

Claim Number: AC-2023-LON-002758

**IN THE HIGH COURT OF JUSTICE
KING'S BENCH DIVISION
PLANNING COURT**

BETWEEN:

AWE PLC

Claimant

-and-

(1) SECRETARY OF STATE FOR LEVELLING UP, HOUSING AND COMMUNITIES

(2) WEST BERKSHIRE DISTRICT COUNCIL

(3) T A FISHER AND SONS LIMITED

(4) OFFICE FOR NUCLEAR REGULATION

(5) SECRETARY OF STATE FOR DEFENCE

Defendants

WITNESS STATEMENT OF GRANT INGHAM

I, **GRANT INGHAM**, of the Office for Nuclear Regulation ("**ONR**"), Redgrave Court, Merton Road, Bootle, Liverpool, will say as follows:

1. I am employed as a Chartered Radiation Protection Professional by the 4th Defendant (the ONR) as a Principal Inspector within ONR's Emergency Preparedness and Response ("**EP&R**") team as the Policy and International Lead and Deputy Delivery Lead.
2. The EP&R team primarily focuses on the regulation of off-site emergency arrangements, and in particular compliance with the Radiation (Emergency Preparedness and Public Information) Regulations 2019 ("**REPPIR19**"). I hold a certificate of competence as a Radiation Protection Adviser, and I have 22 years' experience in the field of EP&R for radiological emergencies covering participation in on- and off-site emergency exercises, preparation of emergency plans, and regulation of emergency arrangements across most of the UK's nuclear sites.

3. I am duly authorised by ONR to make this witness statement in support of the ONR's case.
4. The contents of this statement are true to the best of my knowledge and belief. In drafting this statement, I have reviewed my notes of the Inquiry. I have also read the notes of the Inquiry which were taken by my colleagues and ONR's solicitors in order to confirm my recollection. Where matters are not known to me personally, I have relied on documents and the accounts of others, and I have indicated where this is the case.
5. There is now produced and shown to me and exhibited hereto 7 documents marked "GII" to GI7". Where I have referred to documents in the Supplementary Claim Bundle these are referred to as SCB[Page].
6. At the Inquiry which gave rise to the decision under challenge and these proceedings, I was a witness for the ONR. My evidence was on EP&R. Further evidence on behalf of ONR was given by other employees, Mr Guilfoyle in relation to Land Use Planning, and Mr Rogers on Protection.
7. I attended all sessions of the Inquiry between 5-9 June 2023. I listened carefully to the submissions made by the advocates, the opening and closing statements, and the oral evidence from the 3rd Defendant (who was the Appellant "**Developer**"), the 2nd Defendant ("**WBDC**"), the Claimant ("**AWE**") and my fellow ONR employees. The 5th Defendant ("**SOSD**") did not appear separately from the AWE at the Inquiry.
8. I gave my own oral evidence on the morning of 8th June and was cross-examined by the Developer and asked questions by the Planning Inspector ("**Inspector**"). For the Court's convenience, I have separated my evidence into "topic areas" but wish to make clear that my evidence is not given in strict chronological order.

The OSEP and the DEPZ

9. REPP19 requires that operators of nuclear premises such as the AWE Burghfield ("**AWE(B)**") site carry out a hazard evaluation and consequence assessment to identify and assess hazards that have the potential to cause a radiation emergency. Regulation 2(1) of REPP19 defines a 'radiation emergency' as:

A non-routine situation or event arising from work with ionising radiation that necessitates prompt action to mitigate the serious consequences—

(a) of a hazard resulting from that situation or event;

(b) of a perceived risk arising from such a hazard; or

(c) to any one or more of—

(i) human life;

(ii) health and safety;

(iii) quality of life;

(iv) property;

(v) the environment

10. Regulations 4 and 5 of REPP19 define a standard approach for carrying out such evaluation and assessment. In the case of AWE(B), the operator, AWE, concluded that there are situations that could lead to a radiation emergency and in accordance with Regulation 7 provided a ‘consequences report’ to WBDC. The consequences report sets out the requirement for, and geographical extent of, emergency planning to protect members of the public from the identified radiation emergencies.
11. Based on recommendations from AWE in the consequences report, a detailed emergency planning zone (“**DEPZ**”) is required for AWE(B). AWE recommended that the minimum geographical extent of the DEPZ is an area extending to a radial distance of 3160 metres from the AWE(B) site centre location. Regulation 8(1) of REPP19 provides that the local authority must determine the DEPZ based on the operator’s recommendation and may extend that area in consideration of: local geographic, demographic and practical implementation issues; the need to avoid, where practicable, the bisection of local communities; and the inclusion of vulnerable groups immediately adjacent to the area proposed by the operator.
12. Regulation 11(1) of REPP19 provides that, where premises require a DEPZ, the local authority must make an adequate off-site emergency plan (“**OSEP**”) covering the DEPZ. The local authority in this case is WBDC. The relevant OSEP is a joint plan which covers AWE(B) and the nearby AWE Aldermaston site. Regulation 11(2) requires that the OSEP must be designed to mitigate, so far as is reasonably practicable, the consequences of a radiation emergency outside the operator’s premises.

