CANADIAN NUCLEAR WORKERS COUNCIL
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Canadian Nuclear Worker

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National Director's Message

Responsible "Cradle to Grave" Management

We know that all forms of energy production produce waste, whether it be nuclear, hydropower, coal, natural gas, wind, solar, storage batteries, etc. Our industry has one of the best waste management programs anywhere in the world.

The track record of Canada's nuclear industry is exceptional for both radiation and conventional safety. In fact, no other Canadian electricity generation source can lay claim to such a record.

The Canadian Nuclear Safety Commission licences and regulates all waste management facilities in Canada. Used fuel is safely and securely stored in water filled bays and dry storage containers at nuclear station sites and managed by the utilities that own them. Low and intermediate nuclear waste is stored at OPG's Western Waste Management Facility. Low-level waste is sorted and stored as is, or compacted and incinerated. This processed waste is then stored in above ground concrete warehouses. Intermediate waste is stored in steel-lined containers.

Bottom line, Canada has safely managed used nuclear fuel and radioactive wastes for more than four decades. Plans and legislated funding are also in place to manage both in the short and longer-term.

The Nuclear Waste Management Organization was formed in 2002 to determine a long-term management solution for used fuel. They are moving forward with an Adaptive Phased Management Approach to select a safe and secure site for the centralized containment and isolation of used fuel in a suitable rock formation. OPG is also pursuing a Deep Geologic Repository, an internationally accepted best practise for the permanent storage of nuclear waste.

These efforts are supported by domestic and multi-national research efforts to find the best ways to recycle the fuel and improve decommissioning and waste management practises. CNL's recent announcement about establishing a Centre for Reactor Sustainability is an example.

All of this is based on the best available science and extensive public consultations.

Labour Update

Cameco's McArthur River Mine and Key Lake Mill Shutdown:

- Cameco indicated on July 25, 2018 that it was extending the shutdown for an "indeterminate duration".
- About 550 site employees will be affected.
- USW's Local 8914 has been negotiating terms with the company since its' Collective Agreement for the two locations expired December 31, 2017.
- The transition date from temporary layoff to permanent layoff is November 15, 2018.
- Cameco is currently preparing letters to be mailed to employees that will indicate whether they will be entering permanent layoff, or be placed on a recall list or be working care and maintenance post the November date.
- About 103 persons will be working on care and maintenance at both sites with another 45 working for the catering company.

Aerial view of Cameco's Key Lake Mill, Courtesy of CNSC

Bruce Power Powers through Summer

On July 12, 2018 Bruce Power and BWXT signed a development agreement to supply medical isotopes to be used for cancer treatment. The agreement is focused on identifying market opportunities and Bruce Power's capabilities for providing these services to BWXT. Both companies are part of the recently established Canadian Nuclear Isotope Council set up to ensure Canada remains a world leader in isotope production.

Bruce Power announced on August 16 that its Life-Extension Program was creating more jobs and investment in Grey County. BWXT Canada and Brotech Precision CNC will be opening manufacturing facilities to make nuclear components in Owen Sound creating about 50 jobs. On the last day of August, Bruce Power announced that it had reached an isotope milestone, as medical-grade Cobalt was being placed in Unit 8 on September 1. With this placement all four Bruce B units will be producing High Specific Activity (HSA) Cobalt to treat brain tumours around the world. The milestone received recognition from the Hon. Greg Rickford, Ontario's Minister of Energy, Northern Development and Mines, the Hon. Lisa Raitt, MP for Milton and Ben Lobb, MP for Huron-Bruce.

Over this past summer, more than 5100 people toured the Bruce Power site by bus. The company announced on September 4, that the program, in its fourth year, continues to break records. The CNSC delivered the best news on September 27, announcing that Bruce Power had received a 10-year renewal of its Power Reactor Operating Licence. As part of the Licence application process, the CNSC held a two-part public hearing, which included a four-day public hearing in Kincardine in May of this year. Over 100 intervenors participated via presentations and letters to the CNSC.

