

## Course Overview

This CNS course will present an extensive overview of the important disciplines in CANDU reactor technology and safety. The course provides an introduction to the basic design, technology, and operation of nuclear reactors. It will also present the major systems in a nuclear plant, as well as the important CANDU reactor safety principles and systems. How to prepare and execute safety analysis to meet licensing demands will also be discussed.

The CNS is presenting this course to enhance the professional and technical capabilities of its members (and non-members) working in, or interested in, the nuclear industry. The course is ideally suited for beginning professionals, but also beneficial to experienced professionals. Come broaden your nuclear knowledge beyond your specific area of work and your own area of expertise.

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

Continental breakfast, buffet lunch, and coffee breaks are provided each day. There will also be a banquet on the second evening of the course, with an after-dinner speech highlighting a timely topic in the Canadian Nuclear industry.

Some of the topics to be covered in the course:

- CANDU Design
- Reactor Physics
- Thermalhydraulics
- Safety Design Basis
- Reactor Operation
- Balance of Plant
- Human Factor
- Safety Analysis & Safety Limits
- Spent Fuel Management
- Experiments to Support Safety Criteria
- Severe Accident Management

## Registration

Please register on-line via the link on the **Course web page**, which you can reach directly by clicking [here](#) or via the [CNS web site](#).

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

- CNS Member: \$975.00** [Must be a CNS member in good standing]
- Non-CNS Member: \$1070.00**
- CNS Full-Time Student Member or CNS Retiree Member: \$440.00**

For registration information, please communicate with:  
**CNS Office**  
998 Bloor St. W., #501  
Toronto, ON, Canada, M6H 1L0  
Tel: 416-977-7620  
e-mail: [cns\\_office@cns-snc.ca](mailto:cns_office@cns-snc.ca)

## HOTEL ACCOMMODATION

A very special room rate per night of \$179 + Tax is available at the Courtyard by Marriott Downtown Toronto, but to receive this special rate you must book by **2019 March 4**; [click here](#) to book early to avoid disappointment! Or call 1-800-847-5075 and request the CNS Course Group Booking.

# CNS CANDU REACTOR TECHNOLOGY & SAFETY COURSE



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

**2019 March 25-27**  
**(Mon-Wed)**

**Courtyard by Marriott Downtown**  
**Toronto**  
**475 Yonge St.**  
**Toronto, ON**  
**M4Y 1X7**

Course contact (not for registration):

**B. Rouben**  
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**CNS CANDU Reactor  
Technology & Safety Course  
2019 March 25-27  
Courtyard by Marriott Downtown  
Toronto  
475 Yonge St.  
Toronto, ON  
M4Y 1X7**

**Objectives of the course**

- To provide an introduction to CANDU technology and reactor safety
- To present safety-analysis principles
- To provide an overview of the major CANDU systems
- To foster nuclear safety culture
- To network with colleagues in the industry

**Monday, March 25**

07:30     **Continental Breakfast**

08:30     Welcome & Opening Remarks

08:45     CANDU Design Overview  
E. Varin (WorleyParsons)

10:15     **Break**

10:30     Reactor-Physics Fundamentals  
E. Nichita (UOIT)

12:00     **Lunch**

13:00     Thermalhydraulic Fundamentals  
D. Novog (McMaster University)

14:30     **Break**

15:00     Balance of Plant  
J. Froats (UOIT)

16:30     End of Day-1 Lectures

**Tuesday, March 26**

07:30     **Continental Breakfast**

08:30     In-Core Fuel Management  
B. Rouben (12 & 1 Consulting)

10:00     **Break**

10:30     PSA Fundamentals  
P. Lawrence (Kinectrics Inc.)

12:00     **Lunch**

13:00     Experiments and Code Validation  
T. Nitheanandan (CNSC)

14:30     **Break**

15:00     Control and Instrumentation  
W. Fieguth (AECL Retired)

16:30     End of Day-2 Lectures

18:00     **Host Bar**

18:30     **Banquet**, with Guest Speaker

**Wednesday, March 27**

07:30     **Continental Breakfast**

08:30     Reactor Start-up Tests  
C. Banica (OPG)

10:00     **Break**

10:30     Fuel & Fuel-Channel Safety  
S. Girgis (AECL retired)

12:00     **Lunch**

13:00     Severe-Accident Management  
L. Gilbert (Bruce Power)

14:30     **Break**

15:00     Safety-Analysis Principles and  
Licensing Requirements  
D. Wright (Kinectrics Inc.)

16:30     **End of Course**