

**Response to DECC consultation:
Review of the Siting Process for a Geological Disposal Facility
September 2013**

by
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December 2013

1. Introduction

1.1 I have been intermittently concerned with UK nuclear waste disposal since the mid 1970s, when as an officer of the British Geological Survey (BGS) I was asked to check out a list of low-lying islands west of Scotland as to their suitability for a geological disposal facility (GDF). I sat on a British Nuclear Fuels Ltd (BNFL) Geological Review Panel, then carried out a major seismic project for Nirex at Longlands Farm in 1994, and was an expert witness for Friends of the Earth at the Nirex planning inquiry of 1995-96. I have since submitted responses to various consultations, including the West Cumbria MRWS Partnership consultation of 2012. My evidence about the unsuitability of West Cumbrian geology for hosting a GDF helped to persuade Cumbria County Council (CCC) not to proceed further in the MRWS process.

1.2 Note: Previous electronic submissions of mine appear to have been printed out, then re-scanned with poor quality, thus rendering them partially illegible when made available on DECC's website. I presume that this process reflects merely incompetence on DECC's part and not an overt desire to suppress my submissions.

1.3 For the record, DECC's incompetence at running the consultation extends to misquoting the email address to which responses are to be sent. The email address on page 58 is given as radioactivewaste@decc.gov.uk, whereas it should have been radioactivewaste@decc.gsi.gov.uk.

1.4 Also for the record, as of midday 5 December 2013, the two DECC websites were still indicating a deadline of 11.45pm on that day, even though the deadline had been extended to 19 December to attempt to compensate for DECC's incompetence in providing an erroneous email address.

Summary: DECC displays an unusual degree of incompetence in running this and

previous consultations.

2. Reason for this response

2.1 It will be evident from the evidence presented herein that DECC is not listening to consultation comments. Nor does it heed the advice of its own scientists and respected scientific institutions such as the Royal Society. My evidence shows that predetermination is at play, in the government's drive to ensure a return to GDF siting in West Cumbria.

2.2 I am only going to the trouble of continuing to present rational argument and scientific evidence in the hope and expectation that at some stage a legal challenge into the government's actions and intentions around a GDF will be held. This may take the form of a UK Judicial Review; it might end up being a Brussels legal process. Presentation of the evidence will prevent the current or any future government from claiming that it did not know the facts.

2.3 For the avoidance of doubt, this response should be considered along with:

- my response to the Call for Evidence consultation of 2013,
- my response to West Cumbria MRWS in March 2012 entitled *Why a deep nuclear waste repository should not be sited in Cumbria*,
- my slideshow *The volunteer process of site selection for radwaste disposal in Canada* (January 2013), and
- my slideshow *The Ennerdale granite: Implications of a nuclear waste repository development* (January 2013);

all available on my website

Summary: DECC is ignoring rational argument and evidence in its efforts to get a GDF sited in West Cumbria. This irrational policy, if continued, will inevitably lead to a legal challenge.

3. Chronology of evidence for determinism

3.1 The current consultation exercise is yet another piece of evidence that DECC and its predecessor Defra has taken a number of decisions that, taken together, reveal the intent of returning the search for a nuclear waste geological disposal facility (GDF) in West Cumbria and nowhere else. Here I review the facts, in historical order from 1997 to date.

3.2 The Secretary of State for the Environment followed the Inspector's recommendation that Nirex's appeal be dismissed, in March 1997. His successor, after the national elections, stated that Nirex had "*no plans to investigate any other sites*".

3.3 Nirex published a series of science volumes collectively termed *Nirex 97* in 1997 and 1998, updating *Nirex 95*, which was used at the Inquiry. Although CCC refused Nirex permission to keep the Longlands Farm boreholes open in 1999, we see here the start of a predetermined plan to return to Sellafield eventually.

3.4 During the period 1997-2001 the government indirectly supported, through BNFL as a shareholder in Pangaea, the concept of a 'world' nuclear waste repository, to be sited in Western Australia.

3.5 During the period 1997-2005 the BGS undertook no research whatsoever into UK geological disposal of radwaste. Its annual reports for the period show that all its radwaste work was devoted to international generic collaborations. The large Nirex-funded team was wound down and many BGS staff were dismissed.

3.6 The RSRAE report of 1998 called for "*an organisation, independent both of government and of the nuclear industry, tasked with identifying possible sites, and with the resources to commission relevant research.*" The House of Lords Science and Technology Committee Third Report of 1999 recommended that:

"the first phase of site selection ... would consist of establishing qualitative criteria and using them with desk studies to identify a "long list" of, say, 15-20 potentially suitable sites. The criteria at this stage would be primarily, but not exclusively, geological and hydrogeological ... The final list of sites for field investigation would be derived by consultation or by using a volunteering approach"

3.7 By 2000 all of the Nirex planning inquiry papers had been removed from the Nirex website. They have never been made available elsewhere, excepting on my website. This is evidence of a desire to bury the past and not to learn from history.

3.8 A Nirex technical note on voluntarism, dated September 2000, but which doubtless helped formulate the voluntarist process, was not referenced in the MRWS consultation document of September 2001.

3.9 The MRWS consultation document of September 2001 made no reference either to systematic site selection, as recommended by the two learned societies and by the House of Lords, or to site search, but concentrated purely on voluntarism. Despite its claim to offer transparency, this document tried to hide the fact that the Longlands Farm development failed on scientific grounds.

3.10 The committee that was subsequently set up, CoRWM (in retrospect termed CoRWM-1), comprised social scientists and their ilk, but excluded earth scientists. Given that a government will never embark upon a policy for which it has no idea of the outcome, and given that the local council for Sellafield would be bound to volunteer, it can be argued that this new strategy is evidence of predetermination, i.e. of returning to Sellafield *via* a 'voluntarist' process, and thus sidestepping the fundamental scientific problems raised at the Nirex inquiry.

3.11 Another interim report by Nirex, a draft dated July 2003, was suppressed. This excellent report discussed how to identify regions and districts, then move to the assessment of potentially suitable sites; it even supplied costs and timescales. A systematic national survey, followed by a desk-based evaluation of 15 sites, then by surface-based evaluation of three sites, would cost £491M (£678M in 2013, allowing for inflation). The initial national survey would cost £5M, and desk-based evaluation of 15 promising sites thus selected £40M, at today's prices. This report is the only governmental mention since the 1980s of systematic piecewise geological searches.

