

Message from the President



A Responsible Approach to Managing Nuclear Waste Materials

The recently completed Joint Review Panel hearings for the Deep Geological Repository for Low and

Intermediate Level Radioactive Waste (DGR) garnered significant public profile. Project opponents continue to express concerns about potential safety and environmental impacts associated with the proposed facility.

Similar concerns exist with respect to the efforts of the Nuclear Waste Management Organization's (NWMO) efforts to site a facility for the long-term care of Canada's used nuclear fuel.

Yet both processes have been underway for more than a decade and exemplify openness and transparency and are based on comprehensive, expert analyses concerning public safety and the environment. Both are required by rigorous regulatory requirements involving a multitude of federal and provincial authorities.

Ontario Power Generation (OPG) has been safely transporting, processing and storing nuclear waste for more than four decades. This includes the operation of three facilities for the management of interim nuclear waste generated by OPG's ten nuclear reactors and Bruce Power's eight nuclear reactors.

The DGR facility would be located on lands adjacent to OPG's Western Waste Management Facility near Kincardine, Ontario. About 200,000 cubic metres of low and intermediate waste would be safely stored in 450 million year old stable rock formations 680 metres below the surface. The project has the support of the host municipality and OPG has set aside \$12.5 billion

in secure, well-managed trust funds for this purpose.

The NWMO was established in accordance with the *Nuclear Fuel Waste Act* passed in 2002 by the Canadian Parliament. The NWMO was required by this legislation to develop collaboratively with Canadians "a management approach for the long-term care of Canada's used nuclear fuel."

Following extensive public consultation and outreach the NWMO adopted an "Adaptive Phased Management" siting process that seeks voluntary expressions of interest from communities willing to host this long-term management facility and provides guarantees allowing them to withdraw from the process. A senior professional staffer with the U.S. Nuclear Waste Technical Review Board describes the NWMO process as the "gold standard" today.

It is clear that in spite of these best and leading efforts that public concerns about the future management of nuclear waste persist. A 2004 Report "*Learning and Adapting to Societal Requirements for Radioactive Waste Management*" by a Nuclear Energy Agency Committee stressed the importance of promoting interactions between various stakeholders and experts and constructive and high quality communication between individuals with different knowledge, beliefs, interests, values and worldviews. That's why three of the CNWC's members appeared at the September DGR Joint Panel Review hearings in Kincardine. We know the industry and its focus on safety first. It is our collective responsibility to help address these challenges.



continued...

Point Lepreau Reactor Capacity Factor on Track

In early September, NB Power reported that the Point Lepreau Generating Station (PLGS) had operated at 100 percent reactor power during the month of August with a net capacity factor of 99.51 percent. Capacity factor is the megawatt-hour output of a generating station compared to the maximum that it could produce.

On October 6, 2014 the company reported a net capacity factor of 99.66 percent had been achieved for the month of September. This strong operating performance was maintained during the month of October, with PLGS achieving a net capacity factor of 99.59 percent. As of November 5, 2014 the Station had been online for 126 consecutive days following the successful maintenance outage in early summer.

At the end of September, NB Power filed its 10-year strategic, financial and capital investment plan with the New Brunswick Energy and Utilities Board. The plan lays out three strategies: achieve consistent performance within the top 25 percent of utilities in North America; reduce debt by \$1 billion and achieve an 80/20 debt-equity ratio by 2021; and reduce and shift in-province demand for electricity that will defer the need for new investments in generation while optimizing the electrical system. The plan assumes a 91.5% annual capacity factor for PLGS over the period 2016 to 2025. Biannual maintenance outages at the Station are also assumed.

An October 4th, 2014 editorial in the *Telegraph-Journal* noted that NB Power's plan listed 26 different electricity options. It went on to say, "Among the options we believe the utility should focus on considering a possible second reactor at Point Lepreau."

Uranium Mining, Not Gently 2 in the Spotlight

Work continues to place the Gently 2 nuclear station in a state of safe shutdown in accordance with the Protocol between the CNSC and Hydro Quebec. Some journalists continue to promote the decision to close the station. An October 7th article in the *Nouveliste* (Trois-Rivieres) complimented the environmentalists who lobbied for the decision while continuing to highlight the cost savings resulting from it.

Public opposition to uranium mining in "La belle" province remains a major issue. Since its September hearings began, the Quebec government appointed Bureau d'audiences publiques sur l'environnement (BAPE) has received a total of 1500 submissions. Two uranium mining projects are at the centre of controversy—one in Sept Îles and the other 275 km north of Chibougamau. In addition to environmental groups, the Grand Council of the Crees is opposed to any uranium mining in Quebec. Cree Grand Chief Mathew Coon Come is currently launching a world tour to mobilize international experts against uranium mining exploration in the province. The final phase of the BAPE hearing process concluded in Eeyou Istchee following meetings in Chisasibi, Mistissini

and Chibougamau on November 13, 2014. Recommendations from BAPE are expected in mid 2015.

