

Message from the President

It's Time to Plant the CANDU Flag

As of the end of October 2011, AECL has a new owner, CANDU Energy Inc.; a pro-nuclear government has been re-elected in Ontario; Canada has a new minister of natural resources supportive of nuclear; and the Joint Review Panel's EA Report for Darlington is now with the federal government. All should be good news for moving forward with Ontario's decision to build new CANDU reactors at Darlington.



Meanwhile, anti-nuclear advocates continue to call for meeting Ontario's future base load power needs with more intermittent renewables backed by natural gas. Post Fukushima safety concerns and costs are the key drivers. A recent newspaper headline "Feds on the hook for \$360 million for sold-off AECL reactor division" highlights the latter. The article made no mention of the fact that the federal government might just have a fiduciary responsibility to protect the technology patents it holds.

Nor did the article mention the critical contribution these monies make to Canadian research and development. On November 2nd, the CBC reported that Canadian firms were slashing R&D funding. This was one of the findings from a report prepared by Canada's Science, Technology and Innovation Council. Overall, Canada invests less in innovation than key global competitors. It is worth noting that AECL was number four in Canada's top 15 corporate R&D spenders in 2011, just behind IBM.

Near the end of October, Ron Oberth, President of OCI, Ian Howcroft, VP of Canadian Manufacturers & Exporters, and John Mutton, Chair of the Ontario Nuclear New Build Council called for getting on with the Darlington project in a Toronto Star article. They highlighted the 60 plus years of clean, reliable base load electricity that would be produced as well as the significant employment that would be created.

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Approximately 9,000 of the estimated 30,000 person years of employment would be created in Ontario's manufacturing sector.

A few days later, Patrick Lammarre, the head of CANDU Energy Inc., in a speech to the Toronto Board of Trade made another key point. Romania, Argentina, China and India –all have CANDU reactors and will be in the market for more. As well, Ukraine, Turkey and Jordan and Poland are potential customers. Bottom line - the new company could use some support back home in the form of new reactors from the Ontario government. "The decision to build in Ontario would send a powerful signal to the global marketplace", he told the audience. "It would be a message of confidence heard around the world." Now is the time for the federal and Ontario government's and CANDU Energy Inc. to plant the CANDU flag.



AECL's Chalk River Laboratories Receive Licence Renewal

On October 27, 2011 the CNSC announced that it had approved a five-year operating licence renewal for the Chalk River Laboratories. Hearings on the application were held on June 8, 2011 in Ottawa and on October 4, 2011 in Chalk River. The Canadian Nuclear Workers' Council and the Canadian Nuclear Association were among the 14 intervenors at the October hearing.

During their oral presentation in support of AECL's application, D. Shier, G. Peplinski, G. Tapp and V. Frisna stressed the strong safety culture and community support evident at the facility and the importance of isotope production for medical treatments.

Ms. Carpenter, CNA's President and CEO noted during her remarks that "AECL's Chalk River Laboratories serve as Canada's national laboratory for nuclear science and technology. They provide the infrastructure and expertise to support CANDU technology. They also provide the infrastructure and expertise to support materials science research and medical radioisotope development and production, not just for Canada, but worldwide. And they are a key component of Canada's science, technology and manufacturing infrastructure." The licence renewal will be valid from November 1, 2011 until October 31, 2016.

OPG Moves Forward with Darlington Refurbishment and New Build

On October 28th, the Canadian Nuclear Safety Commission announced that it would be holding a hearing in October to consider the approval of the Scoping Information Document for the environmental assessment of OPG's proposed refurbishment and continued operation of the Darlington Nuclear Generating Station. OPG's plan calls for the refurbishment and continued operation of the four Darlington reactors until 2055. The Commission determined that a public hearing was not necessary and that the hearing would be conducted by way of written submissions from CNSC staff and OPG. The CNSC will post on its website a Record of Proceedings, including Reasons for Decision following its deliberations and decision.

In mid-September, the Joint Review Panel Secretariat provided an update by teleconference from Ottawa on the Darlington New Nuclear Power Plant Project Joint Review process to the Durham Nuclear Health Committee. Debra Myles, Panel Co-Manager for the project provided a review of the key dates and steps in the process.

