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PRAGUE



MANAGEMENT OF NUCLEAR WASTE — ENEF PERSPECTIVE EESC Conference, Brussels 30 Nov 2009

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European Nuclear
Energy Forum

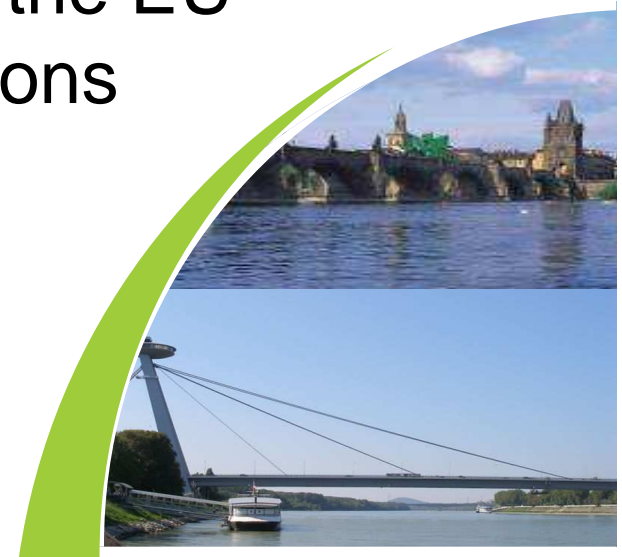


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ENEF SG Waste / Eero Patrakka – 30 December 2009

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ENEF – Subgroup “Waste Management”

- Conclusions from ENEF Plenary, Bratislava 2007, identified the management of spent fuel and radioactive waste as an important subject to be looked into with the objective "to encourage Member States and industry to swiftly implement adequate nuclear waste disposal facilities, in particular deep geological repositories for high level waste".
- To this end the SG "Waste Management" was created in the context of the ENEF Working Group "Risks".



Terms of Reference

- The objective of the Group is to foster in the MS the management of radioactive waste and spent fuel, if regarded as waste.
- To this end the Group is providing guidance for the successful disposal of such waste, while recognising that the current status in waste management varies notably between MS and that different routes for successful waste management are available.
- Special emphasis is put on the final disposal solutions of high level waste.
- The Group will also aim at providing views on legislative initiatives of the European Commission in the area of waste management.
- The objective of the Group is supported by the exchange of information and views on topical issues in waste management.



Contents of Roadmap Report

Preamble

1. Introduction
2. Present situation in selected countries
3. Essential elements for the implementation of geological disposal
4. Conclusions and recommendations for national roadmaps and action at EU level

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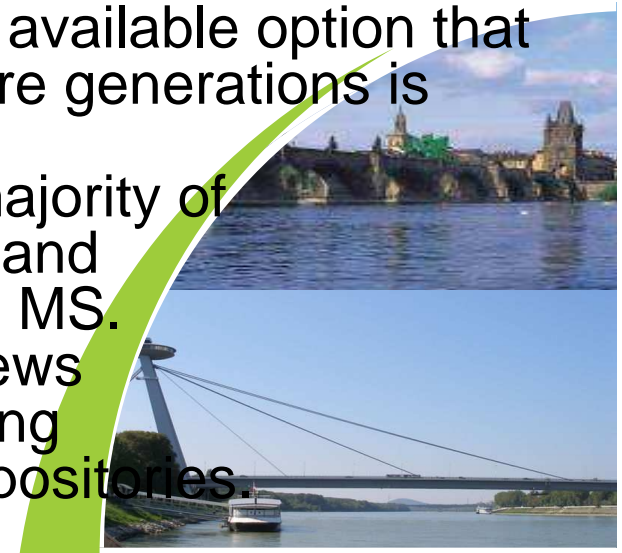
Status of Waste Management in the EU

- All MS generate radioactive wastes, irrespective of whether they have a national nuclear power programme or not.
- The management of low and intermediate level short-lived waste appears to be in hand. Although siting has proved to be a challenge in some MS, repositories are either already in operation or expected to be commissioned by 2020 in most MS.
- Spent fuel and high level waste are being stored at present on an interim basis. Only a small number of MS are progressing in the development of geological disposal as a definitive endpoint that can ensure long-term safety without continued human action.
- Although there is a general commitment by most MS to deep geological disposal, probably only few MS will have operational deep geological repositories for high level waste by 2030.



