

**PNGS Community Advisory Council
Pickering Nuclear Information Centre
Tuesday, September 17, 2024
Highlights**

Site Update

Paul Seguin talked about: the operating status of the units; the end of operations of Units 1 and 4 before the end of the year; a change in the length of time required for storage of used fuel bundles in the fuel bays; a plant emergency evacuation exercise; and other items.

2023 Environmental Monitoring Program (EMP) Report

Lindsay Parks presented the EMP 2023 results for Pickering Nuclear. She presented data showing that the site public dose remains a small fraction of both the annual legal dose limit and the annual natural background radiation in the area. She also noted that Tritium in drinking water measured at local water supply plants remained at a small fraction of the Ontario Drinking Water Quality Standard.

2023 Groundwater Monitoring Program (GWMP) Report

Raphael McCalla presented the 2023 GWMP results for Pickering Nuclear. He showed how groundwater data from key site areas remained stable, indicating consistent environmental performance. There were no indications of off-site impacts of Pickering Nuclear groundwater.

Public/Community Affairs

Crystal Neault talked about OPG activities in the community. Among the items mentioned: a recent Community Expo at Darlington that attracted 3,200 visitors; a forthcoming fall tree planting event; and a forthcoming Birds in the Neighbourhood Walk.

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CAC:

Denise Bacon
Craig Bamford
Frank Dempsey
Nicholas (Nick) Fontana
Tim Kellar
Pat Mattson
Sean McCullough
Cody Morrison
Peter Ottensmeyer
Eric (Zhen) Qin
John Simpson
Nicholas (Nick) West

Regrets:

Mary Gawen
Bill Houston
Tracy MacCharles
Tavis Nimmo
Dan Shire

OPG:

Tiasi Ghosh
Lindsay Parks
Sarah Malcolm
Raphael McCalla
Crystal Neault
Paul Seguin

Hardy Stevenson and Associates:

Francis Gillis
Dave Hardy

Topic #1: Health and Safety Moment

Following a Land Acknowledgment, Senior Vice President Paul Seguin noted that Fire Prevention Week is October 6 to 12. The focus this year is on the importance of fire alarms in the home. There should be a fire alarm in every bedroom and corridor. More information is available on the City of Pickering website.

Topic #2: Review of Minutes

The CAC minutes from June 11, 2024 were approved without changes.

Topic #3: Chair's Update

Chair Dave Hardy noted that the CAC intervened at the Canadian Nuclear Safety Commission (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. Dave thanked Council member Nick Fontana for presenting the CAC letter at the hearing. He noted that there were a lot of good questions from the Commission.

He also noted that the Canadian Standards Association (CSA) updated standard for the decommissioning of nuclear plants was distributed to the CAC.

Topic #4: Pickering and Darlington Developments

Crystal Neault, Senior Communications Advisor, Corporate Affairs, provided an update on the Darlington New Nuclear project, and noted that soil and rock testing is underway to collect information needed to complete the design on the CCW tunnel path. A barge, positioned near the site on Lake Ontario, was assisting in this geotechnical testing.

Crystal also talked about a two-part CNSC hearing in October 2024 and January 2025 to consider OPG's application for a Licence to Construct. The latter is a public hearing that will take place at the Ajax Convention Centre.

Paul responded to Council questions:

- *There is a lot of barge activity in the lake near the site, which has led to a lot of speculation on Facebook. Has there been any OPG communication to the community about this activity?*

Paul: The barges in the lake are drilling to develop a geotechnical assessment of the rock at the bottom of the lake. Information was posted on OPG's website and there was an article in Metroland.

- *What is the purpose of the underwater pipe to be constructed near Pickering Nuclear?*

Paul: The pipe will draw water from farther out in the lake to avoid, or at least reduce, interference of algae at the plant's intake.

