



# IAEA

原子用于和平与发展

الوكالة الدولية للطاقة الذرية

国际原子能机构

International Atomic Energy Agency

Agence internationale de l'énergie atomique

Международное агентство по атомной энергии

Organismo Internacional de Energía Atómica

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国际原子能机构（原子能机构）秘书处向原子能机构各成员国致意，并荣幸地提请注意将于 **2025 年 10 月 20 日至 24 日** 在**奥地利维也纳原子能机构总部**举行的**核装置防范外部事件——气候变化的安全恢复能力国际会议**（以下称“活动”）。

这次活动的目的是召集核电行业的专家，共享核装置安全方面的经验教训，并讨论目前用于衡量安全和恢复能力的措施。这次活动特别关注气候变化对核装置安全的影响。许多电厂都是根据历史事件和基于历史数据的预测方法针对地震和洪水等自然现象造成的负荷进行设计的。众所周知，气候变化正在使许多此类现象的严重程度加剧、频率增加。这次活动的一个特别重点就是业界如何应对这些影响。预计这次活动将保持业主/营运者、技术服务组织（工程师、设计师和研究机构）、监管机构和生产商（核蒸汽供应系统供应商）的均衡代表性。

这次活动将使用英文。

请各成员国向活动的目标受众分发随附的《通知和征文》，并使用 H 部分所述 InTouch+平台指派活动参加者。大力鼓励各成员国确定女性参加者。

原子能机构一般不承担参加者参加活动的差旅费和其他费用。但原子能机构可支配有限资金，用于帮助支付某些参加者的参加费用。根据具体申请通常可向每个国家的一名参加者提供此种援助，条件是原子能机构认为该参加者将为这次活动做出重要贡献。

财政资助申请以及论文提交只有在《通知和征文》O 部分所述截止日期之前通过 InTouch+收到才能予以考虑。

应注意，原子能机构对个人财产遭受的任何损坏或损失概不赔偿。原子能机构也不向活动参加者提供健康保险。因此，个人应做私人保险安排。但是，原子能机构将明显因为原子能机构工作而引起的事故和疾病提供保险。

国际原子能机构秘书处借此机会再次向原子能机构各成员国致以最崇高的敬意。



2024年11月25日

附件（仅以英文印发）：通知和征文



**IAEA**

**International Atomic Energy Agency**

*Atoms for Peace and Development*

# **International Conference on Resilience of Nuclear Installations against External Events from a Safety Perspective – Focus on Climate Change**

**IAEA Headquarters**

**Vienna, Austria**

**20–24 October 2025**

**Organized by the**

**International Atomic Energy Agency (IAEA)**

**In cooperation with the**

**World Meteorological Organization (WMO)**

## **Announcement and Call for Papers**

### **A. Background**

The International Atomic Energy Agency (IAEA) was established in 1957 with an overall objective to “accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the

world.”<sup>1</sup> Article A. 6 of the statute authorizes the Agency to “establish or adopt...standards of safety for protection of health and minimization of danger to life and property.” Article A.3 of the statute authorizes the Agency to “foster the exchange of scientific and technical information on peaceful uses of atomic energy.” This conference serves as a forum for the exchange of scientific and technical information on the resilience of nuclear installations against external events. A special focus of this conference is the impact of climate change on the safety and resilience of nuclear installations.

The Agency has published multiple safety standards such as SSG-18, **Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installations**, SSG-9, **Seismic Hazards in Site Evaluation for Nuclear Installations** and SSG-68, **Design of Nuclear Installations Against External Events Excluding Earthquakes**. These standards provide requirements and guidance toward achieving safety for nuclear installations that are subjected to external events. These events include natural hazards such as earthquakes, floods, tornadoes, hurricanes, and volcanic events. External events can also result from accidents at nearby facilities such as explosions, or human-induced hazards such as accidental aircraft impact.

Resilience may be defined as “*the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events.*” In the context of external hazards, the resilience of nuclear installations is their ability to prepare and plan for, absorb, recover from, and more successfully adapt to these hazards. With regard to safety, resilience can be considered to be a measure of the plant’s ability to recover to a safe state after an incident. Resilience also encompasses the development of flexible solutions that can support the response to emerging, changing, or unknown threats, as well as planning, response, and recovery strategies.

