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Message from the President

Canada's Nuclear Expertise Getting International Attention

During the summer of 2014, a number of developments have occurred that highlight the international community's recognition and appreciation of the value of Canada's nuclear expertise.



On July 24, SNC-Lavalin signed a formal memorandum of understanding (MOU) with the China National Nuclear Corporation (CNNC). In accordance with the terms of the MOU, SNC-Lavalin will work with CNNC to develop reactors using the Advanced Fuel CANDU technology in China. It also provides a framework for collaboration between the two companies on mining projects in China and for the pursuit of international opportunities.

On the same day, SNC-Lavalin announced that its subsidiary Candu Energy and the China Nuclear Power Engineering Co. (CNPEC) had signed a "binding and exclusive" cooperation agreement to construct and finance new CANDU units at Romania's Cernavoda plant and at Argentina's Atucha plant.

One of the items in this newsletter's *In Short* section notes that two of the consortiums bidding to be the successful GO/CO operator of AECL's Chalk River Laboratories include foreign international players in the nuclear field. Last November, Canada and Kazakhstan signed an agreement on the peaceful use of nuclear energy. On August 15, 2014, the two countries announced that the agreement was now in force with the first project being the construction of a \$200 million facility for the conversion of uranium to UF₆.

Most recently, the Organization of Canadian Nuclear Industries (OCI) announced the signing of an MOU with the Korean Atomic Industrial

Forum (KAIF). The MOU outlines the ways the two organizations will collaborate to pursue nuclear projects in Korea, Canada and in other countries.

All of these developments are good news for Canada's nuclear industry. Yet Canada's continuing success in the global marketplace requires two other conditions. First, the parties representing the interests of Canada's nuclear supply chain companies in these agreements must ensure a fair share of the jobs, R&D and high-value exports. R&D is particularly important as it underpins innovation—today's accepted path to economic success.

Secondly, our industry needs to grow in Canada. Completing the refurbishment of Ontario's nuclear reactors is a step in the right direction. The other is making investments in new build an integral element of any Canadian energy strategy. Investing in Canada's reactor technology here at home can provide reliable, affordable, low carbon baseload electricity to meet the needs of Canadians and consumers in fossil fuel dependent neighbouring jurisdictions. Nuclear units can help backstop hydropower production in adjacent provinces while lessening dependence on growing imports of shale gas. Independent studies also clearly show that such investments create tens of thousands more jobs and billions in economic benefits.

It's clear from recent developments that other countries value Canada's nuclear expertise and are making investments in it. Now is the time for our leadership to do the same.

continued...

Positive Recognition for Ontario Power Generation

On June 3, 2014 the CNSC announced its approval of OPG's request to remove the regulatory hold point for the Pickering Nuclear Generating Station. This authorizes OPG to operate the station beyond 210,000 Equivalent Full Power Hours (EPH) up to 247,000 EFPH. The current operating license expires on August 31, 2018. During the May 7, 2014 public hearing on the matter, the CNSC received and considered submissions from OPG, CNSC staff and 55 intervenors.

On the same day the Canadian Electricity Association recognized OPG as this year's winner of one of the CEA's three annual Sustainable Electricity™ Awards. OPG received the Social Responsibility Award for its work building successful partnerships with First Nations and Metis Communities. On June 4 the Corporate Knights recognized OPG as one of Canada's Best 50 Corporate Citizens.

On July 29th, the CNSC extended the power reactor operating license for the Darlington Nuclear Generating Station for twelve months. The public hearing to consider the long-term renewal of this license as well as the proposed refurbishment of Darlington's four reactors will now occur in the summer and fall of 2015.



Photo courtesy of Ontario Power Generation

On August 15, 2014 OPG reported the company's financial and operating results for the three and six months ended June 30, 2014. Highlights included higher net income for the quarter compared to the same quarter in 2013 and higher earnings on the Used Fuel Fund. The capability factor for the Darlington Nuclear Station increased to 86.7 percent compared to 85.0 percent for the same period in 2013 due to a decrease in unplanned outages during the first six months of 2014. On August 21, the CNSC Annual Assessment showed that OPG's nuclear stations continue to operate safely and to a high standard of operational excellence. The Darlington Station was the only station to receive the highest standard of "Fully Satisfactory."

Progress on Gentilly-2 Protocol

An April 2013 Protocol between the CNSC and Hydro Quebec regarding the end of commercial operation of the Gentilly 2 station outlined the licensee's main activities. Those to be addressed in 2014: the emptying and transfer of heavy water, to be completed around July 2014; removal of two pressure tubes, to be completed around August 2014; and preparations, modifications, removal of systems during 2013-2014; construction of infrastructure required for dry storage; and safe storage of the reactor, to be completed in late 2014.

On July 3, 2014, the CNSC issued a Notice of Hearing indicating that it would hold a hearing in July 2014 to consider Hydro Quebec's application to amend its operating licence for the station. HQ was requesting that

its operating licence be amended to reflect the current defueled core state and the transition to safe storage of the Gentilly-2 NGS. Requests to intervene were to be made to the CNSC by July 21, 2014.

