

The 2022 Canadian Nuclear Year in Review



ORGANIZATION OF CANADIAN
NUCLEAR INDUSTRIES



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Bill Walker

President & Chief Executive Officer
Organization of Canadian Nuclear Industries



**Thank you so much for
being part of the OCNI
community in 2022!**



As we come to the end of 2022, it is an opportunity to reflect on all the work achieved in partnership and collaboration with OCNI members, industry partners, and loyal friends. Without such commitment, support, and participation from everyone, we would not be able to achieve all we do collectively.

2022 saw a significant return to the new normal and many more face-to-face interactions. It also shone a light on nuclear and the role our industry plays in the world, and will continue to do in future as we strive to achieve climate and net-zero goals.

OCNI proudly continues to strive to deliver excellence through events, programs, partnerships, and community engagement that have strengthened the Canadian nuclear supply chain for the future. We continue to explore opportunities both domestically and internationally through our trade missions, as well as in Atlantic Canada and Western Canada as the reality of placing SMR's becomes closer to reality.

To you, the members, our sincere appreciation for your support of the association and the pride you demonstrate at being members of a clean-energy community that positively impacts our homes, our jobs and our health. We look forward to having you continue this journey with us in 2023 and beyond.

It is our hope that you take time to reflect and recharge with family and friends. As part of your reflection and your vision for the new year, we welcome you to take read of our holiday mailer "The 2022 OCNI Christmas Season Review." Season's Blessings and wishing you the very best in the New Year!





Mike Rencheck

President & Chief Executive Officer

Bruce Power

BrucePower™
Innovation at work



What is a holiday tradition that you are looking forward to doing?

At Bruce Power, we engage in a number of events to raise money for food banks, support the less fortunate, and conduct toy drives for children in the Grey, Bruce, and Huron counties. It's a way of giving back for all of the blessings that we have. Most importantly we give thanks to all those that work with us to power the future and secure tomorrow.

What is Bruce Power celebrating for 2022? :

Bruce Power is proud of the role it plays in delivering clean, reliable, and affordable electricity while producing life-saving medical isotopes used in the fight against cancer and sterilization of medical devices. This year, Bruce Power was awarded WANO and INPO industry excellence awards at Bruce A and Bruce B for the first time ever. The Unit 6 Major Component Replacement project reached a critical milestone in completing the re-assembly of the calandria. The company also saw the installation of a new Isotope Production System (IPS) in partnership with Isogen (a Framatome and Kinectrics company), marking the first-of-its-kind achievement of a commercial power reactor with the additional capability to commercially produce short-lived medical isotopes. We are proud of our collaboration called Gamzookamin-akazawin with the Saugeen Ojibway Nation (SON), which includes an equity stake for SON and a revenue-sharing program that provides a direct benefit to the community, for the marketing of current and new isotopes produced through the IPS.

What is motivating Bruce Power for 2023?

Our employees are motivated by the positive impact we have on our environment and communities.

In 2023, Bruce Power's Major Component Replacement Project will see Unit 3 come offline for its planned Major Component Replacement in the first quarter, while Unit 6 will be returned to service in the fourth quarter.

These are important milestones in our Life-Extension program, which will secure the site's operation to 2064, while securing tens of thousands of good quality jobs and playing an integral role in reaching Net Zero goals in Ontario. By 2034, following completion of the Life-Extension Project, the output of the facility would result in the avoidance of 15 million metric tonnes of CO2e per year from carbon emitting sources.



What is CNA celebrating for 2022?

