

Final comments by Professors Smythe and Haszeldine to the DMBs ahead of the 30 January decisions

This note is brief, as we know that you will have to consider many representations ahead of the vote next Wednesday. We are two genuinely independent expert earth scientists, who have studied the problem, without funding, and in our own time, because we do not like to see the findings of earth science in this application either ignored or distorted. Our views are based on public domain research largely carried out by Nirex, the British Geological Survey (BGS), the NDA and ourselves.

The Decision and the Process

You have to balance the potential benefits of further studies and investigations, against the certain disbenefits of disruptive site investigations, the uncertain employment of local staff, an unclear package of community benefits, and the immense impact of construction, should a GDF be constructed. Yet it is now clear that what is to be decided, and why, has a different rationale.

We assert that a desk-study of geology envisaged by MRWS-4 has already been undertaken by us, and no promising areas are apparent. It is clear from letters written by Minister Verma to CALC, to the LDNPA and by direct statements to us that central government (DECC) immediately intends to move through MRWS-4, should a “yes” vote be obtained, and commence invasive investigations of MRWS-5. From the evidence to Cumbria MP’s (10 Jan 2013), we know that NDA intends to commit £50 million to this before end 2018. That will bring in specialist teams, not local employment. You are being asked to vote for 4 but will get 5. This is not what has been put to the electorate during the MRWS dialogue, and is a huge investigation of one UK region, when other regions have deliberately not been considered. DECC is forcing Cumbria through, not debating.

The Right of Withdrawal is very unclear. There is still no legal contract. There is a statement of intent to make a RoW “legally binding”. But compare a Westminster legislative timescale to DECC’s intent to “move faster” through to MRWS-5 and beyond, and there is the distinct probability that you will be faced with decisions on invasive surveying and drilling, before a RoW agreement has been concluded. Several of you may have been personally contacted by Minister Verma or other Westminster officials during the past few days. She is, of course, an experienced and adept Party Whip. Whatever has been said in public, it appears that

DECC and NDA are bringing a huge pressure to bear on those of you in the DMB with the responsibility. Imagine how much more pressure will be exerted when tens of millions have been committed. By moving forward now, how can you defend against the inevitability of MRWS-6, the full excavation, being forced upon you? Are you representing DECC, or representing the local communities who voted for you? And many voters in those communities and parishes have clearly opposed being part of this process.

Geology

We have won the geological argument, which is that *nowhere within the Partnership area is suitable for a Geological Disposal Facility (GDF)*. No substantive arguments have been produced to challenge or refute our claim, which is founded upon several hundred pages of technical evidence submitted to the MRWS consultation. The fact that such detailed evidence has not been properly assessed is alone a ground for a judicial review.

Bruce McKirdy (Managing Director of the NDA’s Radioactive Waste Management Directorate) claims that “*many geologists*” agree that there are “*reasonable prospects*” of finding suitable geology. But the NDA is purposefully vague; it quote no names, refuses to name sites and, in any case, science does not progress by simple head-counts of For or Against. It is the force of argument and evidence that matter. In contrast, the Nirex Inspector, his Assessor, and even the MRWS consultant Dr Jeremy Dearlove all publicly concede that the likelihood of finding a site in the MRWS Partnership area is, at best, low.

The alleged support for proceeding to Stage 4, solicited by MRWS from the Geological Society of London (GSL) is misleading, because firstly, the Geological Society neither supports nor even comments on specific proposals (we have checked this with the Geological Society Policy Officer). Second, the statement merely says that it is possible to know more information about West Cumbria. That statement can be made about any geological site on Earth. Third, that statement does not represent the views of the 10,000 Fellows of the Society. The statement was prepared by a so-called ‘contact group’ of just three geologists, and not put out for prior consultation, as was normally the case. The group

of three comprised a BGS board member, and two BGS geologists – formerly consultants to Nirex and NDA.

So the Geological Society of London ‘support’ is in reality the BGS expressing its view. In this matter, the BGS is not impartial, as it has contracts worth many millions of pounds to gain by the process continuing. Furthermore, the head of the BGS nuclear waste research group has stated in 2012 on BBC Radio Cumbria, that West Cumbria “*offers potential*”, it is clear that the impartiality of the BGS is already compromised.

In our evidence-based professional opinion, all of Cumbria is unsuitable for secure disposal of radioactive waste because: i) the geology is complex, and fractured, this is not predictable; ii) the deep groundwater flow moves upwards, this is the opposite of containment; iii) the NDA states that more measurements will solve the problems, that did not happen with Nirex in 1997.

Engineered Barriers

The NDA places great faith in engineered containment of radioactivity, so that the geology does not need to. In Cumbria, the NDA has specifically admitted that a GDF will be more difficult and expensive to develop, with greater reliance on engineered containment, because of the poor geology. This is unlike the strategy in any other nation. An example of how flawed this engineering can be is to understand that the KBS-3 multi-layer barrier approach adopted by NDA originated in Sweden, in 1976, with copper canisters specifically to contain radioactive iodine. But recent research, by an unfunded independent university, has shown that the copper can corrode in a few hundred or a thousand years. The Swedish waste company application to the regulators for approval to develop a GDF was rejected last October. Either NDA knows this, and is not explaining it, or NDA is out of touch with global developments. Thirty-five years of research have now to be rethought from the bottom up.

Voluntarism

MRWS has placed voluntarism of the local elected members above democracy from the residents, and above a geologically-led search. All other countries, except Canada, have placed geology first by undertaking a national survey for suitable GDF regions. Canada did not undertake a national survey (understandable, since Canada is 60 times bigger than England and Wales), but their voluntarism screening includes a tough assessment of potential

geological suitability; such standards applied to West Cumbria would mean an immediate rejection of Copeland and Allerdale.

