



**IAEA**

International Atomic Energy Agency

**International Conference on  
Topical Issues in Nuclear Installation Safety:  
Safety Demonstration of  
Advanced Water Cooled Nuclear Power Plants**

**Organized by the  
International Atomic Energy Agency**

**IAEA Headquarters  
Vienna, Austria**

**6–9 June 2017**

**Announcement and Call for Papers**

## **A. Introduction**

In 1991, the International Atomic Energy Agency (IAEA) organized an International Conference on the Safety of Nuclear Power: Strategy for the Future. Recommendations from the aforementioned conference prompted actions in subsequent years that advanced the safety of nuclear installations worldwide and included the establishment of the Convention on Nuclear Safety, which entered into force in October 1996. In 1998, the IAEA organized and hosted the first of a series of International Conferences on Topical Issues in Nuclear Safety. Subsequent conferences in the series have taken place in Vienna (2001), Beijing (2004), Mumbai (2008) and Vienna (2013).

These conferences have contributed significantly to the exchange of information and experiences related to the latest advances in the field of nuclear installation safety. At the same time, the recommendations made at the conferences have provided the IAEA with valuable insights as to where future IAEA activities should be focused.

This conference in the series will focus on the safety demonstration of the nuclear power plants (NPPs) to be licensed and constructed in the near future, which includes, among other aspects, the establishment of, and compliance with, comprehensive and rigorous requirements for siting, design and operation; the demonstration of adequate safety margins against external hazards; and a robust and reliable design to prevent early radioactive releases or radioactive releases large enough to require long term protective measures and actions. The introduction of passive safety systems, digital instrumentation and a number of innovative safety features in the designs, as well as the inclusion of severe accidents in the design envelope of the new plants, are some of the developments that pose crucial challenges to the safety demonstration and licensing of new reactors. All these aspects are of central interest to design organizations, nuclear regulators, plant operators and technical support organizations in IAEA Member States. In view of this, various stakeholders are already combining efforts at the international level in order to establish harmonized approaches to the design and licensing of new reactors.

## **B. Objectives**

The purpose of the conference is to foster the exchange of information on the latest approaches, advances and challenges in the demonstration of the safety of nuclear power plants that are planned to be licensed and constructed in the near future, in particular those using water cooled reactors. The conference is expected to be of substantive benefit for various types of stakeholder organizations in Member States as a result of the interchange of experiences that can provide valuable insights into how the topics covered by the conference are currently addressed in different countries. Accordingly, the conference should contribute to the harmonization of approaches and methods applied for the safety demonstration of nuclear power plants worldwide.

It is expected that the conference will also provide valuable recommendations for future IAEA activities in the areas covered by the conference and for strengthening international cooperation in particular.

## **C. List of Topics**

The main theme of the conference will be devoted to the safety demonstration of NPPs addressing the following key topical issues. The proposed papers should set out examples and case studies relevant to these issues:

### **Safety assessment of advanced reactor designs**

- Use of advanced models, codes and standards; their verification and validation
- Assessment of innovative design safety features, e.g. passive systems, in-vessel melt retention and ex-vessel corium cooling
- Safety assessment of small and medium sized or modular reactors
- Complementary and adequate use of deterministic and probabilistic safety analysis of plant design and operational states

### **Design safety principles**

- Design extension conditions (DEC) without significant fuel degradation and with core melting
- Practical elimination of early or large releases
- Margins regarding external hazards more severe than those selected for the design basis and avoidance of cliff edge effects
- Assessment of defence in depth, reliability of the provisions for each level and independence between different levels

### **Licensing of advanced reactor designs**

- Meeting the objectives of the Vienna Declaration on Nuclear Safety
- Harmonization of approaches and methods applied, as well as of safety and licensing requirements
- Licensing of passive systems, as well as of digital instrumentation and control systems, including a consideration of design extension conditions
- Licensing of small and medium sized or modular reactors, including considerations for remote installations and multiple unit operation

### **Safety reinforcement of existing installations**

- Implications of the Vienna Declaration on Nuclear Safety for existing NPPs
- Periodic safety reviews
- Definition and use of safety goals
- Backfitting measures, particularly for coping with severe accidents
- Use of non-permanent equipment for accident conditions

## D. Structure

The opening session will include welcome addresses by representatives of the IAEA. This session will be further complemented by a keynote presentation on the importance of the conference's overall theme. A series of four topical sessions will cover the topics outlined in Section C. The topic of each session will be introduced by a chairperson, followed by oral presentations that will be selected based on papers submitted to the Conference Secretariat. Each session will comprise a common discussion. Finally, during the concluding session, the chairpersons of the topical sessions will summarize their sessions and the Conference President will consolidate the conference findings, conclusions and recommendations on the way forward.

## E. Abstracts and Papers

Concise papers on topics falling within the scope of the conference (see Section C) may be submitted as contributions to the conference. All papers, apart from invited papers, must present original work and must not have been published elsewhere.