3.12 CoRWM-1 started work in November 2003. Nirex presented its 2000 voluntarist report to the committee, in a marginally updated form, in February 2004. This new overriding policy of so-called 'community voluntarism' was fed to CoRWM-1 ostensibly as a means of circumventing the difficult political decisions involved in persuading affected members of the public to accept a deep waste repository.

3.13 An anonymous, annotated Nirex report dated October 2004 is available at the Cabinet Office website. It anticipated possible outcomes to the CoRWM-1 deliberations, by recommending action a good 18 months in advance of the CoRWM final report. The aim was to push for geological disposal. It contains recommendations on how to target MPs, and includes a detailed compilation of parliamentary questions. The overall flavour of the document can be summarised by the following extracts:

- "The purpose and aim is to enable our target groups to realise that ... **'our' way is the best way forward**, otherwise there can be no future development of the nuclear industry."
- "We have to be sure that **'opinion leaders are carefully recruited and groomed'**"
- "**'isolate or convince those MPs who are against'**"
- "Investigate ways of **using other organisations** e.g. BGS, Geological Society ..."

[my emboldening]

3.14 This document reveals how the Nirex thinking of the time was more about PR manipulation, worthy of big tobacco, than about transparent science. For example, Nirex hoped that the nuclear waste inventory - a fundamental parameter in any disposal options - should "*hopefully*" be kept secret. The BGS and the Geological Society of London were indeed 'used', as Nirex put it above, in later phases of the MRWS process.

3.15 The December 2004 report by the House of Lords Science and Technology Committee was highly critical of CoRWM. Failures included its unreasonably broad remit, and lack of physical scientists or engineers on the committee. The Science and Technology committee was chaired by Lord Oxburgh, an eminent geologist. It said that too much reliance was placed on the advice of its contractors - in practice this meant Nirex.

3.16 In 2005 Nirex published a review of the site selection process that led to the selection of Longlands Farm. At the same time the previously secret list of 537 potential sites was released - but only in an online searchable form, county by county. Despite this review purportedly being in the interests of transparency, it misleads in various ways, for example, in trying to disguise the fact that the final site was never in the original list. I have discussed the evasions and manipulations of this so-called 'transparent' report in more detail elsewhere.

3.17 In late 2005 a Nirex 'viability' report claimed that the *Nirex 97* set of science documents, issued after the end of the 1995-96 Planning Inquiry, had solved many of the problems discovered by the Objectors at the Inquiry itself, and that the outcome of the Inquiry might have been different, had *Nirex 97* been available in time. This assertion, which implies that the Longlands Farm locality is indeed suitable, is not true, as the Inspector himself has since pointed out. The viability report advocated a return to West Cumbria, on the basis of the supposedly improved science represented by *Nirex 97*. This is discussed further below.

3.18 The 2005 Nirex 'viability' report further claimed support from the BGS:

"Based on the results of this work, we believe that Sellafield is a potentially suitable site for a repository. This view is shared by the British Geological Survey (BGS) and many other specialist consultants." [my underlining].

As a result of Fol inquiries I ascertained that the alleged support for Sellafield, according to the NDA, comprised hearsay memory of a speech by the director of the BGS in 2002, of which there is no written record. Records of other claimed instances of support by the BGS, cited by the NDA, do not exist. It is all hearsay. The BGS stated that there is no written record of any such view. It would appear that the NDA is inventing scientific support for Sellafield where none exists.

3.19 The BGS published a 'brine repository' report in January 2006, funded by Nirex (so presumably some of the work on this started in 2005). Four of the five facets of the 'work package' were devoted to new detailed analyses of existing Nirex offshore data at Sellafield. The fifth work package, almost as an afterthought, comprised a summary compilation of rather out-of-date information from the rest of the UK and offshore. The disclaimer that:

"The use by Nirex of Sellafield as an illustration of the dense brine concept is based solely on the fact that there is existing information on which to base the studies and does not indicate or imply that the site has been selected for detailed consideration as a potential site for an actual repository."

might have been credible if significant new research had been undertaken other than offshore West Cumbria.

3.20 In March 2006 the BGS, commissioned by Nirex, reported that it was finalising a report into the suitability of UK rock formations for hosting nuclear wastes. A joint BGS/Nirex statement, amounting to one page of text, asserted that:

"it can be concluded that rather more than the previously determined 30% proportion of the UK land mass would provide a potentially suitable geological setting for a repository".

This statement became the sole geological justification for deep disposal quoted in the 2008 MRWS White Paper. The anticipated research report, due to be finalised by late 2006, was never published.

3.21 Longlands Farm was transferred to the NDA from BNFL in 2006, even though the CEO of Nirex promised in 1997 that it would be sold. NDA currently holds the mineral rights to the property.

3.22 The CoRWM-1 report was published in July 2006. It recommended geological disposal, but only for existing wastes - it was not a 'green light' for new build. It also recommended a robust programme of interim storage.

3.23 In December 2006 the BGS published a cartoon diagram showing that mountainous terrain was "favourable" for siting a GDF. This ridiculous suggestion, contrary to all international guidelines on safe GDF siting, appears to have only one possible area of application within England and Wales – the western Lake District mountains, such as Ennerdale Fell, inland from Sellafield. No further details were subsequently published by the BGS.

3.24 Nirex was merged in the NDA in April 2007. The personnel and policies of Nirex

continue under the new name.

3.25 CoRWM-1 was reconstituted in 2007 as CoRWM-2, with new membership including two geologists. Its remit included scrutiny of plans for geological disposal. But as a scrutineer of this aspect it failed dismally, taking the 'three wise monkeys' approach to geology - 'we don't yet know enough'. CoRWM-2 can be added to the list of pseudo-scientific doubters such as the tobacco lobby and climate change deniers, all related by their practice of agnotology.