On August 25, 2011, the JRP EA Report on the Darlington Project was submitted for Federal Government Response. The Report included: 67 recommendations directed to the Government of Canada, the Government of Ontario, The Municipality of Clarington and OPG; 43 recommendations directed to the CNSC for implementation at different Project licensing phases; 10 recommendations to Fisheries and Oceans Canada and Transport Canada; and other recommendations to other responsible authorities for the project. The Federal Government will issue an official comment on the next steps for the Project when their review is completed.

The Durham Nuclear Health Committee also received a progress report from OPG on the Darlington Refurbishment and Continued Operation Environmental Project.

OPG's Definition Phase for preliminary and detailed planning work is expected to be complete in 2014. Outage Preparation work will commence in 2014 and be completed by 2016, and the Outage Execution Phase is expected to start in 2016 and be completed in 3-4 years.

Progress Continues on Point Lepreau Refurbishment

On October 6th, 2011 the Canadian Nuclear Safety Commission (CNSC) held the first day of hearings on NB Power's five-year license renewal for the plant and authorization to load fuel into the reactor. Public hearings are scheduled for December 1-2, 2011 in Saint John, New Brunswick. On October 26th, the CNSC announced a new deadline for public submissions on NB Power's requests from November 7th to November 14th, 2011.

In late October, NB Power announced the successful completion of more than three-quarters of the 380 fuel

channel installations. The Refurbishment Project Team is expected to complete the re-tubing work by May of 2012. At that time, NB Power will begin to refill the moderator system with heavy water. The plant is expected to return to service and be generating electricity in the fall of 2012.

Mid month, the government of New Brunswick released its new Energy Blueprint. While the importance of the Point Lepreau plant and the underway refurbishment project was referenced, the plan makes no mention of new nuclear. An Energy Commission appointed in 2010 was given the task of developing a 10-year energy plan for the province. During the public consultation process, five energy objectives for the plan were articulated: low and stable-priced energy; energy security; high reliability standards; produce, transmit and distribute in an environmentally responsible manner; and, strengthen and expand the role of the independent energy and utility regulator.

The reports recommendations resemble the approach taken by Ontario; calling for more energy efficiency, renewable energy, and use of natural gas as a transition fuel including the economic development of shale gas resources. The Blueprint also calls for the re-integration of NB Power and lower electricity costs for big industrial users to ensure these entities remain in the province.

Refurbishment of Gentilly-2 Challenged by MSQN

On September 27th, 2011 a group called "Mouvement sortons le Québec du nucléaire" (Nuclear out of Quebec Movement) called on the Quebec government to stop the Gentilly-2 refurbishment project. The MSQN was formed following the rehabilitation announcement in 2008. The movement is dedicated to educating and mobilizing citizens and decision makers in Quebec about the projects social, economic and environmental impacts.

The protest took place in front of SNC-Lavalin's Montreal office and was attended by environmental groups like Nature Quebec and the David Suzuki Foundation. Citing safety concerns and cost overruns, the group wants to see the plant decommissioned suggesting that it will create jobs and the learned expertise can be marketed to countries that have rejected nuclear power like Japan and Germany. In addition, the group indicated that the federal government's Nuclear Legacy Liability Fund would cover decommissioning costs and site clean up.

"Like some of my fellow environmentalists, I have concluded that nuclear energy is the only source of power capable of providing pollution-free electricity on a large enough scale to replace some of the nearly 70 percent of U.S. electricity generated by fossil fuels such as coal and natural gas. Wind and solar power have their place, but they are too intermittent, expensive and unpredictable to replace big base load plants such as coal, nuclear and hydroelectric. And, hydroelectric resources, providing 8 percent of U.S. electricity, are built pretty much to capacity."

Patrick Moore [one of the founders of Greenpeace], from remarks to the Governor's Energy Conference in Richmond Virginia, October 23, 2011.

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Public Comment Requested on CNSC Fukushima Task Force Report and Management Response

The CNSC issued a press release on October 28th, 2011 requesting public comment to be submitted by December 1, 2011 on its Fukushima report. CNSC Task Force verified that Canada's nuclear power plants are safe and that there are no significant gaps in emergency planning at the provincial and federal levels. Their review focused on the ability of Canada's CANDU nuclear power plants to withstand conditions similar to those triggered by the Fukushima event.