Uranium mining in the province remains a hot issue. On August 11, 2014 the Grand Council of the Crees (Eeyou Istchee) issued a press release re-affirming its commitment to ensure a permanent uranium moratorium on its territory. In early September the Bureau d'audiences publiques sur l'environnement (BAPE) will reconvene hearings regarding the uranium industry in Quebec. BAPE is expected to table recommendations in May of 2015.

Point Lepreau Continues to Deliver

On June 11, 2014 NB Power reported that progress continued on the under way planned outage at the Point Lepreau Generating Station (PLGS). The outage that began on May 3, 2014, involves a variety of maintenance and inspection activities on the nuclear and conventional sides of the plant as well as upgrades related to fire safety and emergency preparedness.

On July 3, following completion of the planned maintenance outage, the station was connected to the New Brunswick grid. The next planned maintenance outage is scheduled to occur in 2016. On the 14th of July, Point Lepreau's Nuclear Response Force team participated in a training exercise with the Canadian Armed Forces Combat Training Center's Infantry team. The exercise was held in the vicinity of the generating station.

By August 11, the PLGS was operating at a 100 percent reactor power delivering about 660 megawatts to the New Brunswick grid, representing about 51 percent of the total net generation from the company's power stations. The reactor had performed at a net capacity factor of 90.6 percent for the month of July 2014. The monthly target for the fiscal year is 94 percent. Management noted that completion of the outage and return to full power meant that the station was well positioned to maintain reliable operations during Post-Tropical Storm Arthur.

What Others Are Saying

"More than 60% of the global power plant investments over 2014-2035 are spent on renewables while fossil-fuelled plants account for almost 30% and nuclear the remainder. Wind accounts for 34% of the expenditure on renewables followed by hydro (26%) and solar PV (22%). Coal leads the investment in fossil-fuelled plants garnering 58% of the expenditure, with gas accounting for almost all of the remainder. Around 60% of the global power plant investments are in non-OECD countries, most to meet demand while OCED countries invest in capacity primarily to replace units that retired or to decarbonize the power mix."

Source: World Energy Outlook 2014-WEIO2014 Fact Sheet 3

A Summer of Successes for Bruce Power

Bruce Power's (BP) summer bus tours began rolling on July 2, 2014. The tours are part of BP's ongoing efforts to provide information to the public about the important role nuclear power plays in Ontario. As a result of high demand and limited seating on the buses, BP announced on July 23 that it was adding two more tours per week in the month of August. The tours, which start at BP's visitors center, were initially offered on Wednesdays and Thursdays with Tuesdays now being added to the schedule.

On August 5, Bruce Power hosted a radiation seminar for community members and employees. Dr. Doug Boreham, Division Head of Medical Sciences at the Northern School of Medicine and Professor of Medical Physics and Applied Radiation Sciences at McMaster University was the guest speaker. An updated version of BP's popular iPhone app was announced on August 12. The newest version of the app will now help people calculate their carbon footprint and energy usage.

One hundred students in Bruce, Grey and Huron counties were the recipients of \$500 Bruce Power Scholarships on August 15, 2014. The winners were selected from over 300 applicants. A selection committee, comprised of 10 Bruce Power employees followed a rigorous process to select the successful candidates.

On August 19, BP received another positive report card from the CNSC. The company received a "Fully Satisfactory" mark, the highest available for its Conventional Health and Safety Program and Security functions. BP achieved 15 million hours without a Lost Time Injury in 2013. Eleven other aspects of the company were deemed "Satisfactory" for the third consecutive row.

Over thirteen years, BP's Charity Golf Tournament has raised \$1.1 million for local hospital foundations. On August 25, the company announced another successful event, raising \$125,400 dollars to be shared by the Kincardine Hospital Foundation and the Saugen Memorial Hospital.

Performance Achievements for Cameco

The CNSC announced on July 9, 2014 that it would be holding a hearing later in July to consider Cameco's application to accept the proposed Environmental Assessment Report for the Key Lake Extension Project in Northern Saskatchewan. In 2010, Cameco applied to the Saskatchewan Ministry of the Environment and the

CNSC to extend the life of and expand its Key Lake Project. Before the project can proceed to the licensing stage the EA must be accepted by the CNSC.

Cameco released its 2014 Sustainable Development Report on August 19, 2014 containing data on the company's sustainability performance. This is Cameco's fifth report and the second full report to use the Global Reporting Initiative Sustainability Guidelines. The report outlines how the company performed with respect to providing: safe, healthy and rewarding workplaces; the environment; community relations; and financial performance and governance.

The company achieved strong safety performance with injury rates trending downward at each site during 2013. There were zero significant environmental incidents at Cameco's operations. Strong community support was evident in all of the regions where the company operates. The report also demonstrated that Cameco achieved outstanding financial performance, including record annual revenue during the year.