3.26 From 2008 onwards a Nuclear Influencing Strategy Workshop was held regularly in Cumbria. Membership included representatives of CCC, CBC, ABC, the NDA and other union and business interests. The minutes of 15 January 2008 state:

"22. No consensus on how/when to play trump card - that West Cumbria has a community willing to host high level repository, but perhaps only if we get new build and socio economic money follows to benefit community. This does of course assume that no other communities are equally willing!"

This statement, made six months before the Defra White Paper was published, shows that Copeland and Allerdale had predetermined the siting of a GDF.

3.27 In the Defra White Paper of June 2008, the CoRWM-1 recommendations of geological disposal for existing waste only, and the programme of robust interim storage were both ignored. Furthermore, the GDF is now to house high-level as well as intermediate level waste. The lack of sound geological basis for deep disposal is discussed in my response to the Call for Evidence consultation of 2013, section 2.

3.28 In June 2012 the West Cumbria MRWS grouping misrepresented a submission as emanating from the Geological Society of London. In fact the three-man submission comprised two BGS employees present in an official capacity, plus a BGS board member. The GSL secretary who convened the meeting is a former BGS and NERC employee. In short, the alleged GSL submission was from the BGS in covert form. The two BGS employees were there in official time, so it is incorrect for the BGS to claim that they were somehow acting 'independently'.

3.29 DECC has misrepresented the findings of the last Call for Evidence consultation that it called for, following the withdrawal from the MRWS process by CCC. Details are provided in section 6 below. The present consultation now proposes that county councils be excluded from the decision process, and that the decision-making body be the district council. This is clearly aimed at cutting CCC out of the decision process.

3.30 The UK research council NERC has awarded a total of £2.3M in research funding, to run from autumn 2013 for 3 or 4 years, to a consortium of three universities, for the study of hydromechanical and biogeochemical processes in 'hard' GDF host rock. There is no funding for research into clay host rocks. This reveals the government's intention to concentrate on hard rock sites, whereas the trend in international site searches now favours clay sites (or salt, if available). In England the only hard rock in play comprises either basement below sedimentary cover (BUSC), or the exposed hard rocks of the Cumbrian mountains. It should be recalled that Longlands Farm was not a true BUSC site, but used a distortion of the concept. BUSC is now out of favour because the fact that the hard rock is hidden from view (by definition) introduces too many uncertainties. This is the position that Canada has taken. So the research funding appears to be pointing towards

West Cumbria once again.

3.31 On 10 December Michael Fallon, Minister for Energy, gave evidence to the House of Lords Select Committee on Science and Technology. He said:

"I think the district council is the best-placed democratic body because of the impact on jobs and on the local economy. I think it is best assessed at district council level. Some counties are extremely large and, as I said before, there are parts of Cumbria County Council that simply would not have been affected at all and had no direct interest in it. My instinct is that the district council is the right level. As you asked us to do and you would expect us to do, we have been consulting on all this. That consultation has now closed and we will now publish our response and set out a way forward."

This was in the context of a discussion about the 'veto' that CCC had applied. The minister wrongly stated that the consultation had ended (para. 1.4 above). His comment implies that he has already made up his mind about cutting the county council out of the process.

Summary: DECC and its predecessors have for the last 15 years been engaged in a covert campaign to revive the idea of a GDF near to Sellafield. There is no evidence whatsoever of government being genuinely interested in finding a GDF elsewhere.

4. Geology

4.1 In March 2006 a one-page assertion was jointly published by the BGS and Nirex, which stated that:

"rather more than the previously determined 30% proportion of the UK land mass would provide a potentially suitable geological setting for a repository"

The "previously determined" figure of 30% must refer back to the 1986 BGS published exercise, since no such survey had been undertaken between 1986 and 2006. The 1986 study identified just one potential rock type in Cumbria – Permian sediments found in a narrow coastal strip of West Cumbria and in an oval area near Carlisle. This formation was believed at the time to host anhydrite layers (a potentially good GDF host rock), but Nirex and oil industry drilling later proved that any such layers were too thin to be of use. So the two potential sites in West Cumbria which had been selected on the presumption of adequately thick anhydrite – Sellafield and Anthorn – were both discarded. It was after this discovery that the defunct 'Sellafield' option was then revived at a late stage in the site selection process, by distortion of the general criteria for suitable generic hydrogeological environments. The final choice of Sellafield resulted in the fiasco of the Longlands Farm research into a hard rock-hosted GDF during the period 1982-1995.

4.2 Therefore the 2006 unpublished BGS study must exclude West Cumbria, since there are no suitable rock formations and environments. The geological reviews presented to the 2012 MRWS consultation by myself and Professor Haszeldine, totalling some 190 pages of text and figures, confirm that this is the case. There are no suitable host formations with the appropriate hydrogeological environment in West Cumbria. Our conclusions have never been challenged.

4.3 My detailed examination of the hydrogeological modelling in Nirex 97 shows that the hydrogeological parameters assigned to fault zones, in particular, have been manipulated

so as to remove the preferential fluid-conducting property of the major faults. The modelling is mendacious. Empirical evidence that the faults in the Sellafield – Longlands Farm area act as good conduits for water includes the fact that the local water utility targets its drilling on these faults to get the highest flow rates. The claim, based on this manipulated modelling, that leaking fluids from a GDF under Longlands Farm would come out well to the west under the Irish Sea after 55,000 years is false; it is probable that the faults will provide a fast-track to the surface, directly above the GDF, for such contamination within a matter of decades.

4.4 It is unacceptable that a White Paper could be based on an unsupported assertion of 30% of UK geology being potentially suitable. It is difficult to avoid the suspicion that the 2006 survey revision had led to West Cumbrian rocks being omitted from the report, and that the report was therefore suppressed.

Summary: The 2008 White Paper is based on the bald, unsupported assertion that more than 30% of the UK has potentially suitable geology. The maps on which this estimate are based are being held secret.

5. Misleading review of international work on GDFs

5.1 The Defra white paper *Managing Radioactive Waste Safely* (Defra 2008) cites examples of other countries where a search for a geological repository is underway. It states in Box 3:

“Of those countries, 25 have taken final decisions on a long-term policy and all had opted for geological disposal. These include Belgium, Canada, Finland, France, Germany, USA and Sweden.”

