

Management and Preservation of Spent Fuel Data

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Data Management & Preservation



- Key data relating to spent fuel is required in order to make informed decisions and implement technical options for its management, whether in relation to storage, transportation, reprocessing and recycling, or disposal
- A number of Member States have established, or are in the process of establishing, systems to manage spent fuel data throughout the lifetime management of their spent fuel

Data Management – Why Now?

- It's been ~20 years since IAEA last looked at the topic specifically for spent fuel
 - TECDOC-1519 was the result of this work and published in 2006
- While the rationale for the data requirements has not changed a great deal, how this data is collected and the timeline between collection and use have changed
- Some countries are preparing to start processing spent fuel for disposal, others are placing it into long term storage, and some are phasing out nuclear altogether
 - All spent fuel owners need to be cognisant of data requirements and data management, so it is timely to refresh this TECDOC
- Linked to ongoing work on spent fuel characterization and fuel cycle integration



Aims of the TECDOC revision

- Primarily to start the conversation and draw attention to the topic
- Will provide guidance based on Member State experiences on planning for and implementing SF data management
- Will take the existing TECDOC from straight 'tell' with addition of illustrative examples
- Will not be a prescriptive guide for MSs
- Will not focus on numbers and data – will be the process behind what is selected and rationale

TECDOC Content

- Section 2: Data needs for spent fuel management
 - Spent fuel data, e.g. fuel type, fabrication data, operating history, damage
 - Typical data needed for SFM facilities to support safety & operations
 - Data needed to satisfy international obligations, such as safeguards
- Existing information could be enhanced
 - Case studies
 - Links to ageing management for storage
 - Updated research & implementation, e.g. SF conditioning
 - Specificities for shutdown reactors / countries that have phased out

TECDOC Content

- Section 3: Spent fuel data specifications
 - Data parameters, using the different phases of the fuel's life cycle
 - Data reliability
 - Individual parameters of interest
- Could be enhanced with more information regarding the implications for data use to be considered when the data is collected

TECDOC Content

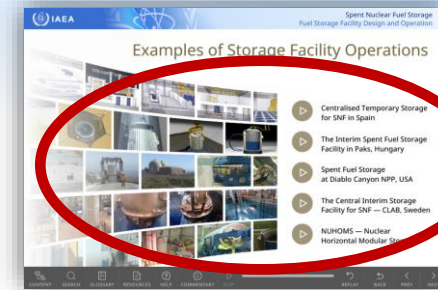
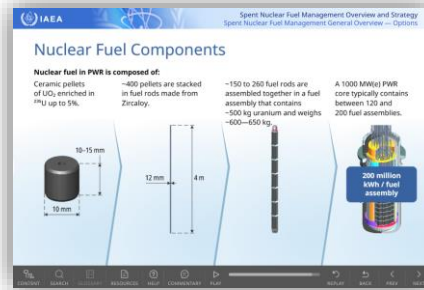
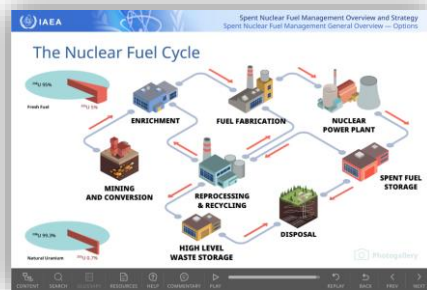
- Data life cycle management
 - Responsibilities for management
 - Lifetime management, including record keeping & backups
 - Records maintenance, including transfer of responsibilities
- Can add more MS experiences here
 - Interfaces between old and new systems
 - Maintaining data accessibility
 - Addressing historical mistakes in data capture
 - Implications for data use
 - Summarising issues relating to proprietary information

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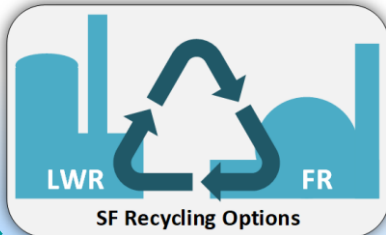
- We want to capture:
 - MS examples of how they determined data needs, data issues, implemented and identified solutions
 - Where MSs have used this data, as this is when issues become apparent
 - Examples of maintaining continuity of knowledge where there is a significant time difference between fuel cycle steps
 - Managing the interface between fuel vendors / utilities and WMOs
 - Managing uncertainty and variability in SF data
 - Technological approaches to data collection and management

