

1 The Nuclear Institute

The NI is a charity registered in England. Its objectives relate to:

- *the advancement of education relating to nuclear energy;*
- *the advancement of nuclear science, engineering and technology;*
- *in the interests of public safety, the promotion of high standards of education and professional performance amongst those engineers, scientists and others working within the nuclear industry;*
- *the promotion of the public understanding of nuclear sciences and the impact on society and the environment.*

It is a professional and learned body with over 2000 individual members, made up of engineers, scientists, other professionals and a number of individuals who have an interest in the NI's objectives. The NI is licensed by the Engineering and Science Councils to register qualified members as Chartered Engineers and Chartered Scientists.

The NI has ten regional branches across the UK. It also has two national networks: the Young Generation Network and Women in Nuclear, which seeks to address the industry's gender balance and improve the representation of women in leadership roles across the sector.

The NI is not a trade association and does not directly take account of its company members' views, instead relying on individual members' views and its charitable objectives to come to an independent position.

The NI is a member of the European Nuclear Society (ENS).

This response was developed within the RadWaste Special Interest Group of the Nuclear Institute. The principal purpose of this group is to highlight the importance of radioactive waste management to the UK to encourage improvements in performance and resilience, and to maximise opportunities for growth.

2 Context

The NDA is now seeking views on a single radioactive waste strategy that will apply to all radioactive waste generated within the NDA Group, including materials that may become waste at some point in the future.

3 Our response- Principal Comments

The preparation of a single radioactive waste strategy for the NDA Group is a positive move and much of the content of the draft strategy is welcome. However, we have identified the following gaps: addressing these would improve the strategy-

- used nuclear fuel is not classified as waste, although it is noted that it might be reclassified as such in the future. This is reasonable because classifying used fuel including Pu from recycling as waste could result in potentially valuable material being

denied to future generations, especially if it is disposed of in the GDF at great cost. However secure storage of used fuel and nuclear materials that might be re-used will be an ongoing issue for the NDA which needs a strategic approach consistent with a government policy (which needs to be defined).

- the strategy is relatively silent on the role of the supply chain. Supply Chain Development is an NDA Critical Enabler that is not mentioned in the 'implementation' section. Does "the wider nuclear industry" in s3.2 5th bullet include suppliers?
- asset management is not addressed directly- there are references sprinkled through the document. It is an NDA Critical Enabler.
- it would be helpful to identify where the strategic position set out in Table 3 represents a change from previous positions, and to link these changes to the benefits of adopting this strategy.
- it isn't clear how a "prioritised phases" approach to implementation will deliver the claimed benefits, or how the priorities have been chosen.

The implementation section lacks a lot of detail. The objectives of the strategy are listed on page 6. Bullet points 2-4 effectively recognise the need for infrastructure. But one of the key blockers to enable optimum use of LLW facilities is that the LLWR permit and planning permissions are explicitly tied to the 4 GBq/t and 12 GBq/t definition of acceptable wastes (across a consignment). This is the same for many of the LLW treatment providers. This blocker is not recognised explicitly in the document; it needs to be addressed to allow more flexible waste management solutions. More could be made of taking opportunities to use well managed and available waste management facilities and infrastructure, even if these are located outside of the UK, subject of course to UK government policy on import and export of radioactive waste.

Section 3.1 refers to the need for credible data. One test of this is the extent of the difference between the UKRWI and RWM's Derived Inventory for those wastes and materials that might go to the GDF. Eliminating this difference should be part of this strategy. The information in the UKRWI should be suitable to support RWM's design and safety case work and be suitable for use in the disposability assessment process. Decisions based on the uncertain data in parts of the UKRWI could be poorly underpinned. It would be well worth devoting some time and effort to tackle this deficiency.

3 Our response- Detailed Comments

We also have the following more detailed comments

- section 2.3. Don't the benefits come from development and delivery of plans to implement the strategy, not from development of the strategy? It isn't clear how having a single strategy will, in itself, lead to the optimisation of waste management, or provide the mechanism for an integrated waste management programme. Don't these depend on having appropriate plans to deliver the strategy?
- following on from this point, raising momentum in radioactive waste management is important, to show that good waste management solutions can be achieved in the short to medium term, and these will enable delivery of NDA's mission. The expected

GDF timescales are long; they should not be used to justify inaction eg avoid the attitude of “we need to wait until the GDF is available before we tackle that difficult issue”.

- what is the relationship between the site Integrated Waste Strategy and the Radioactive Waste Management Case produced under the regulators' joint guidance on the management of higher activity radioactive waste on nuclear licensed sites? Will production of RWMCs be required as part of the implementation of the strategy?
- section 3.2 says “The aim of waste treatment and packaging is to process raw waste into a form that is suitable for disposal, where routes are readily available, or for long-term storage pending the development of suitable disposal routes.” Is this a change of approach or is the intention always to produce a disposable package, even if a disposal route isn't available (as the 6th bullet implies)? The second bullet notes the reasons for undertaking sort and segregation to facilitate waste handling and/or processing. A specific mention of Waste Hierarchy is worth adding. Why does the 6th bullet end with “..if necessary disposed of”? Won't all waste be disposed in some way at some time?
- section 3.3 para 2. Isn't it possible that some containerised waste will be suitable for disposal without additional treatment?
- in Table 3 there is a need for greater clarity on who is meant by “we”. For example the top row on page 16 says “We will provide leadership”, presumably this is NDA. In the next row it says “we will retrieve wastes”, presumably is the SLCs.
- Table 3 refers to “additional near-surface disposal for some HAW”, additional to what? Why does graphite have its own row in Table 3? It will be disposed as ILW or LLW, depending on the conditions for acceptance at the relevant facilities. But that is the same for any type of waste.
- section 5.2.1 of the strategy on People and Skills is particularly welcome. The strategy could go further and promote the status of radioactive waste management professionals within the industry, and for the UK radioactive waste people to be a recognized cadre of excellence for radioactive waste management. Should having expertise in radwaste management be a recognised route to achieving institutional recognition, eg chartership of the Nuclear Institute?
- there are clear references in the document to being able to export radioactive waste to a GDF. However, it is also important to be able to export and retrieve wastes from existing stores, to present and future non-GDF facilities, for example a near surface disposal facility. We understand that, for some stores on nuclear sites, getting the waste out will not be straightforward and suitable plans will need to be developed.