



# **Training Workshop on National Infrastructure Assessments to Support a New Research Reactor Project**

**Hosted by the**

**Government of India**

**through the**

**Global Centre for Nuclear Energy Partnership (GCNEP)**

**Bahadurgarh, India**

**14–18 October 2019**

**Ref. No.: EVT1804394**

## **Information Sheet**

### **Introduction**

The interest of International Atomic Energy Agency (IAEA) Member States in developing research reactor projects has grown significantly in recent years and currently several Member States are in different stages of new research reactor projects for the development of their nuclear science and technology programmes, including nuclear power.

To support Member States in such efforts, the IAEA, in 2012, published *Specific Considerations and Milestones for a Research Reactor Project* (IAEA Nuclear Energy Series No. NP-T-5.1), also known as the ‘Milestones’ publication for research reactors, which provides guidance on the timely preparation of a research reactor project through systematic development phases.

The publication provides a discussion of the mechanisms for justification of a research reactor, and for building stakeholder support. It covers the requirements for both the technical and safety infrastructure, as well as the development of qualified human resources needed for a research reactor.

The publication is meant to be used in conjunction with Feasibility Study for a New Research Reactor Project (IAEA Nuclear Energy Series No NG-T-3.18, published in 2018 [12]), Code of Conduct on the

Safety of Research Reactors [6], IAEA Safety Standards and other IAEA publications referenced therein. The guidance applies to all research reactor types and technologies, and therefore is not recommending a specific reactor type or technology or a specific design.

## Objectives

The workshop is intended to provide participating Member States with practical information and knowledge relating to the application of *Specific Considerations and Milestones for a Research Reactor Project* (IAEA Nuclear Energy Series No. NP-T-5.1), the establishment of the infrastructure for a new research reactor, relevant IAEA safety standards and other related IAEA publications.

The workshop also aims to provide a forum at which participants can share and discuss experiences, challenges and lessons learned in the development and implementation of new research reactor projects.

## Target Audience

The workshop is intended for individuals from IAEA Member States that are building, or are considering building, a new research reactor. Participants should be representatives of the core team involved in and responsible for the new research reactor project, the future operating organization, governmental institutions, national safety and regulatory authorities, the research reactor users' community and other stakeholders.

Member States are strongly encouraged to identify suitable women participants.

## Working Language

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

## Expected Outputs

The expected output of the meeting is a report based on the papers and presentations provided by the participants and on subsequent discussions. The report will:

- Provide an overview of the status of Member States' new research reactor projects;
- Collect and share experiences, challenges and lessons learned from the development and implementation new research reactor projects, including the development of the corresponding national infrastructure;
- Identify issues of common concern related to new research reactor projects and ways to address them, including with the IAEA assistance.

## Structure

The meeting will consist of plenary sessions and group discussions to share and discuss experiences, challenges and lessons learned in the development and implementation of recent and ongoing new research

reactor projects. Time will be allocated for the meeting participants to present the Member State experiences and needs.

The meeting will start at **9:30 on Monday, 14 October 2019**, and will be concluded by **12:00 on Friday, 18 October 2019**.

## Topics

The following topics will be addressed and discussed during the workshop:

- The IAEA ‘Milestones Approach’ for the establishment of a research reactor project;
- National nuclear infrastructure requirements;
- Government commitment associated with the establishment of a research reactor project;
- Legislative and regulatory framework for nuclear safety;
- Safeguards and nuclear security considerations;
- Research reactor applications, justification and future utilization assessment, including methods and criteria to identify and quantify stakeholders’ and users’ needs;
- Considerations for on-site survey, selection and evaluation for research reactors;
- Feasibility study of a research reactor project, including all the information needed for making an informed decision on establishing a research reactor;
- Nuclear Infrastructure peer review missions for research reactors;
- Management system for nuclear facilities and activities;
- Human resources development for research reactors;
- Fuel cycle alternatives, including comparison of fuel options and spent fuel management issues;
- Emergency planning for research reactors; and
- Use of a graded approach in the application of the safety requirements for research reactors.

During the plenary session, participants will be asked to give presentations on the status of their new research reactor projects and to share their experiences in the development of national infrastructure and/or recently established research reactors. Participants need to provide in advance a summary of their presentations to be included in the final report of the workshop.

Participants’ working groups will be formed to share and discuss experiences, challenges and lessons learned, and to identify issues of common concern and possible ways to address them.

## 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 **25 June 2019**. 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 above deadline.

Selected participants will be informed in due course on the procedures to be followed with regard to administrative and financial matters.

Please note that the IAEA is in a transition phase to manage the entire registration process for all regular programme events electronically through the new InTouch+ (<https://intouchplus.iaea.org>) facility, which is the improved and expanded successor to the InTouch platform that has been used in recent years for the IAEA's technical cooperation events. Through InTouch+, prospective participants will be able to apply for events and submit all required documents online. National authorities will be able to use InTouch+ to review and approve these applications. Interested parties that would like to use this new facility should write to: [InTouchPlus.Contact-Point@iaea.org](mailto:InTouchPlus.Contact-Point@iaea.org).

