

CONFERENCE REPORT

24TH Annual Canadian Nuclear Association/ Canadian Nuclear Society Student Conference

24 Conference Étudiante Annuel de l'Association Nucléaire Canadienne et de la Société Nucléaire Canadienne

**TRENT UNIVERSITY
PETERBOROUGH, ONTARIO
26,27 MARCH/MARS 1999**

CONFERENCE CHAIR: DR. JAMES JURY

The 24th CNA/CNS Annual Student Conference , sponsored by the CNS and CNA and Trent University, was held at Trent University and Chaired by Dr. James Jury, of the Physics Department. The conference took place in Peterborough, Ontario at the Holiday Inn and Trent University on March 26 and 27, 1999. Approximately 26 individuals (students, professors and industry professionals) attended this event. A total of 7 technical papers were presented which have been compiled in a bound conference proceedings and have been gazetted in the "Transactions of the 1999 CNA/CNS Student Conference" (available from the CNS and Trent University, Dept. of Physics).

The conference consisted of :

Friday, March 26

- Registration and presentation of conference kits
- Opening social gathering (Holiday Inn)
- Conference Dinner

- Invited Talk (Speaker Dr. David Torgerson, Vice-President, AECL) “The Future Evolution of CANDU Technology” (Holiday Inn)

Saturday, March 27

- Technical Sessions Trent University
(including coffee break)
- Conference Lunch Trent University
- Address by Conference Chair (Dr. J. Jury) “Using Nuclear Techniques to locate anti-personal landmines” Trent University
- Presentation of conference awards
 - (a) undergraduate students
 - (b) graduate students
- Conference Technical Tour (GE Canada Nuclear Products Division with Bill Knowles and Paul Hynes)

DETAILS

Dr. Torgerson’s talk was well received by the conferees. He described in detail the future development of CANDU technology with an emphasis on “intelligent design” to reduce costs and increase lifetimes. He mentioned the need for highly trained human resources to permit this development. Many students in the audience were interested in AECL’s future plans as they might relate to their individual career paths.

Before, during and after the conference dinner, there was ample opportunity for students to meet and mingle with industry and academic professionals as well as with each other. These social and “personal connectivity” goals of the conference were well realized this year.

DETAILS OF THE TECHNICAL SESSION:

**SESSION I: Chair: Dr. Bill Garland, Professor,
Dept. of Engineering Physics,
McMaster University**

“Neutron Activation Analysis (NAA) of Coal and Fly Ashes from Power Plants with and without In-furnace Sorbent Injections”, D. BROCILO, McMaster University

“Numerical Prediction of the Oxygen Potential in the GAP of Defective CANDU Fuel Rods during severe accident conditions”, C. Cole, Royal Military College

“Effet de la température sur la lixiviation des matériaux cimentaires”, A. Gingras-Genois, Université Laval

“Suivi in vivo en imagerie par résonance magnétique, d’acides polylactiques implantés dans le muscle dorsal du lapin”, M-F. Bourgeois, Université Laval

**SESSION II: Chair: Mr. Fred Boyd, Fellow,
Canadian Nuclear Society**

“Experimental and Computational Determination of Radiation Dose Rates in the Slowpoke-2 Research Reactor at the Royal Military College of Canada”,
G. Lamarre, Royal Military College

“Void Distribution Measurement of Swirl-Flow boiling Freon by Real Time Neutron Radiology and High Speed X-Ray Computed Tomography”, D. Novog,
McMaster University

“New approaches for the Lightning Protection of Nuclear Power Plant”, M. Wiacek,
McMaster University

COMMENTS ON THE TECHNICAL SESSION:

While the number of papers presented was somewhat lower than the historical average, the judges and other industry and academic professionals attending expressed the unanimous view that the quality of the work and the manner in which it was presented were outstanding. There was a general sense of quality over quantity. There was some discussion as to the reasons that the number of papers was a little lower than normal. These included the timing of the conference (late March) and the venue (a small university in a small community not served by a local airport).

AWARDS:

Graduate Student : Tie
Chris Cole \$75.00
David Novog \$75.00

Undergraduate Student: Tie
Annick Gingras-Genois \$75.00
Marie-France Bourgeois \$75.00

DETAILS OF THE CONFERENCE LUNCHEON

Following the technical session, the conference luncheon was held in the Private Dining Room of Champlain College at Trent University. The physical setting, “one of the most picturesque academic locations in Canada” (The Canadian Architectural Society) was an ideal location for post session discussion and reflection.

After lunch, Dr. Jury presented a brief description of the research work under way in the Department of Physics at Trent University [and at the University of Toronto and University of Melbourne] to apply the techniques of Thermal Neutron Activation to the detection of antipersonnel landmines. His research group has applied for a patent in this important area of applied nuclear science.

At the conclusion of the luncheon, the 1999 CNA/CNS Student Conference Awards for the best paper presentations were announced as follows [selected by an impartial panel of expert judges from industry, the CNS and university]

DETAILS OF TECHNICAL TOUR:

As a major nuclear industry in Canada, the Nuclear Products Division of General Electric Canada provided a technical tour of their Peterborough Fuel Fabrication and Fueling Machine Support operations. This in depth and very informative tour took place from 2:00 to 5:00 p.m. on Saturday, March 27. It was attended by 20 people and was conducted by Bill Knowles and Paul Hynes of GE Canada. The tour covered all aspects of the fuel fabrication operations. Conferees were shown the advanced CIM and robotic operations of this “world class” nuclear facility. They left with an appreciation for the high level of technical expertise embodied in this fine example of the Canadian nuclear industry.