International Conference on the

Management of Spent Fuel from Nuclear Power Reactors

Meeting the Moment

10–14 June 2024 Vienna, Austria

#SFM24

Background

Nuclear power can help address the twin challenges of ensuring reliable energy supplies and curbing greenhouse emissions. Today more than 400 nuclear power reactors in operation in 31 countries supply over 10% of the world's total electricity and a quarter of all low-carbon power.

The safe, secure, and sustainable management of spent fuel from nuclear power reactors is key to the future of nuclear energy. It is a complex undertaking, covering many technological aspects related to the storage, transportation, reprocessing for recycling, and disposal of the spent nuclear fuel (SNF) and the high level waste (HLW) from reprocessing. In addition, R&D has established the feasibility of advanced energy systems to extract additional energy from SNF, which has the potential to further reduce the impact of nuclear waste and better utilize natural resources.

The implementation of SNF management strategies can take decades, and national strategies must be flexible enough to accommodate potential future options and new technologies that will enhance the safety and sustainability of nuclear power. The needed knowledge management and knowledge transfer over multiple generations of experts is a particular challenge. This will be important to ensure that the service life of storage systems can continue to be extended to cover the necessary timeframes until SNF final disposition is implemented.

It is paramount to take an integrated view of the nuclear fuel cycle to ensure that all stages of the nuclear fuel cycle are clearly identified and understood, enabling effective decision making for the back end of the fuel cycle.

During recent years, increasing attention has been paid to the development and upcoming deployment of small modular (SMR) and micro reactors. SMRs represent a new generation of reactors designed to generate electric power typically up to 300 MW(e) and for non-electrical industrial applications (e.g., water desalination and heat generation for industrial processes). While much focus has been given to certain aspects of SMR deployment such as reactor concepts, engineering, economics, infrastructure, safety, etc., the fuel cycle, and in particular the management of spent fuel, appears to have had limited consideration.

The scope of the conference covers the management of SNF from nuclear power reactors and the steps being taken to enable the safe and effective deployment of new reactor technologies.

Purpose and Objectives

The purpose of the conference is to provide a forum for the exchange of information on national SNF management strategies and on how the management of spent fuel will support the role that nuclear energy could play in a changing energy mix. Whether countries are moving toward nuclear energy to mitigate climate change and meet their national energy goals or moving away from nuclear energy and are concerned about the legacy of its use, the world has reached a pivotal moment. Those who manage spent nuclear fuel must rise to the challenge of **meeting the moment**.

Main Topics

The IAEA welcomes high quality contributions that fall under the umbrella of the seven topics listed here below.

Each individual topic may cover the following cross-cutting aspects: technology (operational and research and development), safety, security, and safeguards with attention to their interfaces, economics, stakeholder involvement, regulatory framework, knowledge management as well as collaborative options.

This conference covers SNF management from current and future power reactors of all sizes and types (Fuels used in current power reactors; Evolutionary fuels intended for current power reactors; New fuels arising from large and small reactors of types not currently deployed for power production), including damaged and degraded fuels, with a particular focus on the integration of these fuels into SNF management systems. The seven topics included in the conference scope are:

National strategies; Storage of SNF/HLW and subsequent transportability; Transportation in the back end of the fuel cycle; Recycling of SNF; Disposal of SNF/HLW in deep geological repositories; Impacts of advanced nuclear energy systems on the backend of the fuel cycle; Achieving integrated SNF management.

Audience

The conference is designed for a broad range of stakeholders from IAEA Member States including technology developers, operators, regulators, governmental authorities, decision makers, and industrial, R&D, and waste management organizations among others.

Registration

No registration fee is charged.
The IAEA is generally not in a position to bear the travel and other costs of participants in the event. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of certain participants.

Language

The working language of the conference is English.

Key deadlines

29 September 2023	Submission of abstracts through IAEA-INDICO
29 September 2023	Submission of Form B (together with Form A) through the InTouch+ platform
29 September 2023	Submission of Form C (together with Form A) through the InTouch+ platform
6 December 2023	Notification of acceptance of abstracts for oral or poster presentation
2 February 2024	Electronic submission of full papers through IAEA-INDICO
22 March 2024	Notification of review of full papers
3 May 2024	Deadline for submission of revised full papers submitted through IAEA-INDICO
4 June 2024	Submission of Form A only (no paper submission, no grant request) through the InTouch+ platform

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