Nuclear installations have typically been designed to withstand external events by using a safety margin approach. Postulated events are defined based on historical data, expert judgment, and/or conservatively defined scenarios. Typically, the historical data used in these evaluations do not explicitly account for the effects of climate change and other non-stationarities. To strengthen the resilience of nuclear installations against external hazards, the industry must also account for factors such as the evolving nature of hazards (including the emergence of new natural and human-induced hazards), degradation of systems over time, adoption of new technologies, and changes in the size and characteristics of the population living in the vicinity of an installation. The nuclear industry should examine the impact of climate change on both planned and existing nuclear installations.

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<sup>1</sup> International Atomic Energy Agency, **Statute of the International Atomic Energy Agency**, Part 1, Section 1, Issued 2000-01-01.

## B. Purpose and Objectives

The purpose of this conference is to bring together nuclear industry representatives to share recent developments and lessons learned regarding the safety of nuclear installations with respect to external events, and to discuss methods to improve their resilience to external events. A special focus is the impact of climate change on the safety and resilience of nuclear installations. Many plants have been designed for loads resulting from natural phenomena, such as floods and high winds, based on analysis and interpretation of historical data. It is well known that climate change is affecting the severity, frequency, and other characteristics of many of these phenomena. Furthermore, changes in geological conditions (e.g., fluid injection to the Earth's crust), land use, aircraft flight patterns, and addition of new industrial facilities lead to non-stationarity of external hazards. It is envisaged that nuclear installation owners/operators, technical service organizations, regulators, designers, research institutes and vendors (nuclear steam supply system suppliers) will attend the conference. Gathering experts from various segments of the nuclear sector for discussion and collaboration is one way the Agency promotes the exchange of scientific and technical information. This information can be used by all Member States in designing, licensing, operating, and decommissioning their nuclear installations.

The objective of the conference is to share experiences and discuss current and novel methods to evaluate the resilience and robustness of nuclear installations and radioactive waste disposal facilities against external events, particularly in the context of the changing climate. This will include existing facilities, as well as those under design, licensing, and construction. In this context *nuclear facility* is defined as any facility in which nuclear material is produced, processed, used, handled, stored or disposed of, if damage or interference with such facility could lead to the release of significant amounts of radiation or radioactive material. In general, nuclear installations and radioactive waste storage facilities are in separate categories. Nuclear installations are subject to authorization that is part of the nuclear fuel cycle, except facilities for the mining or processing of uranium ores or thorium ores and disposal facilities for radioactive waste. This definition includes: nuclear power plants; research reactors and any adjoining radioisotope production facilities; storage facilities for spent fuel; facilities for the enrichment of uranium; nuclear fuel fabrication facilities; conversion facilities; facilities for the reprocessing of spent fuel; facilities for the predisposal management of radioactive waste arising from nuclear fuel cycle facilities; and nuclear fuel cycle related research and development facilities. Radioactive waste storage facilities are meant for permanent storage and retrieval of radioactive waste.

## C. Themes and Topics

The conference will be arranged into themes and topics. The Programme Committee will assemble sessions on specific topics based on the synopses received. The Committee developed the following major themes and subtopics, and encourages submittals aligned with these.

1. Identification and analysis of external hazards, consideration of uncertainties in hazard analyses, and events resulting from combined hazards
  - 1.1. Site selection and site evaluation: risk-informed approaches, management of site investigations, and integration with non-safety criteria
  - 1.2. Hazard analysis methods: scenario definition and time-dependent aspects
  - 1.3. Climate change modelling: projection in time and identification of extreme and rare meteorological phenomena
  - 1.4. Treatment of hazard combinations in safety assessments
  - 1.5. Decision making with high uncertainties.

