

**PNGS Community Advisory Council
Pickering Nuclear Information Centre
Tuesday, April 16, 2024
Highlights**

Site Update

Riedewaan Bakardien presented an update on: the operating status of the Pickering Nuclear units; OPG community information sessions; preparations for dealing with the spring and summer algae bloom near the plant's water intake; forthcoming third-party plant inspections; Government of Ontario support for the refurbishment of Units 5 to 8; and other matters.

Update on the Safe Storage Project for Units 1 and 4

Brian Malowany presented an update on the safe storage project for Units 1 and 4, which will cease commercial operations at the end of this year. He summarized safe storage as planning and executing the transition (or stabilization) of the two units from their current electricity generating state to a storage with surveillance state until dismantling occurs.

Nuclear Sustainability Services Update

Margaret Mervin and Diana Benjamin presented an update on OPG's Nuclear Sustainability Services (NSS). Diana presented an overview of nuclear sustainability and decommissioning. The emphasis is on waste minimization. Margaret noted that OPG will develop decommissioning plans that are safe, scientifically sound, sustainable, fiscally responsible, and aligned with international best practices.

Community Update

Anaïese St. Aubin presented an update on OPG activities in the community. OPG education activities for children; station tours for CAC new members; Pickering and Darlington March Break Blitz free community skates and swims; and the re-launching of OPG's corporate citizenship program were among the items mentioned.

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Pickering Nuclear Information Centre
Tuesday, April 16, 2024**

CAC:

Craig Bamford
Pamela (Pam) Collins
Nicholas (Nick) Fontana
Mary Gawen
Bill Houston
Pat Mattson
Cody Morrison
Dan Shire
John Simpson
Nicholas (Nick) West

Regrets:

Frank Dempsey
Tim Kellar
Tracy MacCharles
Sean McCullough
Tavis Nimmo
Peter Ottensmeyer
Eric (Zhen) Qin
Helen Shamsipour

OPG:

Riedewaan Bakardien
Diana Benjamin
Brian Malowany
Margaret Mervin
Analiese St. Aubin

Hardy Stevenson and Associates:

Francis Gillis
Dave Hardy

Topic #1: Health and Safety Moment

Following a Land Acknowledgment, Senior Vice President Riedewaan Bakardien noted that, with spring, people are beginning to participate in more water-based activities. He remarked that rivers are higher and often turbulent this time of year. People should stay clear of hydro facilities, and away from waterways downstream from those facilities.

Topic #2: Review of Minutes

The minutes from the CAC meeting of January 23, 2024 were approved without changes.

Topic #3: What CAC Members are Hearing from the Community

A member noted that the Canadian Environmental Law Association (CELA) is hosting a Webinar on Tuesday, April 23rd, a general information session on nuclear power in Durham Region. Anyone is welcome to attend. It was agreed that Francis Gillis would email details about the webinar to Council members.

Topic #4: Site Update

Riedewaan presented a site update:

- Units 1, 4, 5, 6, and 8 are operating at or near full power.
- Unit 7 is in a planned outage and is scheduled to come back on line in mid-May. One of the items completed was removal and replacement of a fuel channel. Part of the removed channel will be examined to learn about the effects of aging. This information is shared with other nuclear operators to benefit the industry as a whole. This is the last planned outage of Unit 7 before it is shut down and moved into refurbishment, pending regulatory approval.
- The next planned outages are Unit 5 in the fall and Unit 6 in 2025.
- Thank you to the CAC for their intervention letter to the Canadian Nuclear Safety Commission (CNSC) regarding OPG's request for a licence amendment to extend operation of Units 5 to 8 to the end of 2026. It is important for the CNSC to hear supportive voices like the CAC.
- OPG held two community information sessions in February, one virtual and one in person, both very well attended. There was a lot of interest, as evidenced in the Q&A sessions. There were also two workshops, one for municipal/regional

stakeholders (which CAC Facilitator Dave Hardy attended) and one for NGOs (non-government organizations).

- Information sessions will be held for Indigenous communities on March 20 and April 17.
- In preparation for the summer season, systems and processes are being activated to minimize the effect of the algae bloom and prevent the ingress of algae into the plant's water intake. Following a large algae event a few years ago, these new systems and procedures were put in place to better manage the challenge.
- The Nuclear Safety Review Board will visit the station April 22 to 24 to evaluate the plant's safety and nuclear performance. This is an extra layer of external inspection.
- The World Association of Nuclear Operators (WANO), which monitors and provides support to nuclear plants, will be on the site for the week of May 6th.
- On Jan. 30, the Province of Ontario announced its support for the refurbishment of Pickering Nuclear Units 5 to 8—great news for OPG, plant employees and the community. The project will provide another 50 years of operation for the four units. Initiation activities are now underway.
- Units 1 and 4 will be shut down by the end of this year and, pending regulatory approval, Units 5 to 8 by the end of 2026. There will be opportunities for input from all interested parties regarding the shutdown of Units 1 and 4 and the refurbishment of Units 5 to 8. At the end of 2026, OPG will begin preparation of Units 5 to 8 for refurbishment. The project is scheduled to be completed by 2030. The refurbishment project requires regulatory approval.