The report did make a series of recommendations in the interest of continuous improvement and enhanced safety. The CNSC and licensees were already considering and implementing many of these recommendations as part of normal regulatory oversight. The CNSC is also undergoing an international peer review led by the International Atomic Energy Agency, which will further assess CNSC actions in response to the Fukushima event.

October A Good News Month for Bruce Power

In early October, Bruce Power's A Unit 4 set a new record for consistent production achieving a 99.5 per cent capacity factor this year. Unit 4 has been generating electricity for 267 consecutive days. It was refurbished in late 2003, as part of the world's first reactor reclamation project.

On October 17th, Bruce Power commenced a \$90 million dollar planned maintenance outage for Bruce B's Unit 5. In 2010, the unit achieved an industry wide top Pressurized Heavy Water Reactor ranking with a score of 97.7 out of a possible 100.

On the 26th of October, Bruce Power's Nuclear Response Team captured first prize at the 2011 U.S. National SWAT Championship in Tulsa, Oklahoma. Bruce Power, the only Canadian team competing in the 23 tactical unit event finished first in six of eight events. All of these events are designed to simulate real-life scenarios that test fitness, weapons skills and team organization. The events are conducted in full tactical gear and scoring is based on time and target hits. Bruce Power's team has taken first place in the last four years.

The company also achieved significant progress on the Bruce A Restart Project during the month. The last of the 960 feeder tube segments were installed in Unit 1 by mid-month marking the end of this final construction activity. While performing the work, nuclear worker radiation dose across Units 1 and 2 was 14 percent below estimates. Flow accelerated corrosion caused the removal of Unit 1's original lower feeder segments in 2008, which facilitated

automated and manual fuel channel replacement until the spring of this year.

Post feeder installation work will include the installation of fuelling machine bridges and carriages. Following this, commissioning and operations crews will work towards establishing an over-poisoned guaranteed shutdown state, which in turn will enable manual fuel loading later this fall. Another major milestone was achieved later in the month when the last of 16 Unit 2 bulkheads were removed. These bulkheads isolate the reactor vault from the station's central fuelling duct and common containment envelope. Since 2001, Bruce Power has invested \$1.5 billion in the site including the work on Units 1 and 2.

Worth Repeating....

"Speaking from a Canadian perspective, our regulator, just like the U.S. regulator, has asked the nuclear operators to review their operations and to make recommendations in any areas they think may need improvements, particularly in the area of emergency response. There may be some tougher regulations coming along that will impact the capital cost of a new plant. Obviously there is a little public apprehension but over time most of the public is recognizing that we learn from these events and each time one of these things happens our industry gets stronger and better."

*Comments by Ron Oberth,
President of the Organization of
CANDU Industries, Nuclear Power
Executive Roundtable featured in
Power Engineering, October 2011.*

Cameco Applies to CNSC for License Renewals

On August 24th, 2011 Cameco Corporation made three licence renewal applications to the CNSC for its Blind River and Port Hope fuel manufacturing and conversion facilities.

Cameco is seeking a 10-year licence term and an increase of 6,000 tonnes of UO₃ powder in its annual production limit at the Blind River Refinery. Under the current licence, Cameco can produce up to 18,000 tonnes of uranium as UO₃ powder during any calendar year.

Cameco is requesting a 10-year licence renewal for Cameco Fuel Manufacturing Inc. facility and a 5-year licence renewal term for the Port Hope Conversion Facility. The current licence for the Port Hope fuel manufacturing operation authorizes Cameco to manufacture fuel element bundles using zircaloy tubes containing uranium dioxide

(UO₂) pellets and to process and store depleted UO₂ and limited quantities of low enriched UO₂. The current licence for the conversion facility authorizes Cameco to convert uranium trioxide into uranium hexafluoride and uranium dioxide as well as to produce uranium metal.

Day One hearings for all three applications will take place on November 3, 2011 in Ottawa followed by Day Two hearings in Port Hope on January 18th and 19th. The deadline for public comments is December 19th, 2011. The CNSC has announced the availability of funding under the Participant Funding Program for parties interested in reviewing and commenting on the Cameco applications.

On September 22, 2011 CNSC experts attended a public information session in Port Hope to address any questions regarding the draft Comprehensive Study Report for the Port Hope Area Initiative and Vision 2010. The thirty-day comment period ended on October 22nd, 2011. Local press coverage indicated that only a few residents attended the information session.

In short...

