



**IAEA**

International Atomic Energy Agency

*Atoms for Peace and Development*

# **Hybrid Event: Technical Meeting on On-line Monitoring of Plant Process and Instrumentation and Control Systems and Components**

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

**12 – 15 November 2024**

**Ref. No.: EVT2303680**

## **Information Sheet**

### **Introduction**

On-line monitoring techniques have been under development over the past decades for a variety of applications in process and power industries. In the nuclear power industry, on-line monitoring techniques have been considered for instrument calibration verification as well as equipment and plant condition monitoring.

The subject of improving the performance of nuclear power plants by utilizing on-line condition monitoring of instrumentation and control systems in plants was suggested by the Technical Working Group on Nuclear Power Plant Control and Instrumentation (TWG-NPPIC) in 2003. It was then approved by the IAEA and included in its work programmes for 2004–2007. In 2008, the IAEA released two publications:

- On-Line Monitoring for Improving Performance of Nuclear Power Plants, Part 1: Instrument Channel Monitoring (IAEA Nuclear Energy Series No. NP-T-1.1);
- On-line Monitoring for Improving Performance of Nuclear Power Plants; Part 2: Process and Component Condition Monitoring and Diagnostics (IAEA Nuclear Energy Series No. NP-T-1.2).

The first report focused on the application of OLM to verify the static (calibration) and dynamic (response time) performance of process instruments in NPPs. Its focus is on instrument calibration verification and extension of calibration intervals of sensors, transmitters and channels. The second report extends the application of OLM to equipment and process condition monitoring, encompassing an array of technologies including vibration monitoring, acoustic monitoring, loose parts monitoring, motor current signature analysis and noise diagnostics, as well as vibration analysis of the reactor core and the primary circuit.

Recognizing the relevance of the above-mentioned issues, the members of the TWG-NPPIC at their 2023 meeting recommended that the IAEA should update the publication based on the recent development of digital technologies and on-line monitoring techniques for advanced surveillance, maintenance optimization, diagnostics and prognostics.

In response, the IAEA is developing new revision of the Nuclear Energy Series publication entitled *On-line Monitoring for Improving Performance of Nuclear Power Plants; Part 2: Process and Component Condition Monitoring and Diagnostics (IAEA Nuclear Energy Series No. NP-T-1.2)* to integrate the recent developments, to share best practices and to provide guidance in this area.

## **Objectives**

The purpose of the event is to finalize the new IAEA Technical Document entitled *On-line Monitoring of Plant Process and Instrumentation and Control Systems and Components*, as on-line monitoring techniques have been under development since the last publication, which was published in 2008, for a variety of applications in process and power industries.

## **Target Audience**

In view of the subject of the event, participation is limited to IAEA Member States that currently operate NPPs or are constructing their first NPP units. 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 I&C design and the application of such systems at NPPs. 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 draft manuscript of the new revision of the Nuclear Energy Series publication entitled *On-line Monitoring for Improving Performance of Nuclear Power Plants; Part 2: Process and Component Condition Monitoring and Diagnostics (IAEA Nuclear Energy Series No. NP-T-1.2)* will be provided to the participants prior to the event. This draft will serve as the basis for dialogues at the event. Participants will be requested to review selected parts of the document and to provide their remarks and comments.

## Topics

Presentations are invited on key challenges and overall strategy on RE&M. The following list provides examples of presentation topics that would be appropriate for the event:

- Benefits of on-line monitoring
- Enabling technologies (sensors, wireless networks, etc.)
- On-line monitoring applications
- Implementation strategy and considerations
- Impact on human factors
- Challenges and lessons learned related from experience (case studies, operating experience, proven practices, etc.)
- Future trends (artificial intelligence, digital twins, etc.)
- Intelligent plant

## 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 **31 August 2024**, 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](mailto: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 **31 August 2024**.

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](mailto: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 **31 August 2024**.

## **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 **31 August 2024**.

## 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](http://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 Tuesday, 12 November 2024, at 9.30 a.m. and end on Friday, 15 November 2024, at 2.00 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.

# IAEA Contacts

## Scientific Secretary:

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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.