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Spent Fuel and Waste Management

Irena Mele
Waste Technology Section, IAEA
Future of nuclear power

• Impact of Fukushima accident on global prospects for nuclear power
  • Growth slowed down
  • Nuclear projections for 2030 lower 7 – 8 %

• Interest among newcomer countries remains high
• Most of those with firm plans continue their efforts to introduce nuclear power
SF & RW and New Build

• In countries considering new build main focus on power needs and NPP construction – little consideration of spent fuel and waste management needs

• Complex infrastructure required for starting nuclear programme including RWM and SFM infrastructure

• When invitation for tenders is being prepared requirements for SFM and RWM must be adequately included
Common User Considerations

• CUC activity to explore the needs of developing States that choose nuclear option

• Survey includes also questions on SFM and RWM to assess:
  • What are the desired features of SFM and RWM systems for technology users?

• Questions related to:
  • Amount of waste
  • Operating waste management
  • Spent fuel management
  • Decommissioning
Results: SF management

- Long-term SFM recognized as major challenge
  - Disposal as national solution or Supplier’s country or international community’s responsibility?
  - Regional or international SF centres
  - Wait and see

- Results:
  - NPP should have SF storage capacity for 10 years
  - Supplier countries expected to develop mechanisms for long-term approaches (including fuel take-back, centralized storage facilities, …)
Results: RW management

• LILW management recognized as user’s national responsibility

• Suppliers should provide facilities for on-site waste management

• Suppliers should provide guidance for managing waste

• Amount of waste
  • Production of solid, liquid and gaseous waste and effluents during plant lifetime should be kept as low as reasonably achievable
Results: Decommissioning

• Decommissioning responsibility of NPP owner or the government
• The NPP should be designed for ease of decommissioning
• Guidelines for decommissioning required from the supplier
What are the desired features of SFM and RWM systems for SMR from technology users’ perspective?

What are relevant questions for SFM and RWM?

Questions related to:

- Type and Amount of waste
- Operating waste management (processing and storage technologies and facilities, storage capacities)
- Spent fuel management on-site (storage technology and capacity)
- Preliminary Decommissioning Plan
CUC for SMR

- Pre-conditions for asking right questions and decide about desired features:
  - adequate regulatory framework for SFM and RWM with clearly allocated responsibilities and necessary bodies/institutions
  - policies & strategies for managing SF and RW
  - Resources
  - Possibilities for regional co-operation
Joint Convention

• Articles 4 and 11:
  - Each Contracting Party shall take the appropriate steps to ensure that at all stages of SFM and RWM, individuals, society and the environment are adequately protected against radiological hazards

• Preamble:
  - Convinced that radioactive waste should, as far as is compatible with the safety of the management of such material, be disposed of in the State in which it was generated, whilst recognizing that, in certain circumstances, safe and efficient management of spent fuel and radioactive waste might be fostered through agreements among Contracting Parties to use facilities in one of them for the benefit of the other Parties, particularly where waste originates from joint projects;