



**IAEA**

International Atomic Energy Agency

*Atoms for Peace and Development*

# **Technical Meeting on Treatment and Conditioning Options for Research Related Spent Fissile Materials**

**IAEA Headquarters (Vienna International Centre)**

**Vienna, Austria**

and virtual participation via Cisco Webex

**16-19 December 2024**

**Ref. No.: EVT-2304771**

## **Information Sheet**

### **Introduction**

There are approximately 230 research reactors currently in operation worldwide which generate spent fuel and other fissile residues on a continuing basis. Additionally, many research reactors are in permanent shutdown pending decommissioning, and also have associated inventories of spent fuel and other fissile materials.

Spent fuel from research reactors is commonly managed through two primary approaches: direct disposal or reprocessing. In reprocessing, reusable plutonium and uranium are recovered and reused, while the remaining fissile products and minor actinides are conditioned, often through vitrification in a glass matrix and disposed. Other types of fissile material can also be immobilized in a robust form that reduces the potential for the migration or dispersion of radionuclides during handling, transport, storage, and disposal. The end point for all radioactive waste is disposal, and for waste containing substantial amounts of long-lived radionuclides, the internationally agreed disposal concept is to place such waste within a deep geological formation.

The high costs associated with complex international transportation and commercial reprocessing of spent fuel, along with lack of concrete plans or funding for disposal, have led many countries to defer decisions on how to manage their spent research reactor fuel and fissile materials. As a result, the majority of spent research reactor fuel is stored at the facilities where it is was generated, primarily in

wet storage pools. Other types of fissile materials are usually securely stored in their original unconditioned form.

Given these challenges, there is a growing need to explore alternative technologies for processing spent research reactor fuel and other fissile materials that do not involve traditional reprocessing or direct disposal as high level waste.

## **Objectives**

The objective of this meeting is to facilitate the exchange of information on viable technologies and approaches for the management (treatment and conditioning) of spent research reactor fuel and fissile material. The meeting will focus on both established and emerging solutions, with an emphasis on identifying innovative technologies under development. Through collaboration and knowledge sharing, the meeting seeks to explore alternative pathways for the disposition of spent research reactor fuel and fissile material.

## **Target Audience**

This meeting is intended for technical experts, researchers, technology developers, and other stakeholders involved in the management of research reactor fuel and fissile material. Participants will include experts from Member States, technical professionals from research institutions, and representatives from organizations engaged in the development of innovative nuclear technologies.

## **Working Language(s)**

The meeting will be held in English.

## **Expected Outputs**

The meeting is expected to produce a summary of viable technologies and approaches for managing spent research reactor fuel and fissile material, including both established methods and innovative technologies currently under development. Participants will identify and discuss new technologies that have the potential to improve the safety and effectiveness of fuel management, leading to concrete recommendations for further action and collaboration.

These discussions will contribute valuable content to an upcoming IAEA publication on the subject, ensuring it reflects the latest advancements and expert insights. Additionally, the meeting will foster increased awareness among participants, building their capacity to assess and implement these solutions within their own contexts. Finally, the meeting is anticipated to establish a framework for ongoing

collaboration among researchers, technology developers, and other stakeholders to continue advancing the field.

## Topics

Themes and topics to be covered include:

- **Planning Approaches for Life Cycle Management of Spent Research Reactor Fuel and Fissile Material:** Strategies for managing spent research reactor fuel and fissile material throughout their entire lifecycle, from generation to disposal.
- **Consolidation Strategies for Multiple Waste Streams:** Approaches to consolidating various waste streams to improve storage and disposal efficiency, including logistical and optimization considerations.
- **Treatment and Conditioning Technologies:** Technologies for processing spent research reactor fuel and fissile material into stable forms suitable for storage and disposal, including advanced treatment and conditioning methods.
- **Alternative and Innovative Approaches:** Innovative or less conventional methods, including emerging technologies and collaborative approaches, that offer new solutions for the disposition of spent research reactor fuel and fissile material.

## Participation and Registration

All persons wishing to participate in the event have to be designated by an IAEA Member State or should be members of organizations that have been invited to attend.

In order to be designated by an IAEA Member State or invited organization, participants are requested to submit their application via the InTouch+ platform (<https://intouchplus.iaea.org>) to the competent national authority (Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) or organization for onward transmission to the IAEA by **4 November 2024**, following the registration procedure in InTouch+:

1. Access the InTouch+ platform (<https://intouchplus.iaea.org>):
  - Persons with an existing NUCLEUS account can sign in to the platform with their username and password;
  - Persons without an existing NUCLEUS account can register [here](#).
2. Once signed in, prospective participants can use the InTouch+ platform to:
  - Complete or update their personal details under ‘Complete Profile’ and upload the relevant supporting documents;
  - Search for the relevant event under the ‘My Eligible Events’ tab;
  - Select the Member State or invited organization they want to represent from the drop-down menu entitled ‘Designating Authority’ (if an invited organization is not listed, please contact [InTouchPlus.Contact-Point@iaea.org](mailto:InTouchPlus.Contact-Point@iaea.org));
  - If applicable, indicate whether financial support is requested and complete the relevant information (this is not applicable to participants from invited organizations).
  - Based on the data input, the InTouch+ platform will automatically generate the Participation Form (Form A) and/or the Grant Application Form (Form C).
  - Submit their application.