Topic #5: Site Update

Paul presented a site update:

- Units 1, 4, 6, 7, and 8 are operating at full power. Unit 5 was taken offline on Sept. 6 for a planned maintenance outage.
- On Oct. 1, Unit 1 will be removed from service permanently. Unit 4 will be permanently taken offline before the end of the year.
- The standard practice has been to store used fuel bundles in fuel bays for 10 years. OPG recently obtained an amendment from the CNSC to the Pickering Waste Management Facility (PWMF) licence to remove bundles from the storage bays after six years. The purpose of the change is to free up space for used fuel bundles that will come from the planned refurbishment of Units 5 to 8.
- A new water intake will be built at the plant as part of the refurbishment. A lot of work, including improved meteorological prediction, is being done to address algae coming into the station.
- Two weeks ago, OPG conducted a plant evacuation exercise in case of an emergency. The drill demonstrated that OPG could get everyone off the site within two-and-a-half hours. Staff went out to the neighbourhood to let businesses and residents know that there would be a lot of traffic leaving the site during the drill.
- The CNSC has indicated that OPG may not hear back about the continued operations of Units 5 to 8 until early December.

Paul responded to Council questions:

- *Is there a risk in removing used fuel bundles from the storage bays in less than 10 years?*

An analysis showed that six years' storage was more than adequate for safe removal from the storage bays and transporting the bundles to dry storage containers.

- *Regarding the recent drill, has Pickering Nuclear ever had to evacuate the site?*

To my knowledge, we've never had to do so.

- *Will the barges remain on the lake over the winter?*
(Raphael McCalla said that the barges have to be off the lake by early November.)
- *Where does the CNSC get their expertise?*
As a regulator, they've been gathering expertise over the years. And they have ongoing access to experts.

A Council member remarked that it would be useful for the CAC to hear from the CNSC. Another member recalled that, some years ago, the on-site CNSC representative regularly attended Council meetings. Dave agreed that it would be useful to hear from the CNSC.

Topic #6: 2023 Environmental Monitoring Program (EMP) Report

Lindsay Parks, Environmental Advisor, presented the 2023 results of OPG Pickering's Environmental Monitoring Program (EMP) (Appendix 1). She talked about the key objectives of the program:

- Provide data to assess the level of risk on human health and the environment resulting from the operation of OPG nuclear facilities;
- Demonstrate, independent of effluent monitoring, the effectiveness of containment and effluent control;
- Demonstrate compliance with limits on the concentration/intensity of contaminants/physical stressors in the environment
- Confirm predictions by environmental risk assessments, refine models used, and reduce the uncertainty in the predictions made by these assessments and models.

Lindsay presented a map of Pickering Nuclear critical groups and sampling locations. Critical groups are divided into three age categories—infant, child and adult—with the members of each group having similar diets. Radiation doses are calculated for each age group.

She also presented a chart illustrating radiation dose examples ranging from a typical chest x-ray (0.1 millisieverts (mSv)) to average annual dose from natural background radiation (1.8 mSv) to annual dose limit for a nuclear energy worker (50 mSv) to a number of other activities.

Lindsay noted that the Pickering public dose for 2023 was 1.5 microsieverts (µSv). This very low dose is equivalent to the 2022 public dose. The Pickering Nuclear dose is 0.1 percent of natural background radiation.

Lindsay presented a series of graphs from the 2023 EMP report, then summarized the data:

- 321 laboratory analyses performed for the 2023 Pickering Nuclear (PN) dose calculation
- Site emissions remained at a very small fraction of their respective derived release limits (DRLs).
- The 2023 PN site public dose remains a small fraction of both the annual legal dose limit and the annual natural background radiation in the area.
- Tritium in drinking water measured at local water supply plants remained at a small fraction of the Ontario Drinking Water Quality Standard (7,000 becquerels per litre (Bq/L)) and OPG's voluntary commitment (100 Bq/L)
- Dose calculations and annual report were reviewed and verified by an independent third party
- 2023 EMP report was submitted to CNSC on April 25, 2024 and is available on www.opg.com.
- The overall EMPs encompass other programs that are reported separately.

Lindsay and Raphael responded to Council questions:

- *Is the public dose of 1.5 microsieverts a total for the year?*
Lindsay: Yes, that's right.
- *Regarding the graph you showed of tritium at water supply plants near the Pickering station, does the EMP monitor this tritium?*
Lindsay: We do check tritium at the F.J. Horgan and Ajax water supply plants (see Slide 9 in Appendix 1).

ACTION: Obtain data from water supply plants and other municipalities. (Following the meeting, OPG provided a provincial dataset of range and average tritium levels (Bq/L) for various municipalities across Ontario. This information was shared with the Pickering and Darlington CACs.)

