Site Evaluation – How we will evaluate sites (England)

A Public consultation related to the search for a suitable site for a Geological Disposal Facility (GDF)

Response Form

When complete, please email to siteevaluation@nda.gov.uk or send by post to: Site Evaluation Team, Radioactive Waste Management, Building 587, Curie Avenue, Harwell Campus, Didcot OX11 0RH.

Part 1 – Information about you

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If you are responding on behalf of an organisation or interest group how many members do you have and how did you obtain the views of your members:

Friends of the Lake District has nearly 7000 members, half of whom are based in Cumbria. We carry out a membership survey every two years, hold regular members meets and send out quarterly and special communications. These all enable our members to bring up topical issues such as geological disposal of radioactive waste.

When the consultation ends, we will publish a summary of the key points raised. Members of the public may also ask for a copy of responses under the freedom of information legislation (primarily the Freedom of Information Act 2000, the Data Protection Act 2018, the General Data Protection Regulation (EU) 2016/679 and the Environmental Information Regulations 2004). If you do not want your response, including your name, contact details and any other personal information to be publicly available, please say so clearly in writing when you send your response to the consultation. Please note, if your computer automatically includes a confidentiality disclaimer that will not count as a confidentiality request.
**Part 2 – Your Comments**

**Question 1:**
Are there any other sources of high level Requirements other than Siting Process, National Policy Statement and Legal Requirements identified that you think should be reflected in the Site Evaluation and why?

**National Parks and other protected landscapes**
Yes. Under the Environment Act 1995 and the CROW Act 2000 all public bodies have a duty to take account of the potential effect of their decisions and activities on National Park and AONB purposes, including activities undertaken outside National Park or AONB boundaries which may affect land within them. This means that Radioactive Waste Management (RWM) should be seeking to conserve and enhance National Parks and AONBs and their settings through all of its activities and should be placing a much stronger emphasis on ensuring that the creation of geological disposal infrastructure does not have a detrimental impact on National Parks and AONBs and their settings, including in the site evaluation process.

This statutory duty must be reflected in the site evaluation process alongside the other legal requirements already identified. Failure to do so would mean that RWM is not taking proper account of the additional protections which apply in National Parks and AONBs.

**World Heritage Convention**
Each State Party to the Convention recognizes its primary duty to ensure the identification, protection, conservation and transmission to future generations of the cultural and natural heritage situated on its territory.

Due to the very long timescales associated with a geological disposal facility we consider that such developments are unsuitable to be situated in or near to a World Heritage Site where there could be a generational impact on the natural and cultural heritage for which it is designated.

**Question 2:**
Do you agree with the Siting Factors we have identified? Are there any other Siting Factors that should be included and why?

The “Environment” NPS Requirement should be split into two separate siting factors: Subsurface (e.g. Geological/hydrogeological environment) and Surface Environment

Geological/hydrogeological suitability needs to be included as an independent siting factor. Without suitable geology and associated hydrogeology, there can be no safe geological disposal of radioactive waste at a site no matter how willing the community is to be a host.

In 2018, we provided consultation responses to BEIS on the consultations on the draft National Policy Statement and the Working With Communities proposal in which we elaborated on why we consider geological suitability to be the most important factor in the choice of a site for disposal of radioactive waste (see [here](#) for our responses).

A GDF can only be safely constructed within a suitable geology which allows long term containment...
of radioactivity. Internationally, these suitable geologies have been defined as impermeable lithologies such as clay or salt (Smythe 2013). Therefore communities in areas where the geology is unsuitable should be excluded from this process and prevented from volunteering.

If a host community puts itself forward in an area where the geology is unsuitable or barely suitable for siting a GDF, we are concerned that the geology will be made to “fit” when actually it is not capable of containment of radioactivity for the lengths of time necessary (30,000 - 100,000 years). Human-engineered containment solutions cannot be considered to be fail-safe over the time period that is necessary for geological disposal of radioactive waste. The NPS process is not applying the precautionary principle by starting with the most suitable geology.

Our concern is underlined by work carried out in Sweden on corrosion-resistant canisters to be used in the Swedish geological disposal process. This research has found that canisters which were supposed to contain waste safely for a 100,000+ years have been demonstrated to be subject to a leaching mechanism which would remove the copper casing within 1000 years. In January 2018 the Swedish Land and Environmental Court ruled against a license application for a final repository in Sweden on the basis of uncertainties around the ability of the containment canisters to provide the necessary containment over the required timescales. This demonstrates that the geological barrier is the most important aspect of a GDF, and that human engineering is no substitute for the right lithology (Smythe 2013).

