

# **Canadian Nuclear Achievement Awards**

**June 12, 2006**

## **1. THE CNS PRESIDENT'S AWARD**

**This award recognizes outstanding direct or indirect contribution of an individual or individuals to the CNS for achievements that have been broadly recognized. The award is not intended to be necessarily presented each year, but rather as deserving recipients are identified. The nomination is the prerogative of the CNS President, and the CNS Council or Executive must approve the nomination.**

**I call on the CNS President, John Luxat, to introduce the award winner, make some comments, and then to present this unique award.**

**John Luxat:**

## **2. INNOVATIVE ACHIEVEMENT AWARDS**

**These awards are made for “significant innovative achievement or the implementation of new concepts, which display clear qualities of creativity, ingenuity and/or elegance, and embody an impressive accomplishment in the nuclear field in Canada”. We have two recipients for this award: Dennis Chen and Kelvin Tashiro.**

### **Dennis Chen**

Dennis Chen was the driving force behind the development of the Cerenkov Viewing Device which is recognized by the IAEA as the instrument-of-choice for safeguards inspectors conducting fuel inventory verification at nuclear installations. Dennis led a team at the Whiteshell Laboratories that developed the prototype CVD, and guided the development of the CVD through four generations, including collaboration with industry to design and manufacture a high-output ultraviolet lens to increase its sensitivity. He also lead the development of a course to train inspectors on the technology which was recognized by the IAEA for its “outstanding contribution to Safeguards Inspector Training”. Dennis has continued to develop CVD technology and his contribution has brought Canada international recognition for technological excellence, dedication to nuclear safeguards, and superb customer commitment.

**Kelvin Tashiro**

Kelvin Tashiro received a PhD in Materials Science from McMaster in 1985. He developed a procedure to measure the terminal solid solubility (TSS) of hydrogen in zirconium alloys, leading to the idea of measuring in situ the hydrogen concentration in pressure tubes so that it does not reach concentrations that can affect the tube properties. Existing methods were expensive in reactor downtime and radiation dose. The successful measurement of TSS temperature enables the hydrogen concentration to be calculated without affecting the tube. Despite numerous setbacks, he pursued the objective of a practical use of TSS, and became a key member of the team developing the appropriate tool. With his extensive support, the tool has been employed in over 15 monitoring campaigns and has produced important savings for the utilities.

### **3. OUTSTANDING CONTRIBUTION AWARDS**

**These awards are to recognize Canadian-based individuals, organizations or parts of organizations that have made significant contributions in any field related to the beneficial uses of nuclear energy. These contributions may be either technical or non-technical. Contributions toward improved public safety are specifically included. We have four recipients in this category: Al Brown, Ian Hastings, Bob Tapping, and Declan Whelan.**

#### **Al Brown**

Allan Brown has served in the Canadian nuclear industry for more than thirty years, in a wide variety of fields, from reactor physics to safety, to design and management. One of his several notable achievements is his ability to understand the vast array of factors that collectively determine the level of safety of nuclear plants, both technical and human. His Department in OH became the true Centre of Excellence for nuclear safety in Canada. He has demonstrated an outstanding ability to understand the weaknesses of various safety designs, and to devise practical ways and means to correct those weaknesses, demonstrated, amply and often, both nationally and internationally. His skill in leading both individuals and organizations toward worthy goals is the hallmark of Al Brown's career.

**Ian Hastings**

Ian Hastings has been a key leader and major contributor to an extensive body of work on the basic properties and performance of CANDU fuel, and has contributed significantly to international understanding of UO<sub>2</sub> fuel performance. He was instrumental in developing and testing new and novel CANDU fuels, served as an original member of the CANFLEX fuel development team, designed and tested numerous fuel types to improve fuel performance and reactor operating margins, and made significant contributions to research reactor fuels. He is a prolific author and conference presenter, and has acted as editor for both books and journals. He is a Charter Member of the CNS and the founding Chair of the Chalk River Branch of the Society.

**Bob Tapping**

Bob Tapping is an internationally recognized leader in water chemistry, metallurgy, and component performance. His innovative research spans all reactor systems. He has a unique ability to apply mechanistic understanding of chemistry and materials degradation and to apply the knowledge to support reactor operation. He has been instrumental in the development and implementation of the SMART technology, allowing reactor engineers to anticipate and deal with issues proactively. He was selected by the US NRC to serve on an 8-member international panel to identify reactor components that could degrade in the future, and provided input for developing proactive management programs. He both inspires his colleagues and has a flair for developing young talent and supporting the interests of mature talent. He is one of the pioneers in the highly competitive field of R&D of materials degradation.