2. Impact of external hazards on nuclear installations and radioactive waste disposal facilities
  - 2.1. Lessons learned from recent events: climate-related, seismic, and human induced, including data analysis and processing tools
  - 2.2. Simulations of climate-related natural hazards (e.g., floods, hurricanes) and their impact on nuclear installations
  - 2.3. Impacts on installation safety and operations from rising sea level, heat sink temperatures, water availability, abundance of biologic agents, extreme weather, etc
  - 2.4. Lessons learned from considering climate change in the demonstration of safety of radioactive waste disposal facilities.
  
3. Safety features of innovative emergent reactor designs and their contribution to resilience
  - 3.1. Adapting nuclear installations to changing environmental conditions
  - 3.2. Safety assessment methods including risk indicators, robustness, resilience, safety targets, and defence-in-depth considerations
  - 3.3. Resilience of the energy infrastructure, component and structure fragilities, human factors, deterministic and probabilistic approaches (including vital area identification methods)
  - 3.4. Monitoring systems and techniques, including warning systems based on real-time data collection and short-term forecasts to aid operator actions
  - 3.5. Use of artificial intelligence to assist operator decision making and contingency plans
  - 3.6. Evaluation of safety of deeply embedded advanced reactors and associated construction and cost issues.
  
4. Post-event response
  - 4.1. Potential modifications to emergency planning zones, facility and operator response, equipment additions to enhance resilience
  - 4.2. Post-event recovery plans and public communication strategies
  - 4.3. International collaboration in emergency preparedness and disaster response
  - 4.4. Post-event recovery actions: walkdowns and informed-operation restart.
  
5. Risk-informed, performance-based approaches for safety assessments of nuclear installations against external events
  - 5.1. Evaluation of resilience strategies: applying risk management tools to enhance nuclear safety
  - 5.2. Evaluation of seismic base isolators from a safety perspective
  - 5.3. Evaluation of new technologies, such as steel concrete plate construction, and their impact on nuclear installation safety assessments.
  
6. Regulatory matters related to enhancing nuclear installation resilience
  - 6.1. Regulatory practices regarding external hazards affected by climate change
  - 6.2. International obligations under the Convention on Nuclear Safety and resilience under the Vienna Declaration on Nuclear Safety to address topics related to climate change.

## **D. Structure**

This conference will have both plenary sessions for topics of broad interest, and parallel tracks organised along the major themes. After welcoming remarks from the conference president and the IAEA, the opening plenary session will feature several invited speakers to present their views on nuclear installation resilience. Additional plenary lectures will be scheduled later in the week.

Based on the expected number of participants and the 5-day duration, no more than two breakout sessions will run simultaneously. Technical sessions will be organized to maximize the topical distinctions among parallel sessions, so participants will be unlikely to find papers of highest interest to them scheduled simultaneously. Depending on the number of synopses received, one or more poster sessions may be scheduled during the conference.

Break time between sessions will be scheduled to allow for participant networking.

The closing plenary session will have the conference president discuss highlights and key points raised during the conference, as well as suggestions for future work toward improving nuclear installation resilience. IAEA staff will also provide closing remarks.

## **E. Expected Outcomes**

This conference will enhance knowledge among Member State representatives; nuclear installation designers, operators and regulators; technical service organisations; and individual experts on the state of practice in nuclear installation resilience. This includes knowledge of:

- Probabilistic techniques for characterizing natural hazards, especially considering hazard evolution from climate change
- The latest concepts for enhancing the resilience of nuclear installations and components to respond to external hazards
- Methods for forecasting, monitoring, and adapting to evolving natural and human-induced external hazards
- Related emergency preparedness and response mechanisms designed to enhance resilience of nuclear installations
- Best practices in managing risk related to external hazards and nuclear installations.

The output from the conference will be a compilation of the presentation synopses submitted by authors prior to the conference. The synopses will be more extensive than abstracts, but shorter than research papers. After the conference, a summary will be published containing highlights and any recommended future actions to improve nuclear installation resilience.

More broadly, the conference will help to improve the global nuclear safety posture and international cooperation toward external event impacts and highlight the potential for improved resilience of advanced reactor technology. Researchers and practitioners will also learn where the most fruitful future improvements in nuclear installation resilience can be made.

