



Office for
Nuclear Regulation

ONR Report

Rebuttal Proof of Evidence Monitoring

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Monitoring

Appeal Details	
Application Reference No.	22/00244/FULEXT
Appeal Reference No.	APP/W0340/W/22/3312261
Local Planning Authority	West Berkshire Council
Location	Land to the rear of the Hollies, Burghfield
Proposal	The erection of 32 dwellings including affordable housing, parking and landscaping. Access via Regis Manor Road.

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List of Abbreviations

AWE(B)	Atomic Weapons Establishment Burghfield
DEPZ	Detailed Emergency Planning Zone
NPPF	National Planning Policy Framework
ONR	Office for Nuclear Regulation
OSEP	Off-Site Emergency Plan
REPPIR01	Radiation (Emergency Preparedness and Public Information) Regulations 2001
REPPIR19	Radiation (Emergency Preparedness and Public Information) Regulations 2019

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1. Introduction

1.1. Purpose and Scope of Evidence

1. I have prepared this Rebuttal Proof of Evidence in response to the evidence submitted by Dr Michael Thorne acting on behalf of the Appellant.
2. For the avoidance of doubt, I continue to rely upon my main Proof of Evidence and its other submissions. This Rebuttal Evidence does not address every point of disagreement, but identifies those points where I consider that it may assist the Inspector to have a response in writing to some of the points raised by Dr Thorne's evidence before the start of the inquiry.

2. Rebuttal

2.1. Monitoring

3. Dr Thorne's Proof of Evidence [CD 23.4] sets out how Dr Thorne considers radiation monitoring might be conducted as part of the emergency response to a radiation emergency at the Atomic Weapon Establishment (Burghfield) ("AWE(B)").
4. Dr Thorne concludes that atmospheric dispersion computer models could be used instead of comprehensive environmental radiation monitoring to inform a decision on the lifting of sheltering. He states:

"In respect of determining on-going requirements for sheltering, the primary information on the dispersion of radioactivity will come from retrodictive atmospheric dispersion modelling coupled with information on the time course of release of radioactivity from the source."
5. Dr Thorne also states that:

"... disruption of residents of the development in the period following the initial phase of a radiation emergency at AWE Burghfield should be minimal."
6. This is contrary to the analysis of UKHSA, which leads on monitoring coordination for radiation emergencies. UKHSA has confirmed that there are limitations to computer models and that radiation monitoring would be used to inform decision-making on the lifting of sheltering [CD 24.11¹]. It has also confirmed that residents may be relocated out of an area while that area is monitored and assessed. It states:

"It should be noted that advice to continue to shelter would remain in place whilst the extent and levels of residual contamination hazard are determined and for up to 48 hours. UKHSA would not advise lifting of sheltering immediately after the plume has passed. Upwind areas will still require positive confirmation that they are not contaminated as local weather do not always match prediction models. The scale of the release may be different to the one used in the consequences report so it will take time to confirm the impacts. Monitoring of residual contamination levels and assessment of risks to the public from this contamination takes hours to days to provide sufficient data to inform decision making on lifting of sheltering. As such a decision may be made to advise members of the public move out of any area that requires further monitoring and possible decontamination."
7. Dr Thorne's conclusion in the case of people monitoring is that decision-makers could forego the collection and assessment of all but limited radiation monitoring

¹ Appendix 10

data and make significant public protection decisions on the basis of other factors. He states

“... any actual monitoring would be primarily for reassurance purposes and would not be a significant factor in decision making”

8. ONR would attend the Scientific and Technical Advisory Cell, where scientific advice is generated, and the Strategic Coordination Group, where decisions are made, as part of any response to a radiation emergency. ONR has extensive experience with statutory exercises and responses to real emergencies. Putting aside the fact that reassurance is a significant part of any response to a radiation emergency, ONR would expect the findings from radiation monitoring to be a significant and essential factor in decision-making. My view is supported by a variety of sources:
 - a. The Nuclear Emergency Planning and Response Guidance [CD 12.20] states that:

“Radiation monitoring during a nuclear emergency would play an important role in providing an input to decision-making and in the provision of information to the public and to official bodies. Monitoring undertaken might relate to the immediate impact of the emergency on people and the potential future impact resulting from environmental contamination. Initial information provision will be based on prediction in light of the likely limited hazard data available but, as more data is gathered, assessments must be updated quickly and communicated consistently.”
 - b. The Chief Nuclear Inspector’s report into Fukushima [CD 12.15] states that:

“Radiation monitoring during and after a nuclear emergency plays an important role in providing an input to decision-making and in the provision of information to the public and to official bodies. Monitoring undertaken might relate to the immediate impact of the accident on people and the potential future impact resulting from environmental contamination Furthermore reliable monitoring results are likely to inform decisions on changes to countermeasure advice.”
 - c. UKHSA, responding directly to similar views made in support of another proposed development in the DEPZ, [CD 24.11²] stated that:

“Previous emergencies have demonstrated the need to have a suitably large volume of measurements to have sufficient statistical evidence of levels.”
 - d. UKHSA, in the same report, stated that:

² Appendix 10

“... there will be a significant impact on responders providing both environmental and people monitoring even if only to provide reassurance.”

9. Dr Thorne acknowledges the difficulty of monitoring the principal radionuclide released which might be released in the event of a radiation emergency at AWE(B). He states

“The relevant radioisotopes of plutonium (mainly Pu-239 and Pu-240) are difficult to monitor.”
10. ONR agrees with this statement. This is one of the intrinsic challenges posed by the nature of the radiation emergency at AWE(B) as described in my Proof of Evidence.
11. However, Dr Thorne’s proposed remedy to this challenge is to substantially reduce the level of radiation monitoring afforded in the OSEP to an extent that decision-makers can no longer rely on it to inform their decision-making.
12. This is not appropriate: radiation monitoring verifies that the progression of the radiation emergency falls within the modelling and analysis underpinning the OSEP. It further has an essential role in providing reassurance to the public and to government.
13. One of the reasons ONR has advised against the Proposed Development is because of its concern that the outcome proposed by Dr Thorne might happen: that a core radiation emergency response capability will not be delivered and there will be an associated degradation of the level of protection afforded to the entirety of public living or working in the AWE(B) DEPZ.
14. In my view, a solution which advocates the use of a desk based modelling rather than seeking robust volumes of actual, confirmatory monitoring data in the circumstances of a nuclear emergency in order to mitigate the effects of introducing further development in the DEPZ would not be appropriate. Such a solution neither aligns with national guidance, UKHSA advice, nor relevant good practice. Consequently, it is highly likely that ONR would judge such an approach to be inadequate.