13. The OSEP is a written document, or set of documents, that can be put into effect by responding organisations without delay. The local authority must prepare the plan in accordance with the requirements of Regulation 11. The Health and Safety Executive (“HSE”) has produced the REPP19 Approved Code of Practice and guidance (“**Guidance**”) in association with the ONR [Relevant extracts at Exhibit GI1]. Paragraph 338 of the Guidance provides a concise description of preparing an adequate OSEP:

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.*

14. Schedule 6 of REPP19 describes the minimum content required to be included in the OSEP. Examples of this content which is directly relevant to the OSEP includes:

- a. The arrangements for co-ordinating resources necessary to implement the OSEP, including the activation, deployment, management and sustainment of specific local and national emergency response capabilities needed to provide a response at any time, without delay.
- b. The arrangements for off-site protective action, including sheltering and evacuating members of the public, preventing people entering the affected area, controlling traffic and implementing food and water restrictions.
- c. The arrangements for carrying out an assessment of the impacts of the radiation. This includes arrangements for environmental monitoring to quickly confirm any release of radiation and then to subsequently determine the nature and extent of any contamination and arrangements to establish a public health monitoring facility (radiation monitoring units (“**RMU**”)) to monitor members of the public who have been evacuated or to provide reassurance to people who may have been in close proximity to the premises.

15. For AWE(B), the DEPZ encompasses an area surrounding the site made up of a mix of rural, semi-urban and urban areas with large residential, commercial and transient populations. The area encompasses a section of the M4 motorway, plus other A and more minor roads and is intersected by a railway line. There is a significant transient population moving through the area at most times of the day. The Majedski Stadium, situated within the DEPZ, has a capacity for 24,000.
16. As a consequence of methodological changes introduced by REPP19 when it replaced REPP1, the area of the DEPZ was increased in 2020. As a result of this increase, the number of residential properties contained within the DEPZ increased from 89 to 7,738. The residential population in March 2020 was circa 18,500 and there were approximately 1000 commercial units, in addition to schools and care homes [SCB/98]. The number of people occupying non-residential properties was not quantified, but the OSEP needs to take those people into account to ensure that they benefit from the same urgent protective actions as the rest of the DEPZ population.
17. There are particular challenges associated with the AWE(B) site and its DEPZ that create heightened demand on the OSEP:
 - a. The recommended minimum distance of the DEPZ is the second largest for a GB nuclear site (i.e. the radiation emergency requires a comparatively large geographic response);
 - b. The nature of the radiation emergency which may occur at AWE(B) provides short notice (no more than 10 minutes) for the public to shelter in order to realise any substantive benefit from the sheltering; and
 - c. The principal radionuclide that would be released in the event of a radiation emergency is of a type that is particularly difficult to detect even with specialist monitoring equipment (and so requires greater time, effort and resource from responding organisations).
18. The OSEP stipulates that, upon declaration of a radiation emergency by the operator, the entire DEPZ must shelter immediately (i.e. stay indoors with doors and windows closed). All members of the public (residents, workers, visitors, etc) present in the DEPZ in all sectors surrounding the AWE(B) site, regardless of any external factors such as wind direction, are

expected to take this protective action. They are expected to remain sheltering until explicitly advised to break shelter. The need to remain under shelter in respect of the assessed AWE(B) emergency may be for up to 2 days.

19. Further, some members of the public may be promptly evacuated, whereas others may be relocated during, or at the end of, the 2 day sheltering period. These protective actions are set out in the OSEP and have been communicated to the residents of the DEPZ in leaflets in accordance with Regulation 21 of REPP19.
20. On activation of the OSEP, the responding organisations come together to form the Strategic Co-ordinating Group (“SCG”). The role of the SCG is to consider the situation based on available information. One of the decisions open to the SCG is to advise some members of the public that they can be released from sheltering. This decision would only be made by the SCG if it has evidence (particularly environmental monitoring of radioactivity) and the advice of specialists that it is safe to break shelter in certain locations.
21. REPP19 requires that the arrangements in the OSEP ensure that prompt action is taken to offer protection to members of the public, not simply in terms of restricting exposure to radiation, but also their wider health and safety (including psychological impacts) and quality of life. The OSEP must therefore consider the wellbeing of tens of thousands of people who are sheltering, and who may then subsequently be released from sheltering or relocated.
22. The protection of vulnerable groups is also required to be explicitly addressed by the OSEP, as they will require specialist attention from responding agencies. The guidance to Regulation 8 of REPP19 defines vulnerable groups as:

... those that are less able to help themselves in the circumstances of an emergency and can include occupants of schools, hospitals, care homes, people with mobility difficulties, mental health issues, hearing and visual impairment etc. Those who cannot readily shelter (eg caravan and mobile home dwellers, campers, walkers, farmers, outdoor visitor attractions etc) are also considered to be vulnerable.
23. The conclusion of the sheltering period is not necessarily the end of the nuclear emergency. The decision to proceed from the emergency phase to the recovery phase of the emergency response can be complex. The decision requires input from a wide range of stakeholders. In

an area that has been affected by radioactive contamination, the SCG will again require data secured by monitoring of the environment by specialists. As explained, the type of radiation which would be involved in a radiation emergency arising from AWE(B) is challenging to detect. As a result of this challenge, it is likely that it will take longer to monitor and so in all likelihood the time taken to conclude the emergency phase and move to the recovery phase will increase. The longer the population of the DEPZ is held in the emergency phase, the greater will be the demands on the responding agencies.

