



Regional Workshop on Approaches to Ageing Management of Waste Packages in Storage

Hosted by

The Government of Italy

through

The Abdus Salam International Centre for Theoretical Physics

18-22 Sept 2023

Ref. No.: ME-RER9154- EVT2300641

Information Sheet

A. Purpose

The purpose of this event is to discuss and share experience on the use of computer codes (modelling) as an approach to ageing management (durability) of waste packages in storage/disposal facilities in different environmental conditions.

B. Working Language(s)

The working language(s) of the event will be English with no interpretation provided. All communications, abstracts and papers must be submitted in this language.

C. Deadline for Nominations

Nominations received after **26 July 2023** will not be considered.

D. Project Background

Nuclear energy is a reliable solution to a finite energy supply from fossil fuels. All Member States (MSs) that benefit from the peaceful uses of nuclear energy have some amounts of radioactive waste to manage in a way that it does not present a burden to future generations. In addition, many Member States are tasked with the safe management of waste from past practices or events.

To identify the preferred approach a safety case is constructed that includes the assessment of the long-term impact of the various waste management and/or remediation options over a defined lifetime. Underpinning the safety case are mathematical models that can predict the durability of disposed waste packages in the disposal environment. The models consider the site-specific conditions and the characteristics of the waste form and waste package to predict durability.

These selective non-commercial computer codes underpinning the science of degradation modelling of waste forms and waste packages are developed and understood only by a few researchers in this field.

IAEA is partnering with International Centre for Theoretical Physics (ICTP) to deliver a workshop to teach the fundamental principles that underpin ageing management (using durability modelling) of different waste packages. It will include the following topics:

- Principles of ageing and environmental influences;
- Establishing a conceptual ageing model;
- Ageing (durability) determination of cementitious, vitrified and ceramic waste forms
- Different modelling codes to determine ageing of waste forms;
- Ageing model application and objectives;
- Establish an ageing management program.

The workshop will assist experts from nuclear research, materials science, waste management and environmental protection to understand the principles of ageing and establish an ageing management program. Participants will become acquainted with their international peers and will have a unique opportunity to establish links for their mutual support. Knowledge transfer will be facilitated between individuals from developed and developing countries and can be used to develop performance assessments for planned stored and disposal facilities. The workshop will be held on 18-22 September 2023 in Trieste, Italy.

E. Expected Outputs

As a result of the workshop, the participants will have knowledge regarding:

1. Basics of ageing management of waste packages;
2. Conceptual information needed for modelling of waste form ageing;
3. Ageing (durability) determination of cementitious, vitrified and ceramic waste forms by modelling;
4. Use of different modelling codes to determine ageing of waste forms;
5. Knowledge in executing an ageing management program.

F. Contents

The five-day regional workshop will include lectures, structured discussions and underpinned by modelling exercises designed to practice and reinforce approaches to ageing management of waste packages in storage. Examples of contents that are being planned (depending on availability of experts) of the five-day workshop are:

Day 1: Basics of ageing management of waste packages;

Day 2: Ageing (durability) determination of cementitious, vitrified and ceramic waste forms

Day 3: Use of different modelling codes to determine ageing of waste forms;

Day 4: Establish an ageing management program.

Day 5: Final lectures and closing of workshop.

G. Participation

The meeting is open to Member States 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' Qualification and Experience

The event is targeted at representatives of Member States with a current or future programme responsibility regarding the safe storage of radioactive waste as part of radioactive waste management activities at either a facility or at national level.

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 share information outlining their experience (lessons learned) or needs regarding the durability of waste package in storage and disposal facilities.

I. Papers and Presentations

The IAEA expects participants to give presentations outlining their experience or planned activities regarding the long-term durability determinations of stored or disposed waste packages.

Participants who wish to give presentations are requested to submit the presentation electronically to Mr Meyer (W.Meyer@iaea.org) the Scientific Secretary of the event not later than **31 July 2023**.

Authors will be notified of the acceptance of their proposed presentations by **15 August 2023**.

J. 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. Download and complete the [Designation of Beneficiary and Emergency Contact Form](#), and upload to InTouch+ ('Profile' tab under the personal section) specifying the document name. If already provided, kindly discard this step; and
 - c. Search for the relevant technical cooperation event (**EVT2300641**) 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 and submit their applications to their National Authorities. The nomination forms once fully approved can be submitted by e-mail in a PDF format through the official channels via the IAEA Official E-Mail (Official.Mail@iaea.org) with copy to Ms Deufrains (K.L.Deufrains@iaea.org) and Mr Bru (Y.Bru@iaea.org).

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 over the age of 65 regardless of the event duration.

K. 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 AX Travel Management, or a travel allowance, or they will be reimbursed travel by car/bus/train in accordance with IAEA rules for non-staff travel.

L. 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.

M. 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

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