### E.1. Submission of Abstracts

Anyone wishing to present a paper at the conference — either orally or in the form of a poster — must submit an abstract of between 150–200 words **in electronic format** (no paper copies) through the conference's web browser-based file submission system (IAEA-INDICO).

Instructions on how to upload the abstract to IAEA-INDICO will be available on the conference web page (see Section O). The abstract **must** be submitted through this system between **15 July and 31 October 2016**. No other form of submission will be accepted.

In addition, authors must submit the following two forms to their appropriate governmental authority (see Section F) for transmission to the IAEA. These forms must be received by the IAEA no later than **31 October 2016**:

- Participation Form (Form A)
- Form for Submission of a Paper (Form B)

**IMPORTANT:** The electronically received abstracts will be considered by the Scientific Organizing Committee only if these two forms have been received by the IAEA through the established official channels (see Section F).

### E.2. Acceptance of Abstracts

Given the number of abstracts anticipated and the need to provide ample time for discussion, the number of papers that can be accepted for oral presentation is limited. Authors who prefer to present their papers as posters are requested to indicate this preference on Form A.

Authors will be notified by **27 January 2017** as to whether their papers have been accepted.

### **E.3. Submission of Contributed Papers**

Only authors of papers selected for oral presentation are requested to submit a contributed paper of three to five pages. Contributed papers must be submitted through the IAEA-INDICO file submission system. Specifications for the layout and electronic format of the contributed papers will be made available on the conference web page. The deadline for electronic submission of the contributed papers as both PDF and Word files is **31 March 2017**.

**IMPORTANT:** The system for electronic submission of papers, IAEA-INDICO, is the sole mechanism for submission of papers. Authors are encouraged to submit papers as early as possible.

## **F. Participation and Registration**

All persons wishing to participate in the conference are requested to register **online in advance** through the conference web page (see Section O). **In addition**, they must send a completed

- Participation Form (Form A),
- Form for Submission of a Paper (Form B) (if applicable), and
- Grant Application Form (Form C) (if applicable),

as soon as possible to a competent official authority:

- Ministry of Foreign Affairs,
- Permanent Mission to the IAEA, or
- National Atomic Energy Authority,

or to one of the organizations invited to participate for subsequent transmission to the IAEA, via email to: [Official.Mail@iaea.org](mailto:Official.Mail@iaea.org).

A participant will be accepted only if the above documents are transmitted through the competent national authority of a Member State of the IAEA or by an organization invited to participate.

Participants whose official designations have been received by the IAEA will receive further information on the conference at least three months before the start of the conference. This information will also be made available on the conference web page (see Section O).

## **G. 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 attending the conference. The IAEA has, however, limited funds at its disposal to help cover the cost of attendance of certain participants. Such assistance may be offered upon specific request to normally one participant per country provided that, in the IAEA's view, the participant on whose behalf assistance is requested will make an important contribution to the conference.

If governments wish to apply for a grant on behalf of one of their specialists, they should address specific requests to the IAEA to this effect. Governments should ensure that applications for grants are:

1. Submitted by **31 October 2016**;
2. Accompanied by a duly completed Grant Application Form (Form C) signed and stamped by the Ministry of Foreign Affairs or the National Atomic Energy Authority; and
3. Accompanied by a completed 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**.

## **H. Distribution of Documents**

A preliminary programme of the conference will be made available on the conference web page (see Section O) prior to the start of the conference. The final programme and a compilation of the contributions will be available free of charge upon registration at the conference.

## **I. Working Language**

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

## **J. Venue and Accommodation**

The conference will be held at the IAEA's Headquarters in Vienna, Austria. Participants must make their own travel and accommodation arrangements. Hotels which are offering a reduced rate for conference participants will be listed on the conference web page (see Section O). Please note that the IAEA is not in a position to assist participants with hotel bookings, nor can the IAEA assume responsibility for paying cancellation fees or for re-bookings and no shows.

## **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 ([NPPsafety2017@iaea.org](mailto:NPPsafety2017@iaea.org)) by **17 February 2017**.

## L. Visas

Designated 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 prior to their 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.

## M. Key Deadlines and Dates

Electronic submission of abstract, including submission of Forms A and B, through official channels	<b>23 November 2016</b>
Submission of Grant Application Form (Form C) and Participation Form (Form A) through official channels	<b>23 November 2016</b>
Notification of acceptance of paper	<b>27 January 2017</b>
Electronic submission of contributed paper as PDF and Word files	<b>15 April 2017</b>

## N. Conference Secretariat

### General postal address and contact details of the IAEA:

International Atomic Energy Agency  
 Vienna International Centre  
 PO Box 100  
 1400 VIENNA  
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**Administration and organization:**

**Ms Julie Zellinger**

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretariat and correspondence on administrative matters to the Conference Services Section.

## **O. Conference Web Page**

Please visit the IAEA conference web page regularly for new information regarding this conference:

[http://www-pub.iaea.org/iaeameetings/50816/Topical Issues in Nuclear Installation Safety](http://www-pub.iaea.org/iaeameetings/50816/Topical%20Issues%20in%20Nuclear%20Installation%20Safety)