24. Implementation of the OSEP involves a multi-agency response. It is not just emergency services. Practical implementation of the OSEP requires support from many different responders. At a local/regional level this includes WBDC and neighbouring local authorities covered by the DEPZ, health and care organisations, and those with responsibilities for utilities and transport infrastructure. The response is also dependent on the national capabilities of government agencies such as the UK Health Security Agency (“UKHSA”), the Environment Agency, Food Standards Agency, Department for Levelling Up, Housing and Communities, Department for Environment, Food & Rural Affairs and the Met Office.

Adequacy of the OSEP – General

25. As I have set out, the OSEP must contain the minimum content described in REPP19. The ONR has been satisfied that the OSEP meets that minimum standard. The next stage is for ONR to consider the adequacy of the OSEP. I consider that the most important consideration that underpins adequacy is the requirement that an OSEP “can be put into effect without delay when required” which is set out in [G11 Para 334].
26. In order to reach a view on adequacy, the ONR provides regulatory oversight of the development of the OSEP from the point that the geographical extent of the DEPZ that it covers is being determined. Every DEPZ and associated OSEP is unique, and so ONR is required to liaise (which the ONR terms “engagements”) extensively with the operator, local authority and responding organisations. This is in order to provide the ONR with the necessary background information to identify:
- a. The particular risks posed by a particular nuclear site.
 - b. The particular challenges posed by the geography and demography of each DEPZ.

- c. The protective actions required to mitigate consequences from a radiation emergency arising at the site, and the challenges of bringing them into effect.
 - d. The roles of the responding organisations, both local and national, and their respective capacities and capabilities.
27. The principal opportunity to explore practically the adequacy of the OSEP is via testing, as required by Regulation 12(1) of REPP19. Here again, a key consideration of adequacy is whether the OSEP can be put into effect (paragraph 373(c) of the Guidance), which requires tests to demonstrate that:
- the plan can be practicably implemented and will be effective in the response to a radiation emergency to secure, so far as reasonably practicable, the restriction of exposure to ionising radiation and the health and safety of workers and members of the public.*
28. ONR is engaged throughout the testing process, from the earliest planning meetings, to deploying inspectors to observe the test, to participating in the closing meetings. The purpose of ONR's involvement is to seek assurance that the lessons learned from the test are included in the report of the outcome of the test which is produced under Regulation 12(8), and that those lessons are then taken forward into the subsequent review and revision of the OSEP.
29. The regulations allow for the identification of areas for improvement during tests, requiring the local authority to capture lessons learned during the test and to address them in the review and revision of the OSEP. In this manner, the adequacy of the OSEP is maintained.
30. ONR therefore has effective regulatory oversight of the full OSEP 'lifecycle' from preparation to testing, review and revision.
31. A significant challenge to the practical implementation of the OSEP are the constraints on the resources of responding organisations. The response to a radiation emergency draws from a limited pool of specialists, both local and national. Paragraph 334 of the Guidance advises that the local authority should seek "confirmation, so far as reasonably practicable, from responding organisations that... underpinning capabilities required to implement the plan are in place and readily available".

32. Additionally, regulation 11(5) of REPP19 requires that, when preparing the OSEP, local authorities engage with a wide variety of responding organisations. Paragraph 351 of the Guidance advises:

The purpose of consultation is to engage with and take account of relevant parties' views during the preparation, review and revision of the off-site emergency plan, to maximise its effectiveness. Consultation should ensure that wider specialist knowledge, responsibilities and national guidance are taken into account in developing and resourcing the off-site emergency plan.

33. The duty on local authorities therefore is to consult with the relevant responding organisations both directly and typically also at planning/resilience groups and forums in order to ensure that they are adequately resourced and available. These discussions will factor in each organisation's ability to perform its function in the emergency response. The ONR expects local authorities to ensure that they understand any constraints that might impact delivery of the OSEP [GI1, paras 334, 378 and 381]. ONR places emphasis on the relationships between the local authority and the responding organisation to prepare and maintain an adequate OSEP, since the only accurate judgement of the capability and capacity of responding resources is from the organisations themselves.
34. REPP19 recognises that OSEPs are constantly evolving arrangements and will require revision, either because there has been a material change (such as, for instance, a change to the consequences report or the major restructuring of a responding organisation) or because an area for improvement has been identified. In the latter case ONR accepts that areas for improvement will be identified with the OSEP, either routinely or during testing. ONR works with the local authorities to ensure such areas are identified, tracked, and addressed in a timely manner. These matters are not usually significant enough to cause the local authority or ONR to question whether the OSEP remains adequate, since, on balance, the OSEPs generally remain effective. However, where there is robust evidence of a deficiency with an OSEP which threatens the ability to practically implement an important capability of the plan, ONR would take firmer action – potentially leading to formal enforcement where it is proportionate to do so. As I explain further below, due to the final findings from the latest ALDEX23 exercise ONR has escalated its regulatory action since the Inquiry.