But the history of such searches elsewhere is written up or summarised by Defra in such a way as to wilfully mislead the public about the relative importance of ‘voluntarism’ over the international guidance on geological search criteria.

5.2 The current consultation document states:

“1.36 This continues to be borne out by experience in overseas programmes. Those based on engagement with local communities continue to progress in a mutually acceptable way (e.g. Sweden). Processes perceived to involve imposition on an unwilling community have failed (e.g. the initial GDF development at Yucca Mountain in the USA. Subsequently, the Blue Ribbon Commission on America’s Nuclear Future recommended¹⁵ the adoption of a new, consent-based approach to selecting GDF sites).

1.50 Evidence from abroad shows that this approach can work, with similar waste disposal programmes based on these principles making good progress in countries like Canada, Finland and Sweden.”

5.3 The consultation refers to an NDA document, ‘*Geological Disposal: Overview of international siting processes*’, dated September 2013, which I now review.

5.4 France: the NDA paper is misleading in saying that France is working on a GDF. It is not a *disposal* facility, but a *storage facility* for a duration of 100 years. In law the storage

must be retrievable. The proposal to convert to the current underground laboratory into a final disposal GDF is currently being resisted by the local community.

5.5 Sweden: It is untrue that volunteerism came before geology. DECC appears to be persisting in propagating untruths about what is happening overseas. I have supplied full details about this in my MRWS consultation response of March 2012, therefore I can only presume that DECC does not actually read such material. As I stated then: The Swedish case history shows that the geology has always come foremost, albeit with community assent in the form of a veto, which was indeed exercised by several municipalities. Even the proactive search for sites at existing nuclear facilities was carried out with geology in mind.

5.6 USA: The USA has learned from the Yucca Mountain debacle that planning decisions should not be “short-circuited”, to use the Blue Ribbon Commission's phrase. But this is exactly what is happening in England now – an attempt to short-circuit democratic process by cutting out the inconvenient county council.

5.7 The USA will adopt a consent-based approach like Canada, for similar reasons – it is a very large country, with a dozens of potentially suitable geological environments and host rocks for a GDF. But it is too early to say yet whether geology will play an early and prominent part in the screening process, as it is doing in Canada.

5.8 The Blue Ribbon Commission strongly recommended that communities must be empowered and funded to participate in the process:

“states and affected communities—in order to gain trust and confidence in the decisions taken by the waste management organization—must be empowered to meaningfully participate in the decision-making process. This means being in a position to evaluate options and provide substantive input on technical and operational matters of direct relevance to their concerns and interests. Accordingly, we believe it will be important to provide funding for independent monitoring and testing on the candidate repository site, provided that such activities do not interfere with the waste management organization's activities or compromise the integrity of the site. ...

In sum, the Subcommittee believes that a new U.S. waste management organization should adopt the Swedish practice and set aside funding for participation by citizens, citizen groups, and other NGOs. The availability of funding should be widely announced and reasonable criteria should be established against which to evaluate applications for financial support.”

This fundamental recommendation is omitted from the summary list provided in the NDA review paper; an unacceptable piece of censorship, in my view.

Summary: DECC and NDA are continuing to mislead the UK public about the extent of voluntarism being practised abroad, as well as the supposed overseas 'progress' in disposing of nuclear waste underground.

6. Analysis of the Call for Evidence consultation

6.1 Introduction

6.1.1 I obtained under FOI two spreadsheet tables of analysis of the 185 responses received by the Call for Evidence consultation which ended in June 2013. I have collated the published individual responses (99) into one file and the corporate/organisation responses (86) into another. These, together with my analysis of DECC's findings, are available at [\[link\]](#). Here is a summary.

6.1.2 DECC's analysis (table Call-for-Evidence-theme-definition-and-strength.pdf) puts responses into themes. The largest percentages of responses to certain themes have then formed the basis of the current consultation's summary of key points (document Box 1):

1. *Need for earlier information on geology – with a number of respondents calling for geological screening prior to volunteering.*
2. *Clarity needed on the scale, nature and timing of community benefits.*
3. *Clarity needed on the nature and timing of the Right of Withdrawal.*
4. *Proposals for the introduction of new independent bodies to either peer review the process or to make decisions.*
5. *Earlier provision of information about a GDF, and greater clarity about the process.*
6. *Support for voluntarism as the right approach on which to base a siting process.*
7. *Lack of trust in the current siting process, DECC and / or RWMD.*
8. *Greater clarity needed about the decision making process.*
9. *Current storage facilities at Sellafield should be made safer and plans for extended interim storage should proceed in parallel with a GDF.*
10. *Greater clarity needed on the inventory of waste for disposal in a GDF*

I have numbered DECC's bullet points above, and discuss three of them (items 1, 7 and 9) below, followed by further discussion of DECC's analysis not explicitly featuring in the list above.

6.2 Call for earlier information on geology (item 1)

6.2.1 The DECC analysis table lumped several separate issues together under the description:

"1. The potential suitability of the geology should be investigated at a national level, then invitations to learn more about the MRWS process should be extended to those communities with potentially suitable geologies. National parks etc. should be excluded."

6.2.2 Although this mixes up 3 separate issues, it became bullet point no. 1 (para. 6.1.2 above), which is considerably vaguer than the description in the analysis table. DECC claimed that 59% (109 respondents) agreed with this. Note how figures get smeared into "a number of respondents" who called for geology before volunteerism. My analysis of support for the specific statement 'Geology comes before volunteerism' shows 99 respondents in favour, or 53%. This message is clear, but has been ignored in the new consultation.

Summary: The clearest single message of the consultation, that geology must come first, has been ignored by DECC. This is not consultation in the ordinary sense of the word.

6.3 Lack of trust (item 7)

6.3.1 The DECC analysis table stated:

"13. Lack of trust in the MRWS process / DECC / RWMD"

6.3.2 This became bullet point 7 above. The DECC analysis claimed that 19% of respondents (35) agreed with this. The true figure is 67 respondents (36%). It is difficult to see how DECC arrived at its erroneous figure, just over half the actual figure.

Summary: DECC is mistrusted to an extent nearly twice as much as it is prepared to admit. Consultation response figures have been falsified.