Riedewaan responded to Council questions:

- *Pickering Nuclear staff and contractors need to be congratulated on the plant's operating efficiency, which has come a long way in recent years.*
- *Will the refurbished units have a greater capacity?*
Yes, upgrades of those unit is planned.
- *Will the refurbishment project at Darlington be completed by the end of 2026, with all four Darlington units in operation?*
Yes.
- *What will be the effect of refurbishment on jobs at Pickering Nuclear?*

Many jobs that were expected to end with the plant shutdown will now become permanent. Refurbishment, a multi-billion-dollar project, will offer many opportunities and will also generate jobs in the Pickering area.

- *Will there be changes to the control rooms of the refurbished units?*
There will be some updates and some digitization.
- *Will workers at Pickering use the mock-up at Darlington or will another mock-up be built here?*
Pickering fuel channels are similar to, but not actually the same, as those at Darlington. We will benefit from the mock-up at Darlington, but the tooling at Pickering is different. So, we are looking at modifying the Training Mock-Up (TMB) building that is currently on the Pickering site.

Topic #5: Update on the Safe Storage Project for Units 1 and 4

Brian Malowany, Senior Manager Projects, Pickering Safe Storage presented an update on the safe storage project for Units 1 and 4, which will cease commercial operations at the end of this year (Appendix 1). Brian summarized safe storage as planning and executing the transition (or stabilization) of the two units from their current electricity generating state to a storage with surveillance state until dismantling occurs.

In the PNGS decommissioning life cycle, stabilization is the first phase (2024 to 2028). It includes defueling the reactors of spent fuel, dewatering (removal of heavy water), and other activities.

The second phase, storage with surveillance (2028 and subsequent years) includes:

- Monitoring and maintenance of the plant while radioactive components decay
- Spent fuel transferred to dry storage
- Decommissioning activities

Brian then noted that three processes impact each other:

- Safe storage of Units 1 and 4
- Refurbishment of Units 5 to 8
- Decommissioning (management of Units 1 and 4 until eventual demolition/dismantling)

Brian talked about teams that keep these three aspects of Pickering Nuclear integrated. He presented the scope and details of the safe storage project.

Brian, Riedewaan, and Margaret Mervin responded to Council questions:

- *You spoke of a new right-sized computer system for the monitoring centre for Units 1 and 4. Once those units have been defueled and dewatered, what's left to monitor?*

Brian: Less monitoring will be required, but there will still be electrical equipment to be monitored.

Riedewaan: Yes, during the storage with surveillance stage, Units 1 and 4 will be relatively easy to monitor. Some equipment may be radioactive. And we'll have to ensure that there is no impact on the B side (Units 5 to 8).

Margaret: Systems to protect the workforce from radiation will remain robust.

- *Will there be enough storage room for the spent fuel from Units 1 and 4?*

Brian: Yes. Some of the spent fuel currently stored in pools will be moved to Dry Storage Containers (DSCs) to make room for spent fuel from those two units.

Margaret: If necessary, more DSC storage buildings can be built at the Pickering Waste Management Facility.

- *What do you do with the heavy water removed from Units 1 and 4?*

Brian: It is moved to the heavy water storage facility at Darlington.

Riedewaan: By the way, the use of heavy water enables CANDU reactors to draw power from natural uranium. Other technologies require enriched uranium.

Topic #6: Nuclear Sustainability Services Update

Margaret Mervin, Director Strategic Program Integration, and Diana Benjamin, Senior Manager, Corporate Relations and Engagement for Nuclear Sustainability, presented an update on OPG's Nuclear Sustainability Services (NSS) (Appendix 2).

Diana noted that NSS is primarily focused on big projects from OPG. She presented an overview of nuclear sustainability and decommissioning. The emphasis is on waste minimization.

All waste under NSS care falls under three categories of action:

- Preventing waste before it is created
- Managing the waste in their care
- Harnessing waste and byproducts to make nuclear power useful beyond just generation (As an example, Margaret mentioned that heavy water reactors make isotope production possible. Isotopes are used in nuclear medicine and also have industrial applications.)

Diana talked about lasting solutions for nuclear waste and who is responsible for what:

- The Nuclear Waste Management Organization (NWMO) has long-term responsibility for used fuel or high-level waste as well as intermediate level waste. These wastes are currently being stored by nuclear fuel producers.

- OPG is responsible for low-level waste and is currently developing a long-term plan.

Diana also talked about Nuclear Sustainability Services' involvement in waste minimization strategies: Western Clean Energy Sorting and Recycling; metal reduction; intermediate level waste resin processing; and waste minimization and diversion at the site/source. Diana noted that Nuclear Sustainability Services – Pickering Waste Management Facility (NSS-PWMF) in 2023 continued to remove used fuel from Pickering Nuclear and store it safely and on time. In that year, Pickering loaded 70 Dry Storage Containers (DSCs), hitting its 2023 target.