At the RWM workshop in Manchester on 19th February 2019, we were concerned to hear a comment from a member of CoRWM that “engineering can be flexed, we have to be realistic”. This raises concerns that the long-term safety of future generations could be compromised because a willing host community in an area with “just good enough” or almost good enough geology comes forward.

**Intergenerational Ethics**

The above talk of “flexing engineering” raises a second siting factor that we think should be included in the siting factor: that of ethics, specifically intergenerational equity and justice. The generation(s) who will receive community payments during the siting decision process and the 100 years of operation are not those who would have to deal with the impact if there was inadequate containment of radionuclides in the very long term. As the Swedish canister research cited above demonstrates, human containment may not function as expected in the far future. If engineered containment fails, then geological containment is the backstop preventing the release of radioactive material.

Therefore intergenerational ethics needs to be factored in as a siting requirement, particularly relating to geology. The more suitable the geology is for very long term containment, the better the outcome for the safety of future generations.

We also consider that siting of a GDF must be carried out in a lithology which will be unattractive and/or impenetrable to future generations to ensure that there is no risk of inadvertent mining, quarrying, fracking or other extraction method within the rock which is being used as containment for nuclear waste. Considering the necessary timescales of hundreds of thousands of years over which containment will be necessary, it is imperative that we get it right to ensure that our generation’s legacy of nuclear waste does not cause future generations harm.

We therefore consider that Intergenerational Ethics is a top level issue which should be included within the “Siting Factors” table.
Question 3:
Do you agree with the Evaluation Considerations we have identified? Are there any other Evaluation Considerations that should be included and why?

Intergenerational Equity/ Ethics Considerations – include in Table 1 and add to list of Siting Factors
As described in our response to Question 2 above, Intergenerational Equity/Ethics needs to be included as an evaluation consideration. This issue should have an “Evaluation Consideration” heading of its own as it doesn’t come under Community Evaluation Considerations because of the timescales and futurecasting necessary.

Intergenerational Equity/Ethics may come into conflict with the Community Siting Factor because of the timescales involved. For example a willing community that wants to host a GDF may not be in an area with geology suitable for long term containment.

We consider that Intergenerational Equity/Ethics is the most important matter that should be considered when evaluating a site. This is on the basis that containment of radioactive waste for hundreds of thousands of years is essential to ensure that current generations do not adversely impact on future generations by contaminating their environment.

Community Evaluation Considerations

Communities currently hosting high level radioactive material
There needs to be an evaluation of the impact on the communities in England which currently host radioactive waste. The handling and movement of this waste to a GDF is an integral part of the process of deep disposal of radioactive waste. We consider that the sites in England which currently host quantities of radioactive waste need to be included in the site evaluation process on the basis that much of the waste cannot be transported in its current form and so will need significant treatment/encapsulation on site prior to it being moved into any GDF. This is an essential part of the plan/process, and therefore should be considered as part of any GDF NSIP.

We therefore consider that these communities should be engaged in the process, be part of the Community Partnership and included in allocation of Investment Funding when a site is being investigated. This is on the basis that there will need to be infrastructure improvements within these communities and therefore their consent must also be sought through the Working With Communities process.

Recognition of the Impacts on the Non-Nuclear Sector
We want to ensure that impacts of any GDF development on the non-nuclear community are recognised. For example:

- impacts on tourist and agricultural businesses due to negative perceptions of radioactive waste/construction of a GDF and very real difficulties around transportation, road networks and landscape damage. This is particularly relevant in protected landscapes which have not been ruled out of the Site Evaluation process.
- impacts of construction/delivery transportation on transport infrastructure for those living and working in the area
- impacts on communities and infrastructure of an influx of construction workers
- impacts on communities just outside of the Community Partnership area which won’t receive payments and have the potential for negative impacts without recompense (e.g. tourist and agricultural businesses within a national park, but outside of the defined Partnership).
**Environment Evaluation Considerations**

The sub-surface development of a GDF is very different to any other sort of development that is ever likely to be undertaken in England because of the length of time that a GDF needs to operate safely over. The surface element of the development however should be treated as any other major infrastructure development.

As suggested above, sub-surface environment and surface environment should be split into “Sub-Surface Environmental Evaluation Considerations” and “Surface Environmental Considerations” headings to be evaluated separately.

