The Abdus Salam
International Centre for Theoretical Physics

United Nations Educational, Scientific and Cultural Organization

IAEA International Atomic Energy Agency

Joint ICTP-IAEA Course on Natural Circulation Phenomena and Passive Safety Systems in Advanced Water Cooled Reactors

3 – 7 December 2012

(Miramare – Trieste, Italy)

The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, in co-operation with the International Atomic Energy Agency (IAEA), Vienna, Austria, is organizing a Course on Natural Circulation Phenomena and Passive Safety Systems in Advanced Water Cooled Reactors, to be held at ICTP, Trieste, from ***3 to 7 December 2012.***

Passive safety systems based on natural circulation are a key to the heat removal from core or containment in many evolutionary and innovative water-cooled reactor designs. Some designs also utilize natural circulation to remove core heat during normal operation.

The objectives of the Course are to provide participants with instruction on:

- Natural circulation during reactor start-up and operation, methods of analyses and governing equations, passive system initiation and operation, flow stability, scaling laws for experiments;
- Phenomena that influence natural circulation (e.g. behaviour in large pools of liquid, effects of non-condensable gasses on condensation heat transfer; condensation on containment structures, behaviour of containment emergency systems, thermo-fluid dynamics and pressure drops in various configurations, steam-liquid interaction, gravity driven cooling, liquid temperature stratification, behaviour of emergency heat exchangers and isolation condensers, stratification and mixing of boron);
- Experimental databases for these phenomena;
- Methodology for determining the reliability of passive systems that utilize natural circulation.

PARTICIPATION:

Scientists, engineers and post-graduate students from all countries that are members of the United Nations, UNESCO or IAEA may attend the Course subject to selection. A basic knowledge in thermo-hydraulics, fluid mechanics and heat transfer is required. A science or engineering degree (e.g. in physics, mechanical, chemical or nuclear engineering) or equivalent qualification is necessary. Logistics limit the number of participants to 20. As the Course will be conducted in English, participants should have an adequate working knowledge of that language. Although the main purpose of the Centre is to help research workers from developing countries, through a programme of training activities within a framework of international cooperation, graduate students and post-doctoral scientists from developed countries would equally benefit from the Course and are encouraged to apply.

As a rule, travel and subsistence expenses of the participants should be borne by the home institution. Every effort should be made by candidates to secure support for their fare (or at least half-fare). However, limited funds are available for some participants, who are nationals of, and working in, a developing country, and who are not more than 45 years old. Such support is available only for those who attend the entire activity. There is no registration fee.

HOW TO APPLY:

The "On-line Application" form can be accessed at the **ICTP activity website:**
http://cdsagenda5.ictp.trieste.it/full_display.php?ida=a11173
Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

SECRETARIAT

Joint ICTP-IAEA Course on Natural Circulation Phenomena and Passive Safety Systems
in Advanced Water Cooled Reactors - smr2349
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in co-operation with International Atomic Energy Agency (IAEA)

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Deadline

for requesting participation:

15 August 2012