6.4 Extended interim storage at Sellafield (item 9)

6.4.1 The DECC analysis table has a clear single-issue category for responses:

"22. Requests prioritisation of making the current storage facilities at Sellafield safer."

6.4.2 This is ninth on the list of responses categories when they are sorted by frequency of responses. But this response comment has emerged in the consultation document as:

"9. Current storage facilities at Sellafield should be made safer and plans for extended interim storage should proceed in parallel with a GDF." [my underlining].

Observe how the original clear single issue identified in DECC's analysis has now been coupled with development of a GDF.

6.4.3 DECC alleges that 16% (30 respondents) supported the single issue no. 22. My own analysis shows:

- 31 responses in favour of safer interim storage (with Sellafield not always being implicitly mentioned, but certainly implied),
- 4 responses for safer interim storage to be developed in parallel with GDF development.

6.4.4 Once again the DECC analysis conclusion has been subverted by linking the question of making Sellafield (or other) interim storage safer with the parallel development of a GDF.

DECC misrepresents the case for safer interim storage by linking it with a GDF development, when in fact only 11% of the respondents calling for safer storage also said it should proceed in parallel with a GDF.

6.5 District council as DMB

6.5.1 This does not feature in the bullet point list above of key findings. The DECC analysis spreadsheet description is:

"5a. Decision making body composition and/or powers should be made clear, and the decision-making body should be the District Council"

6.5.2 Note once again the muddled thinking revealed by the conflation of two separate issues. DECC claimed that 3% (about 6 respondents) supported this statement. This is completely false. Taking purely the second part, that the DMB should be the district council, only 4 respondents agreed.

6.5.3 Furthermore, DECC alleges that one of the supporters was the National Trust. This is completely untrue, as is the claim that the Nuclear Institute also supported the proposition. The NI did call for clarity about who should make the decision, but did not suggest that it should be the district council.

6.5.4 In conclusion, the proposal that the district council should be the DMB was supported by:

- One individual (no. 3)
- Copeland Borough Council
- The Prospect Union representative (but not Prospect itself)
- 'Imperial College' (in reality a private individual, as noted below)

6.5.5 It is distressing that DECC appears to be either lying about the responses, or else is completely incompetent in its analysis. Nevertheless, despite the clear lack of support from the consultation, the proposal that the local council should be the DMB has become the central plank of the new consultation proposals.

Summary: DECC has no substantive support from the Call for Evidence responses for making a local council the DMB. DECC has fabricated and/or misrepresented the consultation response data.

6.6 Funding for independent review

6.6.1 Six respondents proposed that funding should be made available for independent scientific research and scrutiny. Examples were quoted of Sweden and Canada. This was not even noted in the DECC response analysis.

Summary: DECC is afraid of critical science, in contrast to Canada and Sweden, countries which fund independent critical research.

6.7 My submission to the Call for Evidence

6.7.1 I submitted a consultation response to the Call for Evidence of 8000 words, complete

with references. The DECC analysis précised my submission as follows:

“Policy: *There is no scientific case for geological disposal. Onshore geological disposal is a matter of expediency that of scientific argument. Not advocating that it be abandoned but approached with caution.* **Other:** *Detailed history of UK experience of geological disposal attempts in recent decades. Looks at international experiences.* **Improvements to the site selection process:** *Other countries carried out systematic geological surveys of their countries before homing in on potential sites. UK Government should set up an independent review agency like Swedish NGO Office for Nuclear Waste review (MKG). BGS has an ambiguous role and has become untrustworthy. Widespread suspicion that DECC may try to restart a new process in west Cumbria without the county council. Responsibility for site search should be removed from the NDA. A new truly independent organisation should be set up under the Environment Agency.* **Other:** *DECC refuses to engage with detailed geological objections.”*

6.7.2 The above summary lists eleven points. But I made fifteen further points:

1. Stop producing extra waste now; concentrate on 100-year secure storage.
2. Demonstrable failure of the engineered barrier concept, therefore geology is the only effective barrier.
3. History – DECC now repeating failed rush to new build of 30 years ago.
4. Nirex Sellafield site was chosen by devious means.
5. Nirex inspector found 19 flaws in Nirex appeal case.
6. MRWS 2001 consultation ignored Royal Society and House of Lords views on finding sites by geological search.
7. CoRWM manipulated by Nirex (opinion leaders to be 'groomed').
8. Data behind 30% suitability of national geology claim withheld; map must be published before any more work done.
9. Failure of CoRWM-2 to perceive difference between geological screening and site search.
10. Abroad – DECC misleading on “good progress” and alleged voluntarism.
11. DECC trying to smear reputation and competence of Nirex inspector.
12. DECC predetermined return to West Cumbria.
13. Separate legacy waste from new build waste in GDF search.
14. 25 years of research into waste encapsulation and secure surface storage required.
15. Honest and transparent search for GDF site must exclude West Cumbria.

6.7.3 So it would appear that, rather than following the assertion in the current consultation:

“When considering responses to this consultation, the Government will give greater weight to responses that are based on argument and evidence, rather than simple expressions of support or opposition.”

DECC simply chooses what it wishes to hear, and disregards detailed reasoned argument when it suits its case.

6.7.4 One can contrast how my submission was treated, with the alleged “Imperial College London” submission, here reproduced in its entirety of 96 words:

"I consider that the issues concerning the safe geological disposal of radioactive waste are of such strategic importance for the whole UK population that the UK Government should - on behalf of all of us - engage directly with the two district councils who voted in favour in order to explore the way forward. I see no reason for the County decision to over-ride the national interest, in any new process, particularly when the two district councils who voted in support occupy an already industrialised coastal strip effectively [sic] demarcated from the bulk of the Cumbrian region."

6.7.5 This bald assertion, clearly from an individual but who misleadingly listing him/herself as 'Imperial College' when it should evidently have been regarded as an individual response, is one of the four responses proposing that Copeland and/or Allerdale be the DMB. Note also that this respondent did not speak of local councils in general – only of those two.

Summary: DECC has analysed the consultation responses in a partial and incomplete way, noting only those responses that suit its purpose.