**Sub-surface Environmental Evaluation Consideration** should include evaluations of:
- geology
- hydrogeology
- hydrogeochemistry

All of these evaluations need to be carried out with the very long term in mind. They will overlap with the Intergenerational Ethics/Equity issue we raised in our response to Question 2 and above on the basis that safe containment is ultimately dependant on the physical qualities of the sub-surface geology and its interaction with water and gases.

**Surface Environmental Evaluation** should include all the usual considerations of environmental issues that any major NSIP development with a putative lifespan of 150+ years would be expected to consider e.g. landscape, biodiversity, air quality, noise, access etc.

**Question 4:**
Is there anything else that you think we should consider in our site evaluations and why?

The Appraisal of Sustainability for 2018’s draft NPS set out an alternative non-site specific NPS that included exclusionary criteria. This option excluded protected landscapes, cultural heritage and protected wildlife sites from being considered as suitable for hosting a GDF. However, this option was not taken forward.

We believe that not taking forward the exclusionary criteria put forward in the draft AoS was an unreasonable decision. We are very concerned that sites and areas with the very highest legal and policy protection such as National Parks and World Heritage Sites are going to be considered as potential locations for nuclear waste disposal.

Nationally and internationally protected landscapes, cultural heritage and wildlife sites belong to the nation as national assets, and as such have national communities of people who care about them. Leaving a local community to make a decision which affects a nationally designated landscape or site is likely to bring large and vocal protests from people throughout the country who consider themselves to be part of a community belonging to that protected landscape. As such, they are well within their rights to demand a say on the decision. Unless people nationally can have a say, it may very well bring legal challenge too.

We consider that National Parks, AONBs and other protected landscapes are at risk from this site evaluation process. This is on the basis that despite National Parks being planning authorities in their own right, they do not automatically have a seat at the Community Partnership table, unlike other local planning authorities. National Parks have no right to remove their area from the siting
process despite the fact that as described above, they have a national community which is unlikely to want a GDF in a national park.

In BEIS 2018 “12th Report - Draft National Policy statement for Geological Disposal Infrastructure” Richard Harrington MP, Minister for Business and Industry, stated that the Government was not in favour of exclusionary criteria as they would preclude proposals from communities who may be interested in hosting a GDF that will have been designed to minimise the environmental impact:

“We have to look at all possible sites where communities want it. For example, the potash proposal near Whitby in North Yorkshire is in a national park, but the people who are proposing the site have shown a way of doing it where the actual buildings that are left will leave very little blot on the landscape of the national park. I am not saying we should have them on national parks, but it would be very wrong to exclude them at the moment in this big policy statement. [ … ] I do not want to prejudge the situation. If it was huge, one-kilometre-wide industrial building in the middle of a national park, of course that would not be suitable.”

We fundamentally disagree with his assertion here that there is “very little blot on the landscape” when actually the Potash mine has had a major impact on the landscape and environment of the North York Moors. To use the Potash Mine as a precedent is unhelpful for two reasons; firstly it does have an impact on the landscape of a national park, and secondly because the potash mine site is resource specific, i.e. was be located where the potash mineral is found. Thirdly, a willing community outside of a national park should not force a community inside of a national park to accept the underground portion of a GDF.

The above demonstrates that excluding National Park Authorities from being designated as Principal Authorities is an error. National Park Authorities will be powerless to prevent a GDF from being placed within their boundary as all control over what happens within the national park boundary will have been wrested from them and given to a different authority, one which has no responsibility for the operation of the national park at risk from being selected to host a GDF.

With regard to definition of community, the number of people in a “community” as defined within the document (wards/parishes) are always likely to be bigger outside of the national park boundary than within. Essentially the community outside of the national park could force the community inside of the national park to accept a GDF that they do not want and which is likely to impact on landscape and livelihoods. This is not a tenable situation for a nationally protected landscape which has a national community which looks to it.

It is essential to consider the impacts of all the associated infrastructure requirements as well as the GDF infrastructure itself. For example, it is extremely unlikely that any location within a National Park or its setting would already have the appropriate transport infrastructure in place to deal with the additional traffic associated with the geological disposal infrastructure. There is a long-established presumption against significant road widening or the building of new roads in National Parks which is another reason why it is highly inappropriate to consider these areas as possible locations for the geological disposal infrastructure. The evaluation considerations for transport (as set out in Table 1) should also take account of all relevant policy, including details of the presumption against road-building in National Parks.