



Regional Workshop on the Establishment of Low and Intermediate Level Waste (LILW) Characterization Methodologies and Infrastructures

Hosted by

The Government of the Republic of Armenia

through

Armenian Nuclear Regulatory Authority (ANRA)

Yerevan, Armenia [*]

12 to 16 September, 2022

**RER/9/154: Enhancing the Implementation of Integrated
Programmes for the Safe Management of Radioactive Waste**

Ref. No.: ME-RER9154-2203718

Information Sheet

A. Purpose

The primary objective of this workshop is to discuss the methodologies for waste characterization, considering the origin of the waste, the different waste streams, the situation and the needs of the characterization laboratories, as well as the available analytical technologies and techniques.

B. Working Language(s)

The working language(s) of the event will be English.

C. Deadline for Nominations

Nominations received after **08 July 2022** will not be considered.

[*] Subject to the acceptance of the Host Country Agreement

D. Project Background

Nuclear techniques and technologies implementation and use lead to radioactive waste (radwaste) generation. Such waste needs to be processed through segregation, treatment, conditioning and packaging to be either stored or disposed of. The disposal of radwaste is an issue that needs to be dealt with in most Member States. There is a continuous need to improve technology and human resources to enhance and strengthen the technical capacity, efficiency and safety of existing or new predisposal waste management facilities related to waste processing or storage. Countries with small amounts of radwaste usually do not have solutions for final disposal. During the peer reviews of national reports under the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (Joint Convention) it was acknowledged that there was a need to update and/or develop the comprehensive radwaste management policy and strategy of many countries in the Europe region, in a timely manner. This will ensure predisposal management of radwaste is aligned with the disposal solutions, which is essential for the safe and effective management of radwaste.

Over the past several decades, there has been an increasing emphasis on the importance of producing a 'quality end product' for all disposed radioactive waste. This is achievable only by obtaining a thorough and accurate assessment of the physical, chemical and radiological characteristics of the waste, a process which is referred to as 'waste characterization.' This must be accomplished or verified at the point of generation, during waste conditioning, and upon disposal, with a clear demonstration that the waste meets the performance objectives established by the disposal acceptance criteria. Moreover, it must be accomplished in a systematic manner using proven methodologies, technologies and techniques with an overriding emphasis on quality assurance and quality control.

Great effort should be invested in radioactive waste characterization during the early stage of its life cycle. Characterization will be much easier at that point, and costs will be lower. In the best overall scheme, the operator performs characterization mainly during the early phases of the life cycle, and the independent laboratory performs this activity in the later stages of the life cycle.

E. Expected Outputs

The workshop participants which will gain a better understanding and improved knowledge in

- 1) Applying the proper methodologies when conceiving a characterization programme for the various kinds of radioactive waste fluxes or packages,
- 2) Establishing the needs for and setting up the characterization laboratories, and
- 3) Developing, implementing and optimising the characterization techniques.

F. Scope and Nature

The five-day workshop will include overview lectures on the basic aspects of the waste characterization role in radwaste management, radioactive waste characterization steps and control strategy, description and evaluation of selected control procedures and methods for all basic steps of the radioactive waste life cycle, pre-requisites for planning and building a comprehensive radwaste waste characterization system. Practical exercises will be followed by Q&A sessions to create an open forum for exchanges and debates.

The workshop will also include participant's presentations outlining Member State experience and issues aligned to emphasize the current status of radioactive waste management infrastructure as well as planning aspects in their countries (as required under H section).

G. Participation

This workshop is open to Member States who are participating in the **RER9154** project: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Georgia, Greece, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Malta, Montenegro, North Macedonia, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Tajikistan, Türkiye, Turkmenistan, Ukraine, and Uzbekistan.

H. Participants' Qualifications and Experience

This workshop is targeted at operators, regulators and decision makers in connection with the management of LILW in both pre-disposal and disposal stages. Preference will be given to candidates having direct involvement and responsibilities in radioactive waste characterization operation, or in regulatory oversight of them as well as to professionals involved in developing strategies, technologies and techniques related to the complete characterization of radioactive waste streams and waste packages.

