



Interregional Workshop on Safety, Security and Safeguards by Design in Small Modular Reactors (SMRs) (general issues)

Hosted by

The Government of the United States of America

through the

Idaho National Laboratory

Idaho Falls, ID, United States of America

11 to 15 September 2023

Ref. No.: ME-INT2023-2301206

Information Sheet

Purpose

The purpose of the event is to discuss and share experiences on holistic consideration of safety, security and safeguards and their interfaces in the design of SMRs highlighting in particular their consideration for different SMR technologies.

Working Language

The working language of the event will be English.

Deadline for Nominations

Nominations received after **20 May 2023** 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, regions with smaller electricity grids that need technology options deployed incrementally to closely match increasing energy demand, and regions where delivery of fossil fuels is cumbersome. The purpose of the project is to provide broad support to Member States in the deployment of SMRs and MRs. The project provides a forum to enable effective capacity building through training and technology transfer activities on all aspects of SMR development. The project 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 understand 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 event is planned to foster exchange of experiences on safety, security, and safeguards (3S) interfaces and in particular examples of their consideration for different SMR technologies (e.g., light water cooled SMR, high temperature gas SMR, sodium fast SMR, lead cooled fast SMR, molten salt SMR). The workshop is planned to focus on general aspects related to 3S concept by design, in particular addressing the following topics:

- General approach to implement safety by design, security by design and safeguards by design.
- Challenges in consideration of 3S interfaces in the SMR design stage (with specific focus on potential negative implications from one to another)
- Specifics connected with SMR technologies and their implications on safety, security and safeguards considerations (e.g. transportability, new fuel concepts, limited access and remote locations, non-electrical applications, highly integrated software systems)
- Practical examples on holistic consideration of safety, security and safeguards by design in SMRs

Special emphasis is planned to be made on the areas of potential synergies in terms of safety, security and safeguards for SMRs.

The event will address various SMR technologies, such as light water cooled SMR, high temperature gas SMR, sodium fast SMR, lead cooled fast SMR, molten salt SMR. It will include presentations from the participants providing their national experience on holistic approach to safety, security and safeguards by design and consideration of 3S interfaces. Invited experts as well as the IAEA staff will present and share their experience, highlighting common challenges and good practices.

Expected outputs

The expected outputs of the workshop are:

- Participants will exchange experiences in implementing the holistic approach to safety, security and safeguards by design in the context of different SMR technologies.
- Participants will discuss and gain better understanding of the interfaces between safety, security and safeguards and relevant implications for SMR designs.
- Participants will get better understanding of the current challenges and potential synergies between safety, security, and safeguards with specific focus on SMR design considerations, but also expanded view on relevant organizational and regulatory framework related aspects.

Participation

The event is open up to 40 participants from the following Member States participating in the INT/2023 project which are operating nuclear power plants or are embarking countries with advanced nuclear programme with SMR developments:

Argentina, Brazil, China, Czech Republic, Egypt, Hungary, Saudi Arabia, Pakistan, Poland, Mexico, Romania, Slovenia, Slovak Republic, South Africa, Türkiye,

At no cost to the IAEA, participants from following countries can also be considered: Belgium, Canada, Denmark, Finland, France, India, United Kingdom, Republic of Korea, Japan.

Participants' Qualification and Experience

The target audience of this workshop are those individuals working in Member States' regulatory bodies, design organizations, operating organizations and research and development institutions who are engaged in safety analysis for nuclear power plants for SMRs. Practical experience with deterministic and/or probabilistic safety analysis is essential for detailed discussions and sharing national experiences during the workshop.

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
 - a. Search for the relevant technical cooperation event (EVT2301206) under the 'My Eligible Events' tab, answer the mandatory questions and lastly submit the application to the required

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.

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.

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.

NOTE: The event will be hosted by the Idaho National Laboratory, therefore nominated participants who require a visa to enter the United States of America should submit the necessary application to the nearest diplomatic or consular representative of the United States of America as soon as possible.

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.

Programme Management Officer

Mr Jing Zhang
Division for Europe
Department of Technical Cooperation
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 VIENNA
AUSTRIA
Tel.: +43 1 2600 26540
Fax: +43 1 26007
Email: J.Zhang@iaea.org

Administrative Contact

Mr Niu Mingye
Division for Europe
Department of Technical Cooperation
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 VIENNA
AUSTRIA
Tel.: +43 1 2600 24561
Fax: +43 1 26007
Email: M.niu@iaea.org