Course Overview

Reactor physics plays a key and central role among various disciplines involved in the design and operation of nuclear reactors. It deals with understanding the fundamental physical phenomena characterizing nuclear reactors, and provides needed input to and interaction with all aspects of design, operation and safety-analysis activities. To address the training needs of the Canadian nuclear industry in this fundamental area, the CNS is happy to offer the CANDU Reactor Physics course.

The course introduces the main topics in the CANDU reactor physics discipline and covers key elements of the chief computer codes used in related analyses. It is ideally suited for beginning professionals but is also beneficial to those individuals who are active in specific design or operation activities. It is also beneficial to experienced professionals who wish to broaden their knowledge beyond their own field of expertise.

Continental breakfast, buffet lunch, and coffee breaks are provided each day. There will also be a banquet on the second evening of the course. The after-dinner speech at the banquet will highlight a timely topic in this particular field in the Canadian Nuclear industry.

Topics to be covered in the course include:

- Fundamental concepts
- Lattice and supercell physics
- Reactor core-design analysis
- Fuel-management design and operation
- Fast and slow kinetics
- Licensing issues
- Operational physics
- ACR Physics

A panel has also been constituted to discuss advances in related analysis techniques.

*This course is eligible for Continuing Education Units in the context of the **Engineering Institute of Canada** Continuing Education program.*

Registration

Please register on-line via the link on the CNS CANDU Reactor Physics Course web page, which you can reach directly at http://www.cnssnc.ca/events/2011_CANDU reactor physics course or via the CNS web site (http://www.cns-snc.ca).

The registration fees are shown below, and include HST (HST # 870488889RT)

- ☐ **CNS Member: $890.00 [Must be a CNS member in good standing]**
- ☐ **Non-CNS Member: $990.00**
- ☐ **Full-time student or CNS retiree member: $450.00**

For registration information, please communicate with: **CNS Office**
480 University Avenue, Suite 200
Toronto, ON, Canada, M5G 1V2
Tel: 416-977-7620; Fax: 416-977-8131
e-mail: cns-snc@on.aibn.com

HOTEL ACCOMMODATION

A special room rate of $159 (+ tax) + $10 parking per night is available at the Toronto Marriott Airport Hotel. If you are flying into Toronto, the hotel has a complimentary shuttle service from the airport. **Book early! To receive the special hotel rate, you must book by April 29.** Call 1-800-905-2811 and request the Canadian Nuclear Society Course Group Booking. You can also reserve your room on-line via the following dedicated link: Toronto Airport Marriott Hotel >>

CANDU REACTOR PHYSICS COURSE

Organized by:
The Canadian Nuclear Society
Nuclear Science & Engineering Division

2011 May 16-18
(Mon-Wed)

Toronto Airport Marriott Hotel
901 Dixon Road
Toronto, ON
M9W 1J5

Course contact (not for registration):

P. Akhtar
Tel: 613-837-9846
E-mail: akhtar.p@sympatico.ca

CANDU Reactor Physics Course
2011 May 16-18
Tentative Schedule

Objectives of the course

- **To provide an introduction to main topics in the CANDU reactor physics discipline and**
- **To cover key elements of the chief computer codes used in design, operation and safety analyses**

Monday, May 16

08:00	Continental Breakfast
08:45	Welcome & Opening Remarks (P.Akhtar)
09:00	Fundamental Principles & Concepts of Reactor Physics & of CANDU (B.Rouben)
10:30	Break
11:00	Lattice Physics – General (G.Marleau)
12:00	Lunch
13:00	DRAGON (G. Marleau)
14:00	WIMS-AECL (D.Altiparmakov)
15:00	Break
15:30	Finite-Core Design Analysis (E.Varin)
17:00	End of Day-1 Lectures

Tuesday, May 17

07:30	Continental Breakfast
08:30	Fuel Management (W.Shen)
10:00	Break
10:30	Fast Kinetics (E.Nichita)
12:00	Lunch
13:00	Saturating Fission Products (A.Buijs)
14:30	Break
15:00	MCNP (B.Wilkin)
16:00	Panel Discussion on Advanced & Future Methods (J.Donnelly,G.Marleau,D.Serghiuta, W.Shen,D.Altiparmakov)
17:00	End of Day-2 Lectures
18:00	Host Bar
19:00	Banquet, with Guest Speaker (P.Boczar)

Wednesday, May 18

07:30	Continental Breakfast
08:30	Licensing Issues & Technical Assessments (D.Serghiuta & P.Akhtar)
10:00	Break
10:30	Start-up Physics and Operational Fuel Management-Bruce Power (O.Nainer)
12:00	Lunch
13:00	Start-up Physics and Operational Fuel Management-NB Power (D.Taylor))
14:30	Break
15:00	ACR Physics (M.Ovanes)
16:30	End of Course