Participants must be nominated by the competent national authority of the Member State and, most specifically, by the Member States' official counterpart for the project.

Please note that participants will be expected to prepare presentations and share information outlining their experience regarding the status of the radioactive waste characterization system, highlighting the challenges and issues faced. These presentations shall be sent to the workshop Scientific Secretary – Ms Felicia Dragolici (F.N.Dragolici@iaea.org) prior to the workshop start date and will respect the following guidelines.

Length: the presentations should not exceed 15 slides.

Contents: the presentations should cover:

- i. waste generation and waste streams;
- ii. inventory (e.g., activities, volumes, particularities);
- iii. characterization facilities: existing, under construction, planned;
- iv. human resource availability (measures for improvement);
- v. currently applied radwaste characterization technologies and future planning's (waste stream related);
- vi. characterization aspects in providing compliance with different predisposal and disposal WACs: availability, development status, challenges;
- vii. challenging aspects and areas where guidance is needed and requested.

I. Application Procedure

Candidates wishing to apply for this event should follow the steps below:

1. Access the InTouch+ home page (<https://intouchplus.iaea.org>) using the candidate's existing Nucleus username and password. If the candidate is not a registered Nucleus user, she/he must create a Nucleus account (<https://websso.iaea.org/IM/UserRegistrationPage.aspx>) before proceeding with the event application process below.
2. On the InTouch + platform, the candidate must:
 - a. Finalize or update her/his personal details, provide sufficient information to establish the required qualifications regarding education, language skills and work experience ('Profile' tab) and upload relevant supporting documents;
 - b. Search for the relevant technical cooperation event (EVT2203718) under the 'My Eligible Events' tab, answer the mandatory questions and lastly submit the application to the required authority.

NOTE: Completed applications need to be approved by the relevant national authority, i.e. the National Liaison Office, and submitted to the IAEA through the established official channels by the provided designation deadline.

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

Should online application submission not be possible, candidates may download the nomination form for the meeting from the [IAEA website](#).

NOTE: A medical certificate signed by a registered medical practitioner dated not more than four months prior to starting date of the event must be submitted by candidates when applying for a) events with a duration exceeding one month, and/or b) all candidates over the age of 65 regardless of the event duration.

J. Administrative and Financial Arrangements

Nominating authorities will be informed in due course of the names of the candidates who have been selected, and will at that time be informed of the procedure to be followed with regard to administrative and financial matters.

Selected participants will receive an allowance from the IAEA sufficient to cover their costs of lodging, daily subsistence and miscellaneous expenses. They will also receive either a round-trip air ticket based on the most direct and economical route between the airport nearest their residence and the airport nearest the duty station through the IAEA's travel agency American Express, or a travel grant, or they will be reimbursed travel by car/bus/train in accordance with IAEA rules for non-staff travel.

K. Disclaimer of Liability

The organizers of the event do not accept liability for the payment of any cost or compensation that may arise from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from or attending the course, and it is clearly understood that each Government, in approving his/her participation, undertakes responsibility for such coverage. Governments would be well advised to take out insurance against these risks.

L. Note for female participants

Any woman engaged by the IAEA for work or training should notify the IAEA on becoming aware that she is pregnant.

The Board of Governors of the IAEA approved new International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources. The Standards deal specifically with the occupational exposure conditions of female workers by requiring, inter alia, that a female worker should, on becoming aware that she is pregnant, notify her employer in order that her working conditions may be modified, if necessary. This notification shall not be considered a reason to exclude her from work; however, her working conditions, with respect to occupational exposure shall be adapted with a view to ensuring that her embryo or foetus be afforded the same broad level of protection as required for members of the public.

IAEA Contacts

Programme Management Officer (responsible for substantive matters):

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