

<b>Meeting:</b>	NuLeAF Steering Group, 6 July 2011
<b>Agenda Item:</b>	7
<b>Subject:</b>	Progress Report
<b>Author:</b>	Fred Barker
<b>Purpose:</b>	To report on a range of developments relating to nuclear legacy management

## **Introduction**

This progress report covers the following items:

- NDA Strategy and meetings with Local Authorities
- process for siting a geological disposal facility
- the interim storage of spent fuel from new nuclear power stations
- the Submarine Dismantling Project, and
- NuLeAF finances.

The report is for noting.

## **Strategic Objectives**

The developments reported are relevant to the following strategic objectives:

### *NDA Strategy*

- Encourage development of (a) an appropriate framework for handling new developments and (b) centralised and multi-site approaches where they are supported by affected LAs in light of the overall balance of benefits and disadvantages.
- Seek to ensure that proposals for new projects that may be simpler, faster or cheaper than current practices can be convincingly demonstrated to be the best practicable, taking into account a full range of life cycle, safety, environmental and socio-economic factors, and stakeholder views.

### *Geological Disposal Facility (GDF)*

- to liaise effectively with any local authority that may wish to consider, or makes, an expression of interest in the GDF siting process and to provide assistance as appropriate
- to work with Government, the NDA, CoRWM, regulators and member authorities to help ensure that the approach based on voluntarism and partnership works robustly in practice
- to ensure member authorities are briefed and up-to-date on developments in the GDF siting process.

*Submarine Dismantling Project (formerly ISOLUS)*

- Encourage any member authority that may be affected by the management of the radioactive wastes from laid up nuclear submarines to participate in consultation on the proposed way forward.
- Encourage MoD to adopt clear objectives and good practices in the consultation on options for managing radioactive wastes from the Submarine Dismantling Project.
- Seek to ensure that the approach taken to the implementation of the Submarine Dismantling Project is consistent with developments in the civil nuclear industry.

## **1 NDA Strategy and Meetings with Local Authorities**

Members will recall that the Steering Group meeting on 25 January endorsed a proposed approach to encouraging greater engagement between NDA, SLCs, regulators and member local authorities on site restoration at NDA sites. Initially, this approach will be based on two 'strategic level' meetings that are taking place as follows:

- 22 June, Birmingham & Midland Institute for local authorities associated with Berkeley, Hinkley Point, Oldbury, Trawsfynydd and Wylfa sites; and
- 27 June, Local Government House for local authorities associated with Bradwell, Dungeness, Sizewell, Harwell and Winfrith sites.

The agendas will include presentations and discussions on NDA Strategy, Site Licensee approaches to implementing strategy and the implications for LAs.

A verbal report on the outcome of the meetings will be provided at the SG meeting.

## **2 Process for Siting a Geological Disposal Facility (GDF)**

The West Cumbria MRWS Partnership has entered the assessment phase of its work programme and anticipates consulting in the autumn on its draft advice about whether to participate in the siting process. The Executive Director (ED) has been contributing to the assessment work through involvement in the Partnership's Technical Review Group. This has included preparation of initial drafts of assessment reports on the Partnership's 'indicators of credibility' (considered at the Partnership meeting on 24 May), the siting process and on the inventory of radioactive wastes for disposal (both topics considered at the Partnership meeting on 24 June). The ED has made an officer input to these assessment meetings. Meeting reports are published on the Partnership website at <http://www.westcumbriamrws.org.uk>.

The second meeting of the Government's Geological Disposal Implementation Board is taking place on 28 June. The meeting will consider a geological situation report, an update on the work of the West Cumbria MRWS Partnership (provided by the Chair of the Steering Group, Councillor Knowles), and a report on NDA and regulatory 'issue resolution processes'.

## **3 Interim Storage of Spent Fuel from New Nuclear Power Stations**

NuLeAF's comments on the draft revised Nuclear National Policy Statement included:

... we consider it essential that potentially affected local authorities are fully involved in a timely way in assessment and decision-making about interim storage options, particularly where multi-site options are under consideration. To that end, we would welcome any encouragement that Government can give to developers to ensure that appropriate local authority involvement takes place.

At the January 2011 Steering Group, Nuclear Industry Association (NIA) representatives presented the outcome of the industry study on options for new build spent fuel management and disposal (see Annex for relevant extract from the study). Much of the subsequent discussion focused on the potential process for moving from the base case (spent fuel storage

and encapsulation at each new build site) to a centralised approach. NIA explained that currently EdF has to proceed with the base case. In their opinion, to do otherwise would require a Government policy change to the base case, and development of a demonstrable case for a centralised approach, which were matters for the MRWS process. The ED observed that it was not clear how and when the MRWS process might address these issues. It was noted that further discussion with DECC would be required to clarify a potential way forward.

