



IAEA

International Atomic Energy Agency
Atoms for Peace and Development

International Network on Innovation to Support Operating Nuclear Power Plants Workshop on Robotic and Drone Applications at Operating Nuclear Power Plants

Hosted by the
Government of the Swiss Confederation

in cooperation with

Axpo Holding AG, Baden, Switzerland

and

Electric Power Research Institute, Charlotte, NC, United States of America

through the
Kernkraftwerk Leibstadt AG
and virtual participation via Microsoft Teams

10-12 June 2025

Ref. No.: EVT2404696

Information Sheet

Introduction

In April 2023 the IAEA launched an international network on Innovation to Support Operating Nuclear Power Plants (ISOP) as an inclusive platform to strengthen international collaboration on innovative solutions to ensure sustainable, competitive operation of nuclear power plants (NPPs) in operation today or those expected to enter operation within the next ~5 years. ISOP is designed to comprise diverse working groups focused on specific innovation topics. The topics could be technical, business process, competency/proficiency or organizational in nature.

An initial working group on artificial intelligence (ISOP-AIWG) was piloted from mid-2022. Engagement in the AIWG grew quickly and activities of 3 IAEA Sections across 2 Departments were routinely shared via the ISOP platform. External engagement in the AIWG expanded to include utilities, regulators, technical support organizations, national laboratories, vendors, and academia. This experience was presented during an April 2023 Technical Meeting to formally launch ISOP. During this meeting, IAEA Member States endorsed the ISOP approach and recommended the IAEA explore opportunities for the network to consider working groups on other innovation topics.

An October 2023 exploratory call for interest in robotic innovations to support operating NPPs gathered 35 experts across 10 Member States and two international organizations. Eight presentations from Member States were shared during the call and generated productive discussion as participants were able to ask questions about similar robotic applications in their own NPPs. Participants suggested the IAEA host a consultancy meeting to determine if/how the Agency can support collaboration in the area of robotics, drones, and remote systems at the international level; either via partnerships or by implementing unique IAEA activities.

This consultancy meeting was held in March 2024. Ten experts from 6 Member States as well as the OECD/NEA and seven IAEA staff members from four IAEA Departments recommended the creation of an ISOP working group on Robotics and Drones which was later endorsed by the ISOP Steering Committee. Participants in the consultancy meeting also developed seven recommendations for the IAEA's consideration:

R1 – Create and host an MS Teams Channel for collaboration. Consider sub-group as appropriate and use the Channel as a platform for collaboration, for example, developing an integrated event calendar and periodic Teams-based calls.

R2 – Develop library of use cases, including photos and videos. Consider including a risk portfolio for various robotic platforms and/or applications and how the risks were addressed. Include experience from other industries as resources permit. Summaries of diverse application scenarios could also be considered.

R3 – Implement technical meetings, workshops, and other events to share user experience, best practices and/or provide hands-on experience. Focus on robotic platforms or use cases available today. Arrange to invite students if possible.

R4 – Implement a technical meeting to share forward looking developments. Topics may include improved performance, payloads, transition from seeing to acting, startups, other industries. Arrange to invite students.

R5 – Hold a high-level event on the margins of another major conference / event to introduce the best practices of robots and AI applications in nuclear power plants worldwide, to provide examples for high level management.

R6 – Develop partnerships between the IAEA and organizations in its Member States or peer international organizations to implement or promote events on robotics, drones, and remote systems. Consider a session dedicated to nuclear applications. For example, we could partner with manufacturers and ask for separate sessions with a focus on nuclear.

R7 – Implement a technical meeting to discuss and summarize the technical features of robots used in nuclear power plants. This information could gradually become a set of development and deployment guidelines in partnership with peer international organizations. This report might include an equivalent evaluation for robots in the nuclear power sector to aerospace’s “Technology Readiness Level” process.

Objectives

The purpose of the event is to deliver a practical workshop on the use of robots, drones and possibly other uncrewed/remote technologies at operating nuclear power plants. The event aims to address recommendations 3 and 4 from the March 2024 consultancy meeting summarized above. The purpose is to share Member States' experience with robotics, drones, and remote systems to improve performance and increase safety at operating NPPs. Hands-on experience, including from outside of the nuclear industry will be shared. The meeting will also constitute an arena for matchmaking between needs in the nuclear power plants and the supplier industry.

Target Audience

The meeting is open to participants from Member States hosting operating NPPs, embarking on nuclear power plants projects or expanding an existing nuclear power program. Attendees will range from experienced to newcomers in the area of robotics, drones and/or remote systems. The event is aimed at experts at NPP utilities, regulators, technical support organisations, national laboratories, and vendors. Start-ups and vendors that are looking to expand to nuclear applications are welcomed. Consistent with the above recommendations, Member States are encouraged to nominate and support students to accompany experts to the event.

Working Language(s)

English.

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 **14 April 2025**, 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 **14 April 2025**.

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.

Papers and 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 **14 April 2025**. Authors will be notified of the acceptance of their proposed presentations by **12 May 2025**.

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 **14 April 2025**.

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.

Optional for designation through the InTouch+ online registration portal:

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 **14 April 2025**.

The application for financial support should be made, together with the submission of the application, by **14 April 2025**.

Venue

The event is being hosted by Government of the Swiss Confederation through the Kernkraftwerk Leibstadt AG and will be held on the premises of the Nuclear Power Plant Leibstadt AG, Leibstadt, Switzerland with virtual participation possible via Microsoft Teams, from 10 to 12 June 2025. 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 Switzerland should submit the necessary application as soon as possible to the nearest diplomatic or consular representative of Switzerland.

IAEA Contacts

Scientific Secretary:

Mr Ed BRADLEY

Division of NENP Division of Nuclear Power
Department of Nuclear Energy
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 VIENNA
AUSTRIA

Tel.: +43 1 2600 22759

Fax: +43 1 26007

Email: E.Bradley@iaea.org

Administrative Secretary:

Mr Roy GEORGE

Division of Division of Nuclear Power
Department of Nuclear Energy
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 VIENNA
AUSTRIA

Tel.: +43 1 2600 22799

Fax: +43 1 26007

Email: R.George@iaea.org

Local Contacts

Host:

Mr Benjamin REGENER

Team Head, Condition Monitoring Calculation and Simulation, Project & Innovation Leader and
Subject Matter Expert
Nuclear Power Plant Leibstadt AG
Eigen 1
5325 LEIBSTADT
SWITZERLAND

Tel.: +41 56 267 8328

Email: Benjamin.Regener@KKL.CH

Local Administrative Lead:

Ms Maxi Viola MONNERJAHN

Assistant of Team Head, Condition Monitoring Calculation and Simulation
Nuclear Power Plant Leibstadt AG
Eigen 1
5325 LEIBSTADT
SWITZERLAND

Tel.: +41 56 267 8495

Email: maxiviola.t.monnerjahn@KKL.CH

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/EVT2404696