Solid Performance for Cameco Continues

In late August, Cameco suspended production at the McArthur River mine and Lake mill operations due to a labour dispute with the United Steelworkers Local 8914. On September 12th, 2014 the company announced that a tentative collective agreement had been reached. On October 6th the company announced that a new four-year contract had been secured.

Two days later, on October 8th Cameco announced that the McClean Lake mill had started producing uranium concentrate from ore mined at the Cigar Lake operation. This ore is trucked about 70 kilometres to AREVA Resources Canada's McClean Lake mill for processing. The mill is expected to produce up to 1 million pounds of uranium concentrate from Cigar Lake in 2014 and reach a full production rate of 18 million pounds by 2018. Cameco's share is 9 million pounds.

On October 29th, Cameco reported its consolidated financial and operating results for the third quarter ended September 30th, 2014. The company confirmed its annual uranium sales outlook noting that the market remains in a state of surplus due to factors such as the lack of reactor restarts in Japan. The long-term outlook remains positive with about 70 new reactors under construction worldwide and more in the planning stage.

Cameco announced on November 4th, 2014 that for the sixth consecutive year, the company had been named one of *Canada's Top 100 Employers*. This national competition acknowledges Canadian companies and organizations that are considered to lead their industries in offering exceptional workplaces for their employees.

What Others Are Saying

"The IPCC is clear in asserting that we risk serious disruption to our climate and our economics unless we increase the use of low carbon technologies, including nuclear energy. It is time for those countries who have committed themselves to taking action on climate change to deliver a low carbon energy sector."

"Nuclear is a cost-effective way of producing reliable low-carbon, electricity on a large scale and must form an increasing part of the solution if the world is to get serious about reducing its dependence on fossil fuels."

"A tripling or quadrupling of low carbon electricity generation, including nuclear energy, is required by most of the scenarios considered by the IPCC that avoid the worst effects of climate change"

Statement by World Nuclear Association Director General Agneta Rising, October 31, 2014 regarding the Synthesis Report, the final publication of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

Bruce Power; Good for the Community and Province

On September 10th, Bruce Power (BP) was awarded a gold level certification from the Canadian Council for Aboriginal Business (CCAB). The award was given in recognition of BP's excellence in Aboriginal Relations. BP is one of only 12 companies in Canada to receive the CCAB's highest-level award.

Seven days later, the company announced that Unit 5 at the Bruce Nuclear Power Complex had surpassed 500 days of continuous service. Three of Bruce B's four units have exceeded 500 days of uninterrupted service since the company was formed in 2001.

On October 6th, 2014 BP indicated that it would be investing \$87.7 million in planned maintenance for Unit 5 after a 516-day run. The planned 50-day outage began on October 3rd. During the outage, BP will harvest about 25 rods of Cobalt-60 from the Unit 5 reactor. MDS Nordion of Ottawa will use the Cobalt-60 to sanitize medical instruments in hospitals.

A coalition of business, economic development, trades and union leaders released an Economic Impact Study, "Affordable Power. Jobs & Growth." on October 17th that outlined the positive role that the BP site plays in Ontario. The Provincial Building and Construction Trades Council of Ontario, Southwest Economic Alliance, Canadian Manufacturers & Exporters, the Society of Energy Professionals, the Power Workers' Union and Bruce Power jointly authored the Study, which highlights the importance of refurbishing the remaining six BP units. Besides helping to reduce carbon emissions and power prices stable over the long-term, these investments would create and sustain 18,000 jobs and \$4 billion in economic activity per year. The Study can be found at: http://www.brucepower.com/wp-content/uploads/2011/04/140368_EconomicImpactStudy-5med.pdf

In response to the death of two members of Canada's Armed Forces during the second last week of October, BP employees raised over \$15,000 for Helmets to Hardhats (H2H). This non-profit organization helps Canadian veterans and reservists transition to civilian life by providing apprenticeship opportunities in the building trades.

OPG Tackling Key Challenges

On September 18, 2014 the Joint Review Panel for the Deep Geologic Repository Project for Low and Intermediate Level Radioactive Waste (DGR) concluded two weeks of public hearings in Kincardine, Ontario. During the hearings, the Panel heard 68 formal presentations as well as several brief oral presentations. Opposition to the DGR project includes a number of environmental groups and several Ontario municipalities

as well as some in Michigan and some state level politicians. The Power Workers' Union, the CNWC and the Society of Energy Professionals made presentations in support of OPG's proposal. Any closing remarks by the participants were due to the Panel by October 9th. Following a review of the closing remarks, the Panel will determine if it requires additional information before proceeding with the preparation of its Environmental Assessment Report (EAR). Within 90 days of the close of the record, the Panel will submit the EAR to the Federal Minister of the Environment.