This issue was pursued with Bruce Cairns (BC) of DECC at the NuLeAF Steering Group meeting in April 2011. In contrast to the NIA view, BC stated that the nuclear industry is free to consider moving towards centralised or regional storage for spent fuel from new nuclear stations, but they would have to go through a process of discussion with relevant parties.

Given the current position on new build developments, it would probably be premature to seek further discussion with industry at this time. However, the Secretariat will keep this issue under review.

#### **4 The Submarine Dismantling Project**

MoD is currently undertaking detailed options analysis and environmental assessment of 'integrated options' for managing the radioactive wastes from laid-up nuclear submarines. These options combine different technical approaches, dismantling sites and generic storage options. MoD plans to conduct public consultation in the autumn. Then, taking Strategic Environmental Assessment, options analysis and public consultation responses into account, MoD will complete its analysis leading to strategic decisions on the project. Key documentation relating to the project is available on the MoD website at: [Submarine Dismantling Project | Background Information](#). This includes documents which explain MoD's approach in the project to decision making and to public and stakeholder engagement.

The MoD is in discussion with representatives of Plymouth City Council about assessment to date and plans for the local aspects of consultation in Plymouth and neighbouring areas.

#### **5 NuLeAF Finances**

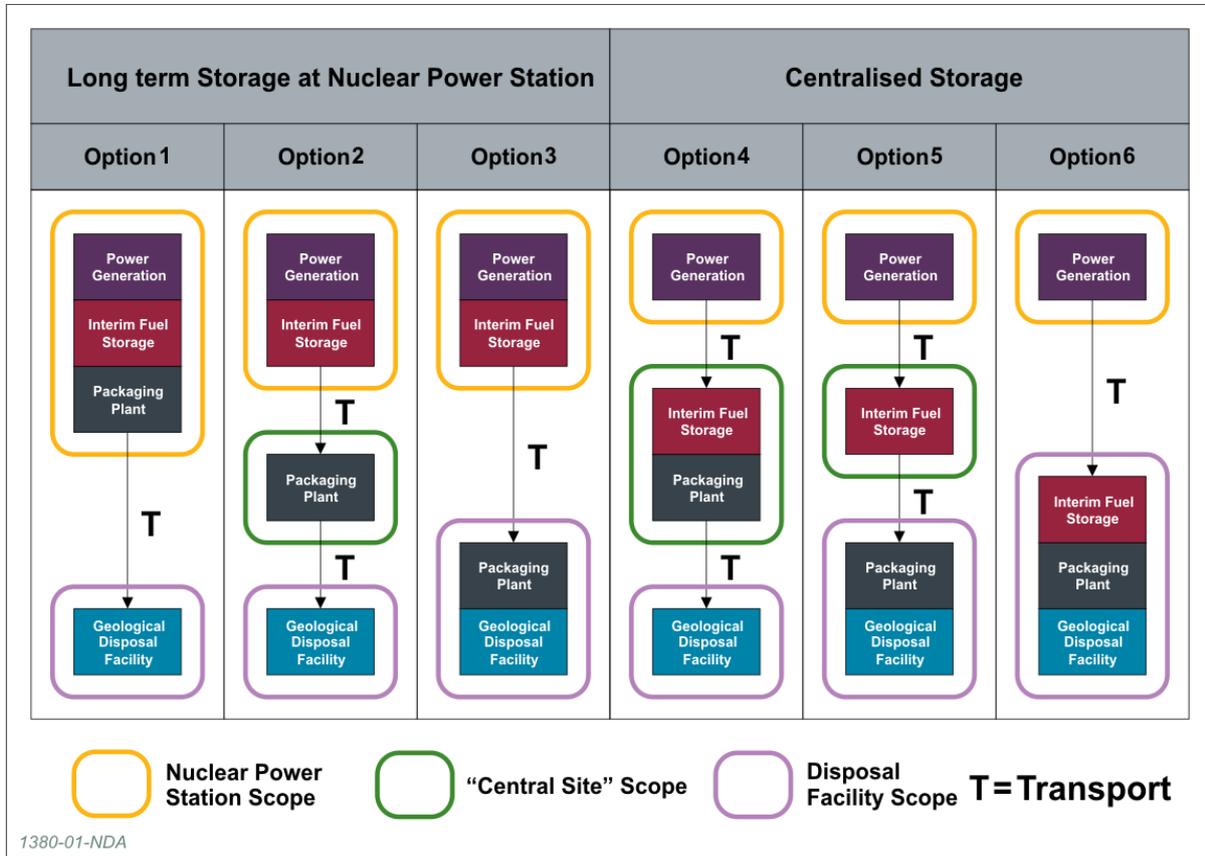
It was agreed at the AGM in October 07 that NuLeAF's accounts be audited by Suffolk County Council on an annual basis. The fourth annual audit has recently been completed. The main findings were that:

- Audit Services found all files (both manual and electronic) to be in order. The audit stated that "administration and audit trails are clear, concise and easy to follow".
- The Income and Expenditure Statement for 2010-11 was checked and verified. Income was £115,755 and expenditure £112,720. The small surplus has been added to reserves.
- The treatment of VAT on commissioned work should be checked. Subsequent discussion with the Suffolk County Council Direct Tax Specialist has led to VAT being charged on all commissioned work.

