

Meeting: Nuleaf Steering Group
Date: 14th June 2023
Item: 3
Subject: Updates on national developments in radioactive waste management
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Introduction:

This paper updates members on recent developments in radioactive waste management and NDA operations. It covers:

- NDA Group update;
- UK Government update;
- Small Modular Reactors (SMRs) and Advanced Modular Reactors (AMRs);
- AGR Update;
- Regulatory news;
- Nuleaf update; and
- International news.

Recommendation:

This paper is for noting.

1. NDA Group update

1.1 On the 1st April **Dounreay** formally joined with Magnox Ltd. This marks the final major step in the creation of 'One NDA' based around four operating companies¹.

Looking forward, Magnox will expand further as it takes on responsibility for AGR station decommissioning following defueling by EDF. The option of the NDA assuming responsibility for the Vulcan site in Caithness and Ministry of Defence liabilities is also under consideration.

¹ [Dounreay has successfully joined with Magnox Limited - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/dounreay-has-successfully-joined-with-magnox-limited)

1.2. Divers have successfully entered the **Pile Fuel Storage Pond (PFSP)** on the Sellafield site and completed 14 dives². This is the first time the pond has been entered since 1958³.

The PFSP was commissioned in the 1950s for the receipt and storage of fuel and isotopes from the Windscale Piles. It is one of oldest and most hazardous facilities on the Sellafield site containing spent fuel, sludge, radioactive and contaminated solids, intermediate level waste and low-level waste, pond water and contaminated concrete.

While significant progress has already been made, with more than 75% of the waste safely taken out of the pond, divers are needed to help extract the remaining inventory. Removing the material from the pond and placing it into safe storage is a strategic priority for Sellafield and a regulatory priority for ONR.

1.3 A Freedom of Information (FoI) request has highlighted that some workers at two Sellafield work sites were leaving work hours early over a period of several years⁴. The document released also states *'This behaviour was discovered by chance when a building alarm exposed the fact that nobody was present when the plant should have been manned and running.'* The two plants in question were the PSFP and the Waste Monitoring and Compaction Plant. The workers involved were given informal warnings with no formal disciplinary action taken.

1.4 Sellafield has also published its first **Artificial Intelligence (AI) strategy**⁵. The Strategy suggests that Sellafield could become a world leader in the use of AI. Examples of potential uses at Sellafield include automating retrieved waste analysis, removing people from high-risk manual sampling processes.

1.5 The NDA has published its **mid-year performance report 2022-23**⁶. Of the 21 Group Key Targets reported on, three are deemed to be 'At Risk'; nine are classified as 'Stretch' i.e. behind schedule; and the remained are On Target. The document also contains an update on progress against the key activities and milestones in the NDA Business Plan 2022-25. These cover NDA corporate centre and the four operating companies.

1.6 Gwen Parry-Jones has been appointed as the interim CEO of **Great British Nuclear (GBN)**, taking up the role on the 1st May. Gwen's place as CEO of Magnox

² [Divers enter legacy pond at Sellafield - Office for Nuclear Regulation - News \(onr.org.uk\)](#)

³ [Divers enter Sellafield nuclear pool for first time in 65 years - BBC News](#)

⁴ [Sellafield 'reckless' with taxpayers' cash in early home-time row | News and Star](#)

⁵ [Sellafield AI strategy 'to boost safety and speed up site remediation' : Waste & Recycling - World Nuclear News \(world-nuclear-news.org\)](#)

⁶ [NDA Mid-year performance report 2022 to 2023 - GOV.UK \(www.gov.uk\)](#)

Ltd. will be filled on an interim basis by Rob Fletcher⁷. Rob was previously Managing Director of the Atomic Weapons Establishment and President of Rolls-Royce's Civil Nuclear business. He was also a board member of Rolls-Royce Power Engineering plc, the company that oversees production of reactors for the UK's nuclear submarine fleet.

1.7 The NDA has published a **SME Action Plan 2023**⁸. The Plan includes information on the geographical spread of their annual £1.6Billion procurement spend and also how the NDA Group intend to meet their target that a third of spend is with SMEs.

1.8 Nuclear Waste Services (NWS) has launched their **Corporate Strategy**⁹. This sets out the milestones and targets designed to ensure that *'the right waste form, in the right package, is disposed of at the right facility.'* It states that the success of the organisation will be judged by their progress against 10 key milestones to be delivered by 2030.

1.9 A new website has been launched for the **Magnox Site Stakeholder Groups (SSGs)**. This is intended to be more accessible and user friendly and provides information on the Magnox sites and planned engagement meetings¹⁰.

2. UK Government update

2.1 On the 30th March the UK Government launched **Powering Up Britain**, its blueprint for the future of energy¹¹. The main strategy was accompanied by an Energy Security Plan and a Net Zero Growth Plan and is intended to explain how the energy supply will be diversified, decarbonised and made less reliable on foreign sources.

It has a significant focus on new nuclear generation with a central commitment to establish **Great British Nuclear**, tasked with driving delivery of new projects. GBN will be based in the Greater Manchester area and, as noted elsewhere, will be headed up on an interim basis by Gwen Parry-Jones. Its first priority is to launch a competitive process to select the best SMR technologies. This got underway in April 2023 with a process of market engagement.

