open 8 months after the event. Critical to this was ensuring it was 'clean' to operate again was a significant recovery plan in relation to bringing people back into the city.

The scale of this incident however was relatively small in relation to the potential impact as a result of an AWE radiation emergency.

COVID19 Pandemic 2020. The start of the CV19 pandemic until when the vaccination programme was rolled out also demonstrates the fear associated with something you cannot see or smell and may cause you significant harm.

The result was general compliance with the requirements and guidance in relation to staying at home, isolating from each other and the wearing of masks. The response also however highlighted some significant challenges faced by the responders by way of overwhelming of the NHS, the significant support required for the vulnerable (either in their homes and or in care/nursing homes), the testing regime put in place and the significant support needed for businesses.

This would also be the case with an AWE radiation emergency in that there would be a risk of the NHS in the immediate aftermath being overwhelmed with 'worried well' and this could be across the UK. The support needed in order to visit vulnerable clients within the area affected could be significant not least in that the carers would need PPE or depending on the hazard may not be able to enter the area and therefore specialist responders would be involved. Testing/monitoring of people and the environment would be required which takes time to set up and there are also limited specialists to undertake this role therefore international support may be required. The support required for businesses to continue afterwards whether in the same location or elsewhere is likely to be significant financially, in addition financial support is likely to be required for any residents since most if not no insurance policies cover for radiation emergencies.

Large utility outage 2022. In Oxfordshire in 2022 there was a significant water outage involving over 35000 properties. As part of the plans the identification of vulnerable people was required in order to ensure they were being provided with bottled water directly.

Mutual aid was provided by West Berkshire Council in order to lead on the identification of vulnerable people. The process involves an agreed Thames Valley Local Resilience Forum data sharing protocol with data being shared by a number of agencies to identify all the vulnerable in an area. This could be social care data, assisted bin collection data, supported living and priority service user data from the utility companies. The data when reviewed resulted in over 5000 records. The impact therefore on the responders on checking on all of these residents and supporting them was significant.

The same process would be applied to an AWE incident. It cannot be done in advance and held in a plan since the vulnerable databases regularly change. Any vulnerable person within the AWE area however may need to be supported before they are either evacuated or within a short period of time depending on their vulnerabilities.

The addition, in relation to the Appeal proposals, would reasonably be expected to add to the number of vulnerable people in the DEPZ area at some time in the lifetime of the properties and therefore the impact upon responders.

Evacuations due to a 'suspect chemicals' 2022. In 2022 there was a security incident in Bracknell Forest Council area whereby 124 homes were evacuated.

When the police evacuated the residents, they were asked if they had anywhere else to go, including overnight, in order to assess the needs for overnight accommodation should the incident go into the evening. 25 households, over 30% had nowhere else to go.

During any emergency people are encouraged to go to friends and families where they can hopefully be more comfortable. But, for many, this is not necessarily an option as was demonstrated in the recent Bracknell incident.

Therefore, rest centres - such as leisure centres - may be utilised but again they are only meant to be for a short period of time in the order of 48-72 hours in the immediate aftermath of an incident. They are resource intensive for the local authority also by way of staffing and the normal operations of these sites.

Evacuation using Hotels as accommodation. Other options for evacuated may be considered involve using hotels in which to house the evacuated population that would include, here, the residents of the Appeal proposals. It is often challenging to procure rooms under normal circumstances due to their normal bookings.

In addition in my experience in West Berkshire in relation to the use of hotels for evacuees is that the use of hotels is not simple in that it is still resource intensive by way of staff involved to supporting the occupants, safeguarding issues, continuing education for the children, work related matters, support with basic human needs such as clothing, toiletries and food and most significantly the health and well-being of the guests especially over prolonged periods. Therefore, the use of hotels may be a temporary solution but not likely to be the longer-term solution.

Summary

4.6 The above nuclear and 'conventional' emergencies demonstrate the complexities of any response and the impact on those affected and the responders. There is no one cap fits all situations, and this would be the same for a radiation emergency.

4.7 Significantly the amount of resources by way of rest centres, housing for those displaced, staff to support the displaced residents, specialist staff and equipment have significant limitations as to their availability and how quickly they can be delivered and for long they can be maintained. Noting that any delay will impact the response and therefore the confidence, assurances and trust the affected community will have.

4.8 It is also clear that, unlike a radiation emergency, for most of the incidents where you could move around relatively freely after the event and where there was damage to property it could be seen. This is not going to be the case in a radiation emergency. As has also been referred to the very invisible nature of radioactive materials is what makes it so genuinely fearful and so significant a cause for real concerns for a population living within a risk area.

4.9 The relevance to this Appeal to the above commentary about different incidents is to demonstrate the complexities of ‘normal’ emergencies in particular where there has been no consideration given to any mitigation options as was the case when this application was submitted and decided.

5. Specific Response to an AWE Radiation Emergency

5.1 As detailed above the response to an AWE radiation emergency is required to be *fast* to afford protection to the community.

5.2 In real time, "fast" is as follows. The Consequence Report states that within 25 minutes to get best protection the community outside the site boundary should be under cover however it is likely that the earliest confirmation and alert will be within 15 minutes due to the check AWE will need to undertake. As a result, anyone outside within the area of Urgent Protection Actions and the wider DEPZ will be at risk immediately following a radiation emergency.

5.3 The alert from AWE is via landlines, however it is recognised that less people have landlines therefore in addition media will be notified and social media messages used. Therefore, the multiple communication routes will be used to alert as many people as possible as quickly as possible.

5.4 The notifications will be for the whole area of the DEPZ initially since the exact area affected will not be known in detail until monitoring has been undertaken which can take time to do.

5.5 The use of the new government Emergency Alert[15] system is currently not available for use to alert people in relation to an AWE radiation emergency. This may change in the future which may negate the need for the alert via landlines. Regardless of the Emergency Alert it is unlikely to be issued within 25 minutes.

5.6 In addition to alerting the public the responders are also activated and they put in place their response actions. These include the following actions, note it is not an exhaustive list:

a. Alerting all responders and setting up the full coordination structures which will include national response due to the nature of the emergency;
b. Alerting all vulnerable sites such as schools, care homes, mobile home sites directly to ensure they are enacting any plans they have in place and identifying any issues they may have.
c. Establishing the individual vulnerable people database for the in the area and what the support may be required for them;
d. Putting in place road closures to limit access into the area and then putting in diversions to keep people away;
e. Assessing the requirements for urgent evacuation;
f. Assessing the need for subsequent evacuation, especially since after 48hrs advise is that sheltering in place would not afford the same protection. This could be some or all properties within the DEPZ area and thereafter putting in place a bespoke evacuation plan – who, how, when, the potential period of evacuation and therefore

[15] https://www.gov.uk/alerts

what people need to take with them etc. and considering the implications of empty properties by way of security and what advice needs to be given to residents to do to their homes before being evacuated etc;

g. Confirming the area(s) likely to be affected. The DEPZ is split into sectors for planning and response purposes should be there be a directional plume. Importantly however for the AWE Burghfield site due to the weather conditions that may be experienced there may not be a directional plume but instead a more widespread area of contamination around the whole site therefore increasing the impact.
h. Providing information to the public about what has happened and what to do and importantly what not to do – e.g. drive away from the area therefore causing traffic congestion and potential resuspension of the contaminants, not eating anything that was outside at the time of the incident and what to do about pets and farm animals;
i. Alerting the UK NHS systems for worried people across the UK;
j. Confirming the environmental and people monitoring strategies;
k. Radiation monitoring of all those within the affected area, with a limited maximum capacity of approx. 200 who can be monitored per day for each Radiation Monitoring Unit (RMU),
l. Supporting those out of the area at the time of the incident by way of assistance centres (information locations) and/or rest centres if they cannot go home;
m. Limiting the use of food related matters such as crops, fruit, vegetables and livestock in the affected area;
n. Continual communications with accurate information;
o. Considering the recovery process in readiness for a smooth transition from response to recovery, noting that this may be for days, weeks, months or years depending on the level of radiation contamination.

