IAEA-NEA Joint Workshop on Safety Considerations in the Use of Artificial Intelligence and Robotics in Nuclear Fuel Cycle Facilities

Hosted by the
Government of France

through the
Orano Group

La Hague, France

28 – 30 September 2026

Ref. No.: EVT2503617

Information Sheet

Introduction

The International Atomic Energy Agency (IAEA) Safety Standards Series No SSR-4, Safety of Nuclear Fuel Cycle Facilities requires that the safety benefit from using automation and remote handling equipment shall also be considered, with an appropriate assessment of the allocation of functions between humans and automated systems.

It is recognized that technology and scientific knowledge advance, and that nuclear safety and the adequacy of protection against radiation risks need to be considered in the context of the present state of knowledge. While items important to safety in a nuclear fuel cycle facility (NFCF) shall preferably be of a design that has previously been proven in equivalent applications, this does not override the need for safety to be enhanced by the use of new or improved designs and technology, subject to appropriate qualification, testing and safety analysis.

Further, the Strategic Roadmap for Nuclear Safety Research of the Organisation for Economic Co-operation and Development (OECD) - Nuclear Energy Agency (NEA) states that "AI can help optimise plant performance, improve maintenance and inspection strategies, and reduce operational risks." It provides recommendations for the safe, secure and effective integration of AI into nuclear systems.

NFCFs could also benefit from integrating automation, robotics and artificial intelligence (AI) in their operation. While these can improve operational effectiveness of the facilities, safety may be jeopardized, if the planning and implementation of these activities are not properly managed. Safety needs to be considered in all phases of implementation of these activities including in planning, design, safety assessment, regulatory oversight, commissioning and operation.

In the context of the above, the IAEA and NEA are jointly organizing this Workshop on Safety Considerations in the Use of Artificial Intelligence and Robotics in Nuclear Fuel Cycle Facilities, at La Hague, France from 28 – 30 September 2026.

Objectives

The purpose of the event is to provide a forum for participants to discuss and exchange experiences related to design and operational safety, as well as regulatory oversight, in the use of robotics and artificial intelligence at nuclear fuel cycle facilities.

Target Audience

Participation in the workshop is subject to designation by Governments or national organizations. The workshop is open to participants from all IAEA Member States with existing or planned NFCFs.

To ensure maximum effectiveness in the exchange of information, participants should be facilities' managers, designers or persons responsible for planning, assessment or implementation of the use of robotics or AI in NFCFs. Persons from regulatory bodies and technical support organizations responsible for safety of NFCFs can also participate in the workshop.

The range of the NFCFs covered by the event includes facilities for the processing, refining, conversion, enrichment and fabrication of fuel; spent nuclear fuel storage and reprocessing; and nuclear fuel cycle research and development facilities. Facilities for the mining and processing of natural ore, nuclear power plants, research reactors and waste disposal facilities are outside the scope of this workshop.

Member States are strongly encouraged to identify suitable women participants.

Working Language(s)

English.

Topics

In addition to presentations by the IAEA and NEA representatives, the event will include presentations by the participants on their experiences related to design and operational safety, and regulatory oversight in the use of advanced technologies such as robotics and AI in NFCFs.

The topics that are expected to be covered include:

- Application of the IAEA safety standards and NEA recommendations in use of advanced technologies in NFCFs.
- Design safety considerations in use of advanced technologies in NFCFs.
- Safety assessment and design safety considerations in use of automation and remote handling systems in NFCFs.
- Operational safety aspects in use of advanced technologies in NFCFs.
- Qualification, testing and assessment of advanced technologies to be used in NFCFs.
- Use of AI for safety of NFCFs including in the areas of quality control, data analysis, training, visual inspection and condition monitoring.
- Regulatory review and assessment of the use of advanced technologies in NFCFs.

The presentations will be followed by discussions in working groups on various aspects related to use of advanced technologies and their impact on safety of NFCFs. The workshop will also identify challenges in these areas as well as actions to address these challenges

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 **10 July 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 a paper is being submitted and complete the relevant information;
   - 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 **10 July 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.

Papers and Presentations

The IAEA and NEA encourage participants to give presentations on the work of their respective institutions that falls under the topics listed above. Submission of a paper should be confirmed, together with the submission of the main application via the InTouch+ platform, by **10 July 2026**.

Expenditures and Grants

No registration fee is charged to participants.

The IAEA and NEA are 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 **10 July 2026**.

Venue

The event will be hosted by Orano, France at Herqueville, La Hague, France. Participants must make their own travel and accommodation arrangements.

Le Moulinet,
Anse du moulinet
Herqueville - 50440 La Hague
France

Delegates are reminded to bring an identity document bearing a photograph for check-in at the reception desk. This document may be requested at the time of issuing delegates' cards for the workshop. Delegates should keep the badge until the last day of the workshop and return it to a drop box or reception desk at their last exit.

Visas

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

Contacts

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretary/Secretaries 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/EVT2503617