2022 was a banner year for Canada's nuclear industry. We saw the Canadian federal government finally recognize nuclear power as "clean energy". This is a major step because it puts nuclear energy on par with other clean technologies, like renewables and hydrogen, as essential to Canada's clean energy future. We also saw the Canada Infrastructure Bank (CIB) invest \$970 million in Ontario Power Generation's project at Darlington to develop the country's first commercial, grid-scale SMR. This is a substantial investment that signals the government's confidence in the commercial viability of SMRs and acknowledges the importance of building a domestic SMR supply chain. At the same time, we celebrated the lifetime extension of Pickering Nuclear Generating Station, not to mention possible refurbishment. Lastly, following significant engagement with the government over the course of the year, we are very happy that SMRs were included in a new Clean Energy Tax Credit. There is clear momentum when it comes to international support for nuclear energy, and it's great that Canada is taking the lead with nuclear research and technology development.



What are you most looking forward to indulging in over the holidays?

Leigh and I have a yearly tradition of hosting our extended family for a Christmas feast. Our son and daughter are also involved in the preparation and cooking, so this time is always precious. It's also hectic and sometimes hilarious as we try to get everything ready by the time our guests arrive. If you're at all familiar with the late Stuart McLean's story on the Vinyl Café about the holiday turkey, then you have a pretty good idea of what it's like at our home with the preparations. It's a blessing to have the opportunity to open our home and welcome everyone during this time of the year.

Summarize 2022 with one famous quote.

"Progress changes consciousness, and when people's consciousness changes, then their awareness of what is possible changes as well – a virtuous circle."

- Bill Clinton, 42nd President of the United States

Rumina Velshi

President and Chief Executive Officer
Canadian Nuclear Safety Commission (CNSC)



what are you most looking forward to indulging in over the holidays?

After a hectic year of Commission proceedings and travel, I am most looking forward to being at home and spending time doing “nothing” over the holidays. It will be a welcome change of pace to unpack, put my suitcases away for a few weeks and spend quality time with family. One of the most important lessons that the pandemic has taught me is the importance of not taking our health for granted. This holiday season, I plan on curling up with a good book and restarting, once again, healthier eating habits and getting recharged for what promises to be an exiting 2023.



What should we watch out for in 2023 from the CNSC?

We should expect another busy and exciting year in 2023. Canada is the first G7 country with a grid-scale small modular reactor (SMR) application – and the world is watching us. To ensure that we are ready to effectively regulate potential deployment, the CNSC will continue to focus on ramping up our capacity to regulate emerging nuclear technologies.

Back home, nuclear waste will continue to be a priority as we ready ourselves for future projects, such as the Nuclear Waste Management Organization’s Adaptive Phased Management approach for the long-term management of used nuclear fuel. Finally, trust-building will again be a major priority this year, demonstrating our commitment to continuously improving public trust, and upholding our pledge to Indigenous reconciliation. This includes, for example, establishing an Indigenous Advisory Council and exploring opportunities to better incorporate Indigenous knowledge into our regulatory framework and activities.

What are you looking for in terms of support from our sector?

I am calling on the nuclear sector to continue prioritizing equity, diversity and inclusion (EDI). These values are fundamental to strengthening our health safety culture, encouraging innovation and collaboration, and supporting better decision-making. Diverse voices bring a broader range of viewpoints and ideas, which result in better safety outcomes. However, women and other minority groups continue to be underrepresented in nuclear and should be considered a largely untapped resource.

Looking ahead, in 2023, the CNSC will continue to do its part by leading initiatives such as the International Gender Champions Impact Group on Gender Equality in Nuclear Regulatory Agencies – a community of heads of nuclear regulatory agencies and organizations committed to addressing gender issues in their institutions, countries and with international partners.

CANDU Owners Group Inc.



"Excellence Through Collaboration"

Rachna Clavero

President and Chief Executive Officer
CANDU Owners Group

What is CANDU Owners Group (COG) celebrating for 2022?

COG has so much to celebrate in 2022, but one of the main things would have to be a return to in-person collaboration.

When the pandemic hit in 2020, we worked quickly to enhance our virtual meeting and training capabilities, which enabled us to keep important programs and services running effectively despite the inability to meet in person. It has also had the added benefit of making our programs more easily accessible for our international members around the world. We'll continue to ensure we are best-in-class in facilitating virtual and hybrid meetings.