On August 27, Cameco and the Southend Cree Community signed an economic deal. Up to 30 members of the community will attend a technical program at

Northland College and Cameco will also provide mentoring and technical support to local businesses and suppliers.

Worth Repeating....

Excerpts from "Nuclear is Key to Reducing Carbon Emissions"

"In today's carbon-constrained world, there is growing recognition of nuclear energy's role in an energy market that must be reliable, affordable and increasingly clean.

Unfortunately, due to several factors, four reactors shut down in 2013 and another is scheduled to shut down this year. Some of the contributing factors are market-distorting forces and a marketplace that has not fully valued low-carbon production and reliability...

Basing long-term energy policies on short-term energy demands is a mistake. The loss of just five reactors will raise carbon emissions by more than 40 million tons per year. In light of new regulations and the need to protect our environment for future generations, it behoves us to protect the only efficient and zero-emission source of baseload electricity we have."

Posted to Energy June 18 2014 by Gov. Christine Todd Whitman, co-chair of the Clean and Save Energy (CASEnergy) Coalition, former governor of New Jersey and administrator of the US Environmental Protection Agency, and current President of the Whitman Strategy Group.

In short...

Cyber Security A Growing Industry Concern

On August 20th 2014 Nextgov.com reported that the U.S. Nuclear Regulatory Commission had been “successfully hacked” on three occasions in recent years. The publication said it had obtained a copy of a report from the NRC’s Office of the Inspector General. The report reviewed 17 suspected breaches between 2010 and 2013. At least two of the successful attacks had originated overseas. An NRC spokesperson stated that the few attempts noted in the OIG Cyber Crimes Report were detected and appropriate measures taken.

The Canadian Nuclear Safety Commission (CNSC) and nuclear power plant operators have taken steps to address challenges in this area. The federal government has also developed and is implementing its “Action Plan 2010-2015 for Canada’s Cyber Security Strategy”.

UK Nuclear Industry Association (NIA) Launches Regeneration Campaign

The NIA predicts that decommissioning activities over the next 15 years and the UK’s nuclear new build targets to 2030 will require 140,000 workers. However, the industry is facing a major perception challenge. A recent survey of science, technology, engineering and maths undergraduates in the UK indicated

that over a third did not see a career in the nuclear industry. Although 32% of the students were open minded about working in the nuclear industry.

To address this challenge, the NIA launched a regeneration campaign in mid-August. It will build on current initiatives and collaborations involving the National Skills Academy for Nuclear and Cogent, an employer led, strategic skills body for the science industries.



Photo courtesy of Nuclear Industry Association UK

New Name for Consortium Pursuing AECL Unveiled

On July 4 2014, the consortium of Babcock and Wilcox, Cavendish Nuclear and Battelle Memorial Institute announced the new name for their organization – Innovation Canada Alliance. The consortium has been jointly bidding on the 10-year contract for AECL’s laboratories and waste management sites since the fall of 2013. If Innovation Alliance is the successful bidder as the GO-CO or government-owned, contractor-operated facilities they will focus on partnerships to help AECL grow and prosper.

The federal government of Canada announced on August 13, 2014 the first four qualified bidders. In addition to Innovation Alliance, the other three include: the Canadian Nuclear Energy

Alliance – a consortium of Energy Solutions, CH2M Hill, Lockheed Martin and SNC Lavalin; the Canadian Nuclear Revitalization Partners; and the Northern Nuclear Laboratories Alliance. Public Works and Government Services Canada are expected to issue a “request for information” (RFI) this fall with the final decision on the successful bidder anticipated to occur in 2015.



Chalk River Laboratories,

Photo courtesy of Atomic Energy of Canada Limited, Chalk River Laboratories.

MOX Fuel Powers Dutch Reactor

On July 1, 2014 the 482 MW Borssele Boiling Water Reactor in the Netherlands began using plutonium-uranium mixed oxide fuel (MOX). The reactor is licensed to operate with a 40 percent MOX share. Currently eight assemblies of MOX have been loaded with another 12 assemblies planned from 2015 onwards. The licence limit allows for a further 36 MOX fuel assemblies. This is the first time MOX fuel has been used in the 41 year-old reactor one of the oldest operating reactors in the world.

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The member groups are:

Canadian Union of Public Employees (Locals 1500, 4250, and 967) • District Labour Councils (Grey/Bruce, Durham, Northumberland) • International Association of Firefighters (160) • International Association of Machinists & Aerospace Workers (608) • International Brotherhood of Electrical Workers (37) • Power Workers’ Union • Hydro Quebec Professional Engineers Union • Professional Institute of The Public Service • Society of Energy Professionals Union • Society of Professional Engineers and Associates Union (Candu Inc.) • UNIFOR (The Union for Canada) (S-48, O-599, & O-252) • United Steel Workers (14193, 13173, 8562, 8914, & 7806)