



Paris; 10th December 2018

Note on the Meeting

The meeting was held at the Hôtel Maison FL, Paris. Participants also attended the IFNEC workshop on '*Approaches to Financing a Multinational Repository: Challenges and Alternate Approaches*', held at the OECD Headquarters on the 11th December.

Eleven participants attended the meeting, including national representatives from Austria, Denmark, Italy, Netherlands, Norway and Slovenia. Observers were also present from the USDOE and the IAEA.

1 Opening

The Chairman opened the meeting with a tour de table, welcoming especially the new Norwegian members of the ERDO-WG and the observers. He then reviewed the actions from the previous meeting in July 2018, all of which had been completed. Representatives of Croatia had been contacted since the last WG meeting with respect to joining the ERDO-WG and it was reported that a decision is expected shortly.

2 Update on National Developments

Short presentations were made on significant developments in the national programmes represented at the meeting.

- **Norway:** Norwegian Nuclear Decommissioning (NND) was established on 12th February 2018 and is currently in a two-year build-up phase, with seven staff, increasing to around 20 next year. The RWM model currently under discussion is that the State is the owner of the programme, NND the manager and IFE the operator. At present, a dual-track approach is being followed. IFE is developing a road map for each waste stream in the national inventory, from source, through storage and conditioning/packaging to eventual disposal. It will eventually include cost estimates. The current assumption for the GDF (principally for 17 tonnes of SF) is that it will be based on an SKB/Posiva model. However, boreholes will also be considered as a possible solution. About 10 tonnes of the SF is unstable metallic fuel and the possibility for reprocessing in France, or converting this to a stable oxide form for disposal, are solutions being considered.
- **Denmark:** The Parliamentary Resolution was approved in May and uses a dual-track approach, with the ERDO-WG specifically mentioned. The new and upgraded 30 – 50 year storage facility at Risø should preferably be ready in 2021, although the exact location is still to be selected. Investigations for a GDF for all Danish waste are under way. The national Geological Survey is carrying out a one-year desk study on geological conditions to depths of about 500 m, after which two areas will be suggested for further investigations. There is to be active dialogue with the public and citizens' groups. A likely host rock would be a clay formation. Dekom is assessing all its RD&D needs in parallel with those in the EURAD project and the IGD-TP.
- **Italy:** The national RWM facility siting approach remains on hold. The new government needs to authorise publication of the map of potentially suitable areas (CNAPI) for the integrated facility. Once the National Programme can be updated and submitted to the EC, Italy could be removed from its current defaulting position at the European Court of Justice with respect to the Waste Directive. The dual track approach is clearly mentioned in the current programme.

- **Slovenia:** New revisions of the Decommissioning programme for the Krško NPP and the Disposal programme for the RW&SF from Krško NPP are being finalised, for eventual adoption by the Slovenia-Croatia intergovernmental commission, expected to occur next year. The plan will include details of the costs and schedule for decommissioning, storage and disposal of all the NPP wastes. ARAO expects to receive a construction license in 2019 for its near-surface silo facility for disposal of LILW, with operations planned for 2022. A joint SLO-CRO GDF is being considered, based on the KBS-3 concept.
- **Netherlands:** The 2017 IAEA Joint Convention report of the Kingdom of the Netherlands specifically mentioned the dual-track approach. Although a GDF is far into the future in NL planning, a sounding board group is being established to investigate how participation of all stakeholders in the project could be established and managed. An issue that arises in discussions is management of inter-generational equity (burdens on future generations), when disposal is not envisaged until the next century. However, there is a clear plan for the future, with work being implemented, along with the necessary operational storage facilities.
- **Austria:** The National Programme has now been completed and submitted to the EC within the scope of the Waste Directive. The programme mentions the potential for international co-operation in waste management. Reaction from the EC is now awaited. The next step, to be taken in 2019, will be to establish a working group comprising the relevant authorities, Nuclear Engineering Seibersdorf and NGOs.