On October 30th, Ontario's Energy Minister Bob Chiarelli officially opened OPG's new Darlington Energy Complex. The facility will help support the company with the intensive planning and preparation required to ensure the successful refurbishment of the Darlington nuclear units. Refurbishment is expected to start in the fall of 2016. On November 4th, 5th and 8th, about 3,500 members of the public had their opportunity to see the new complex and its full-scale mock-up of a replica nuclear reactor.

A September 25th, 2014 Mandate letter from Ontario's Premier to Minister Chiarelli

calls for him to work with OPG and Bruce Power to ensure that the crucial refurbishment of 10 nuclear units at Darlington and Bruce generating stations over the next 16 year is completed efficiently and effectively. OPG's world class Nuclear Refurbishment Training Facility is intended to help achieve this outcome by ensuring that workers are fully trained and that required tools are fully tested and or developed.

Worth Repeating....

"Ontario wisely chose to build an electrical system that is emissions-free. This study shows that nuclear energy is a better environmental choice than either wind or natural gas.

Natural gas is a fossil fuel. To produce the same amount of electricity, a natural gas plant typically emits about 25 to 30 times as much greenhouse gas (GHG) as a nuclear plant.

The combination of wind-plus-gas generates about 20 times more greenhouse gas than does nuclear. That's why nuclear energy offers far more environmental benefit than the combination of wind and gas power.

The implications for our energy policy are very clear. Nuclear energy out performs wind as a source of clean electricity for Canadians."

Quotes: Dr. John Barrett, President of the Canadian Nuclear Association (CNA) in an October 8th, 2014 press release. Dr. Barrett was responding to an independent study by Hatch Ltd that reviewed a wide range of studies comparing the GHG performance of wind, gas and nuclear energy. The study was commissioned by the CNA.

In short...

House of Commons Passes Bill C-22, Energy Safety and Security Act



The Honourable Greg Rickford

On November 8th, Canada's Minister of Natural Resources, the Honourable Greg Rickford announced the passage of new legislation that will enhance the safety and security of Canada's offshore and nuclear energy industries.

The legislation increases the absolute liability limit to \$1 billion for offshore and nuclear companies. The Act will now go to the Senate for their consideration.

Japan's Nuclear Restart—Bad News for Oil But a Boon for Uranium

Media reports in early October reported that Japan's plan to restart its nuclear reactors would punish oil imports as Japanese utilities closed high cost, aging oil-fired plants. Most of these oil-fired facilities are over forty years old. In some cases Japanese utilities switched to cheaper coal. As well, imports of liquid natural gas (LNG) for power generation and other uses reached a record 87.73 million tonnes last year – Japan takes about a third of global LNG shipments.

On November 8, 2014 the *Edmonton Journal* reported that uranium prices

and producers' shares soared following Japan's decision to restart the first of its nuclear reactors. The price of U₃O₈ rose 4.3% to \$39.50 a pound, the biggest gain since March 2011. Cameco share prices increased 11 percent, Denison Mines to 20 percent and Fission Uranium Corp 18 percent.

Candu Energy's AFCR Technology Gets the Nod in China

On November 5th, an Expert Panel of Chinese nuclear experts released its review of Candu Energy's Advanced Fuel CANDU Reactor (AFCR). The twenty two member panel from both industry and academia concluded that the "AFCR technology forms a synergy with China's existing pressurized water reactors and is positioned to promote the development of closed fuel cycle technologies and industrial development."

The AFCR can be fuelled by re-using spent fuel from China's light water reactor technology. This reduces spent fuel volume and China's dependence upon imported uranium. On November 10th, Candu Energy, signed a joint venture agreement with the China National Nuclear Corporation to build nuclear reactors in China.

Canadian Nuclear Laboratories Launched

On November 3rd, 2014, Atomic Energy of Canada Limited (AECL) introduced the opening of its



Canadian Nuclear Laboratories
Laboratoires Nucléaires Canadiens

wholly owned subsidiary to be called Canadian Nuclear Laboratories (CNL). This represents another stage in the federal government's restructuring of AECL.

The corporate headquarters and core R&D operations will remain at Chalk River. The new organization will focus on three key areas: managing the radioactive waste and decommissioning activities associated with more than 60 years of nuclear R&D; providing nuclear science and technology capabilities in support of federal responsibilities; and providing nuclear science and technology facilities and expertise on a commercial basis to Canada's nuclear industry.

The next step in the process is expected in late 2015 when CNL will become a private-sector entity and AECL will become a small Crown corporation focused on the management and oversight of the contract with the private-sector entity.



Photo courtesy of Canadian Nuclear Laboratories

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Tel: 705-725-3902

e-mail: dshier@cnwc-cctn.ca

Contributions should be sent to the above address.

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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)