5.7 The above points give an indication of the activities required. What it does not demonstrate however is the resource intensity of the response for responders.

5.8 Therefore, to give an indication of the requirements at a recent exercise (Aldex 23), which involved the Strategic and Tactical Coordinating Centres being simulated, over 150 people were involved over an 8hr period. For a real incident this would have to be replicated 24/7 until the formal handover to recovery which would also be a resource intensive and prolonged process.

5.9 In addition to the coordination centres, staff resourcing would be necessary for several tasks including at rest centres, radiation monitoring centres, individual agency coordination centres PLUS there would be an expectation that services would be able to continue for the rest of the community not affected.

5.10 Rest centres arrangements can be used to demonstrate resourcing and limiting factors. If this situation were to arise that evacuation was necessary, then within the Plan there are a number of rest centres identified which could support an incident at an AWE site. On average they can accommodate approximately 300-350 people but the staffing for this over a 24/7 period would be in the order of 25 - 50 people depending on the time of day for each 6-8 hour shift. Therefore, a significant impact over a 24/7 period and replicated over 1, 2 or more sites as necessary.

5.11 The location (s) chosen to open as a rest centre will depend on several factors including the area affected, travel arrangements, access to the site (s) at the time etc.

5.12 There are however a number of limiting factors in relation to the use of leisure centres including:

a. Staffing the sites 24/7. Not only are there staff required from the site itself there is also a need for:
b. Rest Centre Managers
c. Safeguarding staff (Adults and Children)
d. Registration staff
e. Health agencies
f. Security
g. Facilities and space such as catering, toilets, showers, areas to sleep, equipment such as sleeping mats and bags.
h. Some premises normally used for reception centres may be being used as RMU's

5.13 In addition, there is the risk that some people may be contaminated and therefore would either need to be separated from others or would need to have been monitored in advance of going to a rest centre.

5.14 Whilst mutual aid would be called up from other local authorities locally and across the UK from local authorities with nuclear sites. Every agency would be doing the same to bolster their resources. Some agencies, including those who have specialist roles such as monitoring will also be activating resources from overseas. It would however put excessive strain on all responders in the response phase which for many would then have to be continued into the recovery phase. There is also not an infinite number of resources to be called upon as has been explained previously.

Summary

5.15 The response to a radiation emergency is complex with many agencies involved and many considerations to take into account. Whilst many incidents are complex the radiation element to the response will undoubtably make it more complex.

5.16 Whilst the initial countermeasure/ mitigation is shelter this is only an option for up to 48 hours, since beyond that time the benefit of sheltering deminishes. Consequently, at the start of a response consideration is given to who may need to be evacuated, since if it is required for whatever reason the timeframe of doing so along with the practicalities such as areas to be evacuated, where will they go, how will the rest centres or longer term accommodated be resources, transportation requirements, communication methods etc etc take time to implement in a contaminated environment. It is complex by matter not least in relation to the numbers which may be involved and the lack of knowledge as to how long any evacuation may be for.

5.17 Placing more people in a known risk area, particularly those who can be deemed to be vulnerable, will only add to the complexities of the response to a radiation emergency therefore impacting the response and the risk to their public health and well-being.

6. Recovery

6.1 Following the immediate response to a radiation emergency as described previously there will be a recovery phase. Recovery is the process of rebuilding restoring and rehabilitating the community following an emergency. It however is not just a remedial process but broadly interlinks categories of impact, that can be summarised as aspects of well-being, that the individuals and communities needs to recover from and include:

a. Humanitarian (including Health)
b. Economic
c. Infrastructure
d. Environmental

6.2 All of the above will be relevant to recovery from a radiation emergency.

6.3 There is a Thames Valley Local Resilience Forum Recovery Plan to support the recovery process. Its focus is more on structure and guidance rather than detail since it covers a wide range of incidents to recover from. The principles within it however include coordination and setting up arrangements where specialists can focus on their area of expertise to agree the strategy and actions within the plan. There are however many documents to support the process including the Strategic National Guidance[16], the National Nuclear Emergency Planning and Response Guidance, Part 3 – Recovery[17], the UK Radiation Recovery Handbook[18]

6.4 The recovery phase will commence when there is a formal handover from the Strategic Coordinating Group. The recovery, however, is likely to be complex, as indicated previously.

6.5 It should be set out clearly that in the case of a radiation emergency, it is very much *not* the case that those affected, those evacuated, will be able to *immediately* return to their homes (as they might do after a flood or a fire, and to begin themselves a clean-up of their homes). Instead, there will be the requirement for environmental monitoring as per the strategy, people monitoring, remediation of land and building clean up strategy, clear communications, physical clean up and the long-term health and environmental monitoring. All these processes and activities take time due to the nature of the material involved.

6.6 Regardless of the level of radiation contamination there is likely to also be a requirement of continual monitoring of the environment over a number of years. Indeed in 1958 there was an alleged crash on Greenham Common involving the US Air Force which involved a radiation source. In the late 1990s environmental monitoring was taking place in relation to this in order to establish if there were any material in the environment or in

[16] SNG_5thEdition_Final_March_2017__1_.pdf (publishing.service.gov.uk)

[17] www.gov.uk/government/publications/national-nuclear-emergency-planning-and-response-guidance

[18] www.gov.uk/government/publications/uk-recovery-handbooks-for-radiation-incidents-2015

the food chain. This involved taking house dust samples, grass, fish and meat samples from the local area. Whilst no evidence was found, there was a genuine fear factor associated with the ongoing monitoring after an incident over a 40-year period. That fear factor also reduces well-being significantly.

6.7 How long 'recovery' will take cannot be specified in any emergency plan because there are so many variables to take into account which will only be known at the time of the incident. It may be hours or days but equally it may be months or years. This has been the case as set out previously in relation to radiation and other non-radiation-type emergencies.

6.8 Recovery is likely to be complex in particular if there is remediation work to property, including the Appeal site proposals, to be undertaken and an evacuation has taken place.

6.9 Throughout that period of recovery, the Appeal site residents would be required to be accommodated elsewhere should they have been evacuated or as the recovery strategy directs and remain elsewhere until it is certified that it is safe for the residents to return to their envisaged proposed homes at the Appeal site. It should be noted that depending on the level of contamination then the residential units may be deemed unfit of human habitation under housing legislation. The consequential need for re-housing permanently in alternative accommodation also reduces well-being significantly and disrupts communities because of their fragmentation.

6.10 The recovery process including ongoing monitoring is also likely to be an expensive process for all involved, including the Appeal site.

6.11 There can be support available in particular by way of the Bellwin scheme[19] is a Government scheme which may support local authorities as set out in S155 of the Local Government Act 1989. However, it is not a given and there are parameters including that it may only cover 'the costs of *immediate actions* taken in the aftermath of an emergency or disaster' and so not extend to the potentially medium- and longer-term recovery from a radiation emergency at an AWE site, howsoever long that aftermath may be.

6.12 Whilst it may be considered the 'polluter pays' this in turn would be the UK tax payers. In addition, as with any risk management if you can prevent the risk in the first place then this should be the way forward therefore placing more people in harm's way which puts them at risk and may result in the existing population being impacted too is not appropriate.

Summary

6.13 Like the response to an emergency, the recovery from a radiation emergency will be complex and resource intensive. The time period cannot be predicted since the data at

[19] https://www.gov.uk/government/publications/bellwin-scheme-guidance-notes-for-claims/bellwin-scheme-of-emergency-financial-assistance-to-local-authorities-guidance-notes-for-claims

the time will direct the type of recovery and how it will be undertaken. It will also be a costly process due to the experts and specialist resources which will be required.