That said, with almost 40 years of experience driving excellence through collaboration, we know how vital it is to bring people together in person to build and foster connections, and relationships, share knowledge & information, and create innovative solutions to important challenges facing the industry.

When COG members come together, the whole industry benefits! It's why we were so excited to host our bi-annual Technical Committee meeting in Romania this year in collaboration with the IAEA and our host member, Societatea Nationala Nuclearelectrica (SNN), including a site visit and CANDU 6 Fleet meeting. We also reintroduced our Nuclear Professionals Development Seminar training, with two sessions held in June and November. Over two dozen candidates representing COG members and supplier organizations came together for leadership training, reactor site visits and to broaden their networks as future leaders. We also hosted a COG/IAEA Nuclear Energy Management School, a variety of safety culture courses, peer groups, workshops, and numerous other events. We've had great engagement and feedback in all of our programs and events, helping us build tailored programs for 2023.

Last but certainly not least, I would like to acknowledge Liette Lemieux, who served as Interim President and CEO from May to December of this year. Big thanks to Liette for her leadership, contributions and support during 2022



What is a holiday tradition that you are looking forward to?

I'm really looking forward to our annual COG staff holiday party. It's so important to take time to come together, connect, and have fun.





Describe 2021 in three words



This past year, SaskPower advanced two of the most important projects in our history – planning our system for a net-zero future and pursuing the option to develop small modular reactors. We look forward to engaging with our customers, Indigenous communities, and other stakeholders in 2023 to learn more about what the path forward looks like for Saskatchewan. The opportunity to reshape our system for future generations is an exciting responsibility.



Summarize 2022 with one famous quote.

“To improve is to change; to be perfect is to change often.”

— Winston S. Churchill



What are you looking for in terms of support from our industry?

We look forward to strengthening our relationships with the nuclear industry this year. As SaskPower considers the broader opportunities and implications that come with establishing nuclear power using small modular reactor technology, we recognize that collaboration is a key element. Raising the profile and potential of nuclear generation is key to driving down greenhouse gas emissions in Saskatchewan and around the world. We are proud to join our peers in the industry in supporting that goal.

What are you most looking forward to indulging in over the holidays?

I’m looking forward to spending time with family and friends and celebrating together. It’s been a long two and a half years.





NUCLEAR
INNOVATION
INSTITUTE™

Bruce Wallace

President and Chief Executive Officer
Nuclear Innovative Institute

What is NII celebrating for 2022?

This year NII hosted our first SWERVE event, a free public festival of technology exploration and imagination. Giving guests of all ages a hands-on feel for how they will live and work in the future, NII welcomed more than 3,500 visitors over the three-day event, engaging them for hours with VR experiences, dancing robots, EV test drives, a ball pit explaining medical isotopes, STEM challenges for kids and much more.



What are you most looking forward to indulging in over the holidays?

Starting on Boxing Day, I'll be indulging in the World Junior Hockey Championship, looking for gold for Team Canada!

Summarize 2022 with one famous quote

“

“Ever tried. Ever failed. No matter. Try again. Fail again. Fail better.” --Samuel Beckett

”



Ken Hartwick

President and Chief Executive Officer
Ontario Power Generation (OPG)

ONTARIO POWER
GENERATION

What is OPG celebrating for 2022?

OPG and our employees have so much to be proud of in 2022.

We continued to lead the way in small modular reactor (SMR) development, with our Darlington New Nuclear Project securing federal support from the Canada Infrastructure Bank through a low-interest loan of \$970 million. This will help fund the early site preparation work now underway at our Darlington site. At the event for this announcement, four levels of government – Indigenous, Federal, Provincial, and Municipal – stood alongside OPG and spoke of the benefits of nuclear power. It was a pivotal moment for the industry and for OPG, and this support will be crucial as we progress on our journey to build Canada's first grid-scale SMR by the end of 2028.

