

**PNGS Community Advisory Council
Pickering Nuclear Information Centre
Tuesday, April 18, 2023
Highlights**

Site Update

Jon Franke presented a site update. The operating status of the units; consideration of extending operation of Units 5 to 8 to 2026 as well as assessing the feasibility of refurbishing these units for the long term; and a focus on new nuclear in the latest Ontario budget were among the items mentioned.

Nuclear Sustainability Services at OPG

Kapil Aggarwal talked about the name change of OPG's Nuclear Waste Management division to Nuclear Sustainability Services (NSS). The name change is appropriate, as the division manages waste but does much else besides. Kapil also presented an NSS update. Council members asked questions about waste minimization as well as long-term storage.

Implementing Canada's Plan for Used Nuclear Fuel

Joe Gaboury presented an update on the community engagement activities of the Nuclear Waste Management Organization (NWMO). The organization's interaction with 22 communities expressing interest in hosting a Deep Geological Repository has now been narrowed down to two areas, which include surrounding Indigenous communities. There were CAC questions about some of the challenges of community engagement.

Community Update

Analiene St. Aubin talked about recent and forthcoming OPG activities in the community. Among the items mentioned: plant tours by politicians and students; tree planting and native species planting events; a National Day of Mourning for workplace deaths and injuries; an OPG donation to support local food banks.

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CAC:

Craig Bamford
Pamela Collins
Frank Dempsey
John Earley
Bill Houston
Pat Mattson
Sean McCullough
Cody Morrison
Tavis Nimmo
Richita Peterson
Eric (Zhen) Qin
Dan Shire
John Simpson

Regrets:

Donna Fabbro
Mary Gawen
Tim Kellar
Tracy MacCharles
Peter Ottensmeyer
Helen Shamsipour
Khaled Turk

OPG:

Kapil Aggarwal
Jon Franke
Analiese St. Aubin

NWMO

Joe Gaboury

Hardy Stevenson and Associates:

Francis Gillis
Dave Hardy

Topic #1: Introductions

CAC Facilitator Dave Hardy asked all participants to introduce themselves. He then welcomed new and recently joined members:

- Craig Bamford, Pickering West Shore Community Association
- Pamela Collins, Centennial Community and Recreation Association
- Rishita Peterson, Lakeridge Health, Ajax
- Eric (Zhen) Qin, Student, Ontario Tech University

Khaled Turk, Student, Durham College (not present this evening) also recently joined the Council.

Topic #2: Review of Minutes

The minutes of the CAC meeting of January 17 as well as CAC meeting/plant tour of March 21 were approved without changes.

Dave asked what CAC members were hearing in the community.

A Council member remarked that the one factor that keeps many from supporting nuclear is the radioactive waste. The Ontario Clean Air Alliance is constantly focusing on waste in its public communications. OPG needs to communicate with the public about this issue.

Topic #3: Health and Safety Moment

Following a Land Acknowledge, Jon Franke, Senior Vice President, noted that the site is doing well from a health and safety standpoint. A number of items and protocols are in place in case of health or safety emergencies that could occur on site. For example: there are defibrillators on site in case of a heart attack; there is a protocol on actions to defend oneself in the unlikely event of an active shooter on site.

Topic #4: Site Update

Jon Franke presented a site update:

- Units 1, 5, 7, and 8 are operating at or near full power. Units 4 and 6 are in maintenance outages.

- Earlier this month, Unit 4 was taken off line for a 70-day planned maintenance outage—the last outage on the Pickering 1 – 4 side before the two units are put into safe storage after the shutdown of their commercial operations at the end of 2024. This outage is shorter than other maintenance outages, the focus being unit reliability. The team will complete channel work, vault work and boiler inspections.
- The Unit 6 outage, which has been just over three months in duration, is now about two weeks from completion. Over the past week, the team safely executed OPG's Reactor Building Pressure Test, which they have been preparing over the past few months. Once that test is complete, there will be preparations to bring the unit back on line, with a target date of May 1.
- OPG is applying to the CNSC to extend operations of Units 5 to 8 to 2026.
- Regarding the refurbishment of Units 5 to 8, OPG is now doing a system-by-system investigation to assess the resources and tasks that would be required to update the units for another 30 years of operation. OPG is aiming to make a recommendation to the province in August. Refurbishment is being considered in light of the need for as much nuclear power as possible in the coming years.
- Earlier this month, experts from a couple of insurance groups did an assessment of Pickering Nuclear. They reviewed the station condition for insurance underwriting and risk control. Strengths identified included:
 - Housekeeping
 - High standards for escorting and briefing
 - Fire preparations for the plant once it is in safe storage
 - Rigorous use of operating experience

