

Course Overview

Aim of Course

The aim of this course is to provide an understanding of the CANDU fuel design, performance and operation, and of how the fuel interacts with the interfacing systems. The course will be of great interest to the fuel designers, regulator, manufacturers, station operations, fuel-channel and fuel-handling-system designers, safety analysts, performance and inspection staff.

Course Outline

This course will provide an overview of the CANDU fuel design, modeling, performance and operation, with a special emphasis on the systems that interface with it. Fuel, more than any other reactor component, interfaces with many different systems. This course is designed to enlighten those involved in fuel design and performance of the interfaces; and vice versa. The course will describe the design of the bundle, the detailed nuclear physics of its operation, the thermal-hydraulic performance, the fuel handling, fuel and physics of the reactor, the discharge and storage of the fuel.

Registration

Please register on-line via the link on the CANDU Fuel Technology Course web page, which you can reach directly at

http://www.cns-snc.ca/events/2019_fuel_technology_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: \$750 [Must be a CNS member in good standing]
- Non-CNS Member: \$850
- Full-time student (CNS member) or CNS Retiree member: \$300.

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

Accommodations at Hilton Garden Inn

Please make accommodation arrangements, if required, on-line via the dedicated link <https://hiltongardeninn.hilton.com/en/gi/group/s/personalized/Y/YYZAJGI-CNS19-20191002/index.jhtml>, or else by telephone directly with the hotel at 1-905-686-9400 (use group code CNS19). A special group rate of \$144 + tax per night is available on the nights of October 2 & 3 if booked before 2019 September 12. **Please reserve early to avoid disappointment.**

CANDU FUEL TECHNOLOGY COURSE

Canadian Nuclear Society
Fuel Technologies Division



2019 October 3 - 4
Hilton Garden Inn
500 Beck Crescent
Ajax, Ontario, L1Z 1C9

Course contacts (not for registration):

Paul Chan, Professor
Chemistry and Chemical Engineering Dept.
Royal Military College of Canada
Tel: (613) 483-6095 Ext. 6145
E-mail: paul.chan@rmc.ca

Erl Kohn
Consultant, Fuel Design
Kinectrics Inc.
Tel: (519) 490-1488
E-mail: erl.kohn@acanac.net

CANDU Fuel Technology Course
October 3 - 4, 2019
Ajax

Objectives of the Course

- To provide the understanding of CANDU fuel design, modelling, performance and safety
- To foster the understanding of the systems that interface with fuel and the effects of fuel on trip setpoint
- To promote knowledge of fuel within the CANDU industry

Day 1

08:00 **Registration**

08:30 **Opening Remarks**
Paul Chan, RMC
Erl Kohn, Kinectrics Inc.

08:45 **Design Overview**
Erl Kohn, Kinectrics Inc.

09:30 **Specifying the Design**
Paul Chan, RMC

10:15 **Coffee Break**

10:30 **Fuel Design Codes and Predictions**
Mukesh Tayal, AECL-Retired

11:15 **Chemical and Material Requirements**
John Roberts, Bruce Power -Retired

12:00 **Lunch**

13:00 **Fuel CHF/CCP**
Glenn Harvel , UOIT

13:45 **Reactor Fuel & Physics Operation**
Charles Olive, Kinectrics Inc.

14:30 **Coffee Break**

14:45 **Fuel Safety**
Samir Girgis, AECL- Retired

15:30 **Fuel and NOP/ROP Trip Setpoint**
Wei Shen, CANDU Owners Group

16:15 **Fuel Physics Within the Bundle**
Ben Rouben, 12 & 1 Consulting

18:00 **Dinner**

Day 2

08:00 **Fuel PIE & Adv Hot-cell Tech**
Jeffrey Armstrong, CNL

08:45 **Fuel Defect Detection**
Eugene Suk, SNC-Candu Energy

09:30 **Defective Fuel Modeling**
Brent Lewis, RMC- Emeritus Prof

10:15 **Coffee Break**

10:30 **Fuel Performance Assessment**
Paul Gillespie, Kinectrics Inc.

11:15 **Multiphysics Approach to Fuel Modeling**
Andrew Prudil, CNL

12:00 **Lunch**

13:00 **Conversion Facility - Ceramic UO₂**
Vanni Iemma, Cameco

13:45 **Fuel Manufacturing**
Thomas Onderwater, BWXT NEC

14:30 **Coffee Break**

14:45 **Fuel Handling**
Ralph Granz, BWXT NEC

15:30 **Long Term Management of Canada's Used Nuclear Fuel**
Chris Boyle, NWMO

16:15 **Closing Remarks**
Erl Kohn, Kinectrics Inc.