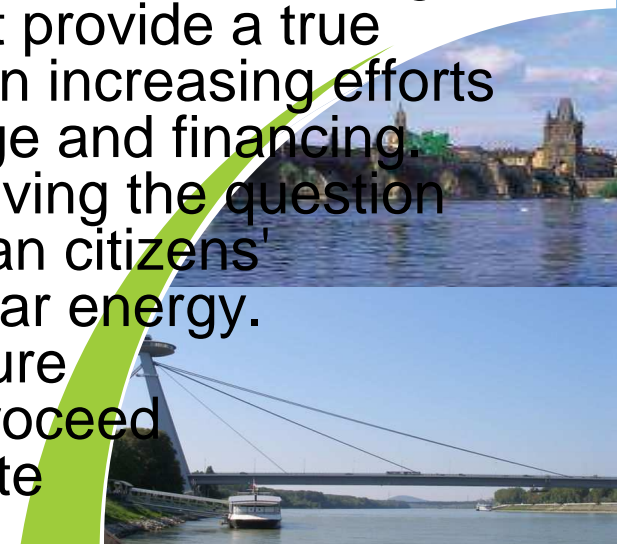
Management of High Level Waste and Spent Fuel (1)

- A final disposal solution is required for all high level radioactive wastes and spent nuclear fuel from any nuclear installation, and also for small quantities of further long-lived wastes that are produced in all MS from other nuclear applications.
- A final disposal solution is required for existing radioactive wastes, independently of whether nuclear power programmes are continued, expanded or phased out.
- For final disposal of such wastes, the only available option that does not place continuing burdens on future generations is implementation of geological repositories.
- This is a consensus opinion of the great majority of scientific and technical experts in the field and it is subscribed to by governments of most MS.
- It is recognized that there are diverging views in some groups and that there are remaining concerns in the public about geological repositories.



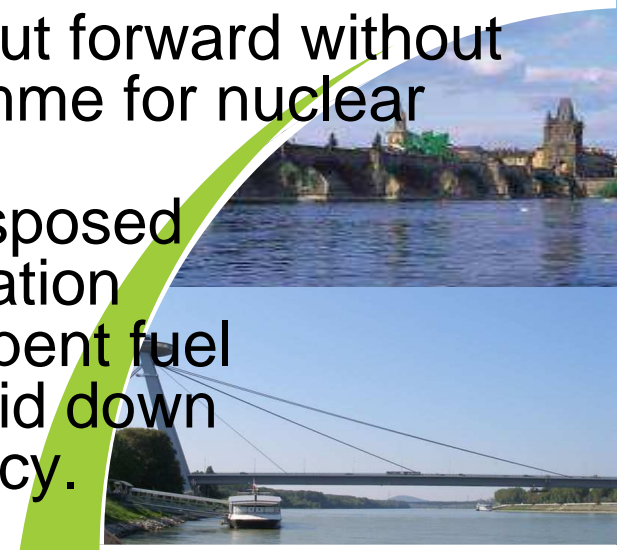
Management of High Level Waste and Spent Fuel (2)

- 30 years of research, debates and peer reviews have sufficiently demonstrated that geological disposal is technically feasible for the safe long-term management of high level waste and spent fuel subject to direct disposal.
- Technical concepts for deep geological repositories have been developed.
- There is a broad consensus that other routes, such as long-term storage at or near the surface, do not provide a true alternative, but require continuing and even increasing efforts to ensure safety, preservation of knowledge and financing.
- The last Eurobarometer confirmed that solving the question of radioactive waste is among the European citizens' major concerns related to the use of nuclear energy.
- In order to avoid any undue burden on future generations, it is an ethical obligation to proceed with the development of a radioactive waste management programme without delay.



