



Atoms for Peace

الوكالة الدولية للطاقة الذرية
国际原子能机构
International Atomic Energy Agency
Agence Internationale de l'énergie atomique
Международное агентство по атомной энергии
Organismo Internacional de Energía Atómica

National Liaison Officer

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In reply please refer to: C7-RER/9/133/002
Dial directly to extension: (+431) 2600-22409

2016-10-11

Subject: Invitation to a Regional Training Course on Flood Safety for Nuclear Installations: from Hazard Assessment to Structural Analysis "HASANI", Pavia, Italy, 28 November – 2 December 2016

Dear National Liaison Officer,

I am pleased to invite you to send nominations of suitable candidates to participate in the above-mentioned training course under the framework of TC Project RER/9/133, "Strengthening Capacity for Harmonized Risk Assessment of Nuclear Facilities and Natural Hazards". The purpose of the training course and related information are outlined in the attached Prospectus.

For candidates who are selected by the IAEA, the IAEA will cover the cost of return international travel from the home country to Pavia Italy and provide a stipend for the duration of the training course in line with IAEA rules and procedures.

Please submit nominations to the IAEA online through the Technical Cooperation Department's InTouch system (<http://intouch.iaea.org>). Only if this is not possible, nominations may be submitted on the Nomination Form for Training Course available on the IAEA website: <http://www.iaea.org/technicalcooperation/How-to-take-part/train-course/index.html>. Completed forms should be endorsed by relevant national authorities and sent to the Programme Management Officer for this project, Mr Asif Salahuddin (IAEA Official Fax: +43-1-26007 or E-Mail Official.Mail@iaea.org), through the official channels, i.e. the designated National Liaison Office for IAEA matters, not later than 26 October 2016.

Yours sincerely,

Martin Krause
Director
Division for Europe
Department of Technical Cooperation

Enclosures: Prospectus

International Atomic Energy Agency

Regional Training Course on Flood Safety for Nuclear Installations: from Hazard Assessment to Structural Analysis "HASANI"

PROSPECTUS

- Project Number & Title:** RER/9/133: Strengthening Capacity for Harmonized Risk Assessment of Nuclear Facilities and Natural Hazards
- Place (City, Country):** Pavia, Italy
- Dates:** 28 November – 2 December 2016
- Deadline for Nominations:** 26 October 2016
- Organizers:** The International Atomic Energy Agency (IAEA) in collaboration with the Government of Italy through the Institute for Advanced Study of Pavia (IUSS).
- Host Country Organizer:** Mr Mario Martina
Institute for Advanced Study of Pavia - Scuola Superiore IUSS
Palazzo del Broletto - Piazza della Vittoria n.15
27100 Pavia, Italy
Tel: +39 0382 3758 46
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Web: <http://www.iusspavia.it>
- Language:** English
- Purpose:** The course will focus on flood hazard assessment as well as risk analysis in order to provide a comprehensive picture necessary for appropriate flood safety assessment of nuclear installations, *i.e.*, Nuclear Power Plants (NPPs) and Research Reactors (RRs).
- Expected Output(s):** The expected outputs of the training course are:
- Increased knowledge on up-to-date methodologies for Nuclear Infrastructure (NI) flood safety from hazard assessment to design and structural analysis;
 - Increased technical skills for flood safety assessment in compliance with IAEA safety standards from nuclear installations siting to site

characterization; and

- Improved ability to understand specific issues but also to manage their interactions into a comprehensive picture necessary for appropriate flood safety assessment.

Scope and Nature:

The training course will include lectures with compliance to IAEA safety standards, including proper time for discussion, concerning the topics below:

- Flood hazard assessment, with emphasis on data collection, hydrological and hydraulic modelling, uncertainties evaluation, flood sources and type of floods, impact of floods
- Necessary information and investigations, hydro-meteorological data;
- Assessment of hydrological hazards and design flood parameters, Identify relevant floods mechanisms and factors relevant for a specific site;
- Case study and applications, Statistical techniques for flood frequency analysis, application of hydrological and hydraulic models;
- Protection and monitoring; and
- Flood risk assessment.

The participants will have the opportunity to present their own experience (*ca.* 5 min each) on seismic safety for NI. At the end of the course, through a final test evaluation, participants will be aware of achieved skills.