6.14 Regardless of how long or not the recovery process would be, there also remains a real fear and genuine concerns that properties within the DEPZ, including the proposed new properties, would be 'blighted' by the ionising event affecting their property.

6.15 The psychological wellbeing of those living and working within the DEPZ area is likely to be affected in a significant way and for a significant period, as was the case at Three Mile Island and in flooding events.

6.16 The appeal site with no robust mitigation in place to include, not only the response phase but, the longer term recovery period would only add to the complexities based on the numbers and vulnerabilities of the residents.

Issue 1
November 2019

ATOMIC WEAPONS ESTABLISHMENT

AWE BURGHFIELD

CONSEQUENCES REPORT

Introduction

This document is the consequences report for the Burghfield Site, as required under Regulation 7(1) of The Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR 2019).

The following information has been titled to relate specifically to the REPPIR 2019 Schedule 4 items required to be included within this report.

Part 1 – Factual Information

1. Regulation 7(3) Schedule 4, paragraph 1(a) - Name and address of the operator:

AWE plc, Aldermaston, Reading, Berkshire, RG7 4PR.

2. Regulation 7(3) Schedule 4, paragraph 1(b) - Postal address of the premises where the radioactive substance will be processed, manufactured, used or stored, or where the facilities for processing, manufacture, use of storage exist:

AWE plc, Burghfield, Reading, Berkshire, RG7 2PQ.

3. Regulation 7(3) Schedule 4, paragraph 1(c) - The date on which it is anticipated that the work with ionising radiation will commence or, if it has already commenced, a statement to that effect:

The Burghfield Site has been occupied in support of the UK nuclear deterrent since 1950 and work with ionising radiation has been conducted on the site since that date.

Part 2 – Recommendations

1. Regulation 7(3) Schedule 4, paragraph 2(a) - The proposed minimum geographical extent from the premises to be covered by the local authority's off-site emergency plan:

a. The proposed minimum geographical extent to be covered by the Local Authorities Off-Site Emergency plan is an area extending to a radial distance of 3160m from the Burghfield Site centre location.
This is illustrated on Map A in Appendix A.

b. In addition to the minimum geographical extent recommended above, an Outline Planning Zone, extending to a radial distance of 12km around the Burghfield Site centre location, has been determined by the Secretary of State for Defence, in accordance with Regulation 9(1)(c).
This is illustrated on Map B in Appendix B.

2. ***Regulation 7(3) Schedule 4, p*aragraph *2(b) – The minimum distances to which urgent protective actions may need to be taken, marking against each distance the timescale for implementation of the relevant action; and paragraph 3(a) – The recommended urgent protective actions to be taken within that zone, if any, together with timescales for the implementation of those actions.***

a. The following distance is recommended for the urgent protective action of sheltering. This is the largest distance determined by detailed consequence assessment of a range of source terms and includes consideration of a range of weather conditions and vulnerable groups within the population.

b. The minimum distance to which urgent protective actions should be taken corresponds to an area with radial distance of 3160m.

c. It is recommended that people are instructed, as soon as is practical, to immediately take-cover in a suitable building and to stay inside with the windows and doors all properly shut. This 'sheltering' action may be necessary for a period of up to two days, or at least until the initial contaminated plume has passed and monitoring of the ground contamination has been undertaken to determine the level of groundshine; and subsequent potential for further dose uptake, (e.g. from contaminated locally produced foodstuffs).

d. It is recommended that the declaration of a Radiation Emergency, by the operator, to the Local Authority is the trigger for implementing the off-site emergency plan and initiating all the above recommended urgent protective actions.

e. Category F weather conditions typically has an associated mean wind speed of $2ms^{-1}$. From the event site, there will be an average of approximately 1500 seconds (25 minutes) from the initiation of the event until the leading edge of any plume travels to the minimum distance recommended for urgent action. Assuming no early warning of the onset of any incident, and that the Site Response Group could take up to an estimated 15 minutes to set-up and formally notify the Local Authority, there remains approximately 10 minutes to inform the public, and for the public to find suitable shelter, in order to realise any substantive benefit from the sheltering action.

3. Regulation 7(3) Schedule 4, paragraph 3(b) – Details of the environmental pathways at risk in order to support the determination of food and water restrictions in the event of a radiation emergency:

a. The release of radioactivity from the Burghfield Site as a result of a fault condition has the potential to result in doses to the public through a range of exposure pathways, including:

i. First-pass inhalation of air in the plume of contamination;
ii. Short-term external irradiation during passage of the plume – Cloudshine;
iii. Long-term inhalation after resuspension, from ground contaminated by the initial plume;
iv. Long-term external irradiation from ground contamination by the initial plume – Groundshine;
v. Ingestion of food crops contaminated by the initial plume.

b. The relative importance of the different exposure pathways is dependent on the type of accident and the potential radioactive isotopes which may be released.

c. The most likely predicted accidents would spread material by explosive distribution, these are non-fission incidents, where the material that would dominate in this type of release will be plutonium (which is an Alpha emitting actinide) in an inhalable particulate form.

d. For potentially more energetic events, a range of fission products would be produced meaning that both internal (inhalation) as well as external exposure (irradiation) would dominate.

e. For the majority of fault sequences, the material released would be in the form of fine particulates of plutonium oxide and the predominant exposure pathway to individuals outside the Burghfield Site during the passage of the plume would be by inhalation. As the plume travels downwind, deposition mechanisms would deplete the plume and leave radioactive material on the ground. Most forms of plutonium are removed from biological pathways by being fixed in the soil and only small amounts are concentrated by biological processes into the food chain, primarily through grazing animals. However, the material can be resuspended by the action of the weather, or by farming practices, or any other disturbance processes, resulting in a potential for longer term inhalation doses.

f. Doses to the public resulting from this consequence may include contributions from cloudshine, first-pass inhalation, long-term inhalation following resuspension, and groundshine.

g. Overall, the primary concern for early response decision-making to radiation emergencies involving possible accidents at the Burghfield Site only merits consideration of the first-pass inhalation dose and therefore sheltering is the recommended urgent protective action.

Part 3 - Rationale

1. Regulation 7(3) Schedule 4, paragraph 4 – The rationale supporting each recommendation made:

a. The release of radioactive particles small enough to be respirable have the potential to result in radiological doses to the public from a range of exposure routes, most notably:

- First-pass inhalation of air from the plume of contamination;
- Long-term inhalation after resuspension of ground contamination by the initial plume;
- Ingestion of food crops contaminated by the initial plume;
- Long-term external irradiation from ground contamination by the initial plume.

b. It has been assessed that the first-pass inhalation dose is the most significant by far, for initial emergency response purposes, which has resulted in the recommendation to shelter as the most appropriate urgent protective action. This should be coupled with a restriction on the consumption of all locally produced food, until the direction of the plume and the extent of the contamination has been

fully investigated, examined and understood. Appropriate local instructions should then be made available to the public based on the prevailing conditions.

c. The recommendation for the minimum emergency action distance at the Burghfield Site originates from the Consequence Assessment carried out under REPPIR 2019. The guidance set out in the Approved Code of Practice is to use the largest candidate distances recommended for the urgent protective actions identified against the lower Emergency Reference Level. This 3160m distance is selected as the minimum geographical extent of the Detailed Emergency Planning Zone (see appendix C for definition) about the Burghfield Site Centre Location.

d. This distance has increased from the REPPIR 2001 ONR determination. The REPPIR 2001 determination was based on a 5mSv dose contour using 55%Cat D weather conditions. Under REPPIR 2019, the minimum distance for urgent protective actions is based on a 7.5mSv dose contour. However, in accordance with the new requirements of REPPIR 2019, the 'reasonable foreseeability' argument is no longer allowed, and several different requirements have had to be taken into consideration, these being that the assessment must:
   - Consider age, and other characteristics which would render specific members of the public especially vulnerable;
   - Include all relevant pathways;
   - Consider a representative range of source terms;
   - Consider a range of weather conditions to account for consequences that are less likely, but which have greater consequences.

e. A further consideration is the geographical area around the site and the potentially significant period that these adverse weather conditions could be experienced.

f. AWE has analysed the dose from a range of weather conditions and has decided to base its proposal on a weather category that is less likely, but which could provide significantly greater doses. Consideration of less likely weather categories, which occur around 12% of the time in the local geographical area, increases the 7.5mSv dose contour to 3160m around the site centre location.

