

**CoRWM Meeting with NDA on R&D,
Warrington, 19 January 2010**

Purpose of Meeting

1. The meeting was held to discuss CoRWM and NDA plans on research and development (R&D) and future CoRWM/NDA interactions on R&D. The agenda for the meeting is at Annex 1.

Participants

2. CoRWM: Bill Lee, Fergus Gibb, Marion Hill, Francis Livens (in person); Simon Harley, Becky Lunn, Andy Sloan (by video link); Allan Ashworth (secretariat, by telephone).
3. NDA: Melanie Brownridge, Neil Smart, Paul Gilchrist, James McKinney.

CoRWM Recommendations on R&D

4. CoRWM had produced its report (CoRWM doc. 2543) to Government on R&D in autumn 2009 and was expecting a response by the end of February 2010. NDA was broadly supportive of the recommendations in the report with:
 - agreement that strategic co-ordination of national R&D was important and could be improved
 - agreement that the regulators should be provided with sufficient resources for oversight (but this was not a matter for NDA)
 - agreement that a single organisation was desirable to provide national leadership on R&D skills and a view that this organisation should have strong links to those who deliver R&D
 - agreement that the appropriate active facilities should be provided for R&D
 - agreement that underground research was an important component of the geological disposal programme, but a view that it was too early to decide whether an underground research facility (URF) would be needed at the site of a geological disposal facility (GDF)
 - agreement that there should be mechanisms to ensure wider stakeholder involvement in establishing R&D requirements and making information available to the public.
5. On the last point above, NDA said that some mechanisms were already available and they would mention potential improvements during the meeting.

NDA R&D

6. NDA provided a PowerPoint presentation on various aspects of their R&D relevant to CoRWM's interests (see separate file CoRWM doc. 2766 Annex 2). The main points that CoRWM wished to explore are covered in general in the presentation, but there were explanatory questions and answers as the presentation was made. These explanatory questions and answers are set out in the points below, which should be seen as an annotation to the presentation.

NDA Strategy Management System and R&D Strategy

7. This presentation (slides 1-29 in Annex 2) was made by Melanie Brownridge. The next version of the overall NDA Strategy (Strategy II) would be consulted upon from September to November 2010. It must be approved by Government and published by the beginning of April 2011. There would probably be a June 2010 cut-off for input to the draft Strategy II document prior to consultation. CoRWM asked whether any draft documents could be made available to it prior to the start of the public consultation. NDA agreed to find out whether this would be possible.
8. The Strategy II document itself would be fairly brief, with detail on the six theme areas and 27 topic strategies in other documents on the NDA website. NDA was anxious that the documents presented on the website in support of Strategy II were properly organised and traceable; for this reason, although there was a presumption that everything would be made available in this public forum, some editing would be done and a structure imposed to ensure a neat presentation.
9. Funding prioritisation for R&D had changed, and would continue to change periodically, as a result of changing programmes; all NDA programmes were at different stages of implementation. Early stages of a project would command higher R&D fund allocations than those approaching full implementation.
10. The next version of the NDA 'Risks and Opportunities' document was being worked on but, as yet, a publication date was not available.
11. CoRWM asked whether there was any strategic oversight or review across the NDA's £100m total R&D spend to ascertain whether the spending pattern was aligned with the Strategy and the prioritisation of work under the Strategy. Most of the R&D was funded by the Site Licence Companies (SLCs) and it was unclear to CoRWM who in NDA had an overview.
12. NDA responded that it could not direct SLCs in regard to their funding of R&D; only advise. R&D was a matter for individual projects and thus for individual SLCs responsible for those projects. There was an assurance process in place for the Technical and underpinning R&D Documents (TBuRDs) to ensure value for money.
13. NDA had an internal R&D Board that dealt with its directly funded R&D. This Board included the Strategic Authorities responsible for the topic strategies and the Radioactive Waste Management Directorate (RWMD). All NDA direct R&D initiatives were also reviewed by the NDA Research Board on Decommissioning and Clean Up in the UK (previously known as NDARB), and the minutes published (excluding matters relating to commercial information and security).
14. The Nuclear Waste Research Forum (NWRf) reported to the Research Board on Decommissioning and Clean Up. It provided a good forum for SLCs, other nuclear site licensees and regulators to talk to each other but did not set strategy or strategic priorities. There might be scope for the Research Board to take a more strategic view of R&D.
15. Research into waste packaging and the Letter of Compliance (LoC) process was funded by the 'direct' route, because this research was of benefit to most SLCs; it would not be appropriate to carry out such work in isolation. Optimisation of this aspect at a strategic level was necessary in order to ensure, for instance, that waste packaging by SLCs was made as simple and economic as possible. There was also other NDA R&D that was of a strategic nature, for example that on management of graphite.