35. A key factor affecting the capacity, and so the adequacy, of an OSEP is the number of people living, working, or visiting within the DEPZ. All increases in population will add to the burden placed upon responders in the event of a radiation emergency, but different OSEPs and DEPZs will have different tolerances to such increases. REPP19 recognises that new developments in the DEPZ can impact the effectiveness of the OSEP [Exhibit GI1]. Paragraph 250 of the Guidance discusses the potential need to re-determine the DEPZ as a result of developments within or adjacent to the DEPZ. Paragraph 378 advises that the review process for an OSEP should take into account “any changes in the detailed emergency planning zone or outline planning zone; for example, a new school or hospital” in addition to “any other changes which could affect the effectiveness of the plan”.
36. There is no mechanism in REPP19 or the Guidance for quantifying the impact of a proposed development on the effectiveness of the OSEP, nor determining the number of residences/workplaces that can be accommodated before the OSEP will become inadequate. This is because of the inherent complexity of developing an analytical approach that factors in tens of thousands of residents and workers in the DEPZ, widely varying transient populations, and the individual resources of more than 20 responding agencies who are themselves subject to fluctuating demands both locally and nationally. As a result, local authorities rely on consultation with the responding organisations to determine whether the resources which form the ‘underpinning capability’ of the OSEP can accommodate a new development.
37. I am not aware of any circumstances where ONR has found that an OSEP has not been adequate. It would be a very serious finding, since it would amount to a declaration that the ONR considers that members of the public who live and work in the DEPZ would not be sufficiently protected should a radiation emergency arise. As I stated in my Proof of Evidence and oral evidence on day 3 of the Inquiry, radiation emergencies are unique in the degree of anxiety they provoke in members of the public. A finding of inadequacy would cause a high degree of distress to people in the DEPZ and beyond. It is for this reason that ONR is very careful in how it expresses its concerns regarding the adequacy of the OSEP, as it is aware of the seriousness and implications of a finding of inadequacy. As well as the impact on the local population, as I discuss further below, there are also potential consequences in respect of UK defence which are likely to arise from an explicit finding of inadequacy of the OSEP.

38. The immediate consequence of the ONR finding that the OSEP was inadequate would be that the local authority would be non-compliant with its duties under REPP19 and ONR would consider formal enforcement action. Enforcement is discretionary, and is typically taken after non-compliance has occurred. Depending on the severity of the breach may include the issue of an enforcement letter, an improvement notice, or prosecution.

39. In order to forestall the requirement for formal enforcement action, ONR seeks to provide advice to duty holders, such as WBDC, on how they can sustain or reestablish compliance with REPP19. In oral evidence to the Inquiry, Mr Rogers described this as “coming alongside” the duty holder. This activity has been taking place in respect of the OSEP with WBDC and AWE. However, ONR consider that this regulatory approach has not provided the necessary protection of the adequacy of the OSEP. As ONR’s closing statement at the Inquiry noted:

... this is the first planning inquiry in which the ONR has taken part. That in itself is significant, and in the ONR’s view, the last remaining element of the “toolkit” or “levers” which it may exercise in order to assure itself that the OSEP is, and remains, adequate. The next stage would be enforcement. [SCB863, Para 14]

40. In summary, ONR bases its judgement on the adequacy of an OSEP on evidence gathered from a range of regulatory activities, including interactions with the local authority or responding organisations, assessment of the OSEP, the outcomes of inspections and the findings of tests. It re-evaluates the judgment of adequacy as new information becomes available and actively engages with duty holders to influence them to uphold the adequacy of OSEPs, which are the most vital component of emergency planning arrangements for radiation emergencies.

Adequacy of the OSEP – Specific

41. As a result of the expansion of the DEPZ, the ONR was aware that there would be a significantly increased burden on the OSEP. Therefore, ONR engaged with the WBDC in order to strengthen its own oversight of development control within the DEPZ and assess whether WBDC has the capability and capacity to fulfil its REPP19 obligations.

42. The first of these engagements was on 13 August 2021. ONR wrote to the Chief Executive Officers of the three local authorities whose territorial jurisdiction was affected by the DEPZ [SCB/6]. In this letter ONR expressed its concern that that further development may have the potential to impact upon the adequate implementation of the OSEP. The letter also notified the local authorities that ONR's land use planning arrangements were changing to increase our scrutiny of planning applications in the DEPZ.
43. Following the issuing of this letter, ONR conducted an initial inspection of WBDC on 16 March 2022, with the inspection focussing on the capability and capacity of WBDC to comply with REPP19. As a consequence of the findings of this inspection, ONR raised a formal Regulatory Issue on WBDC on 25 March 2022. Regulatory Issues provide the formal mechanism by which ONR records and monitors progress against the follow-up actions required to address issues identified by ONR inspectors. The Regulatory Issue related to capability and governance arrangements of WBDC as a REPP19 duty holder. ONR commenced a series of three further inspections to seek assurance that WBDC had adequate resources and capabilities to meet its obligations under REPP19, with the first taking place on 6 July 2022. Through the inspections, ONR sought to answer the following questions:
- a. How does WBDC ensure that it has adequate organisational capability to produce, review and test the AWE off-site emergency plan;
 - b. How resilient are the resources and capabilities of WBDC to produce, review and test the AWE off-site emergency plan;
 - c. How effective are WBDC's arrangements for ensuring there is adequate succession planning for staff in key REPP19 compliance roles;
 - d. How does WBDC manage risks to the delivery of its duty to produce, review, and test the AWE off-site emergency plan; and
 - e. How effective are the arrangements for the cooperation with local authorities for the purpose of reviewing and testing the AWE off-site emergency plan?
44. Between 11 May 2021 and 15 February 2022, WBDC conducted a series of modular exercises which, collectively, formed the first statutory test of the new OSEP. This test included the participation of approximately 30 agencies, both local and national, and included ONR as an assessor. The modules of this test comprised the following:
- a. Road Closure Workshop;

- b. Rail Workshop;
- c. AWE Displaced People Workshop;
- d. AWE Communication Directory Exercise;
- e. Science and Technical Advisory Cell Exercise; and
- f. Media Briefing Centre Exercise and Workshop.

