The Abdus Salam
International Centre for Theoretical Physics

United Nations
Educational, Scientific
and Cultural Organization

International Atomic
Energy Agency

Workshop on the Physics of Tsunami, Hazard Assessment Methods and Disaster Risk Management

(Theories and Practices for Implementing Proactive Countermeasures)

14 - 18 May 2007

(Miramare - Trieste, Italy)

The Abdus Salam International Centre for Theoretical Physics will organize a Workshop on the "***Physics of Tsunami Hazard Assessment Methods and Disaster Risk Management***" from ***14 – 18 May 2007.***

In view of the catastrophic earthquake which occurred with epicentre in Sumatra, Indonesia, on the 26th December 2004 and the subsequent tsunami that devastated the coasts of the Indian Ocean, as well as, a few recent external flood events which affected nuclear power plant (NPP) sites, it was necessary to analyze the lessons learnt from those events and to discuss their impact on the existing safety standards for nuclear power plants. In this way, the criteria and methods applied and used by the international community for site evaluation, design and operation of critical facilities, as nuclear power plants for example, are kept up to date according to recent developments in the subject.

Following the conclusions and recommendations of the "*International Workshop in External Flooding Hazards at NPPs Sites*" conducted in Kalpakkam, India, in August 2005, and as a continuation of the activities in this field, IAEA and ICTP organized a topical consultancy meeting of international experts in May 2006, with the main objective of discussing the experience gained from the past events and proposing, if needed, modifications to the Agency safety standards for nuclear power plants in relation to external flooding hazards. In particular, IAEA recently (2003) published the Safety Guide on *"Flood Hazards for Nuclear Power Plants on Coastal and River Sites"*, which will be subjected in the near future to a revision process on the basis of lessons learnt from these events. During that experts' meeting, the Japanese experts presented the English version of the guidelines for assessing tsunami hazard at nuclear power plant sites, issued February 2002 by the Tsunami Evaluation Subcommittee-Nuclear Civil Engineering Committee of the Japan Society of Civil Engineers (JSCE), and which has been applied for the re-evaluation of the tsunami hazard assessments of Japanese NPPs in recent years.

The standard methodological approach included in these guidelines, as well as, details of the application in the modeling of potential sources, propagation and coastal behaviour of the tsunami phenomena will be discussed during the Workshop in order to reach a good understanding of the Japanese proposal, including the experience in its application in several case studies under way in India and Pakistan.

The Workshop will emphasize synergies between the evaluation of flood hazards in relation to the protection of nuclear installations and evaluation of vulnerabilities and risks of other critical infrastructure and facilities.

Recent trends include an increased emphasis on risk informed decision-making and consequently probabilistic tools for the assessment of hazards, vulnerabilities and risks. Therefore, probabilistic hazard analysis is being utilized more and more by Member States as an input to the Probabilistic Safety Assessment (PSA) studies. Additionally the integrated disaster risk management methodology has been developed to enhance risk-informed decision-making and coping capacity of stakeholders involved.

The programme will cover the following topics:

- Requirements for flood hazard analysis for critical facilities (deterministic and probabilistic approaches)
- Guidance for assessing flood hazard
- Experience from the December 2005 Sumatra Tsunami
- Recent flooding events in nuclear facilities
- Case studies on application of Japanese JSCE methodology for tsunami hazard assessment

Keynote lectures

- Recent developments at IAEA in relation to flood hazard assessment (Antonio Godoy, IAEA)
- Recent developments on tsunami hazard assessment (K. Satake, Japan)
- Tsunami Warning Systems (F. Schindele, France)
- Integrated disaster risk management (IDRiM): Perspective, and methodology (Norio Okada)

Scientists and students from all countries that are members of the UN, UNESCO, or IAEA can attend the Workshop. The main purpose of the Centre is to help researchers from developing countries through a programme of training activities within a framework of international co-operation. However, students and post-doctoral scientists from developed countries are also welcome to attend. As the Workshop will be conducted in English, participants should have an adequate working knowledge of that language. A degree in Physics, Mathematics, Geophysics (theoretical or computational), Computer Science and/or similar disciplines is required.

As a rule, travel and subsistence expenses of the participants should be covered by the home institution. However, limited funds are available for some research workers from developing countries. As scarcity of funds allows travel to be granted only in a few exceptional cases, every effort should be made by candidates to secure support for their fares (or at least half fare) from their home country. It is stressed that participants whose travel expenses are paid by ICTP are required to attend the entire Workshop. For logistic reasons, connected with the number of Personal Computers available, the total number of participants in the Workshop is limited. There is no registration fee for attending the Workshop. The Application Form is obtainable from the ICTP WWW server: **http://agenda.ictp.it/smr.php?1839** which will be constantly up-dated) or from the activity Secretariat. It should be completed and returned before **31 January 2007** to the address below **or** **smr1839@ictp.it** ***(please send file attachments in one of the following formats: pdf (preferably), rtf zipped, or doc) (recent photograph & signature of the candidate are compulsory).***

Workshop on the Physics of Tsunami, Hazard Assessment Methods & Risk Management
(c/o Ms. Gabriella De Meo: de_meo@ictp.it)
the Abdus Salam International Centre for Theoretical Physics
Strada Costiera 11, I-34014 Trieste, Italy

(Telephone: +39 - 40 - 2240355 Telefax: +39 - 40 - 2240585 E-mail: SMR1839@ictp.it)

Trieste, December 2006

Physics of Tsunamis

DIRECTORS

A. Godoy
(I.A.E.A., Vienna)

N. Okada
(Kyoto University, Japan)

LOCAL ORGANIZER

G.F. Panza
(Dept. of Earth Sciences, University of Trieste/ICTP-ESP, Italy)

***Deadline*:**

31 January 2007