3 European Joint Programming

The current status of the EJP project was discussed. The proposal was completed and submitted on 27th September. A five-month evaluation period is anticipated and, if successful, work could begin on the project – now named EURAD – around the autumn of 2019. The Task 6, ‘cradle to grave’ Work Package that is of interest to ERDO-WG has been titled ‘ROUTES’, with ARAO, DEKOM, COVRA among the mandated actors. ROUTES will begin with a one-year assessment of the state of the art on shared back-end developments, including use of technologies and facilities. An evaluation will be made of past projects, international studies and experience in sharing WM facilities. A progress workshop will be held in month 7. The ROUTES study will use only a small portion of the EURAD budget and run over 48 months.

The IGD-TP met recently and expressed its support for EURAD, noting that the TP wishes now to evolve and find an appropriate new role for its future, assuming that EURAD is established. A ‘WMO College’ has been suggested, with representatives of larger, advanced programmes and less advanced and smaller programmes. Following discussion the ERDO-WG noted the need to co-ordinate our own activities with those of ROUTES and that, with respect to the IGBD-TP, the lead on shared solutions, particularly at a strategic level, clearly remains within the ERDO-WG. A number of actions were identified to extend contacts with IGD-TP.

4 International Activities and Update

An overview was provided of activities on multinational solutions and sharing in which ERDO members and/or the secretariat had been involved since July:

- IAEA report on disposal options for small radioactive waste inventories: The IAEA is developing a report on specific technical options that might be suited for countries that have no or only small nuclear power programmes, and small waste inventories. An almost complete draft of the report is currently being edited and a further meeting will take place in May 2019.
- IAEA - INPRO: is getting closer to completing its draft report on “Cooperative Approaches to the Back End of the NFC: Drivers and Institutional, Economic and Legal Impediments”. Chapter 7: is of most direct relevance to ERDO and is entitled “*Multinational Repository Concept: Opportunities and Incentives for Consideration by*

Potential Service Providers and Customers". A drafting meeting was held from 4th – 7th December 2018, in Vienna.

- IFNEC: the reliable nuclear fuel services working group (RNFSWG) of IFNEC is currently focussed on cooperation between countries that wish to share solutions for storage and disposal. The group has organized a meeting that will take place the day after the current ERDO-WG meeting at the OECD Headquarters in Paris on *'Approaches to Financing a Multinational Repository: Challenges and Alternate Approaches'*. Arius, via a contract with USDOE, will make presentations on GDF costs and financing risks. All ERDO-WG members were encouraged by the RNFSWG Chairpersons to attend the meeting immediately after the WG meeting and almost all did so.

5 DG-ENER and ERDO-WG 'Steps to Sharing' Workshop

At the previous ERDO-WG meeting it was agreed that the WG should explore organising a conference or workshop with the working title of 'Steps to Sharing', which would have separate sessions on the types of sharing activities that can take place along the pathway to eventual disposal. The objective of the workshop would be to identify specific sharing projects between interested countries in each of the session areas.

The ERDO-WG secretariat developed an outline programme and contacted DG-ENER in the European Commission to establish whether it would be possible to work together on the initiative. DG-ENER informed us that they were now moving forward from their November 2017 statement that they were prepared to assist EU MS in advancing shared solutions and that they were also planning a workshop on the topic in 2019.

A teleconference was held with DG-ENER staff in November to discuss the possibilities for collaboration and a second teleconference will take place in January 2019. A number of follow-up and planning actions were agreed at the WG meeting.

6 Additional actions

The topic of deep borehole disposal of small inventories of SF and other high activity wastes was discussed. A single borehole (e.g., to depths > 1 km) might be a solution of interest to some WG members. A considerable amount of interest has been expressed in deep boreholes over the years and there is a reasonable background of information available. It was agreed that ERDO-WG should explore the potential in more detail at a half-day session at its next meeting, with a view to widening the discussion afterwards, if this proved interesting.

7 Next Meeting

The date and time of the next meeting will be established after the teleconference with DG-ENER in January.

8 Close

The Chairman closed the meeting, thanking all the participants for useful discussions.