**Declan Whelan**

Declan Whelan was the senior representative of Canada's nuclear regulator for the Bruce-A reactors during their original licensing. During this period his work resulted in fundamentally important improvements to the safety of these reactors. He recognized the importance of process support systems in maintaining sufficient cooling of reactor fuel and his input prompted the development of Safety Design Matrices for analyzing the performance of such systems for their potential to contribute to accidents and their reliability in mitigating the consequences. Furthermore, he appreciated the importance of testing safety-related functions to demonstrate their effectiveness.

Declan's work on Bruce-A also contributed, indirectly, to the development of probabilistic safety assessments and to improvements to the design and operation of subsequent CANDU reactors.

#### **4. FELLOW OF THE CANADIAN NUCLEAR SOCIETY**

**CNS members who are designated “*Fellows of the Canadian Nuclear Society*” belong to a membership category established by the Society in 1993 to denote outstanding merit. This year we recognize one new Fellow:**

##### **Bill Garland**

Bill Garland has served the Canadian nuclear industry for over thirty years, and is unstinting in his assistance and sound advice to students as well as to professionals in the CANDU industry. Bill has always shown keen interest in research as well as in the education and the development of students. He has contributed to several areas of work related to education, especially his commitment to the CANTEACH information archive project, and the University Network of Excellence in Nuclear Engineering. He has also worked for many years on behalf of the Canadian Nuclear Society, of which he is a charter member. His work on the CANTEACH project has been instrumental in its emergence as a valuable contribution to sustaining knowledge of the CANDU nuclear system.

## **5. JOHN S HEWITT TEAM ACHIEVEMENT AWARD**

**This award recognizes for “outstanding team achievements in the introduction or bringing into effect new concepts or the attainment of difficult goals in the nuclear field in Canada”. We have two winners of this award: the Kincardine/OPG Team, and the McMaster Nuclear Reactor Team.**

### **The Kincardine/OPG Team**

The Kincardine Council/OPG team, through cooperation, transparency and trust, established a path forward and an opportunity to attain one of the nuclear industry’s most difficult and elusive goals: what to do with the low- and intermediate-level radioactive waste. They established a “win/win” hosting agreement that set the conditions under which the Council felt comfortable to submit a proposal to their residents, for a deep geologic repository for this waste, beneath the Bruce site. They further won the approval of the residents of the Municipality of Kincardine. Representing the Kincardine/OPG Team are: Glenn Sutton, the Mayor of the Municipality of Kincardine, and Angelo Castellan, Director, Programming and Environmental Assessment, Nuclear Waste Management Division, OPG

**The McMaster Nuclear Reactor Team**

Facing possible closure of their Nuclear Reactor, the McMaster Nuclear Reactor Team was mobilized to improve the facility's safety culture and pursue financial self-sufficiency. A process for I-125 production was successfully licensed and implemented. Based upon a sound business plan, the university continued to support the operation of MNR with an update of the SAR. Since the late 1990s, MNR has implemented safety, operating and infrastructure improvements and reached a sound commercial footing, while operating efficiently. The dedication of this team has transformed MNR into a world-class research, educational and commercial facility, where safety is the first priority. Representing this team to accept the award are: Christopher Heysel, Current Director; Frank Saunders, Former Director (now with Bruce Nuclear); Elise Herzig, Director Commercial Operations; and David Tucker, Senior Health Physicist.

## **6. EDUCATION & COMMUNICATION AWARDS**

**This award recognizes the recipients for “significant efforts in improving the understanding of nuclear science and technology among educators, students and the public”. There are 2 winners of this award: the Deep River Science Academy, and John Sutherland.**

### **The Deep River Science Academy**

In 2006, with campuses at Pinawa, Manitoba and Deep River, Ontario, the Deep River Science Academy (DRSA) marks its 20<sup>th</sup> anniversary. Since 1986, under the founding vision of Alistair Miller and John Hardy, the DRSA has provided high school students with a unique opportunity to participate in the active research and development programs of its several Research Partners. The contribution that the DRSA makes by encouraging Canadian youth to pursue careers in science and engineering has been widely recognized, most recently with the receipt of the Michael Smith Award in 2004. The success of DRSA is due to the dedication and enthusiasm of its volunteers, staff, Research and Funding Partners. Accepting the Award tonight is one of the founders of the DRSA, Dr. Alistair Miller.

**John Sutherland**

John Sutherland is an outstanding communicator who has distinguished himself by improving the understanding of nuclear science and technology among educators, students and the public. His inspiring talks are much sought after by community organizations, workshop organizers, universities, and teacher groups. His courses on Nuclear Safety and Reliability are regularly given at the University of New Brunswick and to interested groups. He is consistently praised for his ability to inspire, motivate and inform. He successfully combines the theoretical with the practical, and explodes myths around nuclear science. John is a tireless advocate for scientific truth and the promotion of nuclear energy.