The conference will provide a forum for enhanced networking opportunities among safety analysts, regulators, researchers, and others engaged in the safety of nuclear installations.

## F. Target Audience

This conference is directed at a broad range of experts in the area of nuclear safety and natural hazard analysis and mitigation:

- Nuclear installation operators
- Technical and scientific service organizations (structural engineers, hazard analysts, etc.) to both regulatory bodies and industry
- Natural hazard researchers
- Nuclear installation regulators
- Nuclear steam supply system vendors
- Civil protection authorities and disaster managers

## G. Call for Papers

Contributions on the topics listed in Section C are welcome as oral or poster presentations. All submissions, apart from invited papers, must present original work, which has not been published elsewhere.

### G.1. Submission of Synopses

Synopses (approximately 500 to 600 words on one or a maximum of two printed A4 pages, may contain any charts, graphs, figures and references) should give enough information on the content of the proposed paper to enable the Programme Committee to evaluate it. Anyone wishing to present at the conference must submit a synopsis in electronic format using the conference's file submission system ([IAEA-INDICO](#)), which is accessible from the conference web page (see Section Q). The synopsis can be submitted through this system from **25 November 2024** until **31 May 2025**. Specifications for the layout will be available on IAEA-INDICO. The system for electronic submission of synopsis, IAEA-INDICO, is the sole mechanism for submission of contributed synopsis. Authors are encouraged to submit synopsis as early as possible. The IAEA will not accept submissions via email.

In addition, authors must register online using the InTouch+ platform (see Section H). The online registration together with the auto-generated Participation Form (Form A) and Form for Submission of a Paper (Form B) must reach the IAEA no later than **31 May 2025**.

**IMPORTANT:** The Programme Committee will consider uploaded synopses only if these two forms have been received by the IAEA through the established official channels (see Section H).



## G.2. Acceptance of Synopses

The Secretariat reserves the right to exclude synopses that do not comply with its technical or scientific quality standards and that do not apply to one of the topics listed in Section C.

Authors will be informed by **30 June 2025** as to whether their submission has been accepted, either orally or as a poster, for presentation at the conference. Accepted synopses will also be reproduced in an unedited electronic compilation of Synopses which will be made available to all registered participants of the conference.

## G.3 Proceedings

Following the conference, the IAEA will publish a summary report. The proceedings will be made available to read online.

# H. Participation and Registration

All persons wishing to participate in the event must be designated by an IAEA Member State or should be a member of an organization that has been invited to attend.

### Registration through the InTouch+ platform:

1. Access the InTouch+ platform (<https://intouchplus.iaea.org>):

- Persons with an existing NUCLEUS account can [sign in here](#) 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 ‘Basic Profile’ (if no financial support is requested) or under ‘Complete Profile’ (if financial support is requested) and upload the relevant supporting documents;
- Search for the relevant event (**EVT2306600**) 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 [Conference.Contact-Point@iaea.org](mailto:Conference.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 Participation Form (Form A), Form for Submission of a Paper (Form B) and/or 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 form(s) will automatically be sent to the IAEA through the online platform.

**NOTE:** Should prospective participants wish to submit a paper or request financial support, the application needs to be submitted by the specified deadlines (see section O).

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).

If it is not possible to submit the application through the InTouch+ platform, prospective participants are requested to contact the IAEA's Conference Services Section via email: [Conference.Contact-Point@iaea.org](mailto:Conference.Contact-Point@iaea.org).

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.

## I. 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 conference. The IAEA has, however, limited funds at its disposal to help cover 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 conference.

If participants wish to apply for a grant, they should submit applications to the IAEA using the InTouch+ platform through their competent national authority (see Section H). Participants should ensure that applications for grants are:

1. Submitted by **31 May 2025**;
2. Accompanied by Grant Application Form (Form C); and
3. Accompanied by Participation Form (Form A).

Applications that do not comply with the above conditions cannot be considered.

Approved grants will be issued in the form of a lump sum payment that usually covers **only part of the cost of attendance**.

## J. Distribution of Documents

A preliminary and final programme will be made available on the conference web page (see Section Q) prior to the start of the conference. The electronic compilation of synopses will be accessible free of charge to participants registered for the conference.

