

**Exotic Fuels and Nuclear Materials – Dounreay**

**LEAD OFFICER:** Steve Smith  
**REPORT AUTHOR:** Denice Gallen

**Summary and Recommendation:**

This report provides a summary of the Exotic Fuels and Nuclear Materials – Dounreay Credible Options paper and outlines the Councils response.

Recommendation:

That the contents of the report and the response are noted.

**1. Introduction**

The NDA published the Exotic Fuels and Nuclear Materials – Dounreay Credible Options paper in February of this year the consultation response deadline was the 23<sup>rd</sup> March 2012. A copy of the consultation response was circulated prior to submission and is attached to this document as Appendix 1.

The document identifies two high level credible options:

- To continue to manage the exotics at Dounreay, which is the current baseline plan
- To transport the exotics to Sellafield for management

Both are compliant with current UK and Scottish Government policies.

The NDA have stated that using their Value Framework the option to transport exotics to Sellafield for management has many advantages but they state that this option needs to be discussed with regulators and stakeholders.

A consultation took place in November 2011, an earlier Credible Options paper, on the Dounreay Fast Reactor Breeder Fuel, as a result of this consultation it was determined that the most appropriate method was to transport the materials to Sellafield for management.

## 2. Assessment of the Options

There are only two sites that the NDA have that are capable of dealing with the exotics within the UK these are Sellafield and Dounreay; therefore all other sites were excluded from the options analysis.

In order to assess the two sites the NDA used a value framework a summary of which was included in the report and is shown below:

ATTRIBUTE	Transport the exotics to Sellafield for management	Manage the exotics at Dounreay
Hazard Reduction	<ul style="list-style-type: none"><li>• Safety and Environmental Detriment (SED) of the exotics is many orders of magnitude less than that posed by the inventory held at Sellafield. The small increase in volume will result in no noticeable difference in Sellafield SED scores, but a reduction in SED scores at Dounreay.</li></ul>	<ul style="list-style-type: none"><li>• Retention at Dounreay means that no reduction in the site hazard potential associated with the exotics is possible until they are removed at the end of the site life.</li><li>• The Interim End State would need to include management of exotics in the long term.</li></ul>
Security	<ul style="list-style-type: none"><li>• Nuclear material stored with similar protected material at Sellafield</li><li>• Net reduction in security risk at Dounreay by transferring nuclear material to a site with existing long term secure facilities which will be retained until at least 2080.</li><li>• Will be carried out in compliance with security requirements so negligible security risk increase associated with transport.</li></ul>	<ul style="list-style-type: none"><li>• Dounreay would continue to be guarded, aligned to the quantity of fissile material and Vital Areas on the site, until the fuel and materials are transferred to a disposal facility, or are managed in alignment with any potential future Scottish Policy for Spent Fuels and Nuclear Materials.</li><li>• Physical security requirements would need to be maintained at a level commensurate with Category I material until beyond 2075. This requires new stores to be constructed.</li></ul>

Safety	<ul style="list-style-type: none"> <li>There would be a slight safety detriment due to the increase in off-site movements. This could be kept at a minimum depending on the transport mode.</li> <li>No new stores (beyond that already planned for Sellafield) would need to be constructed.</li> </ul>	<ul style="list-style-type: none"> <li>Retention at Dounreay would require new fuel stores to be constructed, with an inherent increase in construction safety risk.</li> <li>The continued presence of exotics on the Dounreay site means enhanced security arrangements need to be maintained.</li> </ul>
Environment	<ul style="list-style-type: none"> <li>Some environmental detriment (e.g those arising from emissions from fuel consumed during transport) due to the transfer of material packages from Dounreay to Sellafield.</li> </ul>	<ul style="list-style-type: none"> <li>Environment detriment due to the use and transport of construction materials required to build new facilities and modify existing facilities.</li> <li>There is no recycle opportunity at Dounreay, so exotics would probably require indefinite storage as near surface disposal would not be possible .</li> </ul>
Socio-economic	<ul style="list-style-type: none"> <li>No meaningful difference between options</li> <li>Sellafield 'business' would increase and extra resources for processing exotics would be required.</li> <li>Through delivery of this option, transfer of exotics would support an earlier attainment of an interim end state at Dounreay site.</li> </ul>	<ul style="list-style-type: none"> <li>No meaningful difference between options</li> <li>Retention of exotics at Dounreay would require continued resources for processing and appropriate site security</li> </ul>
Cost	<ul style="list-style-type: none"> <li>Overall infrastructure and security savings is expected to be in the hundreds of millions of pounds. The exact figure would depend on the detailed implementation plans, cost of potential reutilisation of existing facilities at Dounreay, and the mode of off-site transport.</li> <li>These cost savings would be subject to economic discounting.</li> </ul>	<ul style="list-style-type: none"> <li>No savings against the current plan.</li> </ul>

The value framework used criteria such as hazard reduction, security, safety, environment, socio-economic and cost. In the credible options paper it stated that the above document was a summary of the value framework, however there was some confusion over what was the complete framework and if it was available to share with stakeholders.