In 2022, we also received positive news for nuclear's future with the Province's request for OPG to operate Pickering Nuclear's Units 5 to 8 to September 2026 and conduct a feasibility assessment on the potential for refurbishing these units. This speaks to Pickering's outstanding performance and nuclear's importance in meeting the growing demands of the future. We also celebrated excellent progress on our Darlington Refurbishment project, which remains on track more than halfway into its 10-year execution phase.

I want to thank all of our employees for their dedication and commitment in 2022. Through their hard work, talent, and innovation, we are helping to electrify the province to build a stronger, brighter future for all.

What is OPG celebrating for 2022?

Looking ahead to 2023, we want to keep our momentum going.

First, we want to continue our core mission of safely producing clean, reliable, low-cost power for the province. This is what we do best and our power is the engine that runs Ontario's economy.

In our push for electrification, we will continue to invest in our existing generating assets while advancing the development of SMRs, low-carbon hydrogen, and other clean energy technologies. We will also study the feasibility of refurbishing Pickering Nuclear and explore new hydro development opportunities. And we will directly enable the electrification of the transportation sector, including Ontario's transit fleets, by building the necessary infrastructure through our subsidiary, PowerON, and the Ivy Charging Network partnership.

We will do all of this while advancing on our commitments and goals outlined in our Reconciliation Action Plan, our Equity, Diversity and Inclusion strategy, and our Climate Change Plan. For 2023 and beyond, this is our blueprint to success.

William A. (Bill) Fox, III

Executive Vice-President, Nuclear
SNC-Lavalin



SNC • LAVALIN



What is SNC-Lavalin celebrating for 2022?

What a year this has been! At SNC-Lavalin, we've had lots to celebrate and be thankful for in 2022. We saw the gradual end to the COVID pandemic and the definition of a new normal across our workforce. It is so good to be working and collaborating in-person again with colleagues and customers across the world. We are also (along with the rest of the nuclear industry) riding bow wave of momentum for carbon-net-zero with the expansion of new nuclear energy projects. We are seeing new plant orders and developing opportunities. And all of this of course, has been made possible through the safety and operational excellent performance of our existing nuclear plant fleet. We should all be proud of our accomplishments as an industry for earning this right to significantly grow our business here in Canada and abroad.

What is on the top of your holiday list?

This is certainly an interesting question. I used to think that the traditions we had when our family was young would never change. But as my children grew to young adults and began to have families of their own, we've learned to adapt to new traditions (even if it's just one year).

And then comes multiple competing priorities with in-laws (and out-laws).

My wife Deb and I have learned to never put our children and their spouses in a position where they have to choose. If we find at least one day over the 10-day holiday span during Christmas/New Years to celebrate together, we certainly treasure that time.

Finally, I'm particularly proud of the role we have played this past year in contributing to the excellent performance on the refurbishment programs at both the Bruce Power and Darlington stations.

What should we watch out for in 2023 from SNC-Lavalin?

With the stage set for new nuclear development, we look for continued momentum. Not long ago, we were preparing for a large decommissioning and decontamination (D&D) market for the older reactors, here in Canada and in other parts of the world. I expect many of these D&D prospects to be reversed and a new market developed for life extensions and refurbishments. Our own CANDU reactors in China, Korea and Romania are no exception. We will be there for our clients and help them gain additional decades of operational life.

But let's not stop at life extensions. At SNC-Lavalin, we're looking forward to new nuclear plant deployments considering Romania's ambition to finish two new CANDU reactors to combat carbon emissions and reduce dependence on foreign oil and gas imports. These projects have the support of the international investment community, which is necessary for these geo-political projects. 2023 should be a very interesting year of growth and opportunity.



Eddie Saab

President

Westinghouse Electric Canada

What is motivating Westinghouse Electric Canada for 2023?

