



Second NEXSHARE Workshop on Experimental Testing and Validation for Design and Safety Analysis Computer Codes for Advanced Reactors and Small Modular Reactors

IAEA Headquarters, Vienna, Austria

30 November - 4 December 2026

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Information Sheet

Introduction

Assessments by means of computer codes is key for the design and licensing of Nuclear Power Plants (NPPs) and are also used in quantifying the safety margins. Given their impact on safety, those computer codes are required to be validated for their intended application through experimental tests. The use of validated computer codes is a key prerequisite for a robust safety assessment, which is correspondingly reflected in relevant IAEA Safety Standards.

Some Advanced Reactors and Small Modular Reactor (SMR) concepts involve specific design characteristics that require modelling capabilities that are beyond the validated boundaries of existing codes or include physical phenomena for which the existing experimental data is insufficient. The significant efforts and resources associated with performing validation or experimentation constitute a challenge to a safe and secure timely deployment of Advanced Reactors and SMRs because validation should cover anticipated conditions during both normal operations and accidents, and the relevant validation databases should fully cover SMRs conditions. This issue becomes specifically important in the light of innovative (i.e. first of a kind) technologies being currently utilized in SMR designs.

To overcome those challenges, the IAEA, in collaboration with the OECD/NEA, the Gen-IV Forum and the European Commission, has launched NEXSHARE, a Network for Experiment and Code Validation Sharing that facilitates collaboration on experimental testing and computer code validation for the design and safety analysis of small modular reactors and advanced reactors.

NEXSHARE was launched in 2024 during its first workshop. Based on the success and feedback from this workshop, the IAEA and NEA are organizing, in collaboration with the GEN-IV Forum and the European Commission, the second edition of the NEXSAHRE workshop.

Objective

The objective is to event is to share experience and information on experimental testing and code validation for Small Modular Reactors (SMRs), to identify current needs and gaps, and to discuss the potential for collaboration, resource sharing and work on globally recognized common approaches.

The event will feature presentations from the IAEA, the NEA, the Gen-IV International Forum, the European Commission, national laboratories, developers of SMRs technologies, code developers, owners of experimental facilities and Technical Support Organizations. The event will include panel sessions and discussion sessions to enable participants to exchange information and lessons learned, contribute to the summary and highlights of the meeting, and make recommendations to the IAEA and other participating organizations on future activities in this area.

The event includes the participation and builds up on the International Symposium on *Nuclear Energy R&D: Advancements and Trends* planned at the IAEA Headquarters on 1 to 2 December 2026. Workshop participants are requested to also register to the Symposium (EVT2602884). Please visit the [symposium webpage](#) for more information regarding the Symposium.

Target Audience

The target audience of this event are individuals working in Member States' design organization (vendors, code developers), owners of experimental facilities and research institutes, utilities universities, regulatory bodies and technical support organizations; particularly those involved in the key issues and challenges associated with experiments and code validation needed for SMRs.

Working Language

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

Expected Outputs

The key output of the event is to share experience, information and common approaches on experimental testing and code validation for SMRs and advanced reactors.

Discussions are expected to identify current needs and gaps and generate recommendations for enhancements and future R&D, as well as feedback in a form of the key lessons learned and takeaways to be used to further tailor NEXSHARE efforts in this area.

The main outcomes of the workshop will be consolidated in a meeting report. The workshop abstracts and presentations will be available in electronic form to NEXSHARE members.

Topics

The meeting will cover the following topics, such as thermal hydraulics, neutronic and fuel, for all reactor families:

- Updates in international and national experimental and code validation programmes for SMRs:
Current status of ongoing or recently completed experimental and validation activities of phenomena specific to SMRs and advanced reactors, with a particular emphasis on new datasets available since the first NEXSHARE workshop and the accessibility of experimental data.
- Discuss the challenges in code usage and validation for design and safety assessments of SMRs and advanced reactors:
Challenges faced by industry, regulators, TSOs, research organisations, and code developers when validating design and safety analysis codes to novel SMR configurations and advanced reactors, including issues such as code applicability to passive safety systems, user effects, uncertainty quantification, and the availability of design-specific validation data.
- Progress on the NEA CSNI Code Validation Matrix (CCVM)
- Follow up from the first NEXSHARE workshop:
Implementation of recommendations from the inaugural NEXSHARE workshop held in Vienna in June 2024, including progress on populating the database, and implemented synergies with the participating international organisations.
- Key lessons learned and takeaways to be used to further tailor IAEA and NEA efforts in this area.
Identify the critical remaining gaps in code validation and formulate concrete recommendations for future activities and effective collaboration supporting experimental programmes and code validation.

Deadline for Nominations

Nominations received after **16 October 2026** will not be considered.

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 **16 October 2026**, 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 **16 October 2026**.

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.

This event includes the participation to the International Symposium on *Nuclear Energy R&D: Advancements and Trends* ([EVT2602884](#)) held at the IAEA Headquarters on 1 to 2 December 2026. Workshop participants are requested to register to the Symposium, in addition to the NEXSHARE Workshop.

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. All contributions will be reviewed as part of the selection process for presentations. The manuscript should be in A4 page format, should extend to no more than two pages. The abstracts should be sent electronically to Ms Eve-Lyne Pelletier, the Scientific Secretary of the event (see contact details below), not later than **16 October 2026**. Authors will be notified of the acceptance of their proposed abstracts and papers by **16 October 2026**.

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 **16 October 2026**.

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 **16 October 2026**.

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.

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

Scientific Secretaries

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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.

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