OPG has requested an amendment to the PWMF operating licence to allow for the storage of 6-year-old cooled fuel to support defueling activities. Submission to the CNSC for this licence amendment was completed in June 2023 with a written hearing scheduled for the second quarter of 2024. This fuel will have been cooled for a minimum of six years.

Diana talked about the forthcoming construction of Storage Building 5 for added storage space for DSCs at the PWMF. As well, to support the refurbishment of Pickering Nuclear Units 5 to 8, OPG plans to construct additional onsite interim storage space for low and intermediate level wastes from removed reactor components.

Diana noted that public and employee nuclear safety remains OPG's top priority and talked about maintaining radiation safety.

She also noted the recent Government of Ontario announcement that the province supports the refurbishment of Pickering Units 5 to 8.

Diana and Riedewaan responded to Council questions:

- *Will any of the removed materials from Units 1 and 4 be used again?*
Diana: Yes, our decommissioning plan includes looking for opportunities to re-use materials.
Riedewaan: Recycling of such materials is becoming a big business.
- *Regarding refurbishment, there will be different levels of power left in the fuel bundles in the reactors. Will you be taking advantage of fuel that is not spent?*
Riedewaan: They will be reused. The bundles that are removed from the reactor that are not fully spent will be stored in the fuel bays and then reinserted into the reactor after refurbishment.
- *There are, I think, two manufacturers of DSCs. With refurbishment and planned new nuclear at Darlington, do you anticipate any supply problems?*
Diana: There are no anticipated supply concerns with DSC manufacturers. Both manufacturers have dedicated manufacturing facilities to supporting DSC

production. OPG remains in frequent communication with the manufacturers to proactively identify and manage any supply concerns.

Decision Factors

Margaret noted that OPG will utilize a decision matrix to develop decommissioning plans that are safe, scientifically sound, sustainable, fiscally responsible, and aligned with international best practices. The framework will incorporate input from industry, community and Indigenous stakeholders.

OPG will have to decide such issues as how quickly to remove the radioactive and non-radioactive materials now in Units 1 and 4. Is it better to deal with radioactive materials now or first let the radioactivity decay?

Margaret noted OPG reactors produce tritium, used in the production of self-powered lights, medical research and nuclear fusion development. As well, Laurentis is helping to extract high-purity Helium-3 (HE-3), a rare isotope used in quantum computing, border security and medical imaging.

Margaret responded to Council questions;

- *I'm glad to see that you're looking at the socio-economic impacts of decommissioning.*
- *Who funds intermediate and long-term storage of nuclear waste?*
The nuclear waste producers in Canada currently fund the management of wastes and also fund the Nuclear Waste Management Organization (NWMO), which is responsible for the long-term management of these wastes. (See link at <https://www.nwmo.ca/who-we-are>.)

Dave thanked Margaret and Diana for an excellent presentation.

Topic #7: Community Update

Analiene St. Aubin, Senior Manager Stakeholder Relations, Corporate Affairs, presented an update on OPG activities in the community:

- In February, 120 Grades 8 to 12 students from schools across Pickering and Oshawa visited the Pickering Nuclear Information Centre to spend a day learning about nuclear power and careers.
- In April, we talked to 240 students from Trafalgar Castle School in an Electrifying Education presentation. There was a lot of interest in STEM (science, technology, engineering or math) careers, particularly from older students. If

you're aware of any schools who would be interested in similar presentations, please let us know.

- Station tours in February and early March included: APBOT Board of Directors, CAC new members, and the Whitby Chamber of Commerce Board of Directors.
- For the March Break Blitz this year, the Pickering and Darlington stakeholder relations team provided a series of free community skates and swims. Over 1,400 members of the public were involved.
- On April 16, as part of the annual Bring Back the Salmon program, 60 Grade 5 and 6 students from St. Elizabeth Seton Catholic School visited the Information Centre to view the salmon hatchery.
- OPG hosted two public information sessions, a virtual session on Feb. 21 and an in-person session on Feb. 28.
- On Friday, March 8, OPG partnered with the Toronto and Region Conservation Authority (TRCA) to conduct the Everything Maple Syrup Event, an environmental stewardship education event at the Pickering Central Library and George Ashe Library. Many children and parents from the Pickering/Ajax community attended.
- OPG's corporate citizenship program, now transitioned into the Power for Change Project, was re-launched on April 1. The program has now been digitalized and is easier to administer. The new program is focused on: protecting the planet; advancing reconciliation; supporting strong communities; and empowering the next generation.

A member noted that a tree-planting event will take place at Alex Robertson Park as part of Take Pride in Pickering on April 20.

Topic #8: Finalization of CAC Intervention Letter

The CAC made a final review of its intervention message to be presented at the CNSC hearing in June regarding OPG's request to change its operating licence to extend the operation of Pickering Units 5 to 8 to the end of 2026. With two minor changes, the letter was approved.

Next Meeting

Pickering Nuclear Information Centre
Tuesday, June 11, 2024
4 pm – 7 pm