6.8 CoRWM-3's analysis of the consultation responses

6.8.1 CoRWM-3's summary presentation tabulates the following:

Geological Issues

1. *Most responses to consultation in this category.*
2. *National Survey for geology (55).*
3. *Only approach potentially suitable areas (15).*
4. *Early in process and first parameter (50).*
5. *Exclude National Parks, SSSIs etc. (30).*
6. *Clearly defined parameters for suitability (7).*
7. *Copeland, Allerdale, BGS: desk top studies earlier in process (Stage 3).*
8. *Cumbria CC and Shepway: before voluntarism.*
9. *Town and Parish Councils, CALC, individual responses, SKB and National Park: national survey.*
10. *References to NIREX and earlier studies, need for a national map.*
11. *Approach suitable areas: led by GDF organisation or Government.*
12. *Continue voluntarism.*
13. *Exclude National Parks etc.: Individual responses, National Trust, Parish Councils.*
14. *Clearly defined parameters: local environment groups. NFLA, NWAA.*

6.8.2 I numbered the bullet points above. There is some confusion and overlap here (for example points 5 and 13). But the main issue identified – that most responses concerned geological issues – is not borne out by the CoRWM-3 summary, which highlights only:

- *"Wide range of respondents and views*
- *General support for voluntarism and GDF*
- *Cumbria experience is strong*
- *Major issues of trust*
- *Detail of comments on Cumbria process could be helpful in future"*

6.8.3 In this summary there is no mention at all of geology. This is a classic instance of distortion and misrepresentation; the analysis is done, after a fashion, but then the summary of the results is manipulated in such a way that will not upset CoRWM's paymaster DECC.

Summary: CoRWM-3 cannot be trusted to scrutinise nuclear waste disposal work independently, as proven by the fact that its summary mismatches its own analysis of the data.

7. The principle of subsidiarity

7.1 The current consultation document tries to cloak its new policy of excluding county councils by invoking subsidiarity:

"2.26 It is evident from international experience³³ in selecting a site for a GDF that a principle of subsidiarity³⁴ is generally applied."

7.2 The superscript references, 33 and 34, are, respectively, the NDA document, 'Geological Disposal: Overview of international siting processes', September 2013, and an irrelevant EU legislative document, listed as *Official Journal of the European Union – EU Consolidated versions of the Treaty on European Union and of the Treaty establishing the European Community*.

7.3 However, disregarding the irrelevant EU legislation reference (presumably selected to give some semblance of legitimate authority to the suggestion), we can look at the application of the general principle of subsidiarity – that is, the idea that a central authority should have a subsidiary function, performing only those tasks which cannot be performed effectively at a more immediate or local level.

7.4 It is self-evident that county councils such as CCC are the lowest level that can effectively deal with matters such as a GDF, because it falls under their responsibility for minerals and waste. In addition, the infrastructure implications of a GDF cannot be handled by a district council, because they extend beyond the bounds of a district. Therefore the principle of subsidiarity teaches us that the appropriate level for the task of siting and building a GDF is the county council. DECC is therefore being mendacious in seeking to imply that 'subsidiarity equals district council' in competence. It does not.

7.5 For independent confirmation of this conclusion, let us examine the application of subsidiarity in Europe, in the context of DMBs. First, some figures:

France (metropolitan): there are 22 regions with 95 départements, the latter equivalent to English counties. Under the départements there are 4032 cantons and 36,552 communes.

Sweden: There are 21 regions, no county equivalents, 290 communes and 2512 parishes.

Switzerland: central government is federal. There are no administrative counties, nor parishes. The two levels of administration are the canton (26) and the municipality (2465).

Finland: there are 19 regions and 320 municipalities. There are no administrative equivalents of the county or parish. The modern municipality evolved out of the medieval parish.

7.6 In each of these four countries the DMB for radwaste disposal is as follows:

- France – département
- Sweden – commune
- Switzerland – canton
- Finland – municipality

7.7 These administrative levels below central government are all either top-tier (Switzerland) or one level down (the other three countries). By comparison, this would mean that the appropriate level for the DMB in England or Wales is either the **region** or the **county** – not the district council. Note that while the Swedish commune or Finnish municipality might superficially appear to be equivalent to the English district council, the administrative functions of the two Nordic types of body are far more extensive than an English district council. They are much more autonomous, being one level down from their corresponding region.

Summary: Subsidiarity implies that the region or the county is the appropriate administrative level for a DMB, and not a district council.

8. The consultation questions – my answers

1. Do you agree that a test of public support should be taken before the representative authority loses the Right of Withdrawal?

8.1 **No.** The question as posed is essentially meaningless without precise definitions. Who are the “public”? What is meant by “support”? If a GDF is a Nationally Significant Infrastructure Project, then the ‘public’ to be consulted should perhaps be the whole nation. In addition the point at which the Right of Withdrawal ends has been altered relative to the 2008 White Paper. Now the RoW will end before any drilling begins. This will prevent the representative authority (whoever that may be) from being able to withdraw in the event that the results of underground investigations are pejorative for a safety case, even if such results become available early on during the underground operational phase.

8.2 How is this ‘test’ to be conducted? The Ipsos-MORI poll for WC-MRWS in early 2012 was clearly severely flawed. The main result of the poll was to show that 80% of the respondents knew ‘just a little’ or even less about the GDF. There is also a gross internal inconsistency in the answers to the eight questions, as is demonstrated in an online graph published by Professor Haszeldine, in that the voting on the overall view on whether or not to participate in the MRWS process (question 8, the last one) is completely at odds with the voting pattern shown in the first seven questions.

8.3 The consultation states that “Communities would retain an ongoing Right of Withdrawal throughout the siting process”, but would lose the right the moment that “underground investigative work (to confirm a site’s suitability)” begins. I note here:

1. The lack of definition of 'community'. I discussed this at length in my MRWS submission, section 5.2. There are examples of 'communities' in the 1988 national site search list of 537 potential sites where no-one lives. There is also the question of the offshore environment – do the fish and crustaceans living there constitute the 'community'? The 2008 White Paper definitions of 'host community' and 'wider local interests' appear to have been pre-defined with the well-populated area of West Cumbria in mind, while simultaneously ruling out many potentially more promising sites and regions.
2. The underground work is intended to “confirm” the suitability of the site. There is no *a priori* definition of how a site will be deemed suitable. This is predetermination, and does not allow for a negative outcome.