Our Westinghouse Electric Canada team is excited to collaborate with Cameco and Brookfield Renewable, our future owners, and continue to execute projects with Bruce Power, Ontario Power Generation, New Brunswick Power, Canadian Nuclear Laboratories and the incredible OCNI Supply Chain. We are also looking forward to expanding our footprint and service offerings across the global CANDU fleet through continued talent development and local investments. We will continue to push toward Net-Zero targets alongside the Canadian Nuclear industry.



What is a holiday tradition that you are looking forward to doing?

I am looking forward to making and decorating gingerbread houses with my kids. This is a tradition my family looks forward to each year and it's always messy, noisy & delicious... truthfully, I enjoy the gingerbread demolition phase the most!

What are you looking for in terms of support from our industry?

Westinghouse Electric Canada looks forward to continued collaboration with industry partners to support a broad range of exciting opportunities for the global CANDU fleet. We are also driving toward new nuclear, leveraging our eVinci™ microreactor, growing AP1000 fleet and our new long-duration energy storage solutions. As part of these efforts, we continue to develop strategic partnerships that add value to our clients. We look forward to taking our eVinci™ microreactor technology successes in 2022 and building on this momentum, as we drive toward commercialization with support from the Canadian Federal Government – thank you, Minister Champagne!



Matthew Mairinger

Vice President at NAYGN

What should we watch out for in 2023 from NAYGN?

NAYGN will be hosting its first stand-alone national conference June 21-23 in Minneapolis, MN which will include workshops, facility tours, and a vendor exhibit hall! NAYGN will also continue to have a presence at non nuclear conferences (CEM14, COP28, Re+, etc.) to ensure nuclear is recognized as a key clean energy source which is vital for reaching net zero targets. We will continue with our routine initiatives such as the NucLEADers program, Atomic Mentorship Program, drawing contest, essay contest, and regional conferences to ensure we continue to develop nuclear leaders for the future.



What are you looking for in terms of support from our industry?

Opportunities and synergies – we have 120+ chapters all across the continent and an energetic base of volunteers who are passionate about nuclear. If your company/organization doesn't have an active chapter reach out to vp@naygn.org to learn about our organization and how it can help!

Would you rather only listen to holiday music for the entire year, or wear holiday sweaters all year?

Definitely holiday music (which I will loosely interpret to mean not just Christmas music). I can't imagine wearing holiday sweaters all through the summer.



Lisa McBride

President

Women in Nuclear (WiN) Canada

What is WiN Canada celebrating for 2022?

WiN Canada has had a very successful 2022 and we are expecting to carry this momentum into 2023. While we continue to make history on new nuclear here in Canada, we are also actively supporting our 4,500+ members across 6 Chapters with new initiatives that provide significant value.

In 2022, we launched several programs to support the success of our members and increase our impact on the nuclear industry in Canada. We launched our EmPOWERed Women leadership development program in March 2022. This has been an enormous success, with 5 full cohorts of women set to complete our program by the end of this year. We will continue to run this program in 2023, stay tuned for announcements in early 2023 for registration!

WiN Canada has also redesigned our Speakers Clearinghouse and is ready for community organizations and schools to host our speakers, all of whom are members and experts in the industry. This is an outreach initiative that enables WiN Canada's subject matter experts to engage the public and local schools, especially young females, to help them better understand the benefits of the nuclear industry and the careers it provides, so that they can make an informed decision about nuclear technologies. WiN Canada also has launched two formal Mentorship Programs with over 200+ active participants. Our mentoring program offers members the opportunity to engage across the industry to develop both personally and professionally.

Finally, we also hosted our biggest conference ever this past September in Niagara Falls, Ontario. We hosted 500 members from across Canada at our conference, which focused on the exciting future of the nuclear industry in Canada. Be sure to mark your calendars for our 2023 conference taking place October 15-18, 2023 in Niagara Falls Ontario.



What is a holiday tradition that you are looking forward to doing?

