

<b>Meeting:</b>	NuLeAF Steering Group, 30 April 2008
<b>Agenda Item:</b>	4
<b>Subject:</b>	Launch of the Repository Siting Process: Update and Future Work
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<b>Purpose:</b>	To provide an update on developments associated with the siting of a Geological Disposal Facility

## **Introduction**

It is anticipated that the White Paper on the implementation framework for siting a geological disposal facility (GDF) will be published within the next six weeks. This will be accompanied by an invitation to communities to express an interest in the possibility of participating in the siting process.

This report provides an update, covering:

- progress on key issues in the implementation framework
- launch of the White Paper and siting process
- associated documentation and processes
- NuLeAF's future programme
- NDA briefing session
- R&D workshop
- CoRWM work programme
- retrievability

## **Recommendations**

That the Steering Group:

- 1 endorse the arrangements for responding to the launch of the White Paper and siting process as proposed in this report;
- 2 endorse the key elements of a post-White Paper work programme as proposed in this report; and
- 3 re-affirm its view that the extent to which measures should be put in place to enhance retrievability from a GDF should be discussed with, and agreed by, potential host communities during the siting process.

## **1 Progress on Key Issues in the Implementation Framework**

Discussion with Government and NDA at recent liaison meetings has focussed on the way the implementation framework may address key issues, including who can Express an Interest in participation, the role of Community Siting Partnerships and Rights of Withdrawal. NuLeAF's input on these issues has been well received, for example, on the need for the relevant local authority/ies to be involved in an Expression of Interest, and the importance of a post-borehole Right of Withdrawal.

Discussions have also taken place about:

- Whether there will be a need for one or two planning applications for underground investigations and repository construction. This question cannot be resolved until site-specific data is available from surface-based investigations. If sufficient data is obtained from the latter, then a single application for both underground investigations and construction, using a 'parameter-based' approach, may be possible. If sufficient information cannot be obtained, then it would be necessary to submit separate planning applications for underground investigations and facility construction.
- Preparation of a Community Package Framework to guide local discussions about package development and help ensure a consistent approach across participating areas. At the time of writing, it is not clear whether a Framework will be published alongside the White Paper.

## **2 Launch of the White Paper and Siting Process**

All local authorities in England and Wales will be informed about the publication of the White Paper and launch of the siting process by letter from Government. This will be accompanied by press statements and a tiered approach to information provision about geological disposal and siting on the DEFRA website.

The SG should consider how it wishes to respond to the launch, including its policy perspective, initiatives with the LGA and information for member authorities.

### *Policy Perspective*

It is proposed that the SG agree that the following key points be used in statements responding to the launch of the White Paper and siting process:

- NuLeAF recognises the need to make progress in the long-term management of higher activity wastes, following decades of failed attempts to implement policy.
- NuLeAF recognises that geological disposal is widely considered to be the preferred long-term approach<sup>1</sup>, subject to interim storage arrangements being robust to delay or failure in the siting programme, and regulatory and host community confidence in long-term environmental safety at a specific site.

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<sup>1</sup> See NuLeAF, 'Geological Disposal', Policy Statement 3, January 07. The statement recognises that there will be a spectrum of views amongst member authorities on the degree of confidence that can be placed on the long-term safety of geological disposal.

- The White Paper represents a major step forward in establishing a new implementation framework. The fundamental switch away from decide-announce-defend to a siting process based on willingness to participate, partnership and enhancing community well-being is welcome. The Government's commitment not to impose a repository on an unwilling community is particularly welcome.
- It is essential that *major local decisions* within the siting process are taken by local authorities, including: any decision to participate at key stages, or exercise a right of withdrawal; the local acceptability of proposals for community support packages; and the local acceptability of the sites within an area that are proposed for field investigations. Key decisions should be informed by the work of Community Siting Partnerships.
- It will be important for there to be sufficient time and resources to genuinely empower potential host communities and their local authority/ies, and for a substantial community package that is additional to the direct and indirect socio-economic benefits of hosting a repository.
- The way Government has worked with NuLeAF to develop its approach to implementation is welcome. As the process moves forward, NuLeAF will continue to liaise with member authorities to help articulate a national local government voice on siting issues.
- NuLeAF will support, assist or advise any local authorities that may wish to consider participation in the siting process.

#### *Initiatives with the LGA*

At its last meeting, the SG agreed that the Executive Director should enter into discussion with the LGA with a view to issue of a joint press statement and publication of an article in Local Government First to coincide with the launch of the White Paper.

As a result of discussions, the LGA has agreed to:

- Consider adoption of a policy perspective on the long-term management of higher activity radioactive wastes (based on the bullet points above)
- Issue a joint press release with NuLeAF in response to the launch of the White Paper
- Send an alert to Chief Executive Officers about the launch
- Publish an article in Local Government First
- Hold an interactive web-based discussion (currently scheduled for June 19).