Summary: Question 1 is meaningless, and will remain so until an informed, geology-based judgement can be made by suitably qualified independent persons that a particular site, measured against pre-existing scientific criteria, might have potential.

2. Do you agree with the proposed amendments to decision making within the MRWS siting process?

8.4 **No.** The principal amendment to the MRWS process is clearly intended to remove the obstacle to returning to West Cumbria, by removing the right of the county council to have a say. Contrary to the assertions in the document, it both contradicts the principle of subsidiarity and defies practice abroad. But the decision has to be based on informed knowledge of the geology, which therefore must be studied in advance of any volunteer process.

Summary: Decision-making for a Nationally Significant Infrastructure Project has to be made at a higher level (i.e. county or region) than a local council. The amendment to make the district council the DMB is further evidence in a long chain of events going back to 1997 which demonstrate a predetermination to return to West Cumbria.

3. Do you agree with this approach to revising roles in the siting process set out in the White Paper?

8.5 **No.** The 2008 White Paper was severely flawed in relegating geology to a late stage in the siting process. This all goes back to the successive decisions made by government to exclude geology and earth scientists from the development of policy (see paras. 3.2-3.8, 3.10, 3.13 and 3.18 above). But the whole *raison d'être* of a GDF is to permit geology to be the only reliable barrier to the escape of contaminants, and to protect some 30,000 generations into the future (up to one million years hence) from the risk of radioactive poisoning. Therefore it follows that the geology must be studied first. If this were not the case, and engineers were to claim that their man-made barriers will do the job, then there

is no rational reason to bury the waste. But engineers have a proven very poor record in matching their claims to reality. The siting process modifications proposed simply make matters worse.

Summary: The proposed modifications are even less acceptable than the unacceptable siting process set out in the 2008 White Paper.

4. Do you agree with this proposed approach to assessing geological suitability as part of the MRWS siting process?

8.6 No. The document has ignored the chief finding of the Call for Evidence consultation, that national geological studies must come first. This does not just mean geological 'screening', as was carried out by the BGS in 2010 in West Cumbria; it means a sufficiently detailed study of each region and area so that particular localities can be identified as worthy of further investigation or not:

- Such a potential site search was done nationally for the entire UK in 1988, following the BGS publication two years earlier of potentially suitable geological environments.
- It has been done nationally in Sweden and Finland, preceding community involvement.
- It has been done quasi-nationally in France (where clays and granite were pre-defined as potentially suitable host rock types).
- It was proposed and costed by Nirex in a draft paper in 2003, at merely £5M in today's prices.

8.7 The revised siting process now proposes that:

"BGS would publish on their website brief texts for each of the 13 Regional Guide areas covering England, Wales and Northern Ireland, providing a geological model for each region in plain English. A simple 3D geological visualisation of the geology of England and Wales, meaningful to non-geologists, could also be produced over this timescale, based on the BGS GB3D."

8.8 This proposal is a sop to try to placate those (the 53% of respondents) who want geology to be studied first. But it is useless for the intended purpose, for several reasons:

- The BGS 3D model is little more than a toy; even in an enhanced form it can tell us nothing useful about the suitability or otherwise of host rocks for a GDF.
- Lay people usually have difficulty in visualising models in 3D; it takes a lot of geological training to be able to do so in a geological context.
- Why use a complex 3D tool when simple maps (for example, environmentally sensitive groundwater overlain in colour on an OS basemap) will be much clearer to the lay person?
- How would such a geological model include the necessary intricacies of fault zone, differing permeabilities of layers, and so on?
- Use of the 3D model approach is a ploy to prevent accurate localisation of geology, and thus aims to prevent precise fact-based criticism.

8.9 In short, the proposal is unsound, and yet another way of delaying what the BGS

should be saying, based on its vast store of existing knowledge and data – that West Cumbria has no potential for finding a suitable GDF site. There is no substitute for a reasoned, detailed, national desk study. The reason that the government is resisting this is because such a survey (as opposed to high-level screening-out) will rule out West Cumbria.

8.10 In my view it is reprehensible of the BGS in its response to the Call for Evidence not to propose that geological surveys should be carried out before an 'expression of interest'. The BGS is behaving as a mere tool of DECC, by not daring to question the unwisdom of the whole volunteer process. It would have taken little courage to cite the House of Lords and Royal Society reports of 1998-99; but no, the BGS supinely follows the White Paper to the letter. Such behaviour is not worthy of a national geological survey. The BGS even advocated a return to West Cumbria in 2012, without providing a shred of evidence for the supposed "*potential*" of the area; this is mere campaigning, not impartial science. The BGS has become just another contractor in the business of acquiring lucrative contracts in nuclear waste disposal.

8.11 Any such national geological study must not only be transparent; it must be peer-reviewed by outsiders who have no connection with UK government. Neither the BGS nor the Geological Society of London can be trusted with such a peer review, as demonstrated by their previous underhand behaviour.

8.12 Before any such survey is carried out the criteria for what constitutes a safe geological disposal environment must be defined. A paper by NDA, *Geological Disposal: Steps towards implementation* (2010) purports to set out geological criteria for finding suitable geology. I have analysed this paper in my MRWS response of 2102, section 5.8. Logically the whole 65 pages of text can be reduced to 'finding any suitable host rock'; in other words it tells us precisely nothing.

Summary: There is no excuse for a national desk-top geological survey, costing just £5M, not being placed first in the whole process. Instead, DECC and the BGS are playing at cartoon games by proposing 3D models and non-technical website summaries of regions, which will inform no-one.

5. Do you agree with this proposed approach to planning for a GDF?

8.13 **No.** I am opposed to the whole approach of seeking volunteers before the geological studies have been done. I am not against volunteering *per se*, but it should follow the science, and not drive it.

6. Do you agree with this clarification of the inventory for geological disposal – and how this will be communicated with the volunteer host community?

8.14 **No.** One has to ask - what clarification? The proposed amended approach (consultation document, paras. 3.58 – 3.61) is largely open-ended because of the commitment to an unknown quantity of new build wastes. The paragraphs are full of promises, but no substantive figures.