The summary value framework shown above in terms of socio-economics states that there “*is no meaningful difference between the options.*” It maybe considered that to state that there is

no meaningful difference between the options shows a lack of understanding of the issues and negative perceptions surrounding the waste transfers.

The issue of cost shows a saving for the proposed move to Sellafield option with no mention of redistributing this savings to the area where the burden is being displaced too.

The proposed value framework also gives no indication of the weighting process and how factors have been weighted or whether they have been all given the same level of importance.

### **3. Implications for Copeland / Way Forward**

As stated above the consultation response date for the credible options papers was the 23<sup>rd</sup> March. In the response the Council emphasised the need for early and meaningful engagement and took the view that the credible options paper did not fulfil the operator's obligations on consultation. Furthermore it was stated that the consultation with past proposals e.g. The DFR Fast Breeder Fuel was inadequate and the consultation process needs to be in a more appropriate open, transparent manner.

The response to the consultation highlights the need to negotiate a community benefits package to offset the burden of hosting and storing the exotic fuels from Dounreay.

### **4. List of Appendices - Appendix A – Exotic Fuel Consultation Response**

### **5. Consultees**

## **Appendix A – Exotic Fuel Consultation Response**

### **Exotic Fuels and Nuclear Materials – Dounreay Credible Options Feb 2012**

Copeland Borough Council has considered the above consultation and has the following comments:

- The NDA state that the purpose of the paper is to engage with stakeholders before any decision is made in March/ April 2012 – Copeland would suggest that this consultation as a form of ‘engagement’ is too limited and generic to qualify as meaningful engagement and would recommend that further consultation is required with the affected local communities before any decision can be made. It is unclear from the document when, how and what form this consultation will take, this needs to be clearly defined with the prospective community benefit contributions firmly established.
- The consultation states that the option of transport to Sellafield for management needs to be discussed with regulators and stakeholders before any approved strategic decision can be made. Copeland would stress the need for early meaningful engagement and would suggest that the NDA adopt the open transparent approach used by the MRWS framework rather than the previous less positive consultation exercises such as the DFR Breeder consultation in November 2011.
- Within the document it states that “Modern facilities are either under construction or planned at Sellafield” – An explanation of which ‘facilities’ this refers to would be useful and help to clarify how the NDA consider that Sellafield can foreseeably handle the fuel i.e. Are these facilities for reprocessing the fuels or storage?
- In the value framework analysis it is stated that no new stores are needed (beyond that already planned). However, the types of material permitted to be stored are conditional and further investigation is required with the Local Planning Authority to establish the merits of this proposal. Before the NDA engage with Planning Authorities to pursue a preferred strategy it is considered that more recognition needs to be given to the burden that the Copeland community carries now and will continue to carry as these materials with the associated potential safety security and environmental issues are left for the local community to manage.
- Under socio-economics the value framework states that there is no meaningful difference between the options. The displacement of the burden of hosting these materials from one community to another has a positive impact on the community they are removed from and a negative impact on the community they are moved too. It is considered that this statement shows a lack of understanding of the fears and possible resistance within potential host communities.
- Increase in Sellafield business is stated as a socio-economic benefit, however it does not articulate how the fuel will be reprocessed therefore it must be assumed that it will be held within storage and therefore have very limited benefit to the wider community.

The benefits to the community would have to be provided through some form of community benefit contribution which could be partially funded through the saving achieved through reduced security arrangements at Dounreay.

- The Options Analysis states that “Sellafield already has similar materials so there would be no meaningful change in the Sellafield site hazard profile.”

There is no consideration of the socio-economic impact on the local community as the radioactive material inventory at Sellafield continues to rise. This might give the potential appearance of undermining the on-going MRWS process for siting a geological repository. The local community remains highly sensitive to these issues. The consultation document needs to present a more strategic analysis of the importance and national value to the UK of Copeland's stewardship role hosting nuclear materials. This strategic analysis should then consider a reasonable benefits package.

We look forward to your response in due course.

Denice Gallen  
Nuclear and Energy Officer Copeland Borough Council