#### *Information for Member Authorities*

The following arrangements are proposed:

- Issue of an e-bulletin following the SG meeting to alert member authorities to the imminent launch of the White Paper and siting process;
- Creation of a dedicated section on the siting process on the NuLeAF website; and
- Issue of an e-bulletin following the publication of the White Paper, containing an initial commentary on the White Paper and associated materials.

It is proposed that the section on the website: set out the policy perspective above, explain the next steps in the siting process (and link to the DEFRA website), highlight the NuLeAF offer of support, assistance or advice, link to key NuLeAF documents and the LGA website, and outline NuLeAF's future work programme on the siting process (see below).

### **3 Associated Documentation and Processes**

It is anticipated that the following documents/processes will be launched around the time of the White Paper:

- NDA's proposed site assessment methodology: initially this will be published by NDA as a draft, pending consultation on the proposed methodology as part of the GDF Strategic Environment Assessment (SEA) process later in the year. The consultation will enable any authority that has expressed an interest in participation in the siting process to comment on the proposed site assessment methodology.
- NDA's GDF R&D Strategy: this will set out the NDA's proposed strategy for research and development on geological disposal and associated issues. The strategy will also be subject to stakeholder comment prior to review and further development.
- NDA's proposed Public and Stakeholder Engagement Strategy: this will also be subject to stakeholder input, alongside the SEA process.
- Environment Agency consultation on Guidance on Regulations for Authorisation of disposal facilities.
- The 2007 UK Radioactive Waste and Materials Inventory.

The NDA is also working on a 'provisional implementation plan', which will be discussed in Regulatory Interface Management Meetings and with CoRWM prior to developing a version for publication.

### **4 Future Work Programme on Repository Siting**

Following publication of the White Paper, it is proposed that NuLeAF's work programme on repository siting include the following:

- Offering involvement in preliminary discussions about the siting process with local authorities that may wish to consider participation in that process
- Developing and disseminating further guidance to potentially interested local authorities on the requirements of effective local engagement programmes to inform a decision about participation in the siting process
- Supporting and assisting authorities as they undertake the steps leading to a decision about participation
- Contributing to development of the sites assessment methodology and process
- Contributing to development of the community package framework
- Contributing to development of any further guidance that may be prepared on Siting Partnerships
- Contributing to development of the joint permissioning schedule and the resolution of any issues that arise in its development
- Contributing to development of the NDA plan for public and stakeholder engagement for the period following local decisions to participate in the siting process
- Reviewing key assumptions in the NDA's provisional implementation plan

- Helping to ensure transparency and confidence in the repository science and technical programme and the process for its regulatory review.

To this end, dates have been agreed with DEFRA for monthly liaison meetings between June and December.

## **5 NDA Briefing Session**

A detailed briefing on the NDA's GDF-related work has been arranged for the morning of 13 June in Herdus House, West Cumbria. The briefing is primarily for the NuLeAF MRWS Officer Working Group. Additional briefings can be arranged as requested, either for SG members or other local authorities that might be interested in expressing an interest in the siting process.

## **6 R&D Workshop**

At its last meeting, the SG agreed that nominations be sought for attendance at the 4 March regulator workshop on processes of review of the scientific and technical programme on repository development.

Initial discussion at the workshop was wide-ranging, resulting in agreement amongst participants that:

- a similar workshop should be organised on the outcome of the NDA review of interim storage
- waste from new build should be included in the scientific and technical programme, but the wider policy issues around new build were beyond the scope of the workshop.

The afternoon session of the workshop generated lists of comments and questions about processes of review of repository R&D, the siting programme and stakeholder engagement. These formed the main output of the meeting, and will provide information for the regulators in considering how to move forward.

## **7 CoRWM Work Programme**

At the end of February, CoRWM offered a brief opportunity to comment on its draft work programme for 2008-11. The Executive Director submitted brief comments on the draft, which are available at [Comments on CoRWM's draft work programme](#). These welcomed the proposed work programme, requested early engagement on any issues affecting local government, but suggested that the programme should contain a clearer explanation of proposed priorities and how they might change with time.

The CoRWM programme submitted to Ministers following review of comments is at [CoRWM Work Programme 2008-11](#). This explains that the three key strands of its advice and scrutiny role cover geological disposal, interim storage and R&D. The committee intends to produce the following:

- Mar 09 – a review of interim storage
- June 09 – a review of the MRWS programme and progress on geological disposal
- June 09 – a review of R&D

These reviews will be informed by a range of position papers during the course of 08-09. These will be made publicly available and help identify any issues needing early attention. The Committee also intends to produce a summary report in June 09 on the effectiveness of the implementers' and other organisations public and stakeholder engagement.