Bruce Power Visitor Centre

On October 3, the company announced that Bruce Power employees had collected $7,800 for the Canadian Red Cross relief efforts in the Ottawa-Gatineau region. The area was devastated by recent tornadoes that destroyed homes and businesses.

Point Lepreau Achieves Operational and Performance Results

On August 1, the Point Lepreau Nuclear Generating Station (PLNGS) returned to service from a planned maintenance outage begun on May 31. Throughout the first quarter of the 2019 fiscal year the plant operated for 37 days at high power.

Two days later, NB Power released its *2017/18 Annual Report* recording earnings of $23 million for the fiscal year 2017-2018. The associated press release noted that, "NB Power's investment in maintenance and reliability are showing positive results with Point Lepreau recording its best operational and performance results since 1994".

Synergy Challenge 2018

On August 29, the company announced it would be undertaking a full-scale nuclear emergency exercise planned over two days in October. The Synergy Challenge, a multi-tier and multi-jurisdiction event will be conducted by NB Power and the New Brunswick Emergency Measures Organization and involve about 1000 people from more than 35 agencies and organizations. The province's last full-scale exercise, called Exercise Intrepid, was held in 2015. NB Power and the Canadian Nuclear Safety Commission held a demonstration and technical briefing for the media at PLNGS on September 28 in preparation for the Synergy Challenge. The two-day test of emergency preparedness and response capabilities ,a requirement of the CNSC, was held on October 3 and 4.

Worth Repeating

"Nuclear: A Part of Canada's Energy Transition

…The Canadian nuclear industry fully supports the spirit of the Report, and much of the advice. However, the industry would like to emphasize the greater role that nuclear energy can have in leading the energy transition. Below are four ways in which nuclear can contribute to an energy future that is affordable, reliable and clean.

1. Small modular reactors for resource extraction, energy to remote communities and grid power …Establishing a leadership position early would enable Canada to secure a significant share of the projected $400-600 billion global market for SMR technology.
2. Nuclear energy to produce hydrogen for fuel and energy storage Not only can nuclear energy provide clean heat and electricity, it can also be used to produce hydrogen…
3. New nuclear power reactors for on-grid power… Nuclear energy is the largest source of clean energy after hydro, providing approximately 15% of Canada's electricity, and 60% of Ontario's electricity…
4. Social and economic advantages of a strong nuclear industry in Canada Through clean nuclear energy generation in Ontario (60%) and New Brunswick (30%), radioisotope production for nuclear diagnoses and therapy, and numerous other technology applications throughout the country, the Canadian nuclear industry is an undeniable source of revenue, jobs and economic prosperity. The nuclear industry employs 60,000 Canadians directly and indirectly…"

Source: *Canadian Nuclear Association Response to the federal government's Generation Energy Report,* August 10, 2018

Cameco Receives Some Positive News

On July 25, the company reported its consolidated financial and operating results for the second quarter ended June 30, 2018. Continuing weakness in uranium markets is negatively affecting Cameco's bottom line. The company remains focused on drawing down inventory and making operational efficiency improvements. At this time, there are no plans to restart McArthur River and Key Lake. Plans to restart these facilities will not be made until Cameco's production is under long-term contracts that provide an acceptable rate of return.

The company announced on September 26 that the Tax Court of Canada had ruled in favour of Cameco's dispute of the Canada Revenue Agency's (CRA) reassessments for the tax years, 2003, 2005 and 2006. The matter was referred back to the Minister of National Revenue to issue new reassessments for those years. The CRA has a 30-day time period in which to appeal. Such an appeal could take up to two years for the matter to be considered by the Federal Court of Appeal. Cameco will be applying to the court to recover the substantial costs incurred for this case.