In terms of income in the current Financial Year, the Chair and Vice Chair have written to DECC to request a funding contribution. Members should also note that at the time of writing, two contributing members have withdrawn their financial support because of spending constraints.

**Annex: Extract from ‘Feasibility studies exploring options for storage, transport and disposal of spent fuel from potential new nuclear power stations’, NDA, November 2010**

There are six potential location combinations for the siting of the nuclear power stations, SF store, packaging plant and GDF. These are summarised in the Figure below:



The current assumption for SF management is represented as Option 1 and is referred to as the base case. In this Option, following discharge from the reactor, fuel is interim stored at the power station site until it is sufficiently cool to be packaged and disposed of at the GDF. Given the currently assumed thermal constraints on disposal, the SF might be required to be stored for a period of the order of 100 years following discharge. As the new nuclear power stations are expected to operate for a period of 60 years this could mean SF is stored on site for a period of up to 160 years. This option would be expected to incur significant on-going annual costs due to the requirement to ensure secure and safe management of the SF over the storage period. In addition, it requires a packaging plant to be built at each site to prepare the SF for disposal. The packaging plants would not be expected to start operations until after the necessary cooling period (which currently requires packaging after cessation of power station operation). The duplication of construction, operation and decommissioning activities suggests this option is likely to be the most resource intensive and the least cost effective.

With respect to location, there are a number of options that could be potentially beneficial in terms of improving the management of SF compared to Option 1. In Option 2, the SF is interim stored at the power station as Option 1 and then transported to a central site for packaging and onward transport to the GDF. The advantage of this option compared to Option 1 is the avoidance of building a packaging plant at each power station site and the opportunity of sharing a packaging plant with SF from other nuclear power stations and from

legacy SF. However the disadvantage is that it would require two transportation steps: SF to the packaging plant and packaged SF to the GDF.

In Option 3, SF is interim stored at the power station as Option 1 and then transported to the GDF site where it is packaged and disposed of. The advantage of this compared to Option 1 and 2 is that all the transport can be undertaken using existing types of transportation casks and when compared to Option 2 only one transport step is required. In addition, the packaging plant could be integrated with the disposal facility. It must be stressed that the MRWS framework for implementing geological disposal is founded on the principles of voluntarism and partnership with local communities and they will have an ongoing right of withdrawal until a late stage in this process. If this option was to be pursued further then discussions would need to take place with communities who are involved in the site selection process to determine their views on considering potential additional facilities at the site of a GDF.

A plant to package legacy SF and HLW has been investigated previously by UK Nirex Ltd. It is envisaged that SF from new nuclear power stations could be received on a campaign basis by modifying one of the three feed lines to accept slightly longer fuel assemblies, thereby sharing the facilities with the legacy waste and SF. No significant high-level feasibility issues were identified although further assessment of design modifications would be required to confirm viability of packaging both legacy SF and new nuclear power station SF through a common plant. This is discussed at Section 4.4.

Options 4 to 6 are all variants of centralised storage. The consolidation of SF at a single site may provide increased effectiveness and efficiency of arrangements for the security of SF given the storage periods envisaged. In Option 4, fuel is discharged from a reactor and stored for a period at the power station prior to transport to a central store for a period of interim storage. Following the period of interim storage at the central site, the SF is packaged and transported to the GDF for disposal. Option 4 has the advantage of removing the SF from the new nuclear power station site at an early date and the potential of building only one centrally-located packaging plant. Conversely, it has the disadvantage of requiring two transportation steps: SF to the store and packaged SF to the GDF.

In Option 5, SF is discharged from the reactor and stored for a period at the power station site prior to transport to a central store for a period of interim storage. Following the further period of interim storage, the SF is transported to a central packaging plant, co-located with the GDF, where it is packaged and disposed of. In this option the SF is removed from the new nuclear power station site at an early date and all transportations can be accommodated using existing types of transportation casks. The process for considering this scope change to the MRWS framework applies in the same way as discussed for option 3.

Finally, in Option 6, SF is discharged from the reactor and stored for a period at the power station prior to transport to a central store, which is co-located with both the packaging plant and the GDF. The process for considering this scope change to the MRWS framework applies in the same way as discussed for option 3. Following a further period of interim storage, the SF is packaged for disposal and emplaced underground. The advantage of this option is that SF is removed from the new nuclear power station site early, only a single packaging plant is potentially required, the transport of SF can use existing types of transportation casks and only one transport step is required.