Once submitted through the InTouch+ platform, the application, together with the auto-generated form(s), will be transmitted automatically to the required authority for approval. If approved, the application, together with the applicable form(s), will automatically be sent to the IAEA through the online platform.

NOTE: The application for financial support should be made, together with the submission of the application, by **4 November 2024**.

For additional information on how to apply for an event, please refer to the [InTouch+ Help](#) page. Any other issues or queries related to InTouch+ can be sent to [InTouchPlus.Contact-Point@iaea.org](mailto:InTouchPlus.Contact-Point@iaea.org).

Selected participants will be informed in due course on the procedures to be followed with regard to administrative and financial matters.

Participants are hereby informed that the personal data they submit will be processed in line with the [Agency's Personal Data and Privacy Policy](#) and is collected solely for the purpose(s) of reviewing and assessing the application and to complete logistical arrangements where required. The IAEA may also use the contact details of Applicants to inform them of the IAEA's scientific and technical publications, or the latest employment opportunities and current open vacancies at the IAEA. These secondary purposes are consistent with the IAEA's mandate. Further information can be found in the [Data Processing Notice](#) concerning IAEA InTouch+ platform.

## Papers and Presentations

The IAEA encourages participants to give presentations on the work of their respective institutions that falls under the topics listed above.

Participants who wish to give presentations are requested to submit an abstract of their work. The abstract will be reviewed as part of the selection process for presentations. The abstract should be in A4 page format, should extend to no more than **1** page (including figures and tables) and should not exceed **200** words. It should be sent electronically to [Ms Kerry Dunn](#), the Scientific Secretary of the event (see contact details below), not later than **4 November 2024**. Authors will be notified of the acceptance of their proposed presentations by **18 November 2024**.

In addition to the registration already submitted through the InTouch+ platform, participants have to submit the abstract, together with the Form for Submission of a Paper (Form B), to the competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) or organization for onward transmission to the IAEA not later than **4 November 2024**.

## Expenditures and Grants

No registration fee is charged to participants.

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. Upon specific request, such assistance may be offered to normally one participant per

country, provided that, in the IAEA's view, the participant will make an important contribution to the event.

The application for financial support should be made, together with the submission of the application, by **4 November 2024**.

## Venue

The event will be held at the Vienna International Centre (VIC), where the IAEA's Headquarters are located. Participants must make their own travel and accommodation arrangements.

General information on the VIC and other practical details, such as a list of hotels offering a reduced rate for IAEA participants, are listed on the following IAEA web page:

[www.iaea.org/events/evt2304771](http://www.iaea.org/events/evt2304771).

Participants are advised to arrive at Checkpoint 1/Gate 1 of the VIC one hour before the start of the event on the first day in order to allow for timely registration. Participants will need to present an official photo identification document in order to be admitted to the VIC premises.

## Visas

Participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria at least four weeks before they travel to Austria. Since Austria is a Schengen State, persons requiring a visa will have to apply for a Schengen visa. In States where Austria has no diplomatic mission, visas can be obtained from the consular authority of a Schengen Partner State representing Austria in the country in question.

## Additional Information

This technical meeting will also take place virtually via Cisco Webex. The agenda and access link will be sent to the participants before the event.

# IAEA Contacts

## Scientific Secretaries:

### Ms Kerry DUNN

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## Administrative Secretary:

### Ms Nichola CANNAPAN

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretary/Secretaries and correspondence on other matters related to the event to the Administrative Secretary.

Enclosure: Form for Submission of a Paper (Form B) (if Abstract/Paper submission requested)

# Form for Submission of a Paper

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To be completed by the participant and sent to the competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA, or National Atomic Energy Authority) of his/her country for subsequent transmission to the International Atomic Energy Agency (IAEA) either by email to: [Official.Mail@iaea.org](mailto:Official.Mail@iaea.org) or by fax to: +43 1 26007 (no hard copies needed). Please also send a copy by email to the Scientific Secretary ([K.Dunn@iaea.org](mailto:K.Dunn@iaea.org)) and to the Administrative Secretary ([N.Cannavan@iaea.org](mailto:N.Cannavan@iaea.org)).

Participants who are members of an invited organization can submit this form to their organization for subsequent transmission to the IAEA.

**Deadline for receipt by IAEA through official channels: 04 November 2024**

Title of the paper:		
If applicable: Abstract ID in IAEA-INDICO:		
Family name(s) and first name(s) of all author(s): e.g. Smith, John	Scientific establishment(s) in which the work has been carried out	City/Country
1.		
2.		
3.		
Family name and first name(s) of author presenting the paper: e.g. Smith, John	Mr/Ms:	
Mailing address:		
Tel. (Fax):		
Email:		

I plan to attend virtually:

Yes  No

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**Date:**

**Signature of main author:**