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国际原子能机构

International Atomic Energy Agency

Agence Internationale de l'énergie atomique

Международное агентство по атомной энергии

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National Liaison Officers /

National Coordinators

In reply please refer to: **ME-INT2023-2301221**

Dial directly to extension: (+43 1) 2600-26540

2023-04-04

Subject: Interregional Workshop on Safety Analysis for Small Modular Reactors, Ottawa, Canada, from 16 to 20 October 2023

Dear National Liaison Officer / National Coordinator,

I am pleased to inform you that the International Atomic Energy Agency (IAEA) is organizing the above event under the IAEA technical cooperation project INT2023, "Supporting Member States' Capacity Building on Small Modular Reactors and Micro-reactors and their Technology and Applications as a Contribution of Nuclear Power to the Mitigation of Climate Change".

The purpose of the event is to discuss and share experiences in the area of Safety Analysis, namely the Deterministic Safety Analysis (DSA) and Probabilistic Safety Assessment (PSA), for various types of SMRs.

The attached Information Sheet provides further details, including technical and administrative aspects of the event. Selection of participants will be in accordance with IAEA procedures. Member States are strongly encouraged to identify women participants.

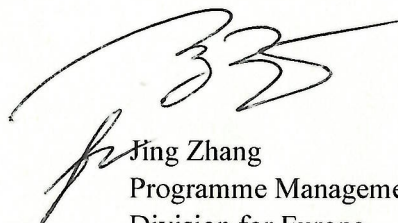
The IAEA will provide non-local participants with a round-trip air ticket based on the most direct and economical route between the airport nearest the participant's residence and Ottawa or a travel allowance to purchase an air ticket. Travel details will be agreed with the participants upon receipt of their official nomination. Participants will also receive an allowance from the IAEA sufficient to cover their costs of lodging, daily subsistence and miscellaneous expenses for the duration of the event in line with IAEA rules and procedures.

We would appreciate receiving your country's nominations by **31 May 2023** through the IAEA's InTouch+ platform (<https://Intouchplus.iaea.org>). Should this not be possible, applicants may download the Nomination Form for the course from the [IAEA's webpage](#). Completed forms must be endorsed by the relevant government authority and may be sent to the IAEA, preferably by email to Official Mail - IAEA Mail address Official.Mail@iaea.org, with copy to Mr Jing Zhang J.Zhang@iaea.org. Please be advised that late nominations or replacements of participants after the closing date for nominations will

not be accepted.

We look forward to receiving your early response.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'Jing Zhang', written in a cursive style.

Jing Zhang
Programme Management Officer
Division for Europe
Department of Technical Cooperation

Enclosure: Information Sheet



Interregional Workshop on Safety Analysis for Small Modular Reactors

Hosted by

The Government of Canada

through the

Canadian Nuclear Safety Commission (CNSC)

Ottawa, Canada

16 to 20 October 2023

Ref. No.: ME-INT2023-2301221

Information Sheet

Purpose

The purpose of the event is to discuss and share experiences in the area of Safety Analysis, namely the Deterministic Safety Analysis (DSA) and Probabilistic Safety Assessment (PSA), for various types of SMRs.

Working Language

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

Deadline for Nominations

Nominations received after **31 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 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. Furthermore, the project is aimed at enabling 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 interregional workshop is planned to foster the exchange of information on approaches, challenges and specific experiences regarding the wide range of aspects related to the Deterministic Safety Analysis (DSA) and Probabilistic Safety Assessment (PSA) in the context of different SMR technologies (e.g. light water cooled SMR, high temperature gas SMR, sodium fast SMR, lead cooled fast SMR, molten salt SMR). In particular, this workshop is planned to address the specifics of safety analysis for SMRs covering the following topics:

- a. Deterministic Safety Analysis for different SMR technologies
- b. Probabilistic Safety Assessment for different SMR technologies
- c. Risk-Informed Decision Making in the context of SMR technologies
- d. Integrated use of PSA and DSA in the design stage for SMRs, for instance to address the following aspects
 - Analysis of Defense in Depth implementation
 - Classification of Systems, Structures and Components (SSC)
 - Analysis and determination of Emergency Planning Zone

Special emphasis is planned to be made on practical examples, current practices and challenges in development and application of PSA and DSA for SMRs.

The interregional workshop 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 the deterministic and probabilistic safety analysis of SMRs. Invited experts as well as the IAEA staff will present and share their experience, highlighting common challenges and good practices. In addition to IAEA Safety Standards on Safety Analysis for NPPs (e.g. [GSR Part 4](#), [SSG-2](#), [SSG-3](#) and [SSG-4](#)), the results of the [recent IAEA study on the review of applicability](#) of IAEA Safety Standards to Non-Water-Cooled Reactors and Small Modular Reactors will be presented and discussed during the meeting.

Expected outputs

The expected outputs of the workshop are:

- Participants exchanged experiences in implementing of the deterministic safety analysis and probabilistic safety assessment in the context of different SMR technologies;
- Participants discussed and gained better understanding of the potential areas of application of safety analysis in the design stage (focusing on defense in depth implementation, SSC classification and other relevant aspects)

Participants acquired better understanding of the current challenges in the field of Safety Analysis for SMRs and the areas for future development and investigation.

Participation

The interregional workshop is open to up to 40 participants from the following Member States participating in the TC project INT/2/023 which are operating and/or designing NPPs or are embarking countries in advanced phase of their nuclear program:

Argentina, Brazil, China, Czech Republic, Egypt, Estonia, Hungary, Indonesia, Jordan, Saudi Arabia, Pakistan, Poland, Mexico, Romania, Slovenia, Slovak Republic, Türkiye.

At no cost to the IAEA, participants from the following countries can also be considered:

Belgium, Canada, Denmark, Finland, France, India, Japan, Republic of Korea, United Kingdom, and the United States of America.

Participants' Qualification and Experience

The target audience of the workshop is staff of 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
- c. Search for the relevant technical cooperation event (EVT2301221) 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 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.

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.

IAEA Contacts

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