

Indian Institute of Technology Gandhinagar

Short Course on **Nuclear Reactor Thermal Hydraulics and Safety**

to be conducted in Ahmedabad during February 18–20, 2010

Motivation

- ❖ India has a flourishing nuclear power program and the Atomic Energy Commission envisages about 500 GWe nuclear energy on line by 2060, through indigenous and foreign technology.
- ❖ Although foreign technology and fuel are expected to boost India's nuclear power projects considerably, all plants will have high indigenous engineering content.
- ❖ This scenario—ambitious targets and new technologies—generates the necessity for timely enhancement of the skill set of Indian engineers involved in design and operation of nuclear power plants. Knowledge of thermal hydraulics and safety will be very important for this.

Course Objectives

- ❖ To discuss problems and methods of nuclear reactor thermal hydraulics and safety analysis
- ❖ To promote exchange of knowledge on thermal hydraulics and safety between the nuclear power industry and the academia
- ❖ To provide engineers with the necessary theoretical knowledge on this subject to meet forthcoming challenges

Topics to be Covered

1. Fundamentals of reactor physics and kinetics
2. Two-phase flow and boiling heat transfer
3. Measurement techniques for multiphase flows
4. Use of CFD in nuclear reactor thermal hydraulics
5. Transient analysis using reduced-order modeling
6. Transient analysis using system codes
7. Thermal hydraulics under low-pressure conditions
8. Thermal hydraulics of advanced nuclear reactors
9. Issues in nuclear reactor safety
10. Methods of safety analysis

Certificate

Participants who successfully complete the course will be awarded a certificate of participation.

Venue

The course will be conducted at IIT Gandhinagar, VGEC Campus, Chandkheda, Ahmedabad – 382424.

Resource Persons

The course will be taught by renowned experts:

Manfred Groll: Professor of Mechanical Engineering (retired), Stuttgart University, Germany. Prof. Groll obtained his doctorate and habilitation from Stuttgart University and has over 40 years experience of teaching and research. He is an expert on thermal engineering, energy technology and reactor safety.

Om Pal Singh: Outstanding Scientist and Secretary, Atomic Energy Regulatory Board. Dr. Singh obtained his Ph.D. from I.I.T. Delhi and has over 30 years experience in research and development and regulation of nuclear power plants. He is an expert on reactor physics, kinetics and safety analysis.

Kannan N. Iyer: Professor of Mechanical Engineering, I.I.T. Bombay. Prof. Iyer obtained his Ph.D. from Purdue University (U.S.A.) and has over 20 years experience of teaching and research in academics and R&D organizations. He is an expert on two-phase flow and safety analysis.

S.V. Prabhu: Associate Professor in Mechanical Engineering, I.I.T. Bombay. Dr. Prabhu obtained his Ph.D. from I.I.T. Bombay and has over 10 years experience of teaching and research. He specializes in two-phase flow and safety analysis.

Manmohan Pandey: Associate Professor in Mechanical Engineering, I.I.T. Gandhinagar. Dr. Pandey obtained his Ph.D. from I.I.T. Kanpur and has over 15 years experience of teaching and research in academics and industry. He specializes in transient analysis, modeling and simulation.

Course Coordinator

Dr. Manmohan Pandey has published a number of research papers in reputed international journals and conferences and carried out sponsored projects and consultancy for R&D organizations and the industry. He has delivered keynote lectures and chaired sessions in international conferences and workshops. Dr. Pandey is an Associate Editor of the international journal 'Science and Technology of Nuclear Installations' and a reviewer of several international and national journals and conference proceedings.

Participants

The course is intended for engineers involved in design and operation of nuclear power plants. Engineering students and research scholars will benefit from this course to prepare themselves better for their careers. This course will also be useful for teachers of engineering colleges and help them to introduce nuclear engineering education in their curricula.

Accommodation

There are a number of luxury as well as budget hotels in Ahmedabad, some of them being very close to the venue. Contact information of some hotels can be obtained from the course coordinator or from our website (<http://www.iitgn.ac.in>).

Registration

The course fee is Rs.10,000/- (Rupees ten thousand only) per participant. It includes course material, lunch and tea during the course. Participants from educational institutes can avail 50% discount and full-time non-sponsored students can avail 80% discount. The fee is payable in advance by a demand draft in favor of I.I.T. Gandhinagar.

Those interested in participating in the course can register by submitting their completed registration forms with demand drafts to:

Dr. Manmohan Pandey
Associate Professor in Mechanical Engineering
I.I.T. Gandhinagar
Vishwakarma Govt. Engg. College Campus
Visat-Gandhinagar Highway, Chandkheda
Ahmedabad – 382424
Phone: 079-23972324
Fax: 079-23972324, 23972586
Mobile: 9435119017, 9601667537
Email: manmohan@iitgn.ac.in
Web: <http://www.iitgn.ac.in>

The last date of receipt of the registration form with fee is 05 February 2010.

Short Course on Nuclear Reactor Thermal Hydraulics and Safety

at

I.I.T. Gandhinagar

during

February 18–20, 2010

Registration Form

Name:

Designation:

Organization:

Mailing Address:

Phone:

Mobile:

Email:

Qualification and Experience:

Category: (please tick)

Industry /

Teacher /

Student (full-time, non-sponsored)

Demand Draft No.:

Bank and Branch:

Dated:

Amount (Rs.):

Date:

Signature