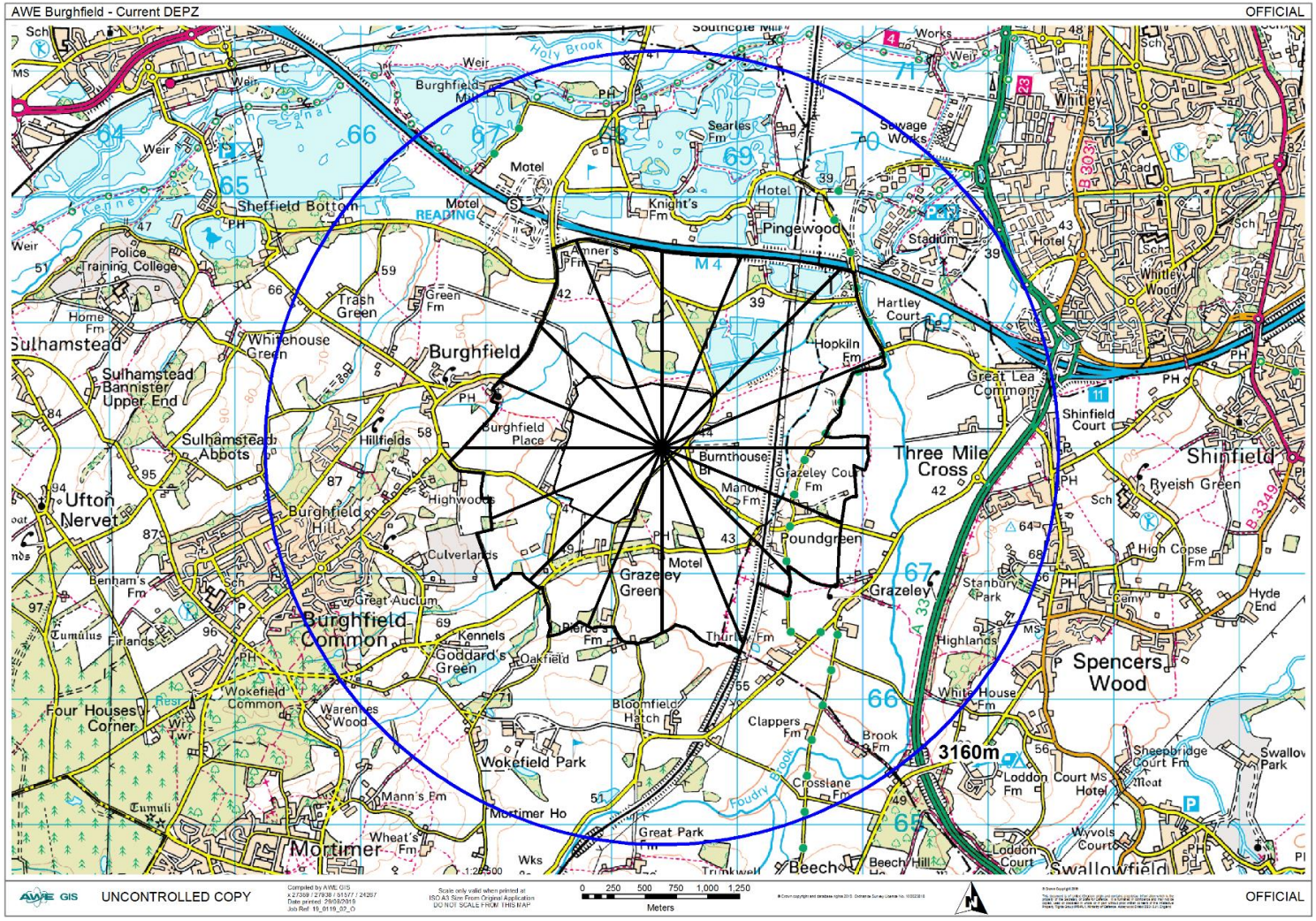
2. Regulation 7(3) Schedule 4, paragraph 5(a) – The rationale for its recommendation on the minimum distances for which urgent protective action may need to be taken:

a. The minimum distance is established from the guidance provided in support of the Regulations, for the appropriate source terms, and is based on the requirement to identify a distance that has the potential to deliver a 3mSv dose saving, when adopting the recommended urgent protective action; which in this case is sheltering.

3. Regulation 7(3) Schedule 4, paragraph 5(b) – The rationale for agreement that no off-site planning is required.

a. Given the content of this Consequences Report, this requirement does not apply to the Burghfield Site.

Appendix A: Map A – The ragged bold black sector is the current boundary of the Detailed Emergency Planning Zone.The Proposed Urgent Action Distance (blue circle) is set at 3160m for the Burghfield Site.



Appendix B: Map B – The Outline Planning Zone Boundary, set at 12Km for the Burghfield Site.

Appendix C: Definitions

Detailed Emergency Planning Zone (DEPZ)	A zone determined in accordance with Regulation 8 of the REPPIR 2019 Regulations. This is now covered by the Local Authority's off-site emergency plan
Outline Planning Zone (OPZ)	A zone determined in accordance with Regulation 9 of the REPPIR 2019 Regulations and covered by the Local Authority's off-site emergency plan.

ATOMIC WEAPONS ESTABLISHMENT

AWE BURGHFIELD

Declaration of No Change

REPPIR 2019

Introduction

This document contains a "declaration of no change" for AWE Burghfield, in accordance with Regulation 6(2)(b) of The Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR 2019).

Review of AWE Burghfield's last hazard evaluation and consequence assessment

Regulation 6(2) of REPPIR 2019 provides that:

> *"For such time as the work with ionising radiation in respect of which an evaluation made pursuant to Regulation 4(1) continues, the operator must, within 3 years of the date of the completion of the last evaluation (whether made in accordance with Regulation 4(1) or this paragraph), or longer, if agreed by the regulator, either-*
>
> *(a) make a further evaluation; or*
> *(b) if there is no change of circumstances which would affect the last Consequences Report required by Regulation 7, make a declaration to that effect."*

A review of the last AWE Burghfield hazard evaluation and consequence assessment carried out in 2019, as required under Regulation 6(2) of REPPIR 2019, has been completed.

This review process has been undertaken in accordance with the requirements of Regulation 6 of REPPIR 2019 and the current Approved Code of Practice and guidance (second edition 2020).

The evidence gathered by the review process has concluded there has been no change in circumstances or material change which would affect the conclusions of the previous hazard evaluation or consequence assessment required by Regulations 4(1) and 5(1).

Declaration of No Change

This document is a "declaration of no change", in accordance with Regulation 6(2)(b).

The 2022 review of the 2019 hazard evaluation and consequence assessment has concluded the Consequences Report (Issue 1) dated November 2019 continues to provide the necessary information for the local authority (in this case West Berkshire District Council) to prepare an off-site emergency plan.

AWE Detailed Emergency Planning Zone

Decision Paper:	Service Director Development & Regulation
Date of Decision:	19th January 2023
Report Authors:	Jonah Maddocks & Carolyn Richardson

1 Purpose of the Report

1.1 To provide information and the decisions made in relation to the determination of the Detailed Emergency Planning Zones (DEPZ) around both Atomic Weapons Establishment (AWE) sites review process as required under Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR19).