A Council member raised a general question about monitoring processes: "Do we worry about some substances in air or water simply because we can measure them?"

Topic #7: 2023 Groundwater Monitoring Program (GWMP) Report

Raphael McCalla, Director Environmental Health and Safety, presented the 2023 results of OPG Pickering's Groundwater Monitoring Program (GWMP) (Appendix 2).

Raphael noted that this very robust program has been in existence for 25 years. Its objectives are to:

- Verify groundwater flow direction

- Monitor changes to on-site groundwater quality to identify new issues in a timely manner and assess historical issues
- Monitor groundwater quality at the site boundary to confirm there are no off-site impacts

There are 120 sampling locations that are checked on a regular basis, with a focus on wells with the most risk of environmental impact.

Raphael presented a series of graphs indicating groundwater quality (concentrations of becquerels per litre (Bq/L) on the site from 2011 to 2024. The findings for 2023 are quite similar to those of 2022.

He noted that there was a challenge with tritium in the Units 5 and 6 areas in 2020 but that the tritium is going down. He also noted that the site boundary groundwater quality shows no migration of tritium.

Raphael noted that both the EMP and GWMP reports are submitted to the CNSC on an annual basis.

In summary:

- At Pickering Nuclear, the groundwater flow patterns remain consistent with original interpretations.
- Groundwater data collected from the key areas remained stable, which indicate consistent environmental performance.
- There were no indications of off-site impacts from Pickering Nuclear and Darlington Nuclear groundwater.

Raphael responded to Council questions:

- *What is the legal limit for tritium in site groundwater?*
The legal limit is 7,000 becquerels. The tritium present in site groundwater is a tiny fraction of that limit.
- *You mentioned that the groundwater flow turns and goes back. What do you do with that water?*
We collect that water and discharge it by pump.
- *Do big storms have an impact on groundwater flow?*
A lot of rain increases the surface water flow, but it does not cause the groundwater flow to move quickly.
(A Council member noted that the flow rate is 0.1 metres in two years.)

Topic #8: Public/Community Affairs

Crystal talked about recent and forthcoming OPG activities in the community:

- It was a very busy summer for Pickering Nuclear community outreach team. OPG hosted community swims, booths at Ribfest events throughout the region, Pickering and Bowmanville Library Summer Reading launches, and many other community events. We reached more than 4,500 community members throughout the various events and activities.
- The 2024 Tuesdays on the Trail program welcomed over 300 community members throughout the summer.
- Last Saturday's Community Power Expo at Darlington welcomed 3,200 visitors. Guests participated in interactive learning opportunities, such as looking inside the full-scale nuclear mock-up and meeting Spot, the robotic dog.
- This Saturday, Sept. 21, OPG is hosting a fall tree-planting event in partnership with Environmental Stewardship Pickering and the Toronto and Region Conservation Authority (TRCA).
- On Sunday, Sept. 22, there will be a Birds in the Neighbourhood Walk, beginning at 7 a.m. in Alex Robertson Park.
- On Saturday, Sept. 28, 11:00 a.m. to 2:00 p.m., OPG is participating for the first time in the Toronto Harvest Fest to be hosted by Deputy Mayor Jennifer McKelvie.

Regarding OPG's Bring Back the Salmon program, a Council member asked if there was to be a report on the current status of salmon in nearby waterways. Crystal said that a report could be provided at a future meeting.

A Council member noted that Durham Public Health and the Durham Emergency Management Office participated in the recent Community Power Expo. He suggested that the two organizations should attend a future CAC meeting.

ACTION: Following the meeting, Analiese St. Aubin indicated that she will pursue having the two groups attend the January meeting, when emergency preparedness will be on the agenda.

Topic #9: Comments/Questions Heard in the Community

A Council member noted that fellow students in his nuclear engineering class were asking why OPG has chosen boiling water technology for the small modular reactor to be built at Darlington.

ACTION: Get an OPG representative to talk to that class.

Topic #10: Concluding Remarks

Paul said it was great to see the participation of Council members in the meeting. He expressed appreciation to the members for volunteering their time to the CAC.

Next Meeting

Joint Session of Pickering and Darlington CACs
(Venue to be announced)
Tuesday, Dec. 3, 2024
4 pm – 7 pm