



**International Experts' Meeting on
Protection against Extreme Earthquakes and Tsunamis in the Light of the
Accident at the Fukushima Daiichi Nuclear Power Plant**

*Organized in connection with the implementation of the
IAEA Action Plan on Nuclear Safety*

**IAEA Headquarters
Vienna, Austria
4 –7 September 2012**

Announcement and Call for Papers

A. Background

In the last ten years, a number of extreme natural events have occurred that have had an impact on nuclear power plants (NPPs) in many parts of the world. The most devastating of these events was the 2011 Great East Japan Earthquake and Tsunami (M_{JMA} : 9.0), which affected the Fukushima Daiichi, Fukushima Daini, Tokai, and Onagawa NPPs in Japan.

Valuable experience and many lessons have been and are being learned by Member States and operators in managing NPPs under adverse conditions. Following the Great East Japan Earthquake and Tsunami which triggered the accident at TEPCO's Fukushima Daiichi Nuclear Power Station, the importance of protecting NPPs against extreme natural hazard such as earthquakes and tsunamis has received renewed attention. This natural disaster resulted in the first ever NPP accident to arise from the combined hazards of ground motion and flooding. The Fukushima Daiichi nuclear accident highlighted the importance of not only single external hazards, but also the combined effect of multiple external hazards in the safety assessment of NPPs, and defence in depth measures.

The International Experts' Meeting (IEM) will provide an opportunity to discuss the latest insights and findings relevant to the protection of NPPs against earthquakes and tsunamis, to share lessons learned, and to exchange knowledge and research results on the latest technologies relating to site evaluation and NPP safety.

B. Objectives

The objectives of the IEM are as follows:

- To share lessons learned from recent extreme earthquakes and tsunamis, including the Great East Japan Earthquake and Tsunami of 11 March 2011;
- To exchange information on the development of recent technologies and the results of ongoing research programmes relating to site evaluation and NPP safety that aim to provide protection against earthquakes and tsunamis; and
- To identify issues which should be further investigated.

C. Format

The IEM will be held at the IAEA's Headquarters in Vienna, Austria, from 4 to 7 September 2012. An opening address will be delivered by a senior IAEA representative. The IEM will consist of a plenary session and four technical sessions dealing with seismic hazard, tsunami hazard, seismic safety and tsunami safety, respectively. There will be a closing session on the final day. The plenary session will include keynote presentations by the Chairpersons of all the technical sessions. The technical sessions will feature presentations by international experts who will focus on topics identified in the seven main thematic areas outlined in Section D below with a view to stimulating discussion.

At the closing session, the Chairpersons of all the technical sessions will present their conclusions. The Chairperson of the IEM will provide an overall summary of the meeting.

An annotated Programme will be made available on the IAEA's website within the following weeks.

D. Thematic Areas and Topics

Technical sessions on seismic hazard and tsunami hazard:

- **Databases**

Prehistoric, historic and instrumental databases;
Measurement and reporting;
Confidence of data and quality management system (QMS) databases.

- **Hazard Assessment**

Source characterization;
Transmission path;
Site effects;
Treatment of a large aftershock and associated events following the main shock;
Occurrence frequency model of extreme events.

- **Characterization of Loading Effects**
 - Ground motion and fault displacement;
 - Wave height, inundation, hydrodynamic forces, scouring, current speed and sedimentation/debris;
 - Correlation between ground motion and inundation height.
- **Event Warning Systems**
 - Earthquake warning systems;
 - Tsunami warning systems;
 - Communication systems.

Technical sessions on seismic safety and tsunami safety:

- **Safety Assessment**
 - Deterministic and probabilistic approaches;
 - Dealing with beyond design basis conditions;
- **Protective Measures**
 - Dry siting;
 - Isolation, sea walls, etc.;
 - Water proofing and structural resistance;
 - Response procedure;
 - Post-event management system;
- **Lessons Learned**
 - Procedures used to evaluate the capabilities of an NPP (e.g. stress tests, information letters in the USA);
 - Results and findings from the implementation of evaluation procedures;
 - Generic insights that should be included in future guidance documents.