1.2 To confirm the next steps to ensure compliance with REPPIR19.

2 Executive Summary

2.1 This report explains the need to determine the Detailed Emergency Planning Zones (DEPZ) around both Atomic Weapons Establishment (AWE) sites as required under the Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR19).

2.2 The DEPZ is the defined zone around the nuclear site where it is necessary to pre-define protective actions which would be implemented without delay to mitigate the likely consequences of a radiation emergency.

2.3 There are requirements in REPPIR19, the associated Approved Code of Practice (ACoP) and guidance detailing why, how and when to determine or review any DEPZ.

2.4 Under REPPIR19 the operator needs to undertake a review of hazard evaluation and consequence assessment within 3 years of the date of the completion of the last evaluation (or longer if agreed with the regulator or earlier should there be material changes in operations on the nuclear site).

2.5 The last determination for both AWE sites was in March 2020 with the last Consequence Report received in November 2019.

2.6 In undertaking this statutory review the Council has followed the legislation, ACOP and guidance.

2.7 The Council had two months to comply from the date of receipt of the information from AWE. This was received on the 18th November 2022 and therefore the date for completion of the process is 18 January 2023. In view of the timeframe over the festive period and the internal governance structure a request was made to the Regulators,

Office for Nuclear Regulation, with a request for an additional day to complete the determination process.

2.8 The options considered are detailed in this report.

2.9 The decision was to:

(a) Amend the DEPZ for AWE Burghfield as detailed in Appendix A.

(b) Make no changes to the DEPZ for AWE Aldermaston.

3 Supporting Information

3.1 There is a legal process in place in order to allow the DEPZ to be determined by the Council which is clearly set out in the legislation, ACoP and guidance. This is summarised in this section with respect to the process for the AWE sites.

3.2 The role of the Council is to:

(a) To determine the boundary of the Detailed Emergency Planning Zone (DEPZ) for each site, based on a minimum area identified by the operator (AWE), taking into account those matters detailed within the legislation and guidance such as local communities, geographical features, etc. As noted above, the DEPZ is the geographic area that the AWE Off-Site Emergency Plan must cover in detail and the Council, along with the other agencies involved in the AWE Off-Site Emergency Plan, must be able to support.

(b) To provide information to the public within the DEPZ areas.

(c) To review and revise the AWE Off-Site Emergency Plan in compliance with REPPIR19 (taking into account any changes in the DEPZ).

3.3 The Council was required to comply with REPPIR19 by updating the DEPZ by the 18th January 2023. Officers therefore prepared the key actions and timeline in relation to this deadline. As a result of internal governance and the festive period a request was made to ONR for an additional day to finalise the process.

3.4 The primary focus for the Council in respect of REPPIR19 is public safety. All actions should be focussed around ensuring the Council protects its residents and businesses, mitigates risk where possible and works closely with AWE and other partners to deliver, in the event of an incident, a comprehensive off-site response by virtue of a good quality Off-Site Emergency Plan.

3.5 In order to undertake the requirements there are a number of steps required of the operator in advance as set out below.

3.6 Hazard Evaluation and Consequence Assessment (HECA) (Regulations 4, 5 & 6)

3.7 The first part of the process requires AWE as the site operator to provide a Consequence Report to this Council and the Regulators. In order to do so, AWEs

technical experts undertook a Hazard Evaluation and Consequences Assessment (HECA).

3.8 AWE Aldermaston and AWE Burghfield have different inventories of radioactive and explosive materials and therefore different fault scenarios are applicable to each site under the legislation.

3.9 The process is undertaken within 3 years of the date of the completion of the last evaluation of where the operator proposes a material change, or where a material change occurs, in the work with ionising radiation to which an operator was required to make an evaluation pursuant to regulation 4(1).

3.10 Consequence Report (Regulation 7)

3.11 Based on the results of the assessment, AWE, as the operator, must propose the minimum area for any Urgent Protective Actions (UPA) required in the unlikely event of a radiation emergency with an off-site impact.

3.12 The UPA forms the basis of the information provided to the Council and the regulators, ONR, in a document called the Consequence Report (CR). These reports, one for each AWE site, set out the minimum areas to be included in the DEPZ, what the urgent protective action(s) should be and how quickly it would need to be put in place in order to protect the public.

3.13 The latest Consequence Reports for each site were received by the Council on the 18th November 2022.

3.14 There has been **no change** to the UPA areas for either AWE site under the REPPIR19 HECA. It should also be noted that for both sites there has been no change in activity or risk.

3.15 AWE Aldermaston Consequence Report Summary:

(a) Urgent Protection Actions (UPA) area for the site is a 1540m radius. However based on analysis of vulnerable groups exposure to tritium it was further recommended to extend the minimum area out to 2000m.

(b) Outline Planning Zone (OPZ) area for the site is a radius 15km.

(c) The recommended Urgent Protective Action (UPA) is shelter.

(d) Timescales for undertaking the UPA (Shelter) is as soon as possible.

3.16 AWE Burghfield Consequence Report Summary:

(a) Urgent Protective Actions (UPA) area for the site is a radius of 3160m.

(b) Outline Planning Zone (OPZ) area for the site is a radius of 12km.

(c) The recommended Urgent Protective Action (UPA) is shelter.

(d) Timescales for undertaking the UPA (Shelter) is as soon as possible and no later than 25 minutes from the start of the incident.

3.17 Developing the DEPZ (Regulation 8)

3.18 The distances identified in the Consequence Reports determine the **minimum** boundaries for the area to be included in the DEPZ and subsequent OPZ.

3.19 In addition to the minimum geographic extent, the UPA, then taking into account the details set out in the regulations, ACoP and guidance, there are additional requirements to consider when developing the DEPZ.

3.20 Reg 8 (1) requires that the local authority must determine the DEPZ on the basis of the operator's recommendation made under (paragraph 2) of Schedule 4 and may extend that area in consideration of:

(a) local geographic, demographic and practical implementation issues;

(b) the need to avoid, where practicable, the bisection of local communities; and

(c) the inclusion of vulnerable groups immediately adjacent to the area proposed by the operator.

3.21 Those properties within the DEPZ are therefore afforded a means of warning and informing process to alert them to take shelter as soon as possible and minimise the risk to their health.

3.22 The ACOP provides further details to be considered:

3.23 The DEPZ must be based on the minimum geographical extent proposed by the operator in the consequences report and should:

a. be of sufficient extent to enable an adequate response to a range of emergencies; and

b. reflect the benefits and detriments of protective action by considering an appropriate balance between;

i. dose averted; and

ii. the impact of implementing protective actions in a radiation emergency across too wide an area.

3.24 In defining the boundary of a DEPZ, geographic features should be used for ease of implementing the local authority's off-site emergency plan. Physical features such as roads, rivers, railways or footpaths should be considered as well as political or postcode boundaries, particularly where these features and concepts correspond with other local authority emergency planning arrangements.

3.25 Actions undertaken to determine the DEPZ

3.26 The process for assessing and developing the DEPZs for both sites followed the legislative requirements and included:

(a) A desk top exercise was initially undertaken to review maps and consider the options.

(b) Site visits were subsequently conducted in the areas concerned to confirm what was shown on the map was the same in reality, having regard to any new developments, changes in features etc. This was jointly undertaken, where appropriate, with the Emergency Planning Officers from Wokingham, Reading and Hampshire Councils. These were undertaken in advance of receipt of the Consequence Report (CR) due to the timings involved in the process. If the CR had been significantly different then further site visits would have been undertaken.

(c) A review of all the planning applications which have been approved but not developed which were still valid was undertaken in order to check they were not going to result in a bisection of the DEPZ should they be built in the next 3 years. At this time there are no developments with planning permission which will impact the DEPZ boundary as determined within this report.

