



IAEA

International Atomic Energy Agency
Atoms for Peace and Development

Workshop on Innovative Technical Solutions to Improve Performance While Minimizing Costs at Operating Nuclear Power Plants

Hosted by the
Government of the United States of America

through the
Idaho National Laboratory

Idaho National Laboratory Offices, Idaho Falls, United States of America
and virtual participation via Microsoft Teams

9–13 October 2023

Ref. No.: EVT2205270

Information Sheet

Introduction

Operating nuclear power plants produced 2,653.3 TWh of electricity during 2021, displacing 1.26 billion tonnes of CO₂.

Nuclear power is a vital component of the global energy infrastructure. As of 1 April 2023, nearly 380 GW(e) of nuclear capacity (423 reactors) in 32 countries, generates approximately 10% of the world's electricity, contributes to a resilient and stable electric power grid, and helps address climate and energy security objectives. However, changes in electricity generation infrastructure as well as market deregulation challenge the economics of the current nuclear plant fleet in many countries.

Meanwhile, other highly technical industries have successfully deployed innovative technical and process solutions to maintain or enhance safety, security and performance while reducing cost. The nuclear industry has been slow to fully embrace these opportunities.

The Global Forum for Nuclear Innovation (GFNI), held in Korea in 2019 and London during 2022 focuses on accelerating deployment of innovative solutions to address the most urgent challenges facing the sustainability of nuclear power generation. It brought together nuclear plant leaders, regulators, and technology providers from around the world in a collaborative environment to build on each of the organizer's ongoing activities. The most recent event focused on key behaviours to identify and accelerate innovation within the nuclear power industry.

The International Network on Innovation to Support Operating Nuclear Power Plants (ISOP) was formally created in the IAEA CONNECT platform in 2019 to compliment GFNI by providing opportunities for more detailed international collaboration on relevant topics between individual GFNI events. ISOP is being launched during an April 2022 Technical Meeting in Vienna.

Objectives

The purpose of the event is to share Member States' experience related to innovative/novel technical solutions to improve performance while minimizing costs at operating nuclear power plants.

Under the auspices of the ISOP Network, the *Workshop on Innovative Technical Solutions to Improve Performance While Minimizing Costs at Operating Nuclear Power Plants* will focus on deployed innovation that maintained or improved safety and security while improving performance, reducing cost and/or increasing revenue. The scope of workshop includes the following:

- Technical innovation related to nuclear power plant operation, maintenance and engineering
 - Examples could include artificial intelligence, digital twins, drones and other autonomous technologies, etc.
- Process innovation in, for example, planning, work management, procedures, configuration management, procurement, outage management, etc.
 - Examples could include artificial intelligence, novel role / responsibility assignment, digitalization, automation, engineering modification processes and approvals, etc.
- Innovation to overcome external challenges, for example, linked to supply chains
 - Examples could include advanced / adaptive manufacturing or novel / improved supplier engagement
- Innovation to exploit new revenue opportunities
 - Examples might include isotope production, hydrogen production or heat applications
- Other innovations that maintain or improve safety and security will improving the economic competitiveness of operating nuclear power plants
- The role of national laboratories and other research and technical support organizations in developing and deploying innovation at operating nuclear power plants.

Meeting participants, from Member States with established nuclear power programmes or actively constructing their first nuclear power plant, are invited to share their perspective and to provide country-specific examples and case studies detailing the development and deployment of solutions. Keynote speakers, with direct experience in planning and implementing innovative solutions at operating nuclear power plants, will highlight their own perspective, challenges and lessons learned.

Participants will discuss the experiences shared during the event and consider recommendations or other feedback for the consideration of the IAEA, the ISOP Network and other relevant stakeholders. These will be compiled in a meeting report with summaries of the event contributions.

Target Audience

The meeting is open to representatives of nuclear power organizations from Member States hosting or actively developing a nuclear power programme:

- Government:
 - R&D agencies;
 - Regulators;
 - Policymakers.
- Industries:
 - Nuclear Power Plant operators;
 - Research and technical support organizations
 - Vendors;
 - Engineering firms.

Participants should be knowledgeable about the details of their country's nuclear power industrial sector and closely related infrastructure (i.e., supply chain, energy market), national strategy and specific plans for nuclear power's role in the broader energy mix; and willing to share their experience and lessons learned in developing and deploying innovation at operating nuclear power plants.