The insurance experts also identified some areas for improvement:

- Seismic awareness – improve the pathway markings to safe areas
- Radiation protection – ensure proper use of contamination friskers
- Fire equipment – the station has alternative measures in place for out of service fire equipment; excellence standard would be to have all fire equipment in service
- New Brunswick Power and OPG are exploring a partnership in regard to the single-unit Point Lepreau nuclear generating station. The two companies are looking at ways Point Lepreau can work very closely with OPG. An announcement of details is expected in June.
- The latest Ontario budget includes a lot of focus on new nuclear: there is support for SMR deployment and refurbishment at Darlington and Bruce as well as continued safe operation at Pickering.

Jon responded to Council questions:

- *Is there any consideration to extending the operation of Pickering Units 1 and 4?*
We never say never, but Units 1 and 4 are an earlier design. They are safe to operate, but it would be very difficult to bring them up to current standards. A team is studying the feasibility of refurbishing Units 5 to 8 and is working to provide a recommendation to the province in August. The success of refurbishment at Darlington is creating confidence in Pickering refurbishment.
- *I assume you don't want refurbishment at Pickering and Darlington to be occurring at the same time. Especially since Bruce is also being refurbished.*
Bruce and Darlington are being refurbished in conjunction with each other. The summer of 2026 is the choke point, so the province has asked Pickering to cover that summer. Darlington refurbishment would be done before Pickering refurbishment which, if approved, would start in 2028. Refurbishment of Pickering would take five to seven years.

Topic #5: Nuclear Sustainability Services

Kapil Aggarwal, Vice President Nuclear Sustainability Services, talked about the name change of OPG's Nuclear Waste Management division to Nuclear Sustainability Services (NSS); he also presented an NSS update (Appendix 1).

Kapil said that the name change was appropriate, as his division manages waste but also does much else besides. The Nuclear Sustainability Services mandate is responsible management of all nuclear by-products at Pickering and Darlington. The three pillars of NSS are: stewardship; lasting solutions; and peace of mind.

Kapil mentioned that, based on feedback from the public, NSS has made some improvements to its website (<https://www.opg.com/powering-ontario/our-generation/nuclear/nuclear-sustainability-services/>), making it more transparent.

Kapil presented an update on the operations of the Pickering (PWMF) and Darlington (DWMF) waste management facilities, which safely store used nuclear fuel from the plants. He noted that public and worker radiation dosage remains well within regulatory limits. He also talked about isotope production at Pickering and Darlington and waste minimization at the plants.

Kapil noted that both Pickering and Darlington play a role in ensuring a steady supply of an array of life-saving isotopes. Pickering has been producing Cobalt-60 for many years. Now Cobalt-60 will be produced at Darlington.

Darlington will become the only source of Molybdenum-99 (Mo-99) in North America. Mechanisms to produce and extract Mo-99 from Unit 2 have been installed, and are now awaiting approval from the Canadian Nuclear Safety Commission (CNSC).

Helium-3 (He-3) is also extracted at Darlington. Right now, the only source of He-3 is Russia. Since He-3 is derived from tritium, its production at Darlington means much less tritium waste.

Jon noted that, in CANDU reactors, heavy water slows the speed of neutrons, making them much easier to target for the extraction of isotopes.

Regarding waste minimization, Kapil said that waste reduction is achieved through sorting and processing in three ways:

- At source
- Through sorting
- Through incineration

Kapil noted that OPG subsidiary Laurentis Energy Partners and McMaster University are jointly researching innovations in sorting and recycling. He also noted that, back in 2020, OPG started looking at legacy waste. He mentioned the recent construction of the Western Clean-Energy Sorting and Recycling Facility, which is now awaiting CNSC approval, expected imminently.

