



IAEA

International Atomic Energy Agency

Atoms for Peace and Development

Technical Meeting on the Characterization of Radioactive Waste

IAEA Headquarters, Vienna, Austria

27 November – 1 December 2023

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Information Sheet

Introduction

Radioactive waste is generated from the operation of nuclear power plants, nuclear fuel cycle facilities and from the use of radionuclides in research, health care, accelerators and industrial applications. Depending on the origin, radioactive waste can be of different types covering a wide range of radiological, physical and chemical properties. Characterization of radioactive waste involves determination of these properties and plays important roles at various stages of their safe management from generation up to disposal. For example, it can help to establish the appropriate treatment and/or conditioning needed, to provide information needed for process control, and to provide assurance that the waste form or waste package will meet the waste acceptance criteria for the processing, storage, transport and disposal of the waste.

The characterization of radioactive waste and waste packages plays an important role during the different stages of the predisposal management of radioactive waste. By understanding the characteristics of such waste, it is possible to establish the necessary adjustment, treatment, conditioning or suitability for further handling, processing, transport, storage or disposal. Waste characterization involves all aspects related to the physical, chemical and radiological properties of the waste.

Therefore, the safe management and disposal of radioactive waste is, in part, reliant upon its accurate and quality-assured characterization by non-destructive and destructive methods, and upon determination of the radionuclide inventory. Relevant procedures, standards, laboratory and routine industrial practices have been developed and refined over the years by Member States of the International Atomic Energy Agency (IAEA) with mature operating nuclear facilities and laboratories.

However, several Member States with less developed programmes do not have such facilities and laboratories. For these countries, establishing fit-for-purpose characterization programmes is a complex technical challenge requiring both intellectual and financial resources.

Over the past decade significant progress has been achieved in the development of waste characterization, control procedures and equipment as a direct response to ever-increasing requirements for quality and reliability of information on waste characteristics. However, some aspects of radioactive waste characterization remain challenging, such as the estimation of the activity of long lived, difficult-to-measure radionuclides, adequate sampling methodologies, refining the characterization method, improving the interpretation of the analysis data to achieve more accurate results, presence of non-radiological hazardous toxic materials, the development of scaling factors adapted to the specificity of waste streams, and the characterization of waste for the verification of waste activity before clearance.

This event is being organized by the IAEA as part of the activities planned within the framework of the IAEA's International Network of Laboratories for Nuclear Waste Characterization (LABONET) in order to increase efficiency in sharing international experience in the application of proven, quality-assured practices for the characterization of radioactive waste and waste packages. The exchange of information and best practices in the operation of characterization laboratories is expected to underpin both public and regulatory confidence in the secure management and responsible storage and disposal of radioactive waste.

Objectives

The purpose of the event is for members of the International Network of Laboratories for Nuclear Waste Characterization to share and discuss good practices, lessons learned, innovations and challenges in the characterization of radioactive waste.

The meeting will provide a forum for the exchange of information and discussions on good practices, latest developments, challenges and future directions in the area of radioactive waste characterization with the aim to seek suggestions and ideas for new activities, particularly those reflecting the needs of Member States in this area.

Target Audience

The event is targeted at representatives of laboratories and organizations in Member States who are responsible for the characterization of low and intermediate level waste and waste packages; who are actively engaged in planning, improving and implementing radioactive waste management programmes; and who are willing to share their experience, to discuss about both the challenges faced and improvements achieved or gain knowledge on the subject.

Participants from the invited Member States and organizations are expected to attend, as well as representative(s) from the IAEA and the LABONET Steering Committee.

Participants should be operators or managers of radioactive waste processing and storage facilities or who are working in regulatory or supporting organizations with responsibility for the management of low and intermediate level radioactive waste and sealed radioactive sources.

Working language(s)

English.

Expected Outputs

The event will provide a forum for the exchange of information and discussions on good practices, latest developments, challenges and future directions in the area of radioactive waste characterization, as well as providing the latest state-of-the-art technical methods and technologies to characterization laboratory planners, managers and technicians as well as designers, operators and regulators involved in the management of radioactive waste in Member States.

The expected outputs are:

- To share international experiences and best practices in characterizing radioactive waste streams through presentations; and
- To increase support for organizations or Member States with less advanced programmes for the characterization of low and intermediate level waste, by making available the relevant skills, knowledge, managerial approaches and expertise from Member States with mature operating characterization laboratories.

Structure

The event will include presentations by the participants outlining the experiences and issues of Member States related to the topics mentioned below. Participants are requested to indicate the chosen topic and title of the presentation in the Participation Form (Form A), and upon their acceptance to send an abstract of the presentation at least two weeks prior to the event.

The technical programme will consist of plenaries, roundtable discussions and a one-day technical visit to the IAEA Seibersdorf laboratories, if the technical and organizational conditions will allow it. In order to allow sufficient time for topical discussions, the organizers are considering the possibility of holding parallel poster sessions depending on the number of contributed papers received. Plenaries will include presentations and discussions on particular waste characterization programmes and on more focused topics covering the specific areas noted above. The roundtable discussions will focus on relevant issues and topics of common interest.

Topics

The event will involve exchanges on practices and trends in radioactive waste characterization covering relevant areas, including:

- Challenges in establishing radioactive waste characterization infrastructures: what do we need to characterise our inventory?
- Sampling and characterization (including interpretation of results) of legacy waste and wastes from facilities decommissioning;
- Non-radiological characterization of radioactive waste: needs, limitations (e.g., hazardous toxic waste), challenges;
- Mobile systems used in waste characterization;
- Responsibilities in setting up a comprehensive radioactive waste inventory;
- Updates on international and European research and development projects and networks; the role of research and development in waste characterization;
- Updates on LABONET network.

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 **1 September 2023**, 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);
 - 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 **1 September 2023**.

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.

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 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 two pages (including figures and tables). It should be sent electronically to Ms Felicia Nicoleta Dragolici, the Scientific Secretary of the event (see contact details below), not later than **1 September 2023**. Authors will be notified of the acceptance of their proposed presentations by **29 September 2023**.

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 **1 September 2023**.

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 **1 September 2023**.

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.

The event will begin at 09:30 on Monday, 30 November, Building M of the VIC. The room number and the agenda will be shared with the participants at a later time, with at least two weeks before the meeting. 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.

IAEA Contacts

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