45. The Report¹ of the Outcome of the Test was produced by WBDC. The Report collated and evaluated the feedback of all of the agencies which participated in ALDEX22, and identified strengths and weaknesses in the OSEP and areas for improvement. The Report highlighted several areas of weakness in the OSEP. Of relevance, the areas of weakness included areas linked to population density within the DEPZ, including:

- a. Arrangements for people monitoring (and associated decontamination);
- b. Arrangements relating to evacuation holding areas for displaced persons awaiting monitoring;
- c. Arrangements for managing the numbers and scale of displaced people, both those outside the DEPZ and unable to return home and those inside the DEPZ who require evacuation; and
- d. Arrangements for managing those who self-evacuate, especially for ensuring they undergo appropriate monitoring and decontamination.

46. A subsequent test of the OSEP, known as ALDEX23, was conducted on the 24 April 2023. This was a full live test and it represents the best available evidence as to the present strengths and weaknesses of the OSEP, especially in conjunction with the modular exercises and workshops carried out as part of the previous testing cycle.

47. At the time of the Inquiry, ALDEX23 had taken place, but WBDC had not produced the Report of the Outcome. As I was a member of the ONR exercise assessment team, as explained later in this statement, I told the Inquiry in my oral evidence that I recognised similar issues in ALDEX23 that were evident at the previous modular exercise. However, I made the following comment in my Proof of Evidence:

¹ The Reports from OSEP tests are restricted documents, and hence have not been exhibited to my witness statement. I am permitted to briefly summarise them, as I have done.

The process of capturing lessons, and identifying and implementing improvements must be allowed to conclude so that all feedback, covering the broad range of expertise involved, can be collated and recorded appropriately.

48. The Report of the Outcome of the Test was completed on 15 September 2023. This provided formal confirmation of the weaknesses with the OSEP that I had described at the Inquiry in my oral evidence. As a consequence of the ALDEX23 Report, ONR issued a letter to the Chief Executive of WBDC on 29 November 2023 [Exhibit GI2] (“**Letter**”). The Letter represented an escalation of ONR’s regulatory activity. It requires WBDC to sets out its plans for improving the OSEP and confirms that ONR will undertake a series of inspections to confirm that the improvements are effective.
49. I explained in my oral evidence at the Inquiry, as I describe below, that the weakness and concerns with the OSEP which are identified in the Letter are not matters which can be easily remedied by WBDC. The required improvements are significant and will be challenging and potentially time consuming to address, due to the limited resources of the various responding organisations.
50. At the Inquiry, the ONR witnesses explained how stretched the OSEP was, and the risks to the adequacy of the OSEP. As a result of the Inspector’s decision, the ONR is now considering the ongoing adequacy of the OSEP. The evidence available to ONR confirms that the capacities of the underpinning capabilities that are required to deliver key elements of the plan have reached their limit.
51. As I told the Inspector in my oral evidence at the Inquiry, and as set out hereafter, the Developer’s scheme adds a further 32 dwellings to an already stretched situation.
52. If the scheme is built out in addition to other already consented schemes, the ONR has no confidence that the OSEP would be adequate. Indeed, even if the other consented schemes are not built out, and only the Developer’s scheme comes forward, WBDC’s evidence at the Inquiry supports the ONR’s concern that the adequacy of the OSEP will not be sustained.

Adequacy of the OSEP – The Inquiry

53. On Day 2 of the Inquiry, in oral evidence, WBDC's emergency planning witness made several references to her perception of the adequacy of the OSEP, referring to it as "borderline adequate" and "barely adequate". In order to assist the Inspector's understanding as to the judgement of adequacy, which can be complex, I discussed the issue at the outset of my oral evidence on Day 3.
54. Prior to its appearance at the Inquiry, ONR was not aware of the scale of the number of housing and commercial units that had been consented and not built out, as it does not track these statistics. The scale of this imminent population increase had not been factored into the ONR's written evidence to the Inquiry and caused me some concern, leading me to address the topic specifically in my oral evidence on the adequacy of the OSEP.
55. In my oral evidence I explained that ONR bases its judgement of adequacy of the OSEP on the DEPZ as we find it today, based on the populations that already exist within the DEPZ. I stated that this judgement does not include consideration of developments that have been consented but not been built out. I added that the OSEP cannot take account of populations that do not yet exist, where there are no residences or workplaces or people living and working in them. Testing of the OSEP is a key tool for assessing adequacy and I explained that WBDC could not test the OSEP on communities that do not yet exist and do not feature in the OSEP. This had been explained in WBDC's oral evidence that developments are included in the OSEP when built out.
56. I explained that the fact that adequacy is binary – the OSEP is either adequate or it is not - and the judgement of adequacy is based on evidence of the present position, meaning that we would not know for certain that the OSEP was inadequate until evidence had become available that it had already become inadequate, i.e. retrospectively. I explained that there was evidence that the adequacy of the OSEP would be challenged by new developments (which I shall return to).
57. At the conclusion of my oral evidence, the Inspector addressed the Developer and WBDC to seek clarity on the number of residences that had been consented but not built out. There was some disagreement between the two parties but the information which was provided later in the Inquiry [Exhibit G13] indicates that the occupants of these residences and commercial

units, both of whom would increase the burden on the OSEP, number in the thousands rather than the hundreds.