## Papers and Presentations

The IAEA encourages participants to give presentations on the work of their respective institutions that falls under the topics listed in Section G 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 2000 words. It should be sent electronically to [A.Sitnikov@iaea.org](mailto:A.Sitnikov@iaea.org), the Scientific Secretary of the event (see contact details in Section N below).

In addition, participants have to submit the abstract together with the **Participation Form (Form A)** and the attached **Form for Submission of a Paper (Form B)** to their competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) or their organization for onward transmission to the IAEA not later than **25 June 2019**.

## 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 **25 June 2019**.

## Venue

The event will be held at the Global Centre for Nuclear Energy Partnership (GCNEP), Bahadurgarh, India. Participants must make their own travel and accommodation arrangements.

## Visas

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

## Reference Documents

- [1] INTERNATIONAL ATOMIC ENERGY AGENCY, Specific Consideration and Milestones for a Research Reactor Project, IAEA Nuclear Energy Series No. NP-T-5.1, IAEA, Vienna (2012).
- [2] INTERNATIONAL ATOMIC ENERGY AGENCY, Technical Requirements in the Bidding Process for a New Research Reactor, IAEA Nuclear Energy Series No. NP-T-5.6, IAEA, Vienna (in print), working material.
- [3] INTERNATIONAL ATOMIC ENERGY AGENCY, Utilization Related Design Features of Research Reactors: A Compendium, Technical Report Series No. 455, IAEA, Vienna (2007).
- [4] INTERNATIONAL ATOMIC ENERGY AGENCY, Applications of Research Reactors, IAEA Nuclear Energy Series No. NP-T-5.3, IAEA, Vienna (2014).
- [5] INTERNATIONAL ATOMIC ENERGY AGENCY, Strategic planning for research reactors: Guidance for reactor managers, TECDOC-1212, IAEA, Vienna (2001).
- [6] INTERNATIONAL ATOMIC ENERGY AGENCY, Code of Conduct on the Safety of Research Reactors, IAEA, Vienna (2006).
- [7] INTERNATIONAL ATOMIC ENERGY AGENCY, Safety of Research Reactors, IAEA Safety Standards Series No. NS-R-4, IAEA, Vienna (2005).
- [8] INTERNATIONAL ATOMIC ENERGY AGENCY, Safety Assessment of Research Reactors and Preparation of the Safety Analysis Report, IAEA Safety Standards Series No. SSG-20, IAEA, Vienna (2012).
- [9] INTERNATIONAL ATOMIC ENERGY AGENCY, Safety Analysis for Research Reactors, Safety Reports Series No. 55, IAEA, Vienna (2008).
- [10] INTERNATIONAL ATOMIC ENERGY AGENCY, The Management System for Facilities and Activities, IAEA Safety Standards Series No. GS-R-3, IAEA, Vienna (2006).
- [11] INTERNATIONAL ATOMIC ENERGY AGENCY, Implementation of a Management System for Operating Organizations of Research Reactors, Safety Reports Series No. 75, IAEA, Vienna (2006).
- [12] INTERNATIONAL ATOMIC ENERGY AGENCY, Feasibility Study for a New Research Reactor Project, IAEA Nuclear Energy Series No NG-T-3.18, Vienna (2018).

# IAEA Contacts

## Scientific Secretaries:

### Mr Andrey Sitnikov

Division of Nuclear Fuel Cycle and Waste Technology  
Department of Nuclear Energy  
International Atomic Energy Agency  
Vienna International Centre  
PO Box 100  
1400 VIENNA  
AUSTRIA

Tel.: +43 1 2600 25132

Fax: +43 1 26007

Email: [A.Sitnikov@iaea.org](mailto:A.Sitnikov@iaea.org)

### Mr David SEARS

Research Reactor Safety Section  
Division of Nuclear Installation Safety  
Department of Nuclear Safety and Security  
International Atomic Energy Agency  
Vienna International Centre  
PO Box 100  
1400 VIENNA  
AUSTRIA

Tel.: +43 1 2600 22726

Fax: +43 1 26007

Email: [D.Sears@iaea.org](mailto:D.Sears@iaea.org)

## Administrative Secretary

### Ms Nargis Hakimy-Sadiq

Division of Nuclear Fuel Cycle and Waste Technology  
Department of Nuclear Energy  
International Atomic Energy Agency  
Vienna International Centre  
PO Box 100  
1400 VIENNA  
AUSTRIA

Tel.: +43 1 2600 22786

Fax: +43 1 26007

Email: [N.Hakimy@iaea.org](mailto:N.Hakimy@iaea.org)

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.