16. NDA had produced a skills strategy (2008) that identified 15 key topic areas; the strategy included a commentary on whether the required skills were available. Skills development for geological disposal would be funded using the 'direct' funding route, but through RWMD. NDA was required to produce a (further) future skills plan for all its work. RWMD would in due course produce its own skills requirements document, linked to its geological disposal implementation plan and research programme. The procedure would be similar to that for other SLCs, which produced skills requirements documents linked to their Lifetime Plans (LTPs) and TBUrDs.

NDA Directly Funded Research on Higher Activity Wastes

17. This presentation (slides 30-38 in Annex 2) was given by James McKinney. The R&D on higher activity wastes (HAW) in NDA's Direct Research Portfolio (DRP) was grouped into seven high-level themes (slides 34-35 in Annex 2). Examples of the R&D in progress in each theme were as shown in the following table.

<i>Theme</i>	<i>Examples of R&D Topics</i>
1. Optimisation of Interim Store Operation and Design	waste package monitoring, package failure criteria, use of dummy packages, monitoring of condition of store buildings and equipment
2. Alternative Waste Encapsulants	achieving large volume reductions, increased passivity
3. Waste Package Integrity	ageing experiments, reworking options
4. Alternative Waste Treatment Methods	thermal treatment
5. Alternative Storage and Disposal Options	near-surface disposal of reactor decommissioning wastes
6. Integrated Waste Management Solutions	use of mobile processing plants, centralised approaches
7. Materials Characterisation	graphite characterisation, remote technologies

18. The NDA's HAW Programme Board had oversight of this R&D and the NWRF reviewed proposals to ensure that they met industry's needs. The Integrated Project Teams (IPTs), which involve NDA's Waste and Nuclear Materials Directorate, SLCs and RWMD, had an input to decisions on which R&D was commissioned, as well as using its results. At present there are three IPTs; these are on reactor decommissioning wastes (including graphite), thermal treatment and interim storage. They appear to be working well.

NDA Directly Funded Research on Spent Fuels and Nuclear Materials

19. This presentation (slides 39-51 in Annex 2) was given by Paul Gilchrist. For Magnox fuels, the current strategy was continued reprocessing. The contingency on which work was being carried out was dry storage for a period while a longer term management option is developed. R&D was focused on managing strategic risks. For example, there was R&D on how long Magnox fuel could be kept in ponds in the event of a failure of reprocessing plant and on how long it would take to implement dry storage. RWMD had done some initial work on disposability of Magnox fuel and would soon start an LoC process for it.

20. The default contingency for AGR fuel was continued wet storage in the ponds at Sellafield. R&D was in progress to ascertain the length of time AGR fuel could safely remain in ponds and to develop dry storage options. An LoC process for AGR fuel was starting. A cross-industry Spent Fuels Management Information Group had been established, involving British Energy and the Ministry of Defence (MoD) as well as NDA and the relevant SLCs.
21. The work on 'exotic fuels' now included MOD fuels, for which the eventual aim was to develop an optimised lifecycle approach. It was noted that there were some exotic fuels that were almost unirradiated and which posed security problems similar to plutonium.
22. R&D on plutonium re-use, storage and immobilisation continued while a Government policy decision was awaited. NDA was reluctant to declare any uranium to be waste if there was any chance that it could be re-used in future. R&D was in progress on re-use and disposability of various uranic materials. There was also R&D to inform a decision on HEX deconversion (especially which uranium oxide would be the best end-product for future storage).

