

DNGS Community Advisory Council
Darlington Nuclear Information Centre
Tuesday, September 24, 2024
Highlights

Site Update

Allan Grace talked about the operating status of the two operating units and the refurbishment status of the other two units. He also talked about the increased efficiencies gained from experiences accumulated from refurbishment to refurbishment.

2023 Environmental Monitoring Program (EMP) Report

Lindsay Parks presented the 2023 EMP results for Darlington Nuclear. She noted that site emissions remained at a very small fraction of both the annual legal dose limit and the annual natural background radiation in the area.

2023 Groundwater Monitoring Program (GWMP) Report

Raphael McCalla presented the 2023 GWMP results for Darlington Nuclear. He noted that groundwater data collected from the key site areas remained stable, which indicates consistent environmental performance. There were no indications of off-site impacts.

Public/Community Affairs and Darlington New Nuclear Project

Lindsay Hamilton talked about recent OPG activities in the community. OPG hosting community swims, booths at Ribfest events throughout Durham Region, the Tuesdays on the Trail program and the OPG Community Power Expo held at Darlington were among the items mentioned. Lindsay also presented an update on the Darlington small modular reactor (SMR) project.

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Darlington Nuclear Information Centre
Tuesday, September 24, 2024**

CAC:

Jim Boate
Bethany Dainton
Sami Elhajjeh
Sheila Hall
Mary Novak (via Microsoft Teams)
Jennifer O'Meara
Heather Reid
Penny Smith
Stacy Wanamaker

Regrets:

Cara Gregory
Pat Pingle
Bonnie Wrightman

OPG:

Tiasi Ghosh
Allan Grace
Lindsay Hamilton
Sarah Malcolm
Raphael McCalla
Lindsay Parks

Hardy Stevenson and Associates:

Francis Gillis
Dave Hardy

Topic #1: Safety Brief and Land Acknowledgment

Following a Land Acknowledgment, Lindsay Hamilton, noted that it is now getting dark earlier. The falling back to standard time on Nov. 3rd requires some adjustment here at the site and in the community generally. Senior Vice President Allan Grace noted that the Monday and Tuesday following the time change present a safety challenge.

Topic #2: Review of Minutes and Chair's Update

The CAC minutes of June 25, 2024 were approved without changes.

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

A memorial bench for long-time CAC member Jim Cryderman has been placed near the Information Centre. A memorial ceremony, to which Council members are invited, will take place near the bench (date to be announced).

At the CAC meeting in June, there was a discussion about the detour of the Waterfront Trail to an on-road section of Energy Drive, which passes the SMR project. At the suggestion of Council member Jim Boate, a number of enhancements have been made to the safety corral for cyclists taking the detour to make it more visible to trail users and motorists. Jim's photos of the enhanced safety crossing have been shared with the CAC.

Topic #3: Site Update

Senior Vice President Allan Grace presented a site update:

- Units 2 and 3 are operating at full power. These units have been working very well since completion of their refurbishment.
- Unit 1 is in the final days of its refurbishment. The unit is currently operating at 0.7 percent of full power, allowing for a series of validation checks. It is expected to be on-line by early-to-mid November.
- In Unit 4 refurbishment, disassembly has just been finished and transition to rebuild will take place in the next month or so.
- These are exciting times, as the refurbishment is ahead of schedule and under budget. Each refurbishment benefits from the experience of previous refurbishments. For example, in the refurbishment of Unit 3, pressure tubes and the calandria tubes surrounding them were removed at the same time. This made for a major increase in efficiency. The refurbishment of Unit 4 will take the least time due to all that was learned from previous refurbishments.
- Learning experience from the Darlington refurbishment will be forwarded to Pickering refurbishment; a lot of staff working on Darlington refurbishment will be transferring to Pickering.

Topic #4: 2023 Environmental Monitoring Program (EMP) Report

Lindsay Parks, Environmental Advisor, presented the 2023 results of OPG Darlington'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 Darlington 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 Darlington public dose for 2023 was 0.7 microsieverts (μSv). This very low dose is equivalent to the 2022 public dose. The Darlington 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:

- 436 laboratory analyses performed for the 2023 Darlington Nuclear (DN) dose calculation.
- Site emissions remained at a very small fraction of their respective derived release limits (DRLs).
- The 2023 DN 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 the Canadian Nuclear Safety Commission (CNSC) on April 25, 2024 and is available at www.opg.com.

- The overall EMPs encompass other programs that are reported separately.