3.27 The output of this process was a draft DEPZ with justifications as to why some suggested amendments to the DEPZ were offered, all of which were based on the legal requirements. These are shown in Appendix A.

3.28 Liaising with relevant organisations

3.29 Although no formal consultation is required under the legislation and the ACoP, the guidance suggests that the Council may liaise with other organisations to consider the draft DEPZ.

3.30 In view of the cross border implications of the revised DEPZ area, liaising with the AWE Off-Site Planning Group (OSPG) was considered the best approach, since it was already a formed group of agencies with knowledge of the AWE sites and emergency planning in detail. As a result the AWE OSPG was consulted.

3.31 On the 24th November 2022 there was a meeting of the AWE OSPG where a presentation was provided giving background information and the proposed details of the DEPZs for each site, as well as access to map with the potential changes.

3.32 At the time of the meeting there was general agreement with the proposed changes.

3.33 The AWE OSPG was given a further two weeks to consider the proposals and provide any suggested changes by 9 December 2022.

3.34 The results of the consultation with the AWE OSPG confirmed that the group agreed with the proposals for the AWE Burghfield Site DEPZ changes.

3.35 There was some feedback in relation to the AWE Aldermaston proposed changes however as noted in Appendix A the implications are more in relation to formalising a situation which already happens by way of notifications etc. and not splitting a

community. The disadvantage to this however is there are properties to the south of the potential expansion, leading to the possibility of more properties being added into the DEPZ which is some distance away from the area where Urgent Protective Actions are necessary.

3.36 Proposed options with Rational

3.37 Following the receipt of the Consequence Reports and using the legislation, ACoP and guidance in undertaking the actions detailed in 5.25 to 5.35 the proposed options are:

(a) Confirm the minor changes for AWE Aldermaston site as detailed in Appendix A to the AWE Aldermaston DEPZ.

(b) Confirm one or both changes for the AWE Burghfield site as detailed in Appendix A to the AWE Burghfield DEPZ

(c) Make no changes to one or both AWE site DEPZ.

3.38 There are no changes for the OPZs for either site.

4 Implications of Proposed DEPZs

4.1 Should options 3.37 (a) or (b) have been approved then the minor increases to both DEPZs will result in eight additional properties being included in the DEPZ. Therefore they would need to be formally written to in order to ensure they are aware of the changes regardless of the fact they have received the booklet and AWE Connect Newsletter previously.

4.2 There would also be some questions in relation to the above changes since there is no change in the UPA, no change in the risks etc. It could also be seen that it was not concluded effectively in 2020. It is however considered that that the options for changing either DEPZ is instead fine tuning the DEPZ following the first determination by this Council in 2020 which is what formal reviews should do.

4.3 There would be no changes to land use planning policies.

5 Feedback from Governance Consultation

5.1 In addition to the AWE Off-Site Planning Group the process and proposed outcomes were considered in advance of a final decision by the Councils Corporate Board, Ops Board and Opposition leaders were briefed.

6 Decision by Service Director – Development and Regulation

6.1 The Service Director- Development & Regulation reviewed the reports prepared and discussed with officers in relation to the proposals in advance of confirming the determination of the DEPZ as per his delegated authority under the Scheme of Delegation as:

(a) Amend the DEPZ for AWE Burghfield as detailed in Appendix A.

(b) Make no changes to the DEPZ for AWE Aldermaston. This decision was taken having regard to the details in Appendix A and in particular the potential further extension to the south of Baughurst as a result of more properties south of that area. Therefore the proportionate decision was to make no changes to the DEPZ for AWE Aldermaston.

7 Next Steps

7.1 As a result of the DEPZ determination the following steps will be undertaken:

(a) Revising the AWE Off-Site Emergency Plan in order to mitigate the impact for those people/properties now included in the DEPZ.

(b) Informing the new properties within the DEPZ that they are in the DEPZ and what they should do in the event of an incident at either of the sites. A multi-agency Communications Plan lead by WBDC has already been developed to contact these properties, as well as the wider communities of the changes.

(c) The DEPZ leaflet and website will also be updated and sent to all residents within the DEPZ before the 31st March 2023.

8 Conclusion

8.1 The proposed changes to the DEPZs for both AWE sites as required have received careful consideration, with due consideration to the legislation, ACOP and guidance.

9 Appendices

9.1 Appendix A – DEPZ options

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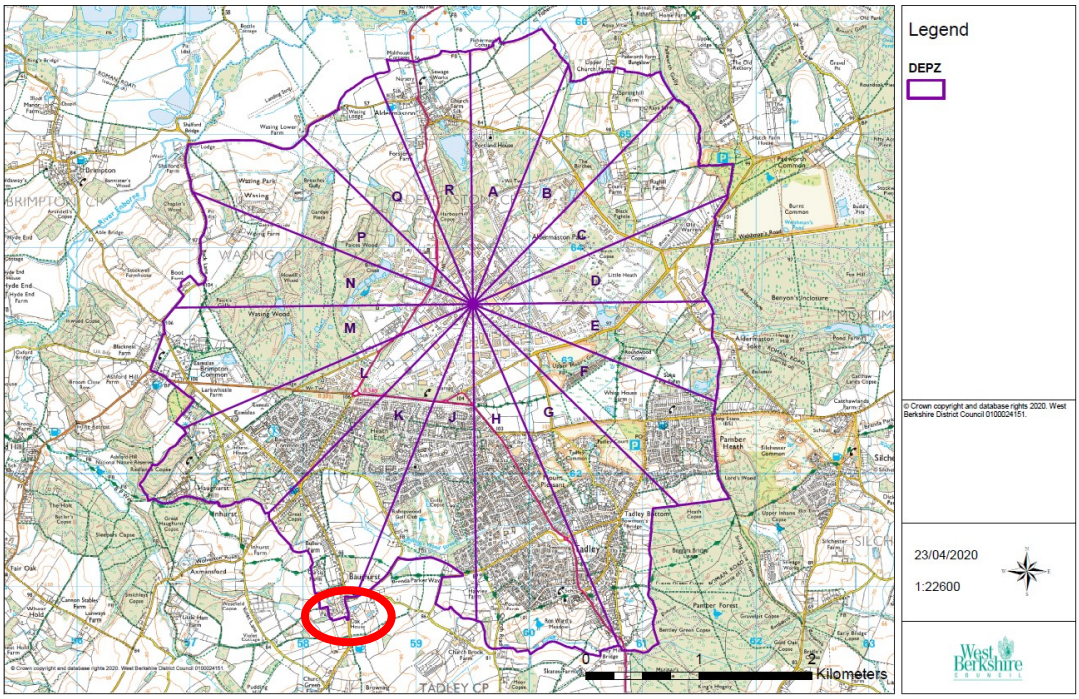
Appendix A DEPZ Amendment Options (Regulation 8 (2))

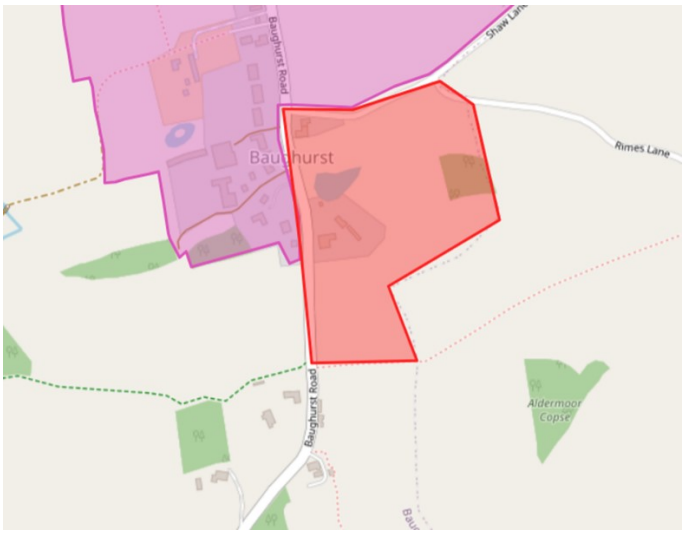
Set out in this appendix are the existing and proposed changes to the AWE Aldermaston and Burghfield DEPZs with relevant justifications. These are based on the requirements of the legislation, ACoP and guidance, site visits and consultation.