Conclusions and Recommendations (1)

- Given the priority of safety and the clear expectations of European citizens, political decisions have to be taken to ensure that geological disposal is implemented without undue delay, independent of any consideration on the further use of nuclear energy.
- Considering the long time spans involved in waste management, sustained political commitment is essential.
- Plans for new reactors should not be put forward without a comprehensive and credible programme for nuclear waste management.
- The political decisions have to be transposed into clear provisions for the implementation of all steps on radioactive waste and spent fuel management up to final disposal, as laid down in the national waste management policy.



Conclusions and Recommendations (2)

- The national waste management policy should be empowered through a legal, regulatory and organisational framework in a timely manner.
- Since it is the only technically feasible way for the safe long-term management of high level waste and spent fuel, if regarded as waste, deep geological disposal should be the endpoint in a national waste management programme for such waste.
- For each individual site, the long-term safety has to be demonstrated in a step-wise process with early public involvement, accompanied by international peer reviews and independent expertise as appropriate.



Conclusions and Recommendations (3)

- The implementation of deep geological disposal has to be performed following internationally accepted safety principles, requirements and methodologies, given the extremely long time spans for which safety has to be demonstrated.
- International cooperation is essential to build, exchange and disseminate expertise, identify good practices and optimise the cost for implementation.
- Joint RD&D programmes will as well play an important role in this respect.
- Shared repositories could be an option based on a voluntary agreement between the concerned Member States.



Recommended Actions at EU Level (1)

- The EU can provide an added value in the interest of the European citizens.
- The EU institutions should have a role in:
 - » providing neutral and accurate factual information about the situation concerning radioactive waste management in the MS and the expectations of EU citizens;
 - » proposing instruments to ensure that each MS establishes, within given deadlines, concrete national programmes for the safe long-term management of spent fuel and all types of radioactive waste, with clearly defined milestones and disposal routes;
 - » ensuring the presentation of the established national radioactive waste management programmes to the public and where appropriate to international peer review;

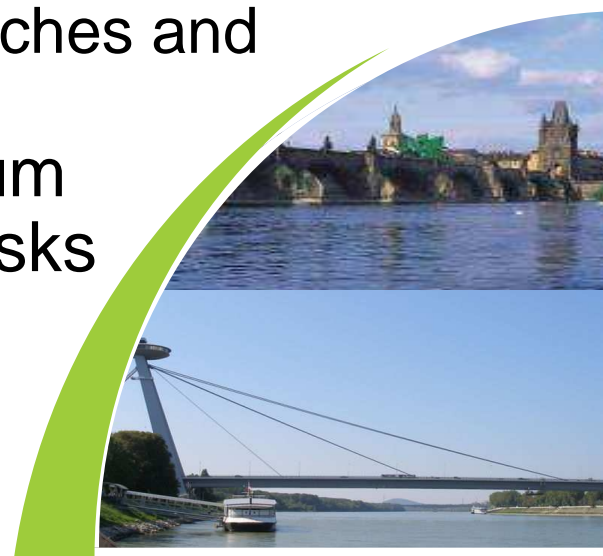


Recommended Actions at EU Level (2)

- » ensuring that there exists an equivalent level of safety in radioactive waste management in all MS; to this end establishing a set of common rules to achieve a high level of safety through the use of best available techniques and methodologies;
 - » continuing RD&D programmes at EU level to foster efficiency through common approaches and shared knowledge management.
- The European Nuclear Energy Forum should further contribute to these tasks through concrete proposals and commenting of EU initiatives as appropriate.

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Future Work Programme

- Publication of "Roadmap to Successful Implementation of Geological Disposal in the EU"
- Consultation towards DG TREN in the context of their Impact Assessment for a potential EU binding instrument for the management of spent fuel and radioactive waste
- Participation in a conceivable further development of such an instrument
- Drafting an outline for practical implementation of the Roadmap report in Member States
- Report to ENEF Plenary in Bratislava, May 2010

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