



IAEA

International Atomic Energy Agency
Atoms for Peace and Development

Hybrid Event: Technical Meeting on Artificial Intelligence Use in Nuclear Operations: Bridging Intelligence and Operations for a Safe, Secure, and Resilient Nuclear Power Industry

IAEA Headquarters, Vienna, Austria
and virtual participation via Microsoft Teams

30 November – 4 December 2026

Ref. No.: EVT2503481

Information Sheet

Introduction

The IAEA Artificial Intelligence Working Group (AI WG), operating under the auspices of the International Network on Innovation to Support Operating Plants (ISOP), plays a central role in supporting Member States in the responsible and effective integration of artificial intelligence into nuclear power plants and their supporting infrastructures. Established as a multidisciplinary international collaboration platform, the AI WG brings together 30 Member States, multiple international organizations, and more than 130 experts spanning nuclear engineering, safety, security, human factors, digital systems, data science and knowledge management.

The ISOP AI WG is structured around three core pillars:

- Internal collaboration: Connecting expertise across IAEA departments to promote coherence, knowledge sharing and cross-cutting coordination;
- External collaboration: Engaging regulators, operators, vendors, research institutions, and technical support organizations to harmonize approaches and exchange best practices;

- Networking: Building a global community of practice that supports learning, dialogue, and responsible innovation in AI for nuclear applications.

To fulfil its mandate, the AI WG operates through seven specialized Task Forces, each addressing a key dimension of AI deployment in the nuclear power industry:

- Task Force 1 – Human factors and knowledge management: Ensuring effective human–AI teaming, explainability, and the preservation of tacit and institutional knowledge.
- Task Force 2 – Cybersecurity: Addressing AI-specific cyber risks and privacy considerations and supporting robust computer security frameworks.
- Task Force 3 – Benchmarking: Developing benchmarking exercises and evaluation methodologies for AI tools, models, and techniques used in nuclear operations.
- Task Force 4 – Strategic partnerships: Coordinating cooperation with international organizations, research centres, and industry partners.
- Task Force 5 – Graded approach, safety, and trustworthiness: Advancing methods for risk-informed deployment and enhancing confidence in AI systems used in safety-critical environments.
- Task Force 6 – Training and educational programme: Strengthening AI literacy across the nuclear workforce through workshops, curricula development, and capacity-building initiatives.
- Task Force 7 – Emerging AI technologies: Monitoring developments, such as generative AI, synthetic data and advanced learning architectures, to anticipate future opportunities and challenges.

Collectively, these Task Forces support a comprehensive roadmap addressing risk-informed AI deployment, human–AI teaming, cybersecurity challenges, capacity building, and the technical evaluation of AI techniques relevant to nuclear operations.

Recognizing the importance of these activities, the ISOP AI WG advised the IAEA to disseminate the outcomes of its ongoing work to Member States and to collect feedback on their needs to ensure that the Task Forces remain fit for purpose. In response, the IAEA is organizing this Technical Meeting on *the Use of Artificial Intelligence in Nuclear Operations: Bridging Intelligence and Operations for a Safe, Secure, and Resilient Nuclear Power Industry*, aimed at helping Member States navigate emerging opportunities and challenges associated with AI-enabled nuclear operations, and at gathering and sharing Member States’ experience in this rapidly evolving field.

Objectives

The purpose of the event, organized to support the AI Working Group of the International Network on Innovation to Support Operating Nuclear Power Plants (ISOP AI WG), is to consolidate and advance international collaboration on the safe, secure and effective use of artificial intelligence (AI) in nuclear power plants.

It is expected that the scope of the discussions will include the diverse applications of artificial intelligence (AI) in nuclear power plants operating today and those expected to come into service in the near-term (~5 years).

Target Audience

In view of the subject of the event, participation is limited to IAEA Member States that currently operate nuclear power plants or are constructing their first NPP units, Member States that are at an advanced stage of developing their nuclear power programme, and Member States participating in the ISOP AI Working Group.

Participation is solicited from representatives of nuclear facilities and regulatory bodies, utilities, technical support organizations, designers, developers, vendors, and research organizations engaged in the field of AI for nuclear power. To ensure maximum effectiveness in the exchange of information, participants should be persons actively involved in the subject matter of the event.

The event is, in principle, open to all officially designated persons. The IAEA, however, reserves the right to limit participation due to limitations imposed by the available facilities. It is therefore recommended that interested persons take the necessary steps to secure their official designation as early as possible.

Working Language

English.

Structure

The event will serve as an international forum for enhancing interaction and information exchange among international experts on their professional experience on AI and its recent and near-term deployment in operating NPPs.

The event will be structured integrating standards presentations, rapid talks (brief presentations, with 1 slide during 5 and 8 minutes, designed to convey only the most important points, avoiding non-essential details), working sessions and discussion sessions.

Topics

Presentations are invited in two formats:

- Standard presentations (20 minutes);
- Rapid talks (5–8 minutes), focusing on a specific issue, challenge or insight.

Contributions are welcome on all approaches related to artificial intelligence and its recent or near-term deployment in operating nuclear power plants. Topics may span AI applications under research, development, testing, or early deployment for nuclear facilities, including operating and advanced reactors, nuclear materials, radioactive waste management and nuclear security.