On the same day, Cameco submitted comments to the U.S. Department of Commerce (DOC) Section 232 Investigation. The DOC issued a request for comments into whether uranium imports threaten to impair U.S. national security under Section 232 of the Trade Expansion Act. With operations in both Canada and the U.S., the company's submission will contend that its uranium does not impair national security. The U.S. is Cameco's biggest customer by country – about 30% of its total 2017 sales by volume were to American utilities.

What Others Are Saying

"3. Leverage Ontario's nuclear sector

Ontario's nuclear fleet is one of its key advantages. Not only does the nuclear industry contribute to the economy by providing less costly and more reliable electricity, it creates jobs across Ontario, it has a high-tech supply chain and contributes to health research and innovation through the development of critical isotopes.

To best leverage this advantage, your ministry should:

- Complete the Darlington Nuclear Generating Station Refurbishment…
- Move forward with the Bruce Power Life-Extension Project…
- Promote Ontario's nuclear expertise domestically and abroad…

For more information, see Pickering Continued Operations: An Impact Analysis on Ontario's Economy and our letter to the federal Minister of Innovation, Science and Economic Development."

Source: *Letter from the Ontario Chamber of Commerce to the Honourable Greg Rickford, Minister of Energy, Northern Development and Mines*, July 16, 2018

OPG Continues Solid Performance on Darlington Refurb

On June 13, OPG released its Q1 Performance Report for the Darlington Refurbishment Program highlighting the halfway mark for Unit 2 and the green light for Unit 3. All 960 end fittings, 480 pressure tubes and 480 calandria tubes were removed from Unit 2. Work commenced installing new and refurbished components in the unit. Project pillar performance – cost, schedule, safety, quality and environment – was positive. The Unit 2 reassembly phase is expected to be complete by summer 2019.

A new collaboration between OPG and BWX Technologies, Inc. (BWXT) regarding the production of molybdenum-99 at Darlington was announced on June 20. This will be the first large scale commercial nuclear power station in the world to produce this critical medical isotope.

OPG outlined its multiple efforts to help fill the gap in skilled trades for the Darlington Refurbishment in a July 26 press release. Working with the Electrical Power Systems Construction Association, the company identified a gap in skilled trades capacity including: boilermakers, millwrights, pipefitters, electricians and carpenters over the next five to 10 years. OPG also recently introduced an Indigenous Opportunities in Nuclear Program to help fill this gap.

OPG announced on August 8, that the CNSC had granted a 10-year operating licence for the Pickering Nuclear Generating Station. The licence will be valid from September 1, 2018 until August 31, 2028. The station will operate until the end of 2024 and them move to safe storage between 2024 and 2028.

On August 27, OPG and Bruce Power released their 2018 collaborative report, "*Powering Ontario Together*", which highlights collaborative initiatives intended to drive efficiencies and lower the costs of the refurb projects at Darlington and the Bruce.

OPG's Q2 report on the Darlington Refurbishment project was released on September 26 indicating that the reassembly of Unit 2 was past the half-way mark. In addition to the work on the reactors, steam turbines are also being refurbished. OPG will be hosting an Open House at the Darlington Energy Complex on October 27.

Turbine spindle lift underway for Unit 2 refurbishment, Darlington Nuclear Generating Station. Courtesy of OPG.

In short…

Holtec Finalizes Decommissioning Contracts with Entergy Corp

On August 1, 2018 Comprehensive Decommissioning International, LLC, (CDI) finalized two discrete multi-year decommissioning contracts with Holtec International. Previously, Holtec International had signed decommissioning agreements with Entergy Corp for its Massachusetts Pilgrim Nuclear Station and the Michigan Palisades Power Plant. Holtec International is a privately held energy technology company with operations in Florida, New Jersey, Ohio, Pennsylvania, Brazil, Dubai, India, South Africa, Spain, UK and Ukraine.

CDI, a joint company formed earlier this year with SNC-Lavalin and Holtec International is focused on performing accelerated retired nuclear power plant decommissioning with innovative technologies. The goal is to cut the total elapsed time to release sites for unrestricted used to eight or fewer years. Only spent fuel would be left on site pending regulatory approval.

