

Public Perception of a Low Level Radioactive Waste Facility Proposal : A Case Study during a Planning Application

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INTRODUCTION

The announcement that the company running a hazardous waste site near King's Cliffe in Northamptonshire, UK, wished to apply for a new license at the site to include low level radioactive waste was greeted with immediate local public opposition.

The proposal was to accept radioactive waste in the lower part of the Low Level Waste (LLW) band, limited to containers with a surface dose-rate of less than $10 \mu\text{Sv}\cdot\text{hr}^{-1}$, which would be placed in a pit with an impermeable lining, covered with soil, and ultimately sealed with an impermeable lining forming a sealed cell, and earth bund.

This poster reviews the issues relating to radiation risk raised by the public and the implications for similar future proposals.

CONCERNS RAISED

1. Knowledge of the Range of Radiation Doses and Risks

Many objections raised by the public appeared to equate the likely risks associated with this proposal to the risks from much higher amounts of radioactivity. Such lack of awareness of the wide range of radiation effects has been demonstrated before, both in the public, and in experts, such as medical doctors when asked about the risks from medical x-rays.

In this case, it led the public to expect the standards of Medium Level and Intermediate Level Waste Depositories to be applied to this site.



2. Concern about Low Radioactive Risks

There was also concern that no level of radioactivity was safe. In part, no comparison was made to the risks of everyday living. In addition, the linear no-threshold theory of radiation safety gives the authorities difficulty in describing the very low risks associated with very low levels of radioactivity, as can be seen from the following statement by the pressure group, King's Cliffe Wastewatchers to the Inquiry :-

"We will refer to evidence from Government, and other, documents, to show official and public concern over the safety of this material. We will point out that the EA confirms there will be health effects resulting from it, and question its assumption that these are of no consequence to those living near to the site. We would also argue that these doubts are sufficient to constitute an 'objective' perception of harm."

3. Mistrust of the Operator

Many submissions centred around whether the operator would perform the work to the required standard, and would ensure that the accepted waste was within the agreed limits, and therefore there would be leaks of radioactivity in the air, and to watercourses.

4. Mistrust of the Regulator

The comments of the King's Cliffe Wastewatchers extended to concern that the Environment Agency would not monitor the site sufficiently.

"Independent monitoring is in the hands of the regulator - the Environment Agency. We shall question the independence of this body, and also the desirability of an organisation being solely responsible for the external monitoring of systems that it helped set up, and which it authorised."

5. Worst Case Scenarios

There was concern that the potential for accidents and other incidents had not been adequately considered in the assessment of the safety of the site, either by the operator or the regulatory authorities.

"Given this concern we are unconvinced by the tone and content of the risk assessment, which we believe errs too much on the side of risk denial. We shall look at individual examples to see how far they cover expected, and unexpected, eventualities." (King' Cliffe Wastewatchers, 2010).

6. Thin End of the Wedge ?

A final reason for local opposition was that the application would be the thin end of the wedge, making it easier for the operator to apply to extend the lifetime of the site, or to accept waste of higher radioactivity.

DISCUSSION

The difference between the risk perception of the public and experts matches previous observations on risk perception which suggest that the public are more likely to object to risks that are imposed, not under their control, man-made, unfamiliar and where there is no benefit.

Although the population, in general, benefits from the uses of radiation which generate the radioactive waste, the fact that the waste would not be generated locally was a strong reason for objection.

It was clear from the objections that there was little appreciation of the wide range of radioactivity and radiation dose, and confusion between the risk from high level radioactive waste and the much lower risk from the type of low level radioactive waste for which application was sought. This is similar to previous studies, including those which considered the different perception of experts and the public.

But it has been shown that there is a range of public perception of risk, which raises the question of whether the representation at the Public Inquiry was representative of the public as a whole. Certainly the inspector raised this question in his report :-

"Is Wastewatchers' evidence fairly representative of community opinion? There is no membership and it appears to be a loose association of a small number of individuals, with a possible core group of 10-12 people living mainly in King's Cliffe, most of whom have given evidence at the inquiry."

A significant contributory factor is the concern for potential accidents releasing radioactive contamination.



CONCLUSIONS

The application to dispose of radioactive waste was strongly opposed by members of the local population. Many were cautious and even fearful of radiation and radioactivity, but it was apparent that this was not based on awareness and assessment of the wide range of activities and doses.

Raising awareness and knowledge of radioactivity is an important pre-requisite for public acceptance of radioactive waste disposal.

The polarised reaction to the Consultation process in this case suggests that it is already too late to influence local opposition, once a proposal has been submitted. A general and national campaign to improve awareness may have more chance of success.

The development and awareness of national policy regarding the use of radioactivity and the necessary disposal of any waste in advance of any proposal would be helpful. However, this review suggests that local residents will always consider local issues more important than national strategy, especially where there is little benefit to the local population, as in this case.