Existing AWE Aldermaston site DEPZ (Mar 2020 – Jan 2023):



Potential Changes to AWE Aldermaston site

On reviewing one area of the existing AWE Aldermaston DEPZ there was the potential for changes at the southern end as shown on the map below and as shown by the circle on the map above in the area of: Baughurst Rd, Tadley RG26 5LP



Justification Comments:

The map shows the bisection of the Baughurst community on the eastern side of the road.

The potential option is to extend the DEPZ by following a public footpath which would act as a clearly visible defining feature.

Factors to consider are that:

(a) The road, as per the DEPZ, acts as a clear boundary for the DEPZ.

(b) The number of additional properties would be five.

(c) Any additional developments proposed in the area would impact on the DEPZ for the future, should all other considerations remain the same, therefore the potential for additional significant development in the area would likely be advised against. Consideration to any such application would however be considered on a case by case basis.

(d) It does not cut off any additional access routes to surrounding areas, though it would remove an alternative route of access to the area outside the DEPZ. The road may need to have a closure on it and therefore access in and out will be limited.

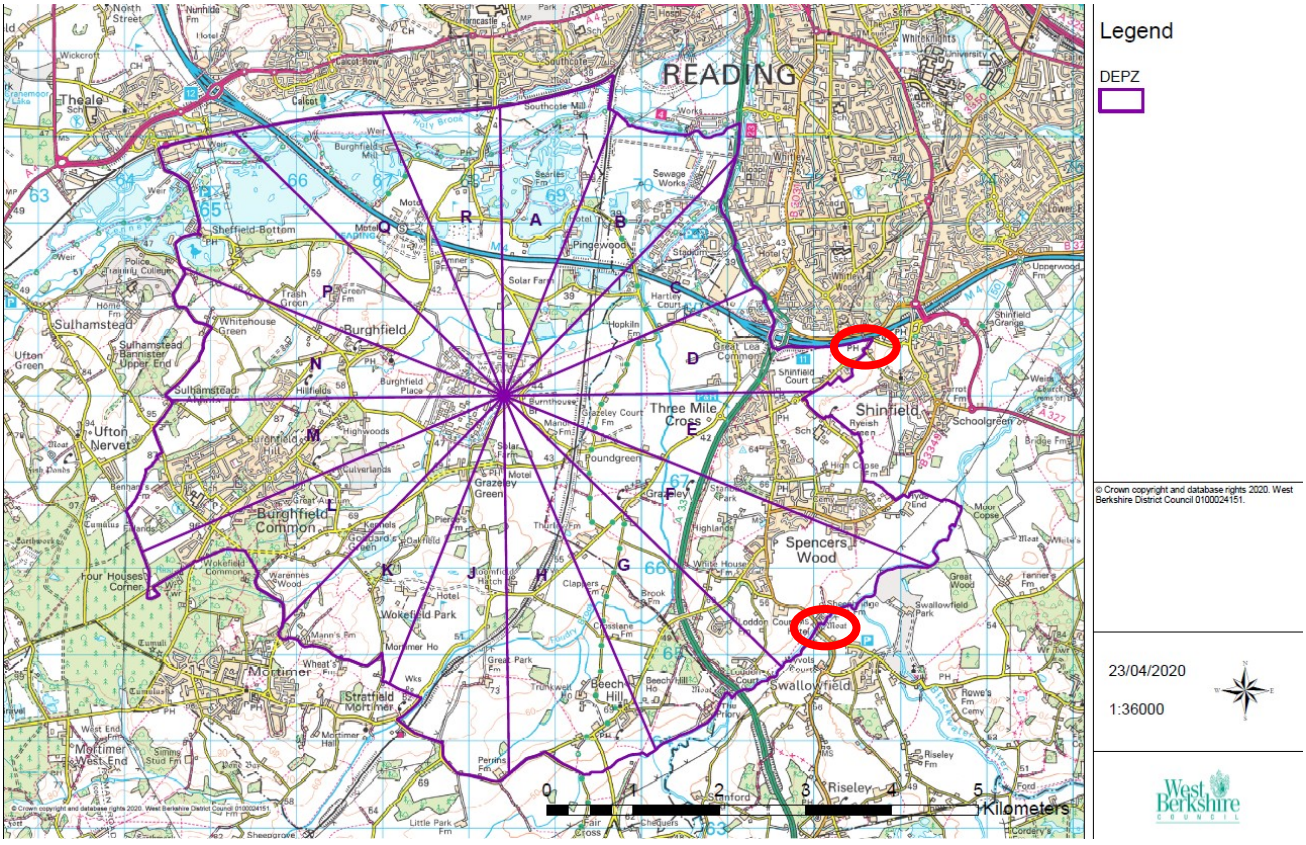
(e) The 3 yearly booklet and the quarterly AWE Connect Newsletter is already distributed to the addresses so they could currently be considered to be part of the DEPZ.

(f) The telephone alerting will also already include the properties within this area since it is based on postcodes.

(g) There are however additional properties to the south of the potential extension of the DEPZ which could result in a further expansion to include these properties. This would mean expanding the DEPZ at some distance from the Urgent Protective Action area.

Decision: On balance it was considered appropriate not to include the above option with the DEPZ for AWE Aldermaston remaining the same.

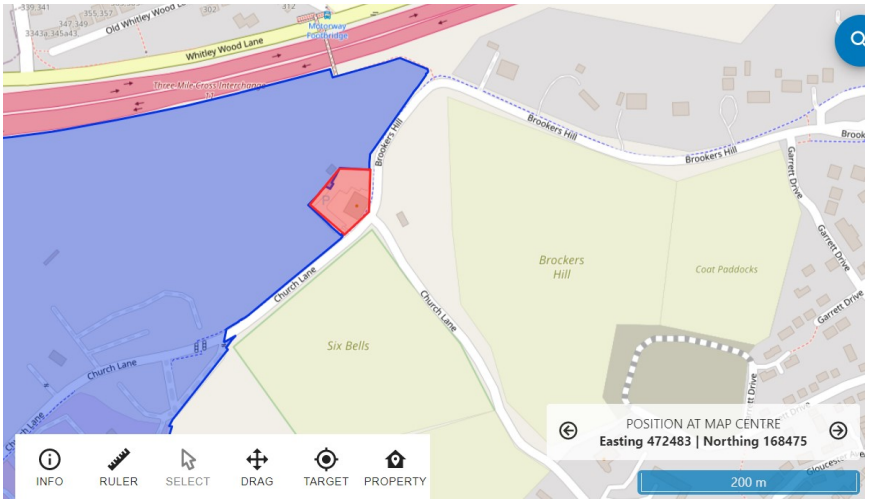
Existing DEPZ for AWE Burghfield site (Mar 2020 – Jan 2023)



Potential Changes to AWE Burghfield site

On reviewing the area around the existing AWE Burghfield DEPZ there were 2 areas which were considered to be amended to correct minor areas of ambiguity as shown in the map above and sections of the maps below

1. The Six Bells Shinfield, Church Lane, Shinfield, Reading, RG2 9DA - Easting 472593 | Northing 168524



Justification Comments

a. Previously the site had been excluded since the building identifies with the Shinefield 'Community' and not Spencers Wood which is the rest of the area included in the DEPZ.

b. This change would therefore use the full length of the road as the boundary rather than go around one property.

c. The road, as per the DEPZ, acts as a clear boundary for the DEPZ.

d. Any additional houses proposed in the area would impact on the DEPZ for the future, should all other considerations remain the same, therefore the potential for additional significant development in the area would likely be advised against. Consideration to any such application would however be considered on a case by case basis.