⁷ [Nuclear Decommissioning Authority \(NDA\) announces leadership changes at Magnox Ltd - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/nuclear-decommissioning-authority-announces-leadership-changes-at-magnox-ltd)

⁸ [NDA SME action plan 2023 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/nuclear-sme-action-plan-2023)

⁹ [Nuclear Waste Services Corporate Strategy 2023 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/nuclear-waste-services-corporate-strategy-2023)

¹⁰ [Site Stakeholder Groups \(magnoxstakeholdergroups.com\)](https://magnoxstakeholdergroups.com)

¹¹ [Powering up Britain - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/powering-up-britain)

2.2 The consultation on **UK policy on managing radioactive substances and nuclear decommissioning**¹² closed on the 25th May. Nuleaf submitted a detailed response and is grateful to members for their feedback on our draft. The final version can be viewed on our website¹³.

2.3 In correspondence with Nuleaf, the UK Government has confirmed that they intend to consult on a proposed way forward for determining how new nuclear reactors might be located. This consultation is due to commence in late 2023 and will feed into the development of a **National Policy Statement (NPS)** on new nuclear to be designated in 2025.

3. Small Modular Reactors (SMRs) and Advanced Modular Reactors (AMRs)

3.1 Rolls Royce's SMR design has successfully completed the first stage of the **Generic Design Assessment (GDA)** process and is beginning Stage 2 of the approval process¹⁴. In this second stage a more fundamental assessment is undertaken which considers whether any significant design modifications are required and whether all information has been provided.

During Stage 1 Rolls Royce provided a scope and submission plan for radioactive waste management arrangements and a disposability assessment. Non-radioactive waste impacts were also considered. The company has committed to share its waste plans with Nuclear Waste Services (NWS) and with stakeholders early in stage 2. NWS will provide disposal advice to Rolls Royce on Higher Activity Waste (HAW) from both operational and decommissioning wastes and for operational Low-Level Waste (LLW).

3.2 A pro-nuclear environmental group, **Re-planet**, has published a report¹⁵ arguing that the UK's spent nuclear fuel, currently classified as waste, could be repurposed for a new generation of fast-neutron reactors that would provide low carbon energy while reducing waste volumes. It claims that there is sufficient energy in Europe's spent fuel to provide the continent's current electricity consumption for 600-1,000 years.

The assertions made in the report have been challenged, including by Prof. Claire Corkhill of Sheffield University. In a letter to The Times¹⁶, she notes that the claims

¹² <https://www.gov.uk/government/consultations/managing-radioactive-substances-and-nuclear-decommissioning>

¹³ <https://www.nuleaf.org.uk/policy-communications/consultation-responses-2/>

¹⁴ [GDA Step 1 of the Rolls-Royce SMR: statement of findings - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/gda-step-1-of-the-rolls-royce-smr-statement-of-findings)

¹⁵ [What A Waste Report \(replanet.ngo\)](https://replanet.ngo/)

¹⁶ <https://twitter.com/clairecorkhill/status/1643900472732819457>

that such technologies do not generate waste are *'plainly false'* and that, *'in reality the reprocessing of spent nuclear fuel results in the generation of non-recyclable radioactive by-products.....fission products, some with radioactive half-lives of 100,000 years, are always generated. This truly is waste – it cannot be reused.'* She notes that a Geological Disposal Facility will therefore still be required.

3.3 The Dalton Nuclear Institute held an online panel discussion on SMRs on the 15th March involving DESNZ and ONR among others. It can be viewed here¹⁷.

3.4 X-Energy UK and Cavendish are proposing to develop a fourth generation SMR on land adjacent to the existing Hartlepool nuclear station, operated by EDF¹⁸. The company claim they could have a first unit operating by around 2030 if given the go-ahead. This would be around 4 years after the planned shutdown of the AGR station, following a newly agreed closure date of 2026.

4. AGR update

4.1 EDF Energy has confirmed that it plans to extend the operation of its AGR reactors at **Heysham 1** and **Hartlepool** until 2026¹⁹, two years later than previously expected. This is based on inspections of the graphite cores which increased confidence that the stations can generate for longer while meeting all regulatory and safety requirements.

4.2 The defueling of Reactor 21 at the **Dungeness B** site got underway in late May 2023. The target is for defueling to be complete by 2028, after which the station will be transferred to the Nuclear Decommissioning Authority for decommissioning.

5. Regulatory news

5.1 ONR has published its annual **Safeguards Report** for 2022²⁰. This covers the work that the organisation undertakes to fulfil international safeguard obligations.

¹⁷ [SMRs and Beyond: A Panel Discussion | Dalton Seminar Series - YouTube](#)

¹⁸ [X-Energy and Cavendish Nuclear's SMR plan for Hartlepool : New Nuclear - World Nuclear News \(world-nuclear-news.org\)](#)

¹⁹ [EDF confirms plans to extend life of nuclear reactors \(electricalreview.co.uk\)](#)

²⁰ [ONR publishes Safeguards Annual Report for 2022 - Office for Nuclear Regulation - News](#)

6. Nuleaf update

6.1 Nuleaf's annual gathering will take place in Workington, Cumberland on the 7th and 8th September 2023. In addition to a Steering Group meeting, site visits to Sellafield and the Low Level Waste Repository (LLWR) are planned, along with a networking dinner on the evening of the 7th September. Travel and accommodation costs for one Member and one Officer from each contributing authority will be covered by Nuleaf, with this including the cost of accommodation on the 6th September for those with far to travel.

Members are asked to note these dates. Further details will be provided nearer the time.

7. International news

7.1 Nuleaf's Executive Director joined a GMF Europe delegation that participated in an international meeting held in Paducah, Kentucky on the 17th-19th May. The meeting was run by the Energy Communities Alliance (ECA), the American equivalent of Nuleaf.

A primary intention of the meeting was to help further build on the co-operation agreement signed last year between GMF Europe, the ECA and the Canadian Association of Nuclear Host Communities (CANHC). A presentation on the meeting and an associated site visit will be delivered at this Steering Group meeting.