



# Radioactive Waste Management

## National Geological Screening

### Public consultation response

When complete, please email to [NGSconsultation@nda.gov.uk](mailto:NGSconsultation@nda.gov.uk) or send by post to: National Geological Screening Consultation, Radioactive Waste Management, Building 587, Curie Avenue, Harwell, Didcot OX11 0RH.

Name	Peter Atkinson
Email address	[REDACTED]
Organisation	Individual (Retired Science/Technology Teacher)

While I was aware that a National Geographic Survey was to be carried out, I was only made aware of the existence of this consultation when it was drawn to my attention by Cumbria Trust on 28<sup>th</sup> November 2015. I feel it is likely that the vast majority of people will also be unaware of its existence and so not be in a position to comment. You are looking for a varied audience to express their opinions but, in view of the above, you will not get that.

I did make representation to you regarding the siting of your meetings and asked for one to be in West Cumbria. The nearest was well over 100 miles away and the suggestion was made that a meeting here would give the impression that West Cumbria was still a prime target area for a GDF.

While this screening is part of a "new" process, the marks left by the errors made previously still remain. One of the "greyed out" words on your front cover is TRUST and I might say this needs to be earned and having your meetings well away didn't help.

The authors of this document are quick off the mark when they say, "We, as experts in the science and engineering of geological disposal, will work with the British Geological Survey (BGS), who hold much of the definitive existing information on British geology."

I am not aware that anyone in the UK has actually engineered a GDF for highly active radioactive materials. How do you qualify in this field? To make this claim leads to a certain scepticism when reading the rest of the document. Indeed, the few attempts at GDF in other countries have met with a variety of difficulties.

There is general agreement internationally that geological disposal provides the safest long-term management solution for higher-activity waste and you seek to define long-term safety requirements to which the geological environment must contribute. You identified in several parts the geological attributes which are relevant – one of which is a stable geological environment in which any facility is to be sited.

You then go on to say you have developed a generic safety case, where you can describe how safety could be achieved in a range of different geological environments.

All the possible geological environments for a GDF must be stable. You discuss at length the groundwater flows through the various rock types but both Sweden and Finland have chosen virtually flat sites with no hills or mountains to drive groundwater flow, in keeping with international guidelines.

#### **Question 1:**

To what extent do you think our proposed approach to providing national-scale existing information about geology relevant to long-term safety is appropriate? Please give your reasons.

Existing geological information particularly at depth is limited and it appears that some recent developments are still to be tapped. To assess whether suitable deposits of rock for a GDF can be carried out nationally will be a mammoth task if it is indeed to be done nationwide.

3.18 says the government preference is for the inventory for disposal in one GDF and recognises that this would require a large enough volume of suitable rock (in an area willing to host a GDF) for the underground facilities to be constructed and for a safety case made. The phrase in brackets negates the whole premise of the search. Would a “willing community” be allowed to continue to be involved if the geology was found to be unsuitable? What happens if there is no “willing community”. The project must be one of “significant national importance”. The geology must come first – not an “engineered solution” in less than ideal geology.

#### **Question 2:**

To what extent do you think that the proposed national information sources are appropriate and sufficient for this exercise? Please give your reasons.

Currently there is Off-shore and On-shore drilling exploration along the West Cumbrian coast around the Whitehaven & St Bees area. This has resulted in a planning application for the extraction of significant quantities of high grade COKING COAL though exploration continues. A new coal mine to be opened in the not too distant future.

20+ years ago there was extensive Off-shore drilling to investigate the extent of gas deposits along the West Cumbrian coast.

Will maps showing the results of the geological explorations undertaken by NIREX in the 1980s at a cost, then, of £400,000,000 be made available to this survey? On the basis of the results from several deep drillings and an extensive seismic survey throughout West

Cumbria, the enquiry in 1997 concluded that the search for a site for a GDF in West Cumbria should be abandoned - though clearly it continues.

The above don't appear to be included.

The document states that geological uncertainty increases at greater depth, except in specific areas such as those that have been .... explored for deep geological .....

West Cumbria is just one such area which has been explored.

You propose to produce maps showing major faults and fracture zones and that many such complex zones are well-known and are identified in the BGS regional guides and memoirs.

Am I misled in thinking that the Western Lakes is just such an area of major faults and fracture zones or has the BGS access to maps of Cumbria I haven't seen?

Will maps showing the results of the geological explorations undertaken by NIREX at a cost, then, of £400,000,000 be made available to interested parties e.g. residents of Cumbria?

They have not been made available so far.

#### Question 3:

To what extent do you agree or disagree with the proposed form of the outputs from geological screening? What additional outputs would you find useful?

The outputs of geological screening are designed to help communities who wish to engage with us about their potential to host a GDF but the description of the data produced for is likely to be insufficient for detailed analysis.

I feel that the inclusion of the word *community* has been deliberately placed in yet another government document. To quote Humpty Dumpty "When I use a word," Humpty Dumpty said in rather a scornful tone, 'it means just what I choose it to mean". Cumbria County Council as representing the Cumbrian *community* rejected Stage 4 back in 2013 but a different *community* might give a more favourable response to the new process. If not a County Council – maybe a Borough Council or a Parish Council?

Who is the output of this survey aimed at? Impossible to say precisely but easy to write "community" here!

#### Question 4:

Do you have any other views on the matters presented in the draft Guidance?

Your diagram - Geological Disposal – Making it happen- leads to a great deal of concern! It appears to illustrate the sort of financial recompense a "community" (that word again) might expect to receive for "volunteering" to host a GDF.

Up to £1m per year during the site investigations. Hardly generous for the disruption to transport systems and damage to the local environment. £2.5m during the design and planning stage and not even a figure after that.

Let's say 15 years at £4m – total £60m. Won't even compensate for the fall in value of the local housing 50,000 houses x £50,000 loss per house £2,500,000,000

What sort of incentive is that regardless of who is the community?

You state several times that Radio-active waste management is a devolved policy issue. Am I mistaken in thinking that radioactive material is/has been shipped from Scotland to Sellafield? If Scotland has its own policy, why is radioactive material moving south?

To avoid future generations "stumbling" on the GDF as they prospect near existing or future resources, you propose to produce maps of the locations of known resources of a range of metal ores, industrial minerals, coal and hydrocarbons below a depth of 100m that are exploited today or have been exploited in the past. You will include the potential for coal-bed methane, shale gas and geothermal energy and produce a national map showing the extent of past glaciation to avoid the possible effects of erosion.

On this basis, I look forward to seeing the Western Lakes and the West Cumbrian coast eliminated from your search very quickly.