The following illustrative topics are suitable for the event:

- Experiences on the use of AI applications
 - Non-destructive evaluation and inspection techniques;
 - Advanced remote monitoring and diagnostics;
 - Operational performance improvement;
 - Digital twins, predictive maintenance and automated/remote maintenance;
 - AI-supported autonomous operations;
 - AI-supported remote operations;
 - AI-supported advanced manufacturing;
 - Other applications like, among others, AI-supported remote/automated maintenance, AI-supported knowledge management, AI-enabled decision support;
 - Modelling, simulation, and design optimization;
 - AI applications in new build optimization;
 - AI for supply chain optimization;
- Safety implications on the use of AI applications;
 - Safety classification of AI applications;
 - Safety assessment of AI applications;
 - Human factors concerns and Human AI interfaces;
- Security implications on the use of AI applications;
 - Cybersecurity and AI techniques for cyber defence;
 - Security of data and AI-powered systems;
- Data, knowledge, and information management:
 - Use of large entity datasets (e.g., NRC ADAMS, IAEA databases) to enable AI tools;
 - AI-supported knowledge management;
 - Synthetic data generation, generative AI applications, and emerging AI technologies;
- Governance, standards, and best practices:
 - Lessons learned and best practices for AI development and deployment;
 - Standards for AI and AI standardization;
 - Fitness for purpose: How to decide if a specific AI solution is adequate for the suggested application;
 - Training and awareness: What different departments or stakeholders in a nuclear installation need to know about AI.
- Application in radiation protection, health physics, or nuclear fuel cycle;
- Generative AI use cases and applications;
- Emerging AI technologies relevant to nuclear power industry.

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 or invited organization, participants are requested to submit their application via the InTouch+ platform (<https://intouchplus.iaea.org>) to the competent national authority (Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) or organization for onward transmission to the IAEA by **4 September 2026**, following the registration procedure in InTouch+:

1. Access the InTouch+ platform (<https://intouchplus.iaea.org>):
 - Persons with an existing NUCLEUS account can sign in to the platform with their username and password;
 - Persons without an existing NUCLEUS account can register [here](#).
2. Once signed in, prospective participants can use the InTouch+ platform to:
 - Complete or update their personal details under ‘Complete Profile’ and upload the relevant supporting documents;
 - Search for the relevant event under the ‘My Eligible Events’ tab;
 - Select the Member State or invited organization they want to represent from the drop-down menu entitled ‘Designating Authority’ (if an invited organization is not listed, please contact InTouchPlus.Contact-Point@iaea.org);
 - If applicable, indicate whether financial support is requested and complete the relevant information (this is not applicable to participants from invited organizations);
 - Based on the data input, the InTouch+ platform will automatically generate the Participation Form (Form A) and/or the Grant Application Form (Form C);
 - Submit their application.

Once submitted through the InTouch+ platform, the application, together with the auto-generated form(s), will be transmitted automatically to the required authority for approval. If approved, the application, together with the applicable form(s), will automatically be sent to the IAEA through the online platform.

NOTE: The application for financial support should be made, together with the submission of the application, by **4 September 2026**.

For additional information on how to apply for an event, please refer to the [InTouch+ Help](#) page. Any other issues or queries related to InTouch+ can be sent to InTouchPlus.Contact-Point@iaea.org.

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. 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.

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

Presentations

Presentations should be prepared as Microsoft PowerPoint (ppt) or Portable Document Format (pdf) files. Computer-based projection facilities will be provided. Authors are requested to provide the Scientific Secretary with electronic copies of their presentation files in advance of their scheduled presentation slot so that the files can be duly uploaded. Electronic versions of the presentations are also necessary to ensure timely issuance of the proceedings to be prepared and distributed in electronic form.

It is not mandatory for all participants to submit a presentation. However, the IAEA welcomes and encourages contributions in this format. Time for the presentations will be limited to 25 minutes followed by a 5-minute discussion period.

The abstract of the presentation should be submitted the Scientific Secretary by **4 September 2026**.

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, together with the submission of the application, by **4 September 2026**.

Venue

The event will be held at the Vienna International Centre (VIC), where the IAEA's Headquarters are located. Participants must make their own travel and accommodation arrangements.

General information on the VIC and other practical details, such as a list of hotels offering a reduced rate for IAEA participants, are listed on the following IAEA web page:
www.iaea.org/events.

Participants are advised to arrive at Checkpoint 1/Gate 1 of the VIC one hour before the start of the event on the first day in order to allow for timely registration. Participants will need to present an official photo identification document in order to be admitted to the VIC premises.

Visas

Participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria at least four weeks before they travel to Austria. Since Austria is a Schengen State, persons requiring a visa will have to apply for a Schengen visa. In States where Austria has no diplomatic mission, visas can be obtained from the consular authority of a Schengen Partner State representing Austria in the country in question.

Additional Information

The event will start on Monday, 30 November 2026, at 9.30 a.m. and end on Friday, 4 December, at 3.00 p.m.

The event agenda, together with information on local arrangements, will be sent to the designated participants in due course.

General information on hotels offering a reduced rate for IAEA participants, are listed on the following IAEA web page: <https://www.iaea.org/events/hotel-list>.

Additionally, participants may elect to make their own bookings at hotels in the area of the event location.

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretaries and correspondence on other matters related to the event to the Administrative Secretary.