



## 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.

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#### 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.

- C1 The role of groundwater flow and composition in terms of the performance of the EBS barrier could be brought up. See Section 2.16 and Table 2, which mainly focus on the transport routes from the repository to the surface. However, also the flow routes in the opposite direction is of importance to the safety of the repository.

C4

Geological disposal, Section 2.9 - 2.13. The geological disposal concepts are presented at a very general level. However, the disposal concept and the characteristics of the engineered barriers may have some effect on which geological environments are favourable for disposal. How will this be taken into account in the screening? E.g., to be able to use Item 1 in Table 1 would require that the EBS materials are known. It is not clear how this requirement will be considered in practice. It is worth noting that the understanding of interactions between the host rock and the EBS materials has increased significantly from the days when geological screening was carried out in many other countries. The particular favourability of a geological formation is likely to increase the local acceptance.

C5

Table 1 (Long-term safety requirements), Item 7: It is important to be able to assess the potential consequences of human intrusion, but it would be even more relevant to mention that the geological environment should lack unusual economical resources (these are mentioned only later), so that probability of (inadvertent) human intrusion is relatively low.

C6

In general the approach is appropriate. Some details could be considered: 1) the waste packages should be placed as far as possible from major faults and fracture zones. Therefore in the higher strength rock types the groundwater flow in the vicinity of the packages is governed by hydraulically conductive discrete fractures. It would be important to acquire any available information. In addition to the extent of past glaciations, any information about their temporal evolution, like e.g. duration of permafrost, ice sheet thickness and movements, would be valuable.

**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.

- C3 The approach and use of sources for the national-scale screening process seems to be appropriate for this stage, with the addition given in comment 1 (C1).
- C9 Hard to answer when the reader has not knowledge on the contents and reliability of the sources mentioned. But being existing material in the BGS, there may enough to have a look at the latest updates.

**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?

- C7 The form of the outputs is good. The role of discrete fracture should be included, at least on a conceptual level.

**Question 4:**

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

- C2 Demonstrating safety. Section 2.14-2.17. The compliance with the regulatory guidance could be brought up as a specific point. Now they are stated under 2.15 but it could be better specified that the safety case has to comply with these, e.g. under 2.17.

The outcome of the screening could be discussed and described a bit more. What are the plans regarding siting and site characterisation after screening. Any idea on the number of sites to be further (preliminarily) characterized? (in Finland there were 5). What are the decision steps to be taken at various stages. It should also be stated, if no plans exist or are postponed to later stages.

Staff members from the Long-term Safety Department at Saanio & Riekkola Oy, Helsinki, Finland have provided the above comments to RWM's public consultation.

The Long-term Safety Department at Saanio & Riekkola Oy was previously responsible for establishing the Safety Case TURVA-2012 for Posiva Oy's DGR construction license application at Olkiluoto, Finland which was finally submitted in December 2012.

On February 13<sup>th</sup> 2015, the Finnish nuclear regulator STUK, announced the disposal facility could be built to be safe. On November 12<sup>th</sup> 2015 the Finnish parliament approved the construction license application, permitting Posiva Oy to proceed with the construction of the disposal facility at Olkiluoto in the Eurajoki municipality in Western Finland.