E. Participation

The IEM is targeted at experts from regulatory bodies, utilities, technical support organizations (TSOs), vendors and research and development (R&D) organizations, who are working in the areas covered by the meeting. All experts to be nominated by Member States are required to send a completed Participation Form (Form A) and, if applicable, the Form for Submission of a Paper (Form B) and the Grant Application Form (Form C) to the competent national authority (e.g. the Ministry of Foreign Affairs or National Atomic Energy Authority) or to one of the organizations invited to participate, for subsequent transmission to the IAEA (Email: official.mail@iaea.org).

A participant will be accepted only if the Participation Form is transmitted through their 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 IEM approximately one month before the beginning of the meeting. This information will also be posted on the IEM web page.

F. Expenditures

No registration fee is charged to participants.

The IAEA is generally not in a position to bear the travel and other costs of designated participants in the meeting. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of selected specialists from Member States eligible to receive technical assistance under the IAEA's technical cooperation programme. Such assistance may be offered, upon specific request, to one participant per country provided that in the IAEA's view the participant will make an important contribution to the meeting. If governments wish to apply for a grant on behalf of one of their experts, they should address specific requests to the IAEA to this effect. Governments should ensure that applications for grants are submitted by **13 July 2012** and that they are accompanied by a duly completed and signed Grant Application Form (Form C).

G. Papers

The IAEA encourages participants to give presentations on the work of their respective institutions that falls under the seven thematic areas listed in Section D above.

Participants who wish to give presentations are requested to submit a paper of their work. The paper should be prepared following the instructions in Annex A. The paper will be reviewed as part of the selection process for presentations. The paper should be in A4 page format, should extend to no more than 2 pages (including figures and tables) and should not exceed 800 words. It should be sent electronically to Mr Pal Vincze and Mr Sujit Samaddar, Scientific Secretaries of the IEM, not later than **13 July 2012**. Authors will be notified of the acceptance of their proposed presentations by **31 July 2012**. Authors whose papers are accepted should submit their presentations in the form of a PowerPoint file by **24 August 2012**.

H. Deliverables

The proceedings of the IEM will be made available online to Member States through the IAEA Action Plan for Nuclear Safety dashboard:

<http://www-ns.iaea.org/actionplan/default.asp>

The proceedings will include the papers, the PowerPoint presentations, the outcome of panel discussions and recommendations.

I. Working Language

The working language of the IEM will be English. All communications, including papers and presentations, must be sent to the IAEA in English.

J. 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 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.

K. Organization

General address of the IEM Secretariat:

International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 Vienna, AUSTRIA
Tel.: +43 1 2600
Fax: +43 1 2600 2007
Email: official.mail@iaea.org

Scientific Secretaries:

Mr Sujit Samaddar
Head, International Seismic Safety Centre (ISSC)
Division of Nuclear Installation Safety
International Atomic Energy Agency
Tel.: +43 1 2600 22513
Fax: +43 1 26007 2007
Email: IEM3@iaea.org

Mr Pal Vincze
Head, Nuclear Power Engineering Section (NENP)
Division of Nuclear Power
International Atomic Energy Agency
Tel.: +43 1 2600 22805
Fax: +43 1 26007 2007
Email: IEM3@iaea.org

Administration and organization:

Mr Andrew McKay
Conference Services Section
Division of Conference and Document Services
IAEA-J20-TM-427321
Tel.: +43 1 2600 21312
Fax: +43 1 26007 2007
Email: IEM3@iaea.org

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

L. IEM web page

Participants should visit the IAEA Meetings web page regularly for new information regarding the IEM. The address is: <http://www-pub.iaea.org/iaemeetings/>

Participants will also find information on services at the Vienna International Centre (VIC) and general information at:

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

PAPER

TITLE OF PRESENTATION

Author 1*, Author 2** and Author 3**

* Position and Institution name

** Position and Institution name

PAPER

The paper should be typed; single spaced on an A4 format or 8.5 by 11 in. paper in Times New Roman 12 point. It should extend to no more than 2 pages (including figures and tables) and should not exceed 800 words. The paper should provide overall information of the subject of the presentation. The author's (authors') name(s) should be given on the first page of the paper.

Submitting an electronic version of the paper is necessary to ensure quality and timely issuance of the proceedings, which are to be prepared and distributed in electronic form. It is highly desirable that an internationally used software programme (preferably Microsoft Word) be used to produce the paper.