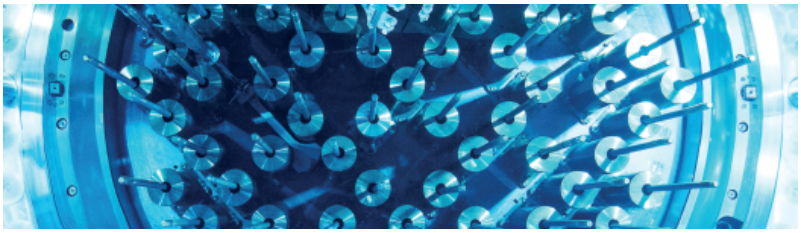
International Conference on the Management of Spent Fuel from Nuclear Power Reactors: Meeting the Moment



Monday, June 10, 2024 - Friday, June 14, 2024

Scientific Program

The IAEA welcomes high quality contributions that fall under the umbrella of the following tracks.

Each individual track may cover the following cross-cutting aspects: technology (operational and research and development), safety, security, economics, public involvement (acceptability), regulatory framework, knowledge management, safeguards and non-proliferation as well as collaborative options

Please note that Track 1 is not open for general submissions.

Track 1: National Strategies for Spent Fuel Management

National strategies for spent fuel management of countries with established nuclear power programmes, countries phasing out nuclear power and embarking countries, including integration of advanced energy systems with an emphasis on:
Stakeholder involvement in decision making, including civil society

(engagement with local and indigenous communities), international

good practices, lessons learned, energy/environmental justice
Multinational or regional approaches for sharing infrastructure
Managing spent fuel to enhance nuclear energy and environmental sustainability
Status of programmes for SNF and HLW disposal
Knowledge management and skills preservation (e.g., competences, data management, human resources, training, etc.)

*** Please note, this track is for invited country representatives only and not open for general submissions ***

Track 2: Storage of SNF and vitrified HLW and subsequent transportability:

Behaviour of SNF during storage (wet and dry)
Service life extension and ageing management of SNF storage systems (wet and dry)
Ageing management of HLW and related storage systems
Demonstrating post-storage transportability of SNF/HLW and SNF/HLW packages,including multipurpose canisters
Storage considerations for new fuel types from current and advanced reactors (e.g., ATFs,spent fuel from all envisaged SMR technologies and innovative reactors)

Track 3: Transportation in the back end of the fuel cycle:

Transportation operating experiences, achievements and lessons learned (including planning, cask testing and maintenance, emergency response, risk assessment, and decommissioning of casks and other transport equipment)

Evolution of international and national regulations for transportation
Optimization of transportation systems, including cost implications
Transportation considerations for higher burnup fuel, advanced technology fuel (ATF), damaged fuel, recycling materials and new fuel types for advanced reactors (e.g., all envisaged SMR technologies and innovative reactors, etc.)
Transportable reactors (e.g., SMRs, microreactors, transportable nuclear power plants): challenges, emerging issues, operational considerations, etc

Track 4: Recycling of spent fuel

Industrial operating experiences and lessons learned:
Fuel and recycling products (RepU and Pu management)
U and Pu co-management
Developments in U and Pu multirecycling
Recycling of fuels from advanced reactors including management and recycling of minor actinides
Opportunities to recycle spent fuel from existing reactors as feedstock for advanced reactors (e.g., SMRs, High Temperature Gas-cooled Reactors (HTGRs), Liquid Metal Fast Reactors (LMFRs), Molten Salt Reactors (MSRs), etc.)
Thorium fuel cycles
Management of waste forms resulting from recycling activities

Track 5: Disposal of SNF, HLW and other waste forms in Deep Geological Repositories (DGR):

Achievements and lessons learned in developing and implementing a DGR
Licensing and specific regulatory framework for disposal. Retrievability and post-closure considerations
Assessing the disposability of SNF, HLW and other waste forms in the DGR:
Acceptance criteria for disposability
SNF and HLW performance/behaviour under repository conditions
Influence of plant operating conditions on disposal of current fuel
Disposal of new materials associated with SNF and their management routes, (e.g., irradiated graphite and TRU contaminated materials (e.g., Cd from pyroprocessing))
Comprehensive national and international R&D programmes in support of the development of DGRs
Characterization of SNF and HLW with regards to disposal
Packaging SNF and HLW for disposal (e.g., repackaging, encapsulation)
SNF data management (characterization, knowledge preservation)
Safeguards of disposed spent fuel (pre- and post-closure)

Track 6: Impacts of advanced nuclear energy systems on the back end of the fuel cycle:

Advanced Technology Fuels
Fuels from advanced reactors (e.g., Small Modular Reactors, HTGRs, LMFRs, MSRs, etc.)

Track 7: Achieving integrated spent fuel management

Achievements and lessons learned in developing and implementing an integrated approach for managing SNF
Integrating storage, transport, recycling and disposal stages (e.g., acceptance criteria, regulatory requirements, information, etc.)
Optimization, flexibility, and resilience. Life cycle management and time frame of implementation
Integrating the management of different spent fuel types:
Accident Tolerant Fuels
Fuels from advanced reactors (e.g., SMRs, HTGRs, LMFRs, MSRs, etc.)
Damaged and degraded fuel
Severely damaged fuel and corium
Drivers and impediments for implementing a back end strategy (e.g., economics, politics, technology, timeframe, stakeholder involvement including public support, resources, etc.)
Multinational approaches and shared infrastructure. Implications for SNF “Take Back” agreements
Risk management and decision making with uncertainties