E-Learning Course on Spent Fuel Management

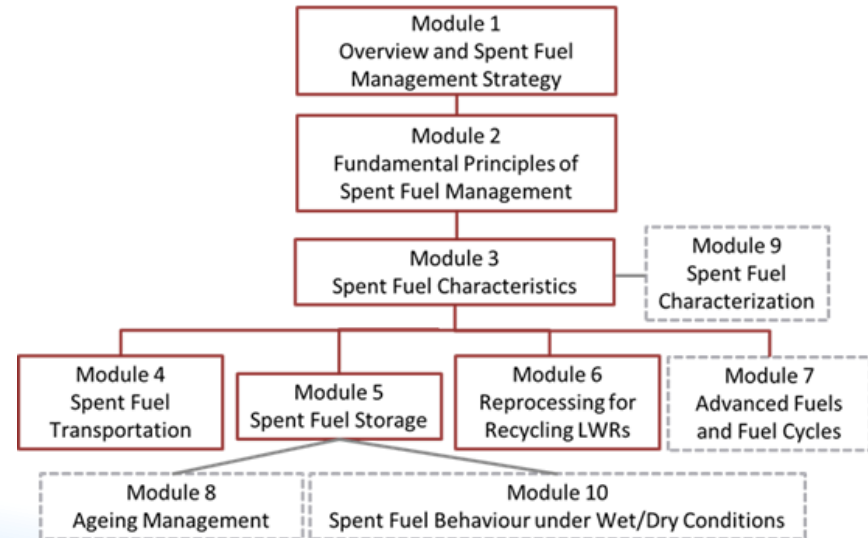
5 Modules (7 Lectures)



Coming soon



Available



Spent Fuel Management Network



Not a member yet?

Introductory video



Now available in Japanese & Russian!

Welcome to the IAEA International Network on Spent Fuel Management - SFM Net

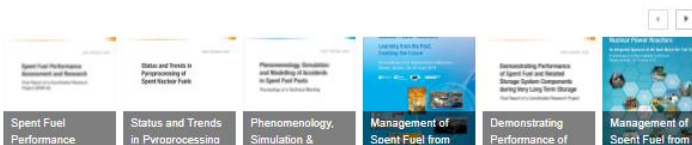
The spent fuel management (SFM) network is a forum for the sharing of practical experience and international developments on spent fuel management.

Its main objectives are to facilitate the efficient exchange of information, communication and cooperation amongst professionals working in the back end of the fuel cycle – from its removal from a reactor core to its final disposition (i.e. SNF wet and dry storage, transportation, handling and retrieval, reprocessing and recycling, economics of the back-end of nuclear fuel cycle, damaged SNF management, stakeholder involvement, communication issues, etc.)

The establishment of the SFM Net is aimed at fostering safe, sustainable and efficient spent nuclear fuel management practices across all IAEA Member States.

For further information or questions please contact SFM.Contact-Point@iaea.org.

Featured Publications



Events 2022

- First Research Coordination Meeting on Spent Fuel Research and Assessment (SFERA) (23-27 May 2022, Virtual)
- Technical Meeting to Identify Opportunities and Challenges in the Back End of the Fuel Cycle for Evolutionary Accident Tolerant Fuels (14 – 17 Jun 2022, Virtual)
- Third Research Coordination Meeting on Management of Severely Damaged Spent Fuel and Corium (29 Aug - 2 Sep 2022, Vienna, Austria)
- Second Research Coordination Meeting on Spent Fuel Characterization (19-23 Sep 2022, Oskarshamn, Sweden)
- Technical Meeting on Back End of the Fuel Cycle Considerations for Small Modular Reactor Fuels (20-23 Sep. 2022, Vienna, Austria)
- Technical Meeting on Operational Experiences of Spent Fuel and High Level Waste Transportation (17-21 Oct 2022, Santander, Spain)
- First Research Coordination Meeting on Spent Fuel Storage Systems Performance and Assessment (7 – 11 Nov 2022, Vienna, Austria)
- Technical Meeting on the Management and Preservation of Spent Fuel Data (6 – 8 Dec 2022, Virtual)

New infographics now available!



Active CRPs

E-Learning Course on Spent Fuel Management

Webinars on Spent Fuel Management

<https://nucleus.iaea.org/sites/connect/SFMpublic/Pages/default.aspx>

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Thank you!