Kapil responded to Council questions:

- *If Pickering refurbishment goes ahead, how will NSS deal with storage of the resulting materials?*
At Darlington, the Retube Waste Storage Building provides on-site storage in support of refurbishment at that station. A similar building at Pickering would be an option.
- *Is the notion of used nuclear fuel being recycled pie in the sky?*
Moltex is researching the recyclability of used fuel at its facility in New Brunswick. They are identifying a lot of waste that can be recycled. But, even with an extensive proportion of used fuel being recycled, it will never be reduced to zero. There will still be radioactive waste left over that will have to be stored long-term.
- *Will that stored waste be retrievable?*
(Joe Gaboury noted that retrievability is part of the Deep Geological Repository design.)
- *How has waste minimization changed in recent years?*
ACTION: Kapil said that he would get data on these changes.
- *As you sort materials, how do you determine what type of storage is safe and appropriate?*
We have systems to measure radioactivity, including procedures to determine what can be safely incinerated.

Kapil said that, any time the CAC wants to tour NSS facilities, he would be happy to arrange that.

Topic #6: Implementing Canada's Plan for Used Nuclear Fuel

Joe Gaboury presented an update on the activities of the Nuclear Waste Management Organization (NWMO) (Appendix 2). As the Director of Indigenous Engagement, Southern Ontario, Joe's focus is on the social side of NWMO activities.

Joe noted that the NWMO mandate is a safe, long-term plan for the storage of used nuclear fuel in Canada. Created in 2002, the NWMO is a non-profit organization funded by waste owners. OPG provides 90 percent of that funding. Through dialogue with Canadians and Indigenous peoples, Canada's plan emerged.

It was determined, Joe said, that our generation should be the one to find a solution for long-term storage of used nuclear fuel versus leaving it for our children. Twenty-two communities expressed interest in hosting a Deep Geological Repository (DGR), which surprised the NWMO; the organization would have been happy with half-a-dozen expressions of interest. The search has now been narrowed down to two communities, Ignace and South Bruce.

Joe remarked that the NWMO asked interested communities to only learn more about the concept of hosting a DGR. He noted that both Ignace and South Bruce are surrounded by Indigenous communities, which NWMO is still talking with.

He noted that other countries envy the large land area Canada has that would be safe for storage. He emphasized that the NWMO will not go forward without a willing partner.

Regarding the project timelines, Joe noted that COVID has significantly retarded progress, but NWMO still hopes to meet the 2043 deadline for DGR operations to begin.

Once a DGR site has been selected, NWMO will build a Centre of Expertise in that location. A Council member asked if the Centre will provide learning opportunities for the local community. Joe said that it would, along with being a place of education and training for the whole country.

Willingness and Reconciliation

Joe talked about NWMO's engagement with the Wabigoon Lake Ojibway Nation in the Ignace area and the Saugeen Ojibway Nation in the South Bruce area. Part of that engagement is to acknowledge what wasn't done well in Canada's interaction with First Nations in the past.

All we want, he said, is to inform native communities. Ultimately, we want them to make an informed decision about hosting a DGR, whether for or against. We would prefer an informed refusal over an uninformed acceptance.

Joe said that, in discussing the DGR with First Nations communities, he and his team never talk about money but always talk about the environment. NWMO does not want to be seen as bribing communities.

Joe remarked that the Town of Ignace has always been supportive of development. Engagement in the South Bruce area is less easy, but “things are progressing.” He emphasized that NWMO won’t build a DGR without community agreement.

In terms of site investigation, borehole studies in both the Ignace and South Bruce areas have now been completed. Part of the studies looked at water deep underground. These studies have indicated that this is very old water, not in contact with the water table closer to ground level.

Joe noted that the DGR will not have a large footprint above ground, about one kilometre square. The services area, at least 500 metres underground, will be several kilometres square.

He remarked that, in public communications, DGR contents should not be called “fuel”, which people think of as a liquid; used nuclear fuel is a solid.