The Stretched Nature of the OSEP – The Inquiry

58. In her oral evidence, WBDC’s emergency planning witness, Ms Richardson, provided a summary of the pressures currently faced by the OSEP as a result of increasing population in the DEPZ. She explained that the DEPZ had significantly increased in size in 2020, requiring that the OSEP extend coverage to a very large population and new, challenging areas of infrastructure. In addition to the geographical extent of the DEPZ, Ms Richardson also set out orally the response challenges in this specific circumstance, including the fact that there would be practically no notice for an event at AWE(B) and that the warning system for residents is via landline, which places limits on the ability to reach members of the public to tell them to shelter.
59. Ms Richardson also drew attention to key capabilities described in the OSEP that were already under intense pressure and that she said would be further compromised by the appeal development. These were set out in her Proof of Evidence [SCB75] and include:
- a. Arrangements for evacuating/relocating people who might then need accommodation in rest centres and support for their wider welfare needs.
 - b. Arrangements for undertaking reassurance monitoring of those members of the public who have been, or perceive they have been, exposed to contamination. Such people may also require decontamination.
 - c. Caring for vulnerable people. Ms Richardson explained further orally that some people will not be able to support themselves in an emergency and will require support from health and social services, which would create a further burden of visiting individual homes.
60. I supported this latter view during my oral evidence, stating that the presence of vulnerable persons in just a couple of homes at the appeal development would significantly increase the pressure on what would be an extremely stretched resource.
61. In her oral evidence at the inquiry Ms Richardson further emphasised the difficulties in coordinating the response arrangements for so many different responding organisations – each with its own constraints on resources. She explained that there are already known issues with

the OSEP which would be exacerbated by any additional development and so repeated her judgement that the OSEP could not accommodate any further developments. She told the Inspector that the additional burden of the appeal development would detrimentally impact adequacy and significantly increase the risk of the OSEP failing.

62. In her oral evidence at the Inquiry, Ms Richardson also explained that, in addition to protecting the public from the radiation effects of the emergency and ensuring their wider health and safety in the response, the OSEP must also account for addressing the psychological impacts of a nuclear emergency. She explained that a radiation emergency is not like any other emergency and generates a unique anxiety amongst those affected. She also explained orally that the responders would seek to address this by providing timely information, but the heightened level of concern can cause people to behave unpredictably. The law requires that the OSEP must account for this.
63. In my oral evidence, I explained that ONR has been transparent about its concerns since the DEPZ expanded by writing to the Chief Executive [SCB/6] in 2021. I said that, given evidence from two tests and other engagements, the ONR's view was that there are areas of weakness in the current OSEP and there was limited tolerance for new development. I stated that any new development will apply extra pressure on the adequacy of the OSEP and WBDC had indicated that no more development could be accommodated, and there are challenging, unresolved areas for improvement of the OSEP that are affected by population. I said that any new development should be avoided unless there is positive evidence to show that they can be accommodated by the OSEP.
64. In my oral evidence during cross-examination, I repeated that the OSEP is stretched and already under considerable pressure. I said that the adequacy of the OSEP faces a challenge as a result of the additional burden posed on it by the large and increasing number of developments with consent and ONR is concerned given that the OSEP is stretched for the DEPZ as we find it today.
65. In my oral evidence at the Inquiry I elaborated on my observations from the recent ALDEX23 and explained that the same issues relating to people management as were noted from ALDEX22 were evident and this highlighted significant issues with capacities and capabilities underpinning the OSEP. In his decision (DL30), the Inspector has only referred to the 'lessons to be learnt' from ALDEX23, with no mention of ALDEX22. This does not

reflect the significance of my oral evidence that observing the same issues at two consecutive tests is an important piece of regulatory evidence that there is a significant deficiency with the OSEP (rather than simply a lesson to be learnt).

66. Under cross-examination I was questioned about whether ONR would work with WBDC to deliver improvements to the OSEP. I responded that although ONR does and would work with WBDC, there are limits to what the responding organisations can deliver. They have real world restrictions on their capacities and capabilities which mean that the OSEP is not infinitely scalable. In any case, I explained that some of the most challenging areas to address in the OSEP relate to capabilities of national responders, and gave the example of UKHSA's role in undertaking personal and environmental monitoring of radioactivity. These are highly specialised capabilities with limited resources, and WBDC does not have any direct influence or control over them.
67. On the topic of the significance of the size of the appeal development, I orally reiterated evidence from Ms Richardson's the Proof of Evidence that she had been informed by UKHSA that the development's prospective population represented approximately one third of the daily capacity of a Radiation Monitoring Unit (the facilities used for undertaking reassurance monitoring of the public). I explained that the short notice nature of the emergency at AWE(B) and the method used for warning the public to take shelter could well lead to a higher proportion of residents being contaminated or perceiving themselves to be contaminated. I explained that radiation emergencies cause great anxiety and the concern about radiation would be such that many people were likely to seek reassurance monitoring. The challenge in achieving this would be further exacerbated by the fact that the type of radiation at AWE(B) would be difficult to detect, slowing down the work of an RMU and reducing its throughput. I explained that there are already national issues with RMU capability that are being addressed at Government level, but those effects will be more keenly felt in relation to this OSEP. I highlighted this as just one example of where the appeal development would place an additional, substantial burden on already stretched resources.
68. In his decision, the Inspector did not address matters that featured prominently in both WDBC and ONR's written and oral evidence as being difficult to practically implement; i.e. the provision of reassurance monitoring, management of displaced people and the protection of vulnerable groups. Instead, the Inspector focussed on his judgement of the capacity of the emergency services. He did not explore this topic with either WBDC or myself, but had he

done so I would have explained that the issues that are challenging the adequacy of the OSEP are the actual concerns that were set out in my own and WBDC's oral and written evidence, not only the capacity of emergency services.

