



**IAEA**

International Atomic Energy Agency

*Atoms for Peace and Development*

# **Technical Meeting on Fusion Design Safety and Regulation**

**IAEA Headquarters  
Vienna, Austria**

and virtual participation via Microsoft Teams

**23–25 October 2023**

**Ref. No.: EVT2102804**

## **Information Sheet**

### **Introduction**

Thanks to the recent scientific and technical advances and the rise in private sector investments, increased attention is gathering around the design safety and regulatory frameworks for future Fusion Power Plants (FPPs), as these factors will determine the costs and time needed for commercialization.

The International Atomic Energy Agency (IAEA) has been developing two technical documents (TECDOCs) on “Experiences on Design Safety and Safety Assessment of Fusion Facilities” and “International Experience in the Regulation of Fusion Facilities”, covering those aspects for FPPs and ‘early-stage fusion facilities’ on the path towards FPPs such as prototype, pilot and demonstration facilities.

Based on this information, the IAEA intends to develop a path forward to establishing a set of principles and key concepts for the safety and regulation of FPPs and early-stage fusion facilities, noting that the existing IAEA Safety Standards (Specific Safety Requirements and associated Safety Guides) do not specifically address safety requirements unique to the features of FPPs.

The Technical Meeting will serve as a key platform to complement the work being carried out by collecting further input from Member States, and for discussion of the path forward to developing principles and key concepts for the safety and regulation of FPPs.

## Objectives

The objective of the event is to provide a platform for Member States to:

- Exchange information on the national activities and experiences related to the design safety, safety assessment, and regulation of fusion facilities, including FPPs and early-stage fusion facilities, which will complement two IAEA TECDOCs on “Experiences on Design Safety and Safety Assessment of Fusion Facilities” and “International Experience in the Regulation of Fusion Facilities”.
- Discuss and identify challenges associated with design safety, safety assessment and regulation of FPPs and early-stage fusion facilities, and to compile inputs for the preparation of the path forward to developing principles and key concepts for the safety and regulation of FPPs.

## Target Audience

The event is targeted to professionals from research organisations, design developing organizations, operators, national regulatory bodies, and associated technical and scientific support organisations (TSOs), with knowledge of, or experience in, design safety, safety assessment or regulation of fusion facilities.

Experts from the government and international organizations responsible for FPPs are also targeted.

The participants are expected to contribute to the discussions on design safety, safety assessment and regulation of FPPs and early-stage fusion facilities.

The event is, in principle, open to all officially designated persons. The IAEA, however, reserves the right to restrict participation due to limitations imposed by the available meeting facilities. It is, therefore, recommended that interested persons take the necessary steps for the official designation as early as possible.

## Working Language(s)

The working language of the meeting will be English. No simultaneous interpretation will be provided.

## Structure and Topics

The programme will mainly consist of sessions dedicated to invited oral presentations and discussions. The IAEA scientific secretariat will be responsible for selecting the invited oral presentations and arranging the technical and discussion sessions, as well as for the overall content of the event. The programme is intended to cover the following topics:

- Fusion design safety and safety assessment approaches, and application of graded approach:
  - Safety functions and associated systems:

- Safety functions
- Structures, systems, and components (SSCs) and safety classification of SSCs
- Physical separation and independence of safety systems. Common cause failures. Single failure criterion. Fail-safe design. Passive safety
- Limits and conditions for safety
- Application of defence in depth. Confinement and shielding barriers
- Plant states. Postulated initiating events. Accident scenarios:
  - Plant states and related safety criteria
  - Postulated initiating events
  - Elimination by design of conditions that can lead to early radioactive releases or large radioactive releases
- Protection against internal and external hazards
- General design requirements for safety:
  - Materials. Equipment qualification
  - Radiation protection and other considerations
  - Consideration of ageing aspects in design
- Design requirements for specific systems
- Safety analyses (deterministic and probabilistic)
- Regulation of fusion facilities, including those for FPPs and early-stage fusion facilities:
  - Current national practices of the regulatory approach for existing and future fusion facilities
  - Common regulatory issues and regulatory approaches
  - Regulatory guidance

## 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, participants are requested to send 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) for onward transmission to the IAEA by **31 July 2023**. Participants who are members of an organization invited to attend are requested to send the **Participation Form (Form A)** through their organization to the IAEA by the above deadline.

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.

## Abstracts 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 2 pages (including figures and tables) and should not exceed 500 words. It should be sent electronically to the Scientific Secretaries of the event (see contact details below), not later than **31 July 2023**.

Authors will be notified of the acceptance of their proposed presentations by **31 August 2023**.

## 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 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 **31 July 2023**.

## 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.

## Key Dates

<b>31 July 2023</b>	Deadline for submission of abstracts
<b>31 July 2023</b>	Deadline for submission of Participation Form (Form A) and Grant Application Form (Form C) (if applicable) through the official channels
<b>31 August 2023</b>	Notification of acceptance of abstracts
<b>23 October 2023</b>	Event begins
<b>25 October 2023</b>	Event ends

# IAEA Contacts

## Scientific Secretaries:

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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/EVT2102804](http://www.iaea.org/events/EVT2102804)