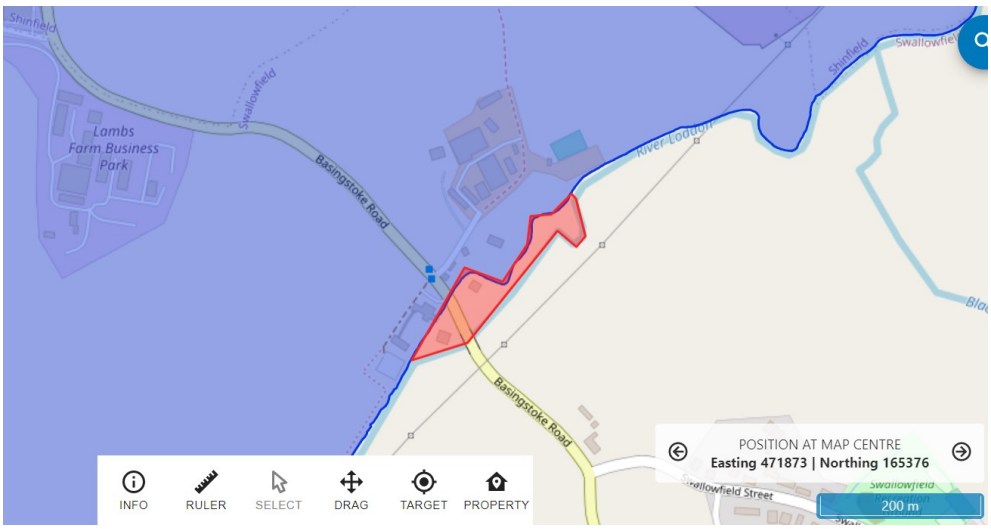
e. The road may need to have a closure on it and therefore access in and out of the property will be limited.

f. The 3 yearly booklet and the quarterly AWE Connect Newsletter is already distributed to the addresses so they could currently be considered to be part of the DEPZ.

g. The telephone alerting will also already include the properties within this area since it is based on postcodes.

Decision: On balance it was considered appropriate to include the above change to the DEPZ for AWE Burghfield.

2. Near Basingstoke Road, Swallowfield, Reading RG7 1PT - Easting 472105 | Northing 165364



Justification Comments

a. This change would redefine the DEPZ fully along the River Loddon and correct a mapping error as a result of a split in the flow of the river.

b. The river acts as a clear boundary for the DEPZ.

c. The change would result in the addition of two properties.

d. Expanding the DEPZ to bring in the 2 properties would better identify them with the properties adjacent to them in their community, and improve the warning and informing in the event of an incident at AWE.

e. Expanding the DEPZ will prevent the properties receiving different advice over sheltering in the event of an incident, which are in close proximity to each other, that differing advice could undermine their confidence and therfor safety in the warning messages.

f. The 3 yearly booklet and the quarterly AWE Connect Newsletter is already distributed to the addresses so they could currently be considered to be part of the DEPZ.

g. The telephone alerting will also already include the properties within this area since it is based on postcodes.

h. Any additional houses proposed in the area would impact on the DEPZ for the future, should all other considerations remain the same, therefore the potential for additional significant development in the area would likely be advised against. Consideration to any such application would however be considered on a case by case basis.

Decision: On balance it was considered appropriate to include the above change to the DEPZ for AWE Burghfield.

Appendix 2

Appendix 2 Development Management Process

1. There has been a development management assessment process in place for Emergency Planning consultation in relation to the AWE sites since 2010 when it became very clear that there was a risk to public health and wellbeing should the DEPZ have uncontrolled development within it and therefore a risk that the AWE Off-Site Emergency Plan would not be adequate.

2. The process has varied overtime and has become more considered and refined in relation to the risks and the impacts associated with a radiation emergency from an AWE site and the impact on the community in the DEPZ.

3. The principles as to *what* applications the Emergency Planning, and as necessary the AWE Off-Site Planning Group as a whole or as individual agencies, are consulted on has remained broadly the same.

4. As a result, the relevant Emergency Planning Service for the geographic area of the application site is consulted with respect to any planning application within the DEPZ, or the other consultation zones as detailed by the ONR. This would normally be West Berkshire, Wokingham Borough, Reading Borough and Basingstoke & Deane Borough Councils.

5. The zones are set out on the ONRs website[1] when emergency planning would be consulted on the application in addition to ONR and as shown below:

Zone	Description
On the nuclear site	Within the nuclear site boundary.
Detailed Emergency Planning Zone (DEPZ)	The DEPZ where set by a Local Authority.
Outer Consulation Zone (OCZ)	Extends from the perimeter of the DEPZ out to a distance defined by ONR from the centre point of the site, where this distance is determined by the nature of the site. For sites without a DEPZ, the OCZ extends outward from the site perimeter fence.
12km zone	A circular zone of 12km radius around all nuclear sites, for certain types of significant development due to the potential for such developments to pose an external hazard to sites.
Special case	ONR also requests to be consulted on planning applications, irrespective of distance from nuclear sites, for special cases. These represent developments that either introduce a new hazard or change the existing external hazards posed to nuclear sites.

6. Each application for planning permission is evaluated by emergency planning professionals on their own merits but specifically in relation to the impact the development would have on the AWE Off-Site Emergency Plan, on the responders capabilities and the community in the short

[1] https://www.onr.org.uk/land-use-planning.htm

and long term and in so doing the public health and wellbeing impact on the occupants of the buildings.

7. The consultation process in outline is:

    a. Development Management consult internally with the respective Emergency Planning officer and the Office for Nuclear Regulation (ONR);

    b. The Emergency Planning Officer reviews the application taking into account several factors relating to the Plan and the impact on it. Where appropriate the officer will respond directly to Development Management to provide feedback or ask for clarity in relation to the application.

    c. The Emergency Planning Officers from West Berkshire, Hampshire (on behalf of Basingstoke and Deane), Reading and Wokingham Councils meet on a regular basis to consider applications in order to ensure consistency in approach.

    d. In more complex or large applications, the AWE Off-Site Planning Group is consulted. This group is made up of all the responders who have a role in the Plan, which can be as many as 27 different agencies. They provide feedback as necessary relating to their agency and the impact which can vary significantly.

    e. Feedback is provided by the relevant local authority Emergency Planning Officer to the relevant Development Control service, West Berkshire Council and ONR.

8. The specific considerations relating to the AWE Off-Site Plan include evaluating the effect of the application upon the following factors:

    a. Whether the proposed development is within the DEPZ or OPZ

    b. The proximity of the proposal to the AWE site boundary

    c. The type of development e.g. residential or commercial

    d. The numbers involved – by sector and distance from the site, including the adjacent sectors to support response by plume directions. This also includes a review of valid approved applications but not built, for which there is at least an annual review.

    e. Any impact on short term sheltering – 24-48hrs

    f. Impact for medium to long term sheltering

g. Likely requirement for immediate evacuation

h. Potential for and the impact of subsequent evacuation – rest centres etc

i. Impact on the Warning and Informing process

j. Impact on any difference between day or night

k. Vulnerable people considerations

l. Impact on external issues e.g. parents wishing access to children

m. Impact on the access and egress routes

n. Recovery implications

9. As detailed in **Appendix 1** the principle behind the legislation is to ensure the adequacy of the AWE Off-Site Emergency Plan and in so doing protecting as far as possible the public health and wellbeing of the community.

10. The Emergency Planning Services also are cognisant of the respective Councils Local Plan including any specific policies relating to the AWE sites.