

**INTERNATIONAL ATOMIC ENERGY AGENCY****TECHNICAL MEETING  
ON  
FUEL DESIGN AND LICENSING OF MIXED CORES FOR  
WATER COOLED REACTORS****12–14 December 2011  
IAEA Headquarters  
Vienna International Centre, Vienna, Austria****INFORMATION SHEET****I. BACKGROUND**

Operators of water cooled reactors sometimes find it beneficial to load newly designed fuel assemblies or fuel assemblies from different fuel vendors than those which provided earlier fuel batches. Such decisions have generally been driven by economic considerations or from the expectation of improved fuel performance. Often the expectation is a transition to a full core adapted to the new fuel type. Loading fuel assemblies of different design could also potentially result as an element of fuel supply assurance resulting from the unavailability of fuel supply from the provider of earlier fuel batches. Cores composed of fuel assemblies of different design are termed ‘mixed cores’.

The licensing issues for mixed cores impinge on such areas as reactor physics, thermal-hydraulics and fuel behaviour. Careful analysis must be performed to demonstrate that safety requirements are met for the whole period of operation of a mixed core, including the transition to a full core.

Many operators in IAEA Member States have experience of mixed cores in their nuclear power plants. This Technical Meeting is being convened to review issues and share experiences related to the operation of mixed cores, and generally to provide information which will serve as the basis for an IAEA report on the subject.

**II. OBJECTIVES**

The purpose of the meeting is to provide an overview of the status and use of mixed cores in light water reactors (LWRs) and heavy water reactors (HWRs). The meeting will have the following main objectives:

- The exchange of information and experiences in the design, licensing and operation of mixed cores
- A detailed review of the safety and licensing issues associated with mixed cores
- An examination of new approaches or analytical tools for modelling mixed cores to perform core physics calculations, as well as structural and thermal hydraulic analyses

### III. TOPICS TO BE COVERED

Papers are invited on all aspects of planning, designing, licensing and operation involving mixed cores in water cooled reactors. Specifically, the following topics will be addressed:

- Experience in obtaining improved fuel cycle economics by operating with mixed cores
- Safety and licensing aspects of mixed cores
- Fuel design requirements for mixed cores
- Analytical tools for modelling mixed cores to calculate their core physics, core thermal-hydraulics and structural behaviour
- Experience of operation with lead test assemblies
- Fuel management with mixed cores
- Experience in obtaining improved fuel performance with mixed cores with new fuel assembly designs
- Problems that have been encountered with mixed cores related to fuel assembly bowing and/or fuel cladding failures

### IV. ORGANIZATION

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## **V. DEADLINE FOR PAPERS AND PARTICIPATION IN THE MEETING**

The meeting may be attended only upon official designation. Participants should complete the attached Form A and send it, together with an abstract of approximately 300 words, to the appropriate national authority (Ministry of Foreign Affairs or National Atomic Energy Authority) for subsequent transmission to the IAEA, not later than **10 October 2011**, with copies to the IAEA Scientific Secretaries. The abstracts should summarize the content and principal conclusions of the paper which the author intends to present during the Technical Meeting.

Prospective participants whose nominations have been received by the IAEA will be notified directly. Authors will also be notified about the acceptance of their paper(s). The preliminary programme will be issued to all participants by 12 November 2011. As is the usual practice for this type of meetings, the programme will include a panel session to permit participants to contribute to the summary and highlights of the meeting and to make recommendations to the IAEA on future work in this field.

On arrival to the meeting, the authors are requested to bring in electronic form (on a CD or a memory stick) their papers in MS Office Word format and their presentations in PowerPoint format.

## **VI. VENUE AND ACCOMMODATION**

The meeting will be held at IAEA Headquarters, Vienna International Centre (VIC), Vienna, Austria. For more information on the venue, including directions for how to reach the VIC, please go to:

<http://www-pub.iaea.org/MTCD/meetings/vicservices.asp>

Delegates should arrange their accommodation directly with hotels. For a list of hotels with indicative room rates, please visit the web page for this meeting:

<http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=41825>

Designated participants who require a visa to enter Austria should submit the necessary application form in due time to the nearest diplomatic or consular representative of Austria.

## **VII. EXPENDITURES**

In accordance with the established rules, Governments or other national authorities are expected to bear the travel and other costs of designated participants in the Technical Meeting. Limited funds are, however, available to help cover the cost of participants from Member States eligible to receive technical assistance under the IAEA's technical cooperation programme. Such assistance can be offered, upon specific request, to one participant per country provided that, in the IAEA's view, this participant will make an important contribution to the meeting. The application for financial support should be made at the time of designation of the participant.

## **VIII. WORKING LANGUAGE**

The working language of the meeting will be English. All communications, abstracts, and papers must be sent in English.



**FORM A**  
**I3-TM-41825**



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ON  
FUEL DESIGN AND LICENSING OF MIXED CORES FOR  
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**12–14 December 2011  
IAEA Headquarters  
Vienna International Centre, Vienna, Austria**

To be sent to competent official authority (Ministry of Foreign Affairs, National Atomic Energy Authority) for transmission to the International Atomic Energy Agency, Vienna International Centre, PO Box 100, 1400 Vienna, Austria

**PARTICIPATION FORM**

**DEADLINE FOR APPLICATION: 10 OCTOBER 2011**

Family name:	All initials of given name:	Mr Ms
Institution:	Full address:	
	For urgent communications please indicate: Tel.: Fax: Email:	
Nationality:	Designating government or organization:	
Mailing address (if different from address of institution):		

Do you intend to present a paper?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Title of paper .....		
.....		
An abstract of my paper is attached?	YES <input type="checkbox"/>	NO <input type="checkbox"/>