## **8 Retrievalability**

At its meeting in January, the SG agreed that this meeting should consider a report on repository designs and retrievalability.

It should be noted that the term 'retrievalability' is often used as a short-hand for a number of different ways of getting radioactive wastes out of a repository. To avoid confusion about what is really meant, it is helpful to distinguish between:

- Reversibility – where the waste can be taken out of a repository by simply reversing the original emplacement process. In this case, the repository has not been back-filled and sealed.
- Recoverability – where additional steps have to be taken to retrieve the wastes. If access tunnels have been kept open, this might entail removing the material used to 'backfill' vaults, for example, by water jetting. However, if access tunnels have been back-filled, it would entail mining or similar intrusive methods.

In all these cases, the waste is 'retrievable', but the cost and complexity of retrieval increases as we go from 'reversibility' through more difficult types of 'recoverability'. In other words, the 'retrievalability' of the wastes decreases.

Two Briefing Papers on retrievalability are available on the NuLeAF website, [BP8 July 07](#) and [BP15 Mar 08](#). BP8 summarises the pros and cons of designing a repository to enhance retrievalability:

### *Pros*

Wastes could be taken out of the repository in response to:

- Technical safety concerns that are only recognised after waste emplacement eg advances in scientific understanding reveal unexpected characteristics or phenomena that are detrimental to the long-term safety of the repository.
- A desire to extract resources from the wastes in the repository.
- A desire to use alternative waste treatment or disposal techniques developed in the future.
- Changes in social acceptance and perceptions of risk, or changed policy requirements.

Other pros include:

- Flexibility (the repository could be backfilled and closed at any time within the design life for the period of extended underground storage).
- Public and stakeholder support, increased prospect of acceptability to potential host communities, and potential to inspire more confidence.

## *Cons*

Reasons for not keeping a repository open for extended periods include:

- Imposing burdens on future generations, including the need for continued active management of the wastes during underground storage, and ultimately the need to backfill and close the repository or retrieve the wastes.
- Potential negative effects, including conventional safety and radiological exposure of workers engaged in extended storage operations.
- Potential for failure to seal a repository properly due to loss of organisational, technical or financial capabilities.
- Increased opportunity for unauthorised access to the repository to retrieve or interfere with the wastes during times of social or political unrest.

Other cons include:

- Increased financial costs associated with more onerous design requirements and keeping the repository open for longer.
- Questionable flexibility – once wastes are emplaced it is difficult to envisage circumstances where wastes would be removed, because this would require alternative facilities and potentially involve abandonment of an expensive repository.

In addition, an Environment Agency review of the viability of Nirex's PGD concept<sup>2</sup> has expressed concern that plans for a long period of underground storage are not sufficiently technically underpinned. The EA expressed particular concern about waste package degradation during extended underground storage. The NDA is currently reviewing the extent to which waste package degradation may limit the period of underground storage that is possible.

BP15 outlines the measures that can be taken to enhance retrievability, including:

- **Design of the repository** – retrievability would be enhanced through improved stability of access tunnels and shafts and disposal vaults, a reduced number of packages per vault, control of environmental conditions in the vaults, reduced distance from emplaced wastes to the nearest access point, enhanced stiffness and water tightness of vault lining and use of easily removable backfill material.
- **Design of the waste packages** – retrievability would be enhanced by good corrosion resistance of the package material and emplacement of packages in disposal containers or over-packs.
- **Operational measures** – retrievability would be enhanced by keeping disposal vaults, access tunnels and access shafts open.
- **Monitoring of package integrity** – retrievability would be enhanced by maintaining package integrity. To do this requires monitoring of temperature, water saturation and geochemistry in the disposal vault.

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<sup>2</sup> EA, 'Review of Nirex Report: The Viability of a Phased Geological Repository Concept for the Long-Term Management of the UK's Radioactive Waste', NWAT/Nirex/05/003, November 2005.

- **Monitoring of waste accessibility** – retrievability would be enhanced by maintaining waste accessibility. To do this requires monitoring of the stability of openings, the extent of water saturation in back-filled vaults, and ambient conditions (eg temperature and radiation) in the repository.
- **Maintaining equipment** – retrievability would be enhanced by maintaining or replacing equipment installed to allow reversibility of waste emplacement (eg lifting gear).

Judgements about the extent to which measures should be taken to enhance the retrievability of radioactive wastes from a geological repository will have to be based on what is technically achievable, and should involve a careful weighing of the pros and cons.

It is proposed that the SG re-affirm the view that the extent to which measures should be put in place to enhance retrievability should be discussed with, and agreed by, potential host communities during the siting process.