IAEA
International Atomic Energy Agency
Atoms for Peace and Development

TC Project RER/9/166 "Enhancing Safety Assessment of Advanced Safety Features of Nuclear Power Plants including Small Modular Reactors:

Regional Workshop on Design Aspects of Advanced NPPs and Innovative Technologies

Hosted by

The Government of Austria

through the

International Atomic Energy Agency (IAEA)
Vienna, Austria

24 to 28 August 2026

Ref. No.: EVT2600246

Information Sheet

Purpose

The purpose of the event is to bring together representatives from participating Member States to exchange knowledge and develop a common understanding of design aspects of advanced nuclear power plants (NPPs), including small modular reactors (SMRs), and innovative technologies. The workshop responds directly to the needs identified through the preparatory questionnaire, particularly in relation to limited experience with innovative design concepts, passive safety features, and new reactor configurations.

The workshop will serve as the first technical activity following the initial regional meeting and will provide a shared conceptual foundation for subsequent training activities under the project. It will focus on design principles, safety concepts, and technological innovations without entering into detailed safety assessment methodologies, which will be addressed in later training courses.

Specifically, the event aims to:

- Establish a common understanding of key design features and safety concepts of advanced NPPs and innovative technologies;
- Facilitate exchange of knowledge and experience among Member States on innovative reactor designs and safety approaches;
- Highlight the role of passive safety systems, inherent safety features, and new design architectures;
- Identify key technical challenges associated with advanced designs, including uncertainties, limited operational experience, and lack of experimental data;
- Provide a basis for subsequent training activities focused on safety assessment methodologies.

Through these objectives, the workshop will support the development of a shared technical baseline and contribute to a coordinated regional approach for addressing challenges related to advanced NPP design.

Working Language(s)

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

Deadline for Nominations

Nominations received after **05 July 2026** will not be considered.

Project Background

The regional project RER9166 – Enhancing Safety Assessment of Advanced Safety Features of Nuclear Power Plants Including Small Modular Reactors aims to strengthen the technical and regulatory capabilities of Member States in Europe and Central Asia to assess, review, and oversee advanced nuclear power plant (NPP) designs, including small modular reactors (SMRs) and innovative safety features. The project responds directly to growing regional interest in deploying advanced reactor technologies and the need for robust, well-supported safety demonstrations that are aligned with the IAEA Safety Standards.

The experience gained through previous regional and interregional projects, notably RER9160 and INT2024, revealed that while some progress has been made in applying harmonized, risk-informed approaches to severe accident management and safety analysis, Member States still require targeted support in developing comprehensive safety demonstrations for advanced NPPs. Many regulatory authorities and technical support organizations report challenges related to managing design uncertainties, applying advanced deterministic and probabilistic methodologies, and reviewing safety cases in the absence of sufficient operating experience. These challenges underscore the need for a structured, regional effort to expand technical competence and establish common approaches.

The regional dimension of RER9166 is critical. Member States are facing similar technical and regulatory challenges, including:

- New safety concepts and reactor configurations that differ from existing practices;
- Limited experience with risk-informed applications of DSA and PSA for advanced features;
- Fragmented national approaches without harmonized methodologies;
- The need for improved access to shared knowledge, practical guidance, and peer dialogue.

By addressing these issues through coordinated regional activities, RER9166 will support Member States in developing the competencies necessary to prepare, review, and assess safety cases for advanced NPPs. The project will provide a platform for exchanging national experiences, identifying common solutions, and fostering technical harmonization. It will also strengthen the application of relevant IAEA Safety Standards—particularly GSR Part 4 and SSR-2/1 (Rev.1)—which emphasize the need for robust safety demonstrations when introducing unproven or innovative design features.

Through regional workshops, training courses, expert missions, and technical exchanges, the project will enhance national and regional capabilities, facilitate mutual learning, and support the safe and effective deployment of advanced reactor technologies across Europe and Central Asia.

Scope and Nature

The workshop will focus on the exchange of knowledge and experience related to the design aspects of advanced nuclear power plants (NPPs) and innovative technologies, including small modular reactors (SMRs), with emphasis on establishing a common understanding of key design concepts and safety approaches.

The workshop will include:

- Presentations from participating Member States and invited experts on advanced reactor technologies, innovative design features, and national perspectives on design development and deployment;
- Technical discussions on the application of fundamental safety principles, including defence in depth, safety functions, and design extension conditions, in the context of advanced NPP designs;
- Technical discussions on innovative design approaches, including modularization, modularity, compact layouts, novel plant configurations and on the role and implementation of passive safety systems and inherent safety features from a design perspective;
- Technical discussions on design-related challenges to new materials, coolants, and operating conditions, including uncertainties, modelling limitations, and the availability of experimental data for innovative technologies;
- Establishment of a common technical basis and shared understanding to support follow-up activities, including training courses, workshops, and expert missions within RER9166.

Expected Output(s):

The list of expected outputs of the event are:

- Improved understanding of advanced NPP design concepts and technological innovations;
- Enhanced knowledge exchange among participating Member States;
- Identification of key design challenges and uncertainties;
- Consolidated inputs for the development of subsequent training activities;
- Strengthened regional cooperation on advanced reactor technologies.

Radiation exposure may occur

No radiation exposure is expected during the event.

Participation

The regional meeting is open to applicants from countries participating in project RER9166 “Enhancing Safety Assessment of Advanced Safety Features of Nuclear Power Plants including Small Modular Reactors”: Armenia, Belarus, Bulgaria, Czech Republic, Hungary, Kazakhstan, Lithuania, Romania, Russian Federation, Slovakia, Slovenia, Türkiye, Ukraine.

Participants' Qualifications and Experience

Nominated candidates should be regulatory staff, TSO specialists, or utility experts with responsibilities in deterministic safety analysis, probabilistic safety assessment, or evaluation of advanced NPP designs and innovative safety features. Experience in safety reviews, application of IAEA Safety Standards, or development of safety demonstrations is desirable.

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 (EVT1906868) 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.

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.

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.

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.

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Annex A: List of Member States

Armenia

Belarus

Bulgaria

Czech Republic

Hungary

Kazakhstan

Romania

Russian Federation

Slovakia

Slovenia

Türkiye

Ukraine