## **K. Exhibitions**

A limited amount of space will be available for commercial vendors' displays/exhibits during the conference. Interested parties should contact the Scientific Secretariat by email [RNI2025@iaea.org](mailto:RNI2025@iaea.org) by **31 May 2025**.

## **L. Working Language**

The working language of the conference will be English. All communications must be sent to the IAEA in English.

## **M. Venue and Accommodation**

The conference will be held at the Vienna International Centre (VIC), where the IAEA's Headquarters are located. 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.

Participants must make their own travel and accommodation arrangements. Hotels offering a reduced rate for participants are listed on <https://www.iaea.org/events>. Please note that the IAEA is not in a position to assist participants with hotel bookings, nor can the IAEA assume responsibility for paying fees for cancellations, re-bookings and no-shows.

## **N. Visas**

Participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria as early as three months but not later than 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.

For more information, please see the Austria Visa Information document available on <https://www.iaea.org/events>.

## O. Key Deadlines and Dates

Submission of synopses through IAEA-INDICO	<b>31 May 2025</b>
Submission of Form B (together with Form A) through the InTouch+ platform	<b>31 May 2025</b>
Submission of Form C (together with Form A) through the InTouch+ platform	<b>31 May 2025</b>
Notification of acceptance of synopses for oral or poster presentation	<b>30 June 2025</b>
Submission of Form A only (no paper submission, no grant request) through the InTouch+ platform	<b>No deadline</b>

## P. Conference Secretariat

### General Postal Address and Contact Details of the IAEA:

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## **Administration and Organization:**

**Ms Julie Zellinger**

Conference Services Section

Division of Conference and Document Services

Department of Management

IAEA-CN-337; EVT2306600

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretaries and correspondence on administrative matters to the IAEA's Conference Services Section.

## **Q. Conference Web Page**

Please visit the IAEA conference [web page](#) regularly for new information regarding this conference.



*Atoms for Peace and Development*

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国际原子能机构

International Atomic Energy Agency

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Международное агентство по атомной энергии

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Dial directly to extension: (+43 1) 2600-213121

The Secretariat of the International Atomic Energy Agency (IAEA) presents its compliments to the IAEA's Member States and has the honour to draw their attention to the **International Conference on Resilience of Nuclear Installations against External Events from a Safety Perspective – Focus on Climate Change** (hereinafter referred to as “event”) to be held at the IAEA's Headquarters in Vienna, Austria, from **20 to 24 October 2025**.

The purpose of the event is to bring together experts in the nuclear power industry to share lessons learned regarding the safety of nuclear installations, and to discuss the measures currently used to gauge safety and resilience. A special focus of the event is the impact of climate change on the safety of nuclear installations. Many plants have been designed for loads resulting from natural phenomena, such as earthquakes and floods, based on historical events and on forecasting methods based on historical data. It is well known that climate change is increasing the severity and frequency of many of these phenomena. How the industry is dealing with these impacts is a special focus of the event. It is envisaged that there will be a balanced representation of owners/operators, technical service organizations (engineers, designers and research institutes), regulators, and producers (nuclear steam supply system suppliers) at the event.

The event will be held in English.

Member States are invited to disseminate the attached Announcement and Call for Papers to the target audience for the event and to designate participants using the InTouch+ platform, as indicated in Section H. Member States are strongly encouraged to designate women 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.

Applications for financial assistance, as well as submissions of papers, can only be considered if received via InTouch+ by the deadlines indicated in Section O of the Announcement and Call for Papers.

It should be noted that compensation is not payable by the IAEA for any damage to or loss of personal property. The IAEA also does not provide health insurance coverage for participants in events. Arrangements for private insurance coverage on an individual basis should therefore be made. The IAEA will, however, provide insurance coverage for accidents and illnesses that clearly result from any work performed for the IAEA.

The Secretariat of the International Atomic Energy Agency avails itself of this opportunity to renew to the IAEA's Member States the assurances of its highest consideration.



2024-11-25

Enclosure: Announcement and Call for Papers