Joe noted that the next ice age will bring a two-to-three-kilometre layer of ice pressing down, so the repository will have to be built accordingly. There is a proof-testing facility in Oakville to demonstrate the robustness of the DGR. He would be happy to arrange a CAC tour of this facility if Council members are interested.

The DGR is like a hotel; it is made up of a series of rooms.

Regarding transportation of used nuclear fuel, Joe remarked that there will be a lot of tough discussion with communities along the route, since the benefit to them is not obvious.

Regarding small modular reactor (SMR) fuel wastes, Joe said that NWMO will apply the same standard of safety to managing nuclear fuel wastes from advanced reactors, including SMRs. Given that no SMR has yet been built, NWMO may find itself asking communities to accept waste material when it doesn’t know precisely the nature of that material. The organization is now in discussion with several SMR vendors and utilities to get a better sense of the kind of waste that this technology will produce.

Joe responded to Council questions:

- *You talked about the need for the potential site community to be a willing host. Does this mean that the land required for the DGR has to be publicly owned?*

In southern Ontario, we will purchase land as required.

- *In your discussions with Indigenous communities, have elders been involved?*
We do meet with the elders. If we get their support, everything's easier.
- *Are activist outsiders infiltrating First Nations communities?*
That has happened in the past, but not as much today. The NWMO has been involved with these communities over time, so we have built a relationship of trust.
- *Are you working with groups on the U.S. side?*
Another group works with U.S. stakeholders. Ironically, their communities have nuclear plants all over the place.

Topic #7: Community Update

Analiene St. Aubin, Manager Corporate Relations, talked about recent and forthcoming OPG activities in the community.

- Recent station tours at Pickering have included: Ajax MPP Patrice Barnes and staff; Pickering Councillors Linda Cook, Mara Nagy and Lisa Robinson; U.S. NRC Commissioner Wright and CNSC President Velshi; and a virtual tour by Ontario Tech University graduate students. Upcoming tours will include: Toronto Councillor Nick Mantas; Ajax Councillor Linda Henry; and Whitby Mayor Elizabeth Roy and staff.
- On April 13, 18 Ajax Rotary members attended a presentation at the Pickering Nuclear Information Centre that included a virtual plant tour.
- On April 17, OPG visited four Grade 11 physics classes at Dunbarton High School to provide a presentation on OPG and a CANDU 101.
- This coming Saturday, April 22, a Take Pride in Pickering tree planting will take place from 10 a.m. to noon in the Dufferin Heights area. This is a joint event with the City of Pickering, OPG and the Toronto and Region Conservation Authority (TRCA). All are welcome.
- OPG sponsors the Meadow, a wild patch of space on the west side of the Ajax Pickering Hospital, adjacent to the new Indigenous Community & Healing Garden and the helipad. The Meadow hosts a variety of native plant species. All are welcome to a planting of more native plants on Tuesday, April 25.
- April 26: As part of the Bring Back the Salmon program, Pickering will bring the two Grade 5/6 classes from Biidaasige Mandamin Public School to Brockridge

Community Park to complete a garbage pick-up in the watershed where 100 Atlantic Salmon will be released.

- On April 28, OPG will recognize the National Day of Mourning and honour the men and women who lost their lives or were seriously injured in the workplace.
- On May 7, the annual Steps for Life walk will take place at the Pickering Nuclear Information Centre, a five-kilometre fundraising walk for families of workplace tragedy.
- OPG is donating \$25,000 to Feed the Need in Durham to support local food banks.

Topic #8: Closing Comments

Regarding First Nations community engagement, Joe Gaboury noted two very successful NWMO approaches:

- The Organization provides a meal in the home, a comfortable setting where families can ask questions through a virtual connection.
- Bingo games with a baloney cylinder in the size of a nuclear fuel bundle as a prize.

Jon Franke remarked that it is very important for OPG to maintain good relations with the local community. The CAC is a vital part of that effort. He thanked Council members for their time and valuable feedback.

Next Meeting

Pickering Nuclear Information Centre
Tuesday, June 20, 2023
4 pm – 7 pm