Background Information:

Participants are expected to have basic knowledge concerning i) general safety principles of NI and relevant IAEA safety standards and ii) flood hazard assessment and/or design and analysis for protection of NI against flood hazards. They should be also fluent in English. More details on the content of the course are in the Agenda below. Lectures will be interactive and a proper time for discussions will be allowed. These require engineering and nonlinear analysis related to multi-hazard exposure. Recent disaster episodes, caused by natural hazards such as floods affecting developed and developing countries alike, highlight the need for the scientific and technical community to develop new approaches and responses strategies to challenges they have not been previously exposed to, in order to improve the resilience of critical infrastructure and effectiveness of structural response. Highly trained professionals in the nuclear field, with specialized structural safety skills, need to assume challenging roles. Where there was no TC initiative for disaster risk assessment, management and mitigation, project RER/9/133 was designed to fill this gap and will help build capacity where needed, based on multidisciplinary synergies and exposure, and to facilitate bringing together civil engineering knowledge (structural, geotechnical, etc.) and statistical and probabilistic tools for understanding and managing extreme events. In terms of key partners, the project falls within the scope of the "Practical Arrangement" between IAEA and IUSS (Vienna, September 2013), which covers the establishment of education networks and encourages the development of a competent nuclear workforce. Within the aforementioned framework, and through this project, professionals from the TC Europe Region will have the opportunity to rely on the training expertise provided by the academia and applied research stakeholders, represented by Institute for Advanced Study (IUSS) Pavia and its

Centre for Training and Research in Understanding and Managing Extremes (UME), as well as the Eucentre Foundation.

In particular, in the light of the recent flood disasters, importance of comprehensive assessment of flood safety from hazard evaluation to structural analysis is increased. This regional Training Course was designed to offer professionals in the TC Europe Region the valuable opportunity to receive hands-on training in flood safety assessment for nuclear installations.

Participation: The training course is open to 30 participants from Member States in the TC Europe Region. Priority shall be given to qualified candidates from Member States which have recently operated/are operating nuclear facilities or are actively planning to operate nuclear power plants and research reactors, namely: Armenia, Azerbaijan, Belarus, Bulgaria, Czech Republic, Greece, Hungary, Kazakhstan, Lithuania, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Turkey, Ukraine, and Uzbekistan.

Participants' Qualifications: Participants are expected to have basic knowledge concerning i) general safety principles of NI and relevant IAEA safety standards and ii) flood hazard assessment and/or design and analysis for protection of NI against flood hazards. They should be also fluent in English. More details on the content of the course are in the Agenda below. Lectures will be interactive and a proper time for discussions will be allowed. These require engineering and nonlinear analysis related to multi-hazard exposure.

Participants are expected to currently work in regulatory bodies, nuclear facilities or technical support organisations of participating Member States and to be directly involved in safety assessment activities.

The regional training course will be conducted in English and candidates must have sufficient English proficiency to ensure their active participation. Applications from *Junior Professionals* are encouraged.

Nomination Procedure: Please submit nominations to the IAEA online through the Technical Cooperation Department's InTouch system (<http://intouch.iaea.org>). Only if this is not possible, nominations may be submitted on the Nomination Form for Training Course available on the IAEA website: <http://www.iaea.org/technicalcooperation/How-to-take-part/train-course/index.html>. Completed forms should be endorsed by relevant national authorities and sent to the Programme Management Officer for this project, Mr Asif Salahuddin (IAEA Official Fax: +43-1-26007 or E-Mail Official.Mail@iaea.org), through the official channels, i.e. the designated National Liaison Office for IAEA matters, not later than **26 October 2016**

Administrative and Financial Arrangements: Nominating Governments will be informed in due course of the names of the candidates who have been selected and will, at that time, be given full details of the procedures to be followed with regard to administrative and financial matters.

Selected participants from countries eligible to receive technical assistance will be provided with a round trip economy class air ticket from their home countries to Pavia, Italy, and a stipend sufficient to cover the cost of their accommodation, food,

and minor incidentals. Shipment of accumulated training course materials to the participants' home countries is not the responsibility of the IAEA.

The organizers of the training course do not accept liability for the payment of any cost or compensation that may arise from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from or attending the training course, and it is clearly understood that each Government, in nominating participants, undertakes responsibility for such coverage. Governments would be well advised to take out insurance against these risks.