Determining the Limits of Adequacy of the OSEP – The Inquiry

69. The concept of a 'tipping point' for adequacy was referred to in the closing statements of three of the parties at the Inquiry: the ONR, the Council and the Developer. All three used it as a shorthand term for the sudden transition of the OSEP from adequacy to inadequacy. Although this is not a term ONR uses, it aided understanding at the Inquiry. However, the Developer in its closing submissions at the end of the Inquiry introduced the concept of a 'tipping point analysis' or 'tipping point assessment' suggesting a quantitative analysis which predicts at what stage of increasing development the OSEP has become, or will become inadequate.
70. I do not believe that the concept of a 'tipping point analysis' was explored with any party at the Inquiry. Hence I believe that the SSLUHC summary grounds are factually wrong to say at paragraph 18(i) that "the point was raised by the inspector during the inquiry". Neither the Developer's advocate nor the Inspector raised with the ONR, AWE or Council witnesses the possibility of having a "substantive tipping point analysis" which set out a "quantification" of how much more development would "tip the OSEP into a state of being inadequate" (DL31). As the only witness to provide evidence on the application of judgements of adequacy as applied to OSEPs, I would have expected to be questioned by the Inspector on this point if he had considered it of significance for his decision, as it was not raised by the Developer's advocate with me in cross-examination.
71. Had I been asked about this matter, I would have explained that it is not possible to predict the point, in advance, that the OSEP will be deemed to be inadequate as a result of increasing development (as explained above). The judgement on whether the OSEP has tipped into inadequacy is necessarily made retrospectively after the 'tipping point' is crossed and cannot be predicted in advance. I have checked with my colleagues and I can confirm that ONR is not aware of any methodology that can forecast in advance the impact that a given development, when built, will have on the adequacy of the OSEP. If there was such a methodology the ONR would be aware of it. Neither REPP19 nor any other legislation,

guidance, policy or established practice requires the application of, or even alludes to, such an analysis. This is a likely reflection of the fact that it is not feasible.

72. This is because, as I have explained, REPP19 and its guidance creates a framework where the adequacy of the OSEP can be established, tested, reviewed and revised. I have already described above how the adequacy of the OSEP is achieved. The most powerful and evidence based tool available in this context is statutory testing of the OSEP. As I outlined in my oral evidence, two consecutive tests have indicated that the OSEP is deficient in several key areas that are important to its delivery.
73. When evaluating the ability of the OSEP to accommodate new developments the Inspector says in his decision (DL39) that a recently granted planning permission for a residential development with more (49) dwellings, elsewhere in the DEPZ, in Wokingham Borough, has not tipped the OSEP into inadequacy. Neither the Developer's advocate developer nor the Inspector raised with ONR's witnesses the position in relation to this development. The ONR did not therefore have the opportunity to explain that this suggestion was misconceived because a judgement on the adequacy of the OSEP including new development would not be made until a considerable time in the future, once the development had been built-out and occupied, and the OSEP had been subject to statutory testing.

ONR's Approach to Regulation – The Inquiry

74. The Inspector notes in his decision (DL39) that there is no evidence presented that the ONR has written to AWE to raise a 'REPP19 regulation 10(4)' concern if this appeal were to be allowed. Neither the Developer nor the Inspector raised this point with the ONR's witnesses. The ONR did not therefore have the chance to explain that this suggestion was misconceived and a fundamental misunderstanding of how safety regulators work. ONR would not write to AWE in advance to identify a Regulation 10(4) concern as suggested by the Inspector because, as I have explained above, formal enforcement action would normally only happen retrospectively after there is evidence of non-compliance. In this case this would be when the WBDC had withdrawn confirmation that it had complied with its duties under Regulation 11, i.e. where WBDC had withdrawn confirmation that it had an adequate OSEP.

75. Person MD for AWE said in their oral evidence, in response to the point that the ONR had not contacted AWE to raise the prospect of it curtailing AWE(B)'s operations, that regulators do not make threats and that they deal with the situation as they find it.
76. ONR has been taking unprecedented action for regulating this OSEP, as I have set out in this statement. This, and our presence at the Inquiry, highlights the degree of concern that ONR has about the adequacy of the OSEP and our focus on ensuring sustained compliance with REPP19.
77. As explained in Paragraph 71 above, the Inspector has not reflected in his DL the findings arising that I made clear were known from the ALDEX23 statutory test. This may be a result of his apparent but incorrect perception that ONR had not taken any action. However, the timing of the Inquiry in relation to the test was important. It was shortly after the ALDEX23 test had taken place and, as I explained in my Proof of Evidence and oral evidence, the process of gathering feedback from all responders involved had only just begun. This is an important part of the statutory cycle, culminating in the production of a Report of Outcome of a Test where areas for improvement are finalised and captured for further action. In my oral evidence I emphasised that ONR bases its regulatory activities on evidence and I explained that, although I expressed my initial observations in my written and oral evidence on the outcome of ALDEX23, it was not possible for ONR to undertake any regulatory actions until the report had been formalised. The report has now been issued and as a result of the findings I had already summarised in my Proof of Evidence and oral evidence, ONR has written to the Chief Executive of the Council to express its concerns (Paragraphs 45-48 above summarise this process). I explained to the Inquiry that regulatory action resulting from the findings of the ALDEX23 could not have taken place at the time of the Inquiry, it should have been apparent to the Inspector that it was still a prospect and that regulatory action may be forthcoming.
78. In his decision (DL40), the Inspector refers to the REPP19 Regulation 25(2) provision for the Secretary of State for Defence to invoke an exemption in order 'to re-establish OSEP adequacy'. Neither the Developer nor the Inspector raised with the ONR's witnesses the point that the Secretary of State for Defence might invoke an exemption. The ONR did not therefore have the chance to explain that this suggestion was misconceived. An exemption applied in this way would not re-establish the adequacy of the OSEP, it would simply create a situation where a lower standard of public protection was tolerated.