BWXT Acquires Sotera Health's Nordion Medical Isotope Business

Lynchburg, Virginia-based BWX Technologies Inc announced the purchase of Sotera on August 6, 2018. BWXT employs about 1250 people in Ontario and British Columbia.

At the beginning of October, the company was chosen by NuScale Power to refine the company's small modular reactor (SMR) design. During this first manufacturing phase, BWXT will use Pennsylvania-based Precision Custom Components. The remaining two phases of the contract – preparation for fabrication, and fabrication, will be contracted at a later date.

NuScale's self-contained 50 MW SMR design houses the reactor core, pressuriser and steam generator inside a single containment vessel. NuScale's SMR is undergoing design certification review by the US Nuclear Regulatory Commission (NRC), the first SMR to do so. Application approval is anticipated in the fall of 2020. Utah Associated Municipal Power Systems (UAMPS) is planning the development of a 12-module NuScale plant at a site at the Idaho National Laboratory, with deployment expected in the mid-2020s.

Brookfield Completes Westinghouse Purchase

Brookfield Business Partners L.P. with institutional partners completed the purchase of Westinghouse Electric Company's nuclear technology, fuels and services on August 1, 2018. Previously, Westinghouse (owner Toshiba Corp) had been in Chapter 11. With the closure of the transaction, the company has emerged as a reorganized company.

The new company will be focused on capitalizing on its global footprint. Brookfield Business Partners is the flagship listed business services and industrials company of Brookfield Asset Management Inc. The latter is a leading global alternative asset manager with approximately $285 billion of assets under management. About $150 billion is invested in the U.S.

On September 18th, Brookfield indicated it was in talks with Toshiba Corp for the purchase of its UK nuclear unit NuGen. The project in Moorside, northwest England is expected to deliver about seven percent of Britain's electricity.

SNC-Lavalin Wins Chinese Recycled fuel Contract

On August 8, 2018 SNC-Lavalin was awarded the first commercial contract to use the recycled fuel – a mixture of depleted and recycled uranium – for two units at the Qinshan Phase III nuclear power plant. The contract, signed with China National Nuclear Corporation marks the first commercial use of the fuel.

SNC-Lavalin indicated that only a few changes are required to the current operating Candu designs, safety parameters and licensing case to use the 37 Natural Uranium Equivalent (NUE) fuel.

Terrestrial Energy USA Partnership To Produce Hydrogen

On September 5, 2018 a partnership was announced involving Terrestrial Energy USA, the developer of the generation IV Integral Molten Salt Reactor, Southern Company and several U.S. Department of Energy laboratories. The two-year R&D partnership will focus on cleaner and more efficient ways of producing hydrogen from nuclear heat and power. The hydrogen market is expected to represent a $200 billion business by 2020.

In July, Terrestrial Energy announced the signing of an agreement with Montreal-based, L3MAPPS to develop real-time simulation of its Integral Molten Salt Reactor.

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The Canadian Nuclear Workers Council is an organization of workers represented by unions working in various areas of the Canadian nuclear industry which includes uranium mining, nuclear fuel processing, nuclear power stations, radio isotope production for medical and industrial purposes, and nuclear research.

The member groups are:
District Labour Councils (Grey/Bruce, Durham, Northumberland) • International Association of Firefighters (160) • International Association of Machinists and Aerospace Workers (608) • International Brotherhood of Electrical Workers (37) • Power Workers' Union • The Professional Institute of The Public Service of Canada • Society of Energy Professionals Union • Society of Professional Engineers and Associates Union • UNIFOR (The Union for Canada) (S-48, O-599, & O-252) • United Steelworkers (14193, 13173, 8562, 8914, 7806 & 1568) • International Federation of Professional & Technical Engineers Union • Provincial Building and Construction Trades Council of Ontario • International Union of Operating Engineers