8.15 The CoRWM-1 recommendation of separating legacy from new build waste has been

ignored. There is speculation about whether yet another MOX processing plant will be built, which in turn will require a different category of new reactor build from those currently being considered.

8.16 The response from CoRWM-3 recognises the open-ended nature of the commitment to new build, and considers (CoRWM doc. 3138, para. 86) that the 16GW new build figure is only a first tranche. The response goes on to say that instead of this figure, the maximum figure, being the "75GWe upper limit being examined in DECC" should be retained, and that this in turn "reinforces the requirement to leave the option open for more than one repository".

8.17 Defence wastes are now to be added to the mix. No costings are available for how the new build owners will pay (if at all) for the back end of the nuclear cycle.

Summary: A 'volunteer' community will end up having foisted upon it all manner of nuclear waste, yet to be defined, long after a right of withdrawal period has passed.

7. Do you endorse the proposed approach on community benefits associated with a GDF?

8.18 **No.** Para. 4.15 of the consultation document amounts to no less than a bribe, paid up front, with the threat of having the moneys clawed back if the community decides not to proceed (i.e. exercises a right of withdrawal).

8.19 The amount of funding is not mentioned, nor which authority would control it. On the other hand, a properly sited GDF chosen in the safest practicable UK geological environment should, by virtue of the extra employment it brings, be its own reward to the community.

8.20 A GDF thus selected should be no more deserving of bribes, or 'community benefits' as they are termed, than any other national infrastructure project. It appears that when there is a significant risk to a community such bribes tend to be proposed – fracking for shale gas, for example. The honest way to proceed is to remove the risk (by ensuring that the geology is the best possible), be open and transparent, and then communities will volunteer. This is how volunteerism has worked elsewhere in western Europe.

8.21 Communities abroad are indeed offered 'benefits', but in the case of France, for example, this is now backfiring. Protesters at Bure, the site of the underground laboratory, claim that local communities have been bought off by benefits, and that the current consultations about turning the site into a 100-year storage site are a sham. The local 'consultations' have collapsed, and the exercise has now been reduced to an internet questionnaire (see *Le Monde*, 10 December 2013).

8. Do you agree with the proposed approach to addressing potential socio-economic and environmental effects that might come from hosting a GDF?

8.22 **No.** The AoS, SEA, HRA, etc. (paras. 4.30-4.32 above) can and should be carried out in parallel with the national geological investigations, but could possibly be delayed to the stage where promising areas are being identified.

9. Do you have any other comments? - yes.

9. The sham of consultation and voluntarism

9.1 The current DECC approach has a thin veneer of voluntarism and consultation, disguising a centrally directed *dirigiste* approach in which all opposition is ignored, and even its own science advisers are ignored - all with the aim of selecting a geologically unsuitable site somewhere near Sellafield. All it has in its favour is the support of a handful of local councillors and some of the Sellafield workforce. The prediction made in the 2008 White Paper:

"6.5 In the event that at some point in the future, voluntarism and partnership does not look likely to work Government reserves the right to explore other approaches."

is already coming true, with the current proposals to exclude county councils. In practice this means the *involuntary* exclusion of CCC, to enable Copeland BC to be given the role of DMB.

Summary: DECC is intent on building a GDF at or near Sellafield. Consultation and voluntarism are seen only as means to help that end, but are discarded as and when DECC sees fit to do so.

10. Conclusions

10.1 The government's behaviour in its plans to revive the site search for a GDF since 2001 is perverse and irrational:

- There is a strong evidence trail that the government has predetermined a return to Sellafield for a GDF site.
- It ignores scientific evidence from its own advisers, from independent specialists, and from abroad.
- It ignores international guidance on siting a GDF.
- It has been engaged in a mendacious campaign of distorting, manipulating and/or ignoring the facts about foreign experience and about the UK history of site search.
- The government is driven by an irrational and fiscally irresponsible desire to ensure that up to 75 GW of 'new build' nuclear power stations are constructed, when the subsidies given to the nuclear industry could be much more wisely spent on renewable technologies.
- Under its own environmental regulations the back end of this new nuclear cycle has to have the semblance of having been 'solved' by finding a GDF site.
- Successive government since the 1980s have completely lost the trust of the public in matters nuclear.
- In terms of the scientific, technical and sociological progress towards finding a safe GDF site within a willing community, the UK is now some 35 years behind the leaders in the field (Sweden, France and Finland) – whom, it should be noted, are still themselves many years from actually starting to store or dispose of high- and intermediate-level waste underground.

10.2 In particular, it is irrational to ignore the scientific evidence that nowhere in West Cumbria contains a suitable host rock volume for constructing a GDF. The government mistakenly thinks that having a 'willing community' – which can be defined in effect as the subset of Copeland Borough Council councillors – all the fundamental technical and safety problems will magically disappear. They will not; a wrong decision taken in the early twenty-first century could affect the health and safety of millions of people, as yet unborn, well into the geological future, some 100,000 years from now – about 3,000 generations. I do not believe that these current Copeland councillors, nor DECC ministers, have any moral right to act on behalf of these future generations.

10.3 The national geological desktop survey, costed at just £5M, must be done first. Refusal to consider this implies that DECC has something to hide – its predetermination to return to West Cumbria.

10.4 DECC has distorted, manipulated and/or falsified the 2013 Call for Evidence consultation data in a disgraceful manner. Therefore the current consultation should be considered invalid, since it is demonstrably based on falsehoods.

10.5 The statement by Lord Flowers on the ethics of what is now called 'new build' still retains its moral force and validity, 37 years later:

*“there should be no commitment to a large programme of nuclear fission power until it has been demonstrated beyond reasonable doubt that a method exists to ensure the safe containment of long-lived, highly radioactive waste for the indefinite future.” **

10. 6 In conclusion, there should be no new build until the problem of what to do with the waste has been resolved. DECC has reversed this logic by promoting new build, and asserting that the problem of underground disposal of high- and intermediate-level waste will be solved by voluntarism.

** Royal Commission on environmental pollution. Sixth report; nuclear power and the environment. Chairman: B. Flowers, HMSO 1976. Copy available at*