The 'Grills Christmas' is a holiday tradition I look forward to every year. Grills is my maiden name and I have a very large extended family. We have a tradition of getting together annually for a Christmas celebration early in December. Our Grills family Christmas started in 1976 with my Great Grandfather and his siblings families, with the first one hosted in Campbellford, Ontario. Since then, it has included 6 generations of our family, and usually brings together more than 100 people from our extended family. This is the first time we have been able to get together since COVID, and I can't wait to get together with everyone this year to celebrate the holidays and catch up!



Laurie Swami

President and Chief Executive Officer
Nuclear Waste Management Organization(NWMO)



What is your favourite holiday movie and why

My favourite holiday movie is Love Actually – in today's world it is no longer politically correct, particularly the treatment of women. But there are many famous actors and funny situations that make me laugh, particularly when Hugh Grant does a celebratory dance, and gets caught.



What is motivating the NWMO for 2023?

In 2023, it will be all hands on deck to get us to site selection in 2024. Since 2010, we have been engaged in a process to identify a site for Canada's deep geological repository for used nuclear fuel. Our consent-based siting process has been receiving considerable praise around the world and is being cited as an example to follow.

Due to the pandemic, we lost a significant amount of time for the meaningful, face-to-face interactions that are so critical to this process. So, this year we made the difficult decision to update our timeline for site selection, moving it from 2023 to the fall of 2024. However, this small adjustment in timing will not impact the overall schedule for Canada's plan.

We've built up a lot of momentum in 2022 and are excited to carry that into 2023 as we prepare for site selection.

What are you looking for in terms of support from our sector?

We need the industry to become vocal advocates for Canada's plan for a deep geological repository. The success of the NWMO is critical to the success of all Canadian nuclear projects.

We know that there is an international, scientific consensus that repositories will protect people and the environment for generations to come. We also know that the nuclear industry has a great story to tell when it comes to managing our waste. What we need now is the social license to move forward with this project.

Public endorsements go a long way. There are two key messages we need the nuclear industry to help us amplify about this project – it will create thousands of high-value jobs and billions of dollars of economic investment, and it is necessary if we want to address climate change. So, get out there and share our story.

Joe McBrearty

President & Chief Executive Officer
Canadian Nuclear Laboratories (CNL)



Canadian Nuclear
Laboratories

Laboratoires Nucléaires
Canadiens



What is a holiday tradition that you are looking forward to doing?

Our tradition is a Christmas Eve viewing of National Lampoon's Christmas Vacation! It is truly a holiday classic!



Were there any challenges CNL had to overcome in 2022?

What was an unexpected joy this past year?

This year saw Canadian Nuclear Laboratories reach a significant milestone – after more than five years, we were in front of the Canadian Nuclear Safety Commission seeking the licence to construct the Near Surface Disposal Facility (NSDF). This is an engineered facility which will safely isolate low-level radioactive wastes from the environment, enable us to move forward on addressing legacy liabilities, and renew the Chalk River campus. Our team worked very hard on this project and represented CNL and the project professionally at the hearing. I am very proud of this team and the work they put in.

However, after it was all said and done, an extension was provided through Procedural Direction and CNL was challenged to continue to engage with our local indigenous community members, ensuring that they have additional time to build an understanding of the proposed project and identify any potential impacts on their communities.

This segues nicely into the 'unexpected joy'. Over my tenure at CNL I have gained a new respect and appreciation for the cultures, values and traditions of the many Indigenous communities which surround the sites on which we operate. While I would be lying if I said this extension wasn't a setback to the schedule, honestly it can also be viewed as a real opportunity. In delivering the NSDF, it is critical to CNL that we 'get it right' in every aspect. The teams have been using the additional time provided to work even harder to reach out, strengthen communications and grow to understand within Indigenous communities. As an active participant in many of these engagements over the past four years, I would say that building these relationships has been a very enjoyable and refreshing learning experience, provided me with a new perspective on the projects, and has truly enriched who I am both personally and professionally.