79. Person MD for AWE in his oral evidence explained that the provision for an exemption from REPP19 was being misinterpreted by the Developer. Its inclusion in REPP19 is not to permit defence facilities to adopt a lower standard of safety than other sites and the Secretary of State for Defence had a policy statement that required defence facilities to put in place equivalent standards where exemptions were in effect, they said.

The Interpretation of CS8

80. The relevant Local Plan (which includes Policy CS8) was adopted in 2012. CS8 describes ONR land use planning consultation zones as they were in 2012.

81. On 13 November 2009, ONR wrote to WBDC to set out its then land use planning consultation zones for developments in the vicinity of AWE Aldermaston and AWE(B) [Exhibit GI4]. For AWE(B), these consultation zones were as follows:

- a. An inner zone of 0 – 1.5 km;
- b. A middle zone of 1.5 – 3.0 km; and
- c. An outer zone of 3.0 – 5.0 km.

82. These zones are identical to those described in CS8. The letter explicitly makes clear that the inner zone and the DEPZ are synonymous and are of the same territorial extent: [Exhibit GI4 Annex 1]. The use of “DEPZ” and “inner zone” interchangeably re-occurs in 2013 guidance that ONR issued to local authorities [Exhibit GI5 section entitled “consultation zones”].

83. Furthermore, the ONR land use planning website until early 2021 used “DEPZ” and “inner zone” interchangeably [Exhibit GI6].

84. Mr Guilfoyle stated in oral evidence at the Planning Roundtable part of the Inquiry that the that the purpose of CS8 was to provide a means for ONR to advise on proposed developments with respect to their impact on the OSEP. The OSEP is now geographically linked by REPP19 to the DEPZ. Mr Guilfoyle stated in oral evidence at the Roundtable, the efficacy of the OSEP is inextricably linked to population, and that the consultation criteria in CS8 for the inner zone (“all residential or non residential” development) are congruent with development criteria for the DEPZ land use planning consultation zone as it is today (“Any

new development, re-use or re-classification of an existing development that could lead to an increase in residential or non-residential populations”). These criteria are directly connected to population growth and so to challenges to the efficacy of the OSEP.

85. The extent of the DEPZ increased as a consequence of legislative change introduced by the replacement of the Radiation (Emergency Preparedness and Public Information) Regulations 2001 (“**REPPIR01**”) by REPPIR19. This introduced a new methodology for determining the extent of the DEPZ. The increase in the size of the DEPZ necessarily increased the size of the inner consultation zone as referred to in CS8.
86. The replacement of REPPIR01 with REPPIR19 was a consequence of the transposition of the European Union’s Basic Safety Standards Directive; the changes introduced in this Directive reflected important lessons learned from the Fukushima Daiichi Incident, as well as relevant standards agreed at the International Atomic Energy Agency (“**IAEA**”) and International Commission on Radiological Protection (“**ICRP**”).
87. There is a distinction between ONR’s land use planning zone known as the Outer Consultation Zone (“**OCZ**”) and the REPPIR19 Outline Planning Zone (“**OPZ**”). The OPZ is a REPPIR19 emergency planning zone set under REPPIR19 Regulation 9; its purpose is to establish an area for “outline planning” (as opposed to the substantially more onerous detailed planning required in the DEPZ). Unlike the DEPZ, the OPZ is not used by ONR as a land use planning zone and ONR does not consider the impact of a proposed development on outline planning. The OPZ was introduced in REPPIR19 and did not exist in REPPIR01. As such the OPZ could not have been included in CS8 at the time it was written.
88. The OCZ is an ONR land use planning zone only and was created by ONR after implementation of CS8. The ONR’s current land use planning website [Exhibit GI7] describes the OCZ as extending from the perimeter of the DEPZ out to a distance defined by ONR from the centre point of the site. In the OCZ, ONR requests consultation on any new residential development of 200 dwellings or greater or any re-use or re-classification of an existing development that will lead to a material increase in the size of an existing development (greater than 500 persons). These consultation criteria are congruent with consultation criteria for the ‘outer zone’ described in CS8.

89. There is no concept of an OCZ in REPP19 and no requirement to produce any form of emergency plan for it. The OCZ is larger than the DEPZ for AWE(B) everywhere, except for a DEPZ salient near Spencer's Wood. Consequently, the OSEP does not cover the full extent of the OCZ (only those parts of the OCZ that are also within the DEPZ).

Statement of Truth

I believe that the facts stated in this witness statement are true. I understand that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth.

Signed:

A handwritten signature in black ink, appearing to read 'G. Ingham', written in a cursive style.

Dated:

07 December 2023