RWMD

23. Neil Smart gave a brief overview of recent developments in RWMD and its interactions with other parts of NDA (slides 52-57 in Annex 2). There was no discussion of the RWMD R&D programme because this was to be the subject of a separate meeting on 28 January 2010.
24. It was noted that RWMD was now operating as a prospective SLC. It was building its team to implement geological disposal. A Chief Scientific Advisor was about to be appointed and the post of Managing Director of RWMD would be advertised. RWMD had established a Research Advisory Panel of external experts (Neil Chapman (chair), Steve Sparks, Steve Jones and Andrew Sherry). This would meet three times per year and could bring in other experts if necessary. It would review research that was at an advanced stage, as well as the proposed RWMD R&D programme.
25. CoRWM explored the difficulties in integration of research throughout the NDA, RWMD and the other SLCs as RWMD moved towards full SLC status. Would this represent further fragmentation, and be a further step away from a national R&D programme for geological disposal related research? NDA believed that integrated R&D would take place, giving the example of atmospheric corrosion of stainless steel, a matter of interest for all SLCs involved in long-term storage as well as for RWMD. Such research was, and would continue to be, managed by way of specific cross-organisation sub-groups.
26. RWMD planned to publish the first version of its Disposal System Safety Case in September 2010. There would be eight underpinning reports that synthesised R&D to date and linked to future plans. These would be on: wastes and corrosion, waste package performance, near-field barriers, geosphere, radionuclide transport, criticality, gas generation, biosphere.

NDA R&D Funding

27. NDA's DRP spend had been £8.4 million in 2008-9 and would be £6.2 million in 2009-10. It was not yet known what budgets for 2010-11 would be. NDA's work on the public value programme was not yet complete and its overall budget for 2010-11 had not been set yet. In general the NDA view was that budget cuts would lead it to slow down the implementation of its Strategy, rather than changing the Strategy. However, there would be areas where a budget cut would necessitate a change of direction.

CoRWM Work on R&D in 2010-11 and Future CoRWM-NDA Interactions on R&D

28. CoRWM had been invited to give evidence to the House of Lords Science and Technology Committee on 9 February 2010. It was expected that the Committee would ask whether and how CoRWM's advice to Government was used in policy formulation.
29. CoRWM wished to scrutinise NDA R&D progress and plans on HAW, spent fuels, nuclear materials and geological disposal, and to keep in touch with R&D funded by the SLCs. It was agreed that this could be done by:
- holding a meeting on R&D between CoRWM, NDA, regulators, MoD, nuclear site licensees, Research Councils and others, once the Government response to CoRWM's R&D report was published
 - a CoRWM member attending meetings of the NWRF as an observer
 - a CoRWM member attending meetings of RWMD's Research Advisory Panel as an observer
 - covering R&D in meetings between CoRWM Task Group 1 and James McKinney and team (one meeting on HAW in February or March and another in the summer before publication of Strategy II for consultation)
 - covering R&D in meetings between CoRWM Task Group 1 and Paul Gilchrist and team (one meeting on spent fuels and nuclear materials in February or March and another in the summer)
 - a further meeting like this one in autumn 2010.

Annex 1

CoRWM Meeting with NDA on R&D, 19 January 2010, NDA Offices, Warrington, 11.00 – 14.30

Purpose of meeting

To discuss CoRWM and NDA plans on R&D in 2010-11 and future CoRWM/NDA interactions on R&D.

Agenda

1. Introductions, note taking arrangements.
2. Summary of recommendations in CoRWM 2009 R&D report (CoRWM doc. 2543) and process that led to them.
3. Overview of NDA Strategy Management System and R&D strategy
4. NDA overview for 2010-11 on:
 - R&D for conditioning, packaging and storage of higher activity wastes, including treatment and conditioning to make them suitable for near-surface disposal, any R&D on long-term storage and other impacts of expected Scottish Government policy
 - NDA and SLC R&D on management of spent fuels, plutonium, uranium.
 - links between NDA/SLC conditioning, packaging and storage R&D and RWMD geological disposal R&D
5. CoRWM plans for work on R&D in 2010-11, including report to House of Lords Science and Technology Committee (February).
6. NDA and SLC funding for R&D in 2010-11.
7. Future CoRWM/NDA interactions on R&D via NWRF and RWMD Geological Disposal Advisory Panel.
8. Next steps.
9. AOB.