Ten years ago Nirex costed a geological desk study of the entire UK, at about £5.7M (at today’s values) and taking two years. So DECC’s assertion that a survey of the entire UK would be too costly is false. Since the Partnership area comprises 1% of the UK’s landmass, it is evident that the desk study of West Cumbria could be completed in a few weeks, for a few tens of thousands of pounds. Why has this not been done?

Desk studies of suitable geology have been carried out three times in the UK by the BGS without breaking the bank. The last, in 2006, was never published, even though it was used as the basis for a joint Nirex/BGS statement that “*rather more than the previously determined 30% proportion of the UK landmass*” is potentially suitable for geological radwaste disposal. Since this statement underpins government policy that geological disposal is the way forward for the UK, the fact that the evidence has been withheld (the relevant maps, according to a response to an FOI request to NDA, are said ‘not to exist’), is irrational and perverse.

It is obvious that many of the resident public are not volunteers. The two main petitions now total in excess of 20,000 signatories. Demonstrations have been well attended, and newspapers columns are active. Will this concern decrease when survey-trucks and drill-rigs roll in? Is this ‘credible’ local support, in the terms of the MRWS White Paper?

The National Park

Many expert and public commentators have noticed that the majority of the NDA search area incorporates the National Park, and that this is deliberate. Is the NDA naive? This is one of the most highly valued rural landscapes in the world, and a firestorm of protest is just starting to emerge, led by the multi-billion tourist industry. If you agree to the precedent of Government sanctioned industrial development of the Park, even for the best of motives, then no region in the UK can be protected.

Councillors in the Boroughs have a duty to protect and to enhance the Park, not to conspire in its industrial development. The scenarios we have publicised about site investigation and

development are not scaremongering or exaggeration; they are taken directly from NDA reports on GDF surveying, design and development. We also know that NDA has deliberately kept its ownership of Longlands Farm since 1997; that this land can form the entrance to a 10-15 km tunnel access to beneath the central Lake District; and that diagrams published by BGS would fit perfectly as extracts from a larger tunnel plan. Yet the NDA's own chief geological consultant has shown clearly that such sites are not viable – because of the complex geology and the return of deep groundwater from a GDF to the surface.

Pre-Determination

In 1997, at a point equivalent to MRWS-6, the Nirex application was overturned by Planning Inquiry. At that time Cumbria CC was a leading Objector to the proposition. The Inspector's conclusion, re-iterated to MRWS in 2012, was that the choice of west Cumbria was irrational, the region shows very little geological promise, and that future investigations should be directed elsewhere. In the intervening years DTI, then DECC, has failed to make those investigations, or to engage seriously with other potential volunteer communities. Instead, what has occurred is substantial planning of a political process, with contract reports to Nirex, then NDA, and carefully phased roll-out of an MRWS strategy which deliberately keeps everything vague for as long as possible. This is not a good procedure for Cumbria - politically pilloried to take the UK's waste - and not a good procedure for the UK – where is the backup plan to discover a GDF region? The retention of Longlands Farm, and the combination of MRWS-4 into MRWS-5 are the clearest examples that Government makes the rules. Where does that leave your RoW? Predetermination is a reasonable explanation for so many perverse actions by government and its agencies since 1997.

Options and Recommendations

Even with the most optimistic timelines, for a GDF, much legacy waste remains inadequately processed and packaged at Sellafield. Safe surface storage at Sellafield must be developed now.

A central tenet of the engineered barrier approach has been shown to be flawed. The NDA has to embark on a fresh programme of research on engineered barriers, while at the same time DECC must fund a long-term, careful study to find a variety of geological sites in the UK that really have potential. This is what has happened internationally. In Switzerland and France, the high quality of radioactivity retention by a good geological site

means that the engineered barriers assume much less importance. The process of identifying a site cannot be rushed. It may require 20-25 years.

We urge you decisively to reject Stage 4, and leave MRWS. However, if some Councillors remain unpersuaded by our arguments, then you should at the very least demand another delay, of 12 months. Within that time frame DECC must provide:

- The legally-binding Right of Withdrawal that you have already requested,
- Significant funding (£1 million) for independent scientific and performance reviews of Cumbria, undertaken by organisations which do not benefit from UK policy or actions on a GDF.
- Substantive evidence (which we would expect to run to at least a hundred pages of technical detail) that some or all of our geological arguments are unfounded,
- A precise and legally-watertight definition of what exactly constitutes a 'community', since it is clear that the current DMBs do not represent the wishes of various local communities that stand to be affected by their decisions.
- A set of publicly understandable and numerical definitions, by which to assess a 'good' potential site – and by implication the criteria by which a candidate site would 'fail'.
- A number of rival candidate regions for a GDF in the UK, selected by geology

If you are minded to proceed, on the basis of local jobs and benefits, then we suggest that much better knowledge is needed of how many jobs, for whom, and when? What type of local benefits are envisaged, and how do those differ from the benefits necessary for the GDF? Will local Partnerships be funded to obtain genuinely independent advice ?

Various documents, including why Canada's voluntarism is not applicable to the UK, the BBC radio broadcast transcript, the KBS-3 barrier problem, the Cumbria MP's inquiry, and illustrated presentations, etc., can be found here:

Smythe:

<http://www.davidsmythe.org/nuclear/documents.htm>

Haszeldine :

<http://www.geos.ed.ac.uk/homes/rsh>