New Nuclear Reactor sited in Finland

Four years of rigorous assessments have resulted in the final selection of the site of Finland's seventh nuclear power plant. Finnish nuclear power consortium Fennovoima has chosen Pyhäjoki, on Hanhikivi peninsula, as the



Courtesy of Fennovoima

location of the newest reactor. This decision, made post-Fukushima, took into consideration the solid bedrock and low seismic values of the location, among other factors such as technical feasibility, safety, environmental impact, construction costs and scheduling.

Bid invitations have been sent to Areva and Toshiba with selection of the plant design scheduled for 2012-2013, and an in-service date expected no earlier than 2020.

“Team Steeltown” takes first place at Nuclear Olympiad

Two Canadian university students, James Harrington and Alex Wolf, teamed up to place first at the inaugural International Nuclear Energy Olympiad, held this September in Seoul, South Korea. The event, promoting public acceptance for the use of nuclear power, was organized by the World Nuclear University (WNU) and hosted by the Korean Nuclear Energy

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Promotion Agency (Konepa). Ten countries were represented in the finals – Canada, India, Japan, Korea, Malaysia, Mongolia, Romania, Russia, Turkey and the United States – with each team consisting of two university students aged between 19 and 26. The teams were required to present to an international panel of judges the results of research and analysis on public opinion of nuclear energy within their home country; also looking at the work of relevant associations and future opportunities. The Canadian team recommended targeting campaigns to specific groups and preventing the spread of misinformation among the undecided majority of the public.



Courtesy of Konepa

France busy on nuclear front

French Energy Minister Eric Besson has been in the news promoting France's plans for nuclear power at home and abroad. Minister Besson has stated that plans are still being made to build a second EPR nuclear reactor at Penly, citing mandated safety testing and upcoming elections for delays in the project. Areva, a government controlled corporation, currently has four reactors under construction: Flamanville 3 in France, Olkiluoto in Finland, and Taishan 1 & 2 in China.

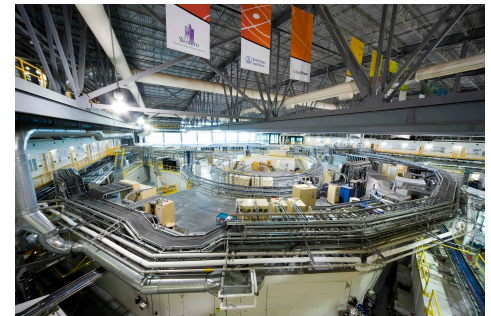
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More recently, Minister Besson signed a deal with the government of Kazakhstan committing to the construction of a nuclear fuel plant with production dedicated to the Asian market.

Investments in Nuclear

Innovation Saskatchewan and representatives from Hitachi Ltd and its associated partners, have signed two Memorandums of Understanding (MOUs) that will provide \$10 million and will support research and development into nuclear science. This builds on an existing \$30 million investment made by the federal and provincial governments for a new centre for research in nuclear medicine and materials science.

The new MOUs will make research into nuclear safety and the reclamation of unused uranium fuel rods a priority, and will study the feasibility of small reactor technologies in the province. The Canadian Light Source Synchrotron facility will research new nuclear medicines and nuclear imaging technology in collaboration with the University of Saskatchewan, University of Regina and the Saskatchewan Research Council.



Interior of CLS,

Courtesy of Canadian Light Source Inc.

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The member groups are:

CANADIAN UNION OF PUBLIC EMPLOYEES • CHALK RIVER TECHNICIANS AND TECHNOLOGISTS UNION • COMMUNICATION, ENERGY & PAPER WORKERS UNION • CANADIAN AUTO WORKERS UNION • HYDRO QUEBEC PROFESSIONAL ENGINEERS UNION • INTERNATIONAL ASSOCIATION OF FIREFIGHTERS • INTERNATIONAL ASSOCIATION OF MACHINISTS & AEROSPACE WORKERS • INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS • POWER WORKERS' UNION • PROFESSIONAL INSTITUTE OF THE PUBLIC SERVICE OF CANADA • PUBLIC SERVICE ALLIANCE OF CANADA • SOCIETY OF PROFESSIONAL ENGINEERS & ASSOCIATES • UNITED STEELWORKERS • ALLIED TRADES COUNCIL • INTERNATIONAL BROTHERHOOD OF BOILERMAKERS