Working Language(s)

The working language of the meeting will be English. No interpretation will be provided.

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, participants are requested to send the **Participation Form (Form A)** to their competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) for onward transmission to the IAEA by **16 June 2023**. Participants who are members of an organization invited to attend are requested to send the **Participation Form (Form A)** through their organization to the IAEA by the above deadline.

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. Further information can be found in the [Data Processing Notice](#) concerning IAEA InTouch+ platform.

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. The abstract will be reviewed as part of the selection process for presentations. The abstract should be in A4 page format, should extend to no more than 1 page (including figures and tables) and should not exceed 300 words. It should be sent electronically to Mr Ed Bradley, the Scientific Secretary of the event (see contact details below), not later than **16 June 2023**. Authors will be notified of the acceptance of their proposed presentations by **15 August 2023**.

In addition, participants have to submit the abstract together with the **Participation Form (Form A)** to their competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) or their organization for onward transmission to the IAEA not later than **16 June 2023**.

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 using the **Grant Application Form (Form C)**, which has to be stamped, signed and submitted by the competent national authority to the IAEA together with the **Participation Form (Form A)** by **16 June 2023**.

Venue

The event is being hosted by Idaho National Laboratory and will be held on the premises of the Idaho National Laboratory, Idaho Falls, United States of America, from 9 to 13 October 2023. The meeting agenda, together with information on local arrangements, will be sent to designated participants once the completed Participation Forms have been received.

Visas

Participants who require a visa to enter the United States of America should submit the necessary application as soon as possible to the nearest diplomatic or consular representative of the United States of America.

IAEA Contacts

Scientific Secretary:

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Local Contacts

Host:

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United States of America

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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.

Event Web Page

Please visit the following IAEA web page regularly for new information regarding this event:

www.iaea.org/events/EVT2205270

Participation Form

Workshop on Innovative Technical Solutions to Improve Performance While Minimizing Costs at Operating Nuclear Power Plants

Idaho Falls, United States of America and virtual participation via Microsoft Teams

9-13 October 2023

To be completed by the participant and sent to the competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA, or National Atomic Energy Authority) of his/her country for subsequent transmission to the International Atomic Energy Agency (IAEA) either by email to: Official.Mail@iaea.org or by fax to: +43 1 26007 (no hard copies needed). Please also send a copy by email to the Scientific Secretary ([E. Bradley@iaea.org](mailto:E.Bradley@iaea.org)) and to the Administrative Secretary (R.George@iaea.org).

Participants who are members of an invited organization can submit this form to their organization for subsequent transmission to the IAEA.

Deadline for receipt by IAEA through official channels: 16 June 2023

Family name(s): (same as in passport)	First name(s): (same as in passport)	Mr/Ms
Institution:		
Full address:		
Tel. (Fax):		
Email:		
Nationality:	Representing following Member State/non-Member State/entity or invited organization:	
If/as applicable: Do you intend to submit a paper? Yes <input type="checkbox"/> No <input type="checkbox"/> Would you prefer to present your paper as a poster? Yes <input type="checkbox"/> No <input type="checkbox"/> Title:		

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.

Grant Application Form

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To be completed by the applicant and sent to the competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA, or National Atomic Energy Authority) of his/her country for subsequent transmission to the International Atomic Energy Agency (IAEA) either by email to: Official.Mail@iaea.org or by fax to: +43 1 26007 (no hard copies needed). Please also send a copy by email to the Scientific Secretary ([E. Bradley@iaea.org](mailto:E.Bradley@iaea.org)) and to the Administrative Secretary (R.George@iaea.org).

Deadline for receipt by IAEA through official channels: 16 June 2023

Family name(s): (same as in passport)	First name(s): (same as in passport)	Mr/Ms:
Mailing address:	Tel.:	
	Fax:	
	Email:	
Date of birth (yy/mm/dd):	Nationality:	
I plan to attend virtually:	Yes <input type="checkbox"/> No <input type="checkbox"/>	

1. Education (post-secondary):

Name and place of institution	Field of study	Diploma or Degree	Years attended from	to

2. Recent employment record (starting with your present post):

Name and place of employer/ organization	Title of your position	Type of work	Years worked from	to

3. Description of work performed over the last three years:

4. Institute's/Member State's programme in field of event:

Date: _____ **Signature of applicant:** _____

Date: _____ **Name, signature and stamp of Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority** _____