Lindsay responded to Council questions:

- *Do you just go to local farms for vegetable samples?*
Yes, some local farms voluntarily provide samples. We are always looking for new samples.
- *How do you establish critical groups?*
We send out surveys to residents. Individual results are reported independently. We then take averages to report critical group results. The numbers of respondents are very small.
- *In the chart showing the public dose from 2014 to 2023, the doses for 2019 and 2020 look much lower.*
Actually, the differences from year to year are very slight, all of them being less than one microsievert. These slight differences are due to a variety of reasons, for example plant emissions, wind direction, etc. The results for 2023 and previous years are far below OPG derived release limits (DRLs), which ensures the legal limit is never reached.

Allan remarked that OPG does not want refurbishment disassembly to cause emissions to exceed derived release limits. Raphael McCalla said that refurbishment has not caused public dose to go up.

- *Is the public dose in Bowmanville higher than in Oshawa? And how does the Darlington public dose compare to that of Pickering and Bruce Power?*
The Darlington and Pickering public doses are quite similar. We can provide data for the other places you mentioned.

ACTION: Provide public dose figures for Oshawa and Bruce Power. In general, the public dose for all these locations is similar. (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 Darlington and Pickering CACs.)

- *Have changing weather patterns affected Darlington and Pickering public doses?*
There have been no major changes over the years.

Topic #5: 2023 Groundwater Monitoring Program (GWMP) Report

Raphael McCalla, Director Environmental Health and Safety, presented the 2023 results of OPG Darlington's Groundwater Monitoring Program (GWMP) Report (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 62 sampling locations that are checked on a regular basis.

Raphael presented a diagram showing groundwater flow direction at Darlington Nuclear in 2023, which is consistent with previous interpretations.

He also presented a chart showing groundwater quality (concentrations of becquerels per litre (Bq/L) on the site from 2011 to 2023. A site boundary groundwater quality chart showed no adverse off-site impacts. OPG is confident that there is no off-site 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.
- OPG is confident the GWMP continues to achieve its objectives.

Raphael responded to Council questions:

- *Will new roads being constructed around the SMR site alter groundwater flow?*
It's possible, though we haven't seen any change in flow patterns to date.
- *If there were an incident affecting site groundwater, how would that groundwater be contained?*
Groundwater is not moving off site.
- *Is groundwater at the nearby St. Marys Cement site being impacted?*
If that were the case, we would see evidence of it at Darlington boundary locations, and we have not.

Topic #6: Public/Community Affairs and Darlington New Nuclear Project

On behalf of Jesara Holla, Lindsay Hamilton presented an update on the new nuclear project.

Workers are now building a water intake structure for the small modular reactor (SMR) project.

A CNSC hearing in April 2024 concluded that OPG's 2012 Environmental Impact Statement for the new nuclear project remains applicable.

A CNSC Licence to Construct hearing for the new nuclear project will have two parts:

- A virtual hearing on Oct. 2, 2024
- A public hearing at the Ajax Convention Centre on Jan. 8, 2025.

Intervention statements are due Nov. 4. OPG hopes that the CAC is interested in intervening.

Lindsay responded to Council questions:

- *Is the Licence to Construct for all four of the SMRs planned.*
No, it's just for construction of the first SMR.
- *Who is the new CNSC president?*
The President and CEO is Pierre Tremblay.

Community Update

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

- Over the summer, OPG hosted community swims, booths at Ribfest events throughout the region, Canada Day Celebrations, Clarington Concerts in the Park and many other community events. More than 4,500 community members participated in the various events and activities.
- The 2024 Tuesdays on the Trail program was held over four Tuesdays in July and August. Over 300 community members participated over the summer.
- Last Saturday (Sept. 14) Darlington Nuclear welcomed more than 3,000 visitors, including staff, stakeholders and members of the public, to the annual OPG Community Power Expo. OPG partnered with Feed the Need Durham and, together with our local community, was able to donate a remarkable amount of non-perishable food during the event.

A Council member who attended described the event as inspiring.

Lindsay remarked that a lot of planning, starting in April/May, goes into the event. The event is widely promoted, including through word of mouth. And OPG involves other community organizations.

DNNP Public Hearing on Licence to Construct

Council members expressed interest in intervening in the Jan. 8 CNSC hearing and presenting their intervention in person. Each presenter will read a section of the CAC message. Those interested in presenting can contact davehardy@hardystevenson.com.

Members who've presented at previous hearings said it was a very interesting experience. The role of the CAC resonates with the CNSC. The Commissioners have noted that the Council reaches out to neighbours to see what they think about OPG issues.

Council member Heather Reid, who presented at the hearing on the applicability of OPG's Environmental Impact Statement to the SMR project, expressed interest in presenting again.

Lindsay remarked that CAC feedback is really helpful to OPG.

Next Meeting

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