



# **Interregional Training Course on Safety Aspects of Small Modular Reactors (SMRs) and Other Innovative Reactor Technologies (SMRs Safety Academy, two modules)**

**Hosted by**

The International Atomic Energy Agency

IAEA Headquarters, Vienna, Austria

**19-30 January 2025**

**Ref. No.:** TN-INT2023-EVT2500457

## **Information Sheet**

### **Purpose**

The purpose of the event is to train participants in key safety aspects of small modular reactors and other innovative reactor technologies, namely water cooled SMRs, high temperature gas cooled reactors, sodium cooled fast reactors, lead cooled fast reactors, and molten salt reactors.

### **Working Language**

The working language of the event will be **English**.

### **Deadline for Nominations**

Nominations received after **07 November 2025** will not be considered.

## **Project Background**

To meet the growing demand for energy and to mitigate global climate challenge, the interest in Small Modular Reactors (SMRs) and Micro-Reactors (MRs) is growing, especially with regions inaccessible to large electricity grids and regions with smaller electricity grids that need technology options deployed incrementally to closely match increasing energy demand. SMRs and MRs are also viable options for users that need beyond electricity supply, e.g., district heating, desalination, industrial process heat, as well as hydrogen. The purpose of the project is to provide broad support to Member States in the development and deployment of SMRs and MRs. The project provides a broad range of forum to enable effective capacity building through training and technology transfer activities on all aspects of SMR development. The project also covers the emerging MRs, the deployment of SMRs for electric and non-electric applications, and the coupling of such nuclear systems with renewables in integrated energy systems. The aim of the project is to enable national stakeholders to gain enhanced understanding on key characteristics of SMR and MR technologies and their applications, and to formulate, in line with international safety standards, countries' specific legal and regulatory frameworks, and generic user requirements and criteria for SMR technologies.

## Scope and Nature

The training course is structured in two modules of one week each.

During the first week, the selected participants will receive lectures from the IAEA and international experts, as well as participate in discussions and in-class group sessions. The first day will provide an introduction of the IAEA's programme on advanced reactor technologies, including SMRs, and will be followed by five reactor technology specific modules during the rest of the week. The five modules will focus on WC-SMRs, HTGRs, LFRs, SFRs, and MSR and will be delivered by international experts in each technology.

To facilitate meaningful discussions on the key safety aspects of each technology, each technology specific module will be structured as follows:

- An introduction to the reactor technology, such as general plant description, operating history, nuclear core and fuel design, main plant systems and main applications.
- A description of the safety aspects of the reactor technology, such as design characteristics important to safety, implementation of defence-in-depth, how the fundamental safety functions (reactivity control, heat removal, confinement) are achieved, typical potential accidents and how they are dealt with in the design. For some of the technologies, a discussion about waste and spent fuel management and decommissioning will be included.

In-class group sessions will be organized throughout the week to help participants to have a better understanding of the matters discussed and assimilate the contents of the technology specific modules. Conclusions from the work will be discussed on the last day.

During the second week, participants will engage in hands-on assessments of selected advanced reactor types, applying the theoretical knowledge gained during the first week to practical case studies. These assessments will involve evaluating reactor designs against IAEA safety standards for design safety and safety assessment, with the objective of determining compliance with the standards and identifying potential gaps. Through this exercise, participants will strengthen their understanding of safety-related issues across different reactor technologies and increase their knowledge of how IAEA safety standards are applied in practice.

## Expected Outputs

- Enhance participants' understanding of safety-related issues associated with advanced reactor technologies, including SMRs.
- Strengthen participants' knowledge of IAEA activities on the safety of these technologies and enhance their awareness of IAEA safety standards and how they apply to real cases.
- Develop and improve participants' skills in conducting safety reviews of reactor designs.

## Participation

The event is open to 20 participants from the following Member States which participate in the INT/2/023 project:

Algeria, Argentina, Armenia, Azerbaijan, Bolivia, Brazil, Bulgaria, Czech Republic, Egypt, El Salvador, Estonia, Ethiopia, Ghana, Greece, Guatemala, Hungary, Indonesia, Islamic Republic of Iran, Jamaica, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Lithuania, Madagascar, Malaysia, Mexico, Mongolia, Morocco, Myanmar, Namibia, Nigeria, Pakistan, Philippines, Poland, Romania, Rwanda, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, Sri Lanka, Thailand, Tunisia, Türkiye, Ukraine, United Republic of Tanzania, Uzbekistan, Zambia

At no cost to the IAEA, participants from following countries can also be considered: Belgium, Canada, China, Denmark, Finland, France, Italy, Japan, Republic of Korea, Russian Federation, Spain, United Kingdom, United States of America

## Participants' Qualifications and Experience

The nominees should be representatives from invited Member States' governments, regulatory bodies, technical scientific support organizations, or prospective owner/operator organizations and SMR developers, particularly those needing to understand key issues and challenges associated with safety consideration of advanced reactor technologies, including SMRs. Nominees are requested to provide a summary of how this event will provide direct benefit to their current or future job position and/or organization. The event will be conducted in English, and it is expected that candidates possess a sufficient level of English proficiency to actively engage in the event without encountering any language-related difficulties. Note that accepted nominees will be encouraged to read a list of references to get the most out of the event. The list of references will be provided in due course.

## 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 (EVT2500457) 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. **All nominations must include a scan of the candidate's first page of passport with photo.**

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](mailto:InTouchPlus.Contact-Point@iaea.org).

Should online application submission not be possible, candidates may download the nomination form for the training course 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.

## **Training on Basic Security in the Field (BSITF)**

In order to comply with UN system-wide security measures, it is required that all training course participants complete the online security awareness training BSAFE (which replaces BSITF and ASITF), prior to traveling to locations where UN security phases are in effect. The aim of these course is to educate participants on how best to avoid or minimize potential dangers and threats, and to demonstrate what individuals can do if they find themselves in insecure situations. The course is available online (<https://training.dss.un.org/course/category/6>).

Once an individual has completed the training, he/she must go back to the main training page to receive the certificate. If the button to get the certificate is not immediately visible, please refresh the page. BSAFE is maintained by UNDSS; in case of problems with the system, please contact UNDSS through the "Contact Us" page on the training website (<https://dss.un.org/dssweb/contactus.aspx>).

This certificate is compulsory for any IAEA-supported activity and should be submitted, along with the Nomination Form, through the competent authority in your country (NLO). Copies of the certificate should be kept by the candidate for his/her records as the BSAFE certificate does not expire.

## **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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