

**Darlington Nuclear Generating Station  
Community Advisory Council  
Virtual Meeting  
Minutes, Tuesday, Sept. 28, 2021  
Highlights**

**Site Update**

Richard Geofroy presented an update on plant productivity, the operating status of the reactors, the status of the refurbishment of Unit 3, a Nuclear Safety Review Board inspection of the site, production of helium-3 for industrial use, responding to misinformation about the new nuclear project at Darlington, and other matters.

**Environmental Monitoring Program (EMP) and  
Groundwater Monitoring Program (GMP)**

Lindsay Parks presented the 2020 results of the EMP report for Darlington and Pickering. The 2020 site public doses remain a small fraction of both the annual legal dose limit and the annual background radiation in the area. Council members asked questions about measuring tritium in drinking water and other topics.

Kristina Brama presented the 2020 results of the GMP report for Darlington and Pickering. There were no indications of offsite impacts of DN and PN groundwater.

**Public and Community Affairs**

Carrie-Anne Atkins presented an update on Darlington Nuclear's involvement in community activities. Resources that Council members can access to respond to misinformation about the Darlington New Nuclear Project, OPG's recently launched Climate Challenges Podcast, and distribution of free black chokeberry shrubs at the Darlington site for families to plant in their backyards were among the items mentioned.

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**Darlington CAC:**

Jim Boate  
Jim Cryderman  
Sheila Hall  
Janice Jones  
Mary Novak  
Penny Smith

**Regrets:**

Shirley Crago  
Mary Ann Found  
Brenda Metcalfe

**OPG:**

Carrie-Anne Atkins  
Kristina Bamma  
Richard Geofroy  
Raphael McCalla  
Lindsay Parks

**Hardy Stevenson and Associates:**

Francis Gillis  
Dave Hardy

**Topic #1: Review of Minutes**

The minutes of the joint meeting of the Darlington and Pickering Community Advisory Councils on May 18, 2021 were approved without changes.

**Topic #2: Health and Safety Moment**

Richard Geofroy, Deputy Vice President, presented a COVID-19 update for the Darlington site. He noted that safety is OPG's top priority. In mid-September, OPG began the return of those employees who had been working from home, to the offices

as well as the station proper. The site continues the same protocols around mask wearing and social distancing and has strengthened cleaning protocols. Management is monitoring the Delta variant of COVID-19, and expect staff to continue getting vaccinated. Darlington is setting standards to ensure the safety of employees and contractors. Sixty-two percent of employees have filed necessary COVID-related information as of last Monday, and the station expects to reach 100 percent soon.

Richard responded to Council questions:

- *Are those working in restricted areas all vaccinated so that there is no disruption of operations in an emergency?*  
Yes.
- *In a nuclear event, would you continue with COVID restrictions so that members of the community are not put at risk?*  
Yes, we would.

### **Topic #3: Site Update**

Richard presented a site update:

- Units 1, 2, and 4 are operating at full power. Unit 3 remains in refurbishment.
- A planned outage of Unit 4 for two months or so begins on Friday.
- Regarding the refurbishment of Unit 3, a lot has happened over the summer. We remain on target with safety objectives. There was one medically treated incident last month, a pulled muscle. This record indicates good performance in workplace safety.
- About 45 percent of the refurbishment of the unit is now complete, a month ahead of schedule and on budget. This time, in an industry first, staff are removing both the pressure tubes and calandria simultaneously, a fully automated operation. This innovation will save about 30 days in the critical path of the refurbishment. It also entails savings in material handling.
- Minister of Energy Todd Smith visited the site in August. Our goal was to demonstrate why OPG should be the operator of choice for any new reactors.
- A full site assembly emergency drill was held in July. At every such drill, the team conducting the drill is expected to identify opportunities for improvement.
- The Nuclear Safety Review Board was at the Darlington site this past week. The Board includes members from OPG and other nuclear operators around the

world. Last year, they said there were no safety issues at Darlington. This year they said the same but also identified opportunities for further improvement.

- Darlington will soon be producing helium-3 for industrial use. Helium-3 is a byproduct of nuclear generation, but it is very useful for applications in quantum computing, medicine and security. This innovation at Darlington represents a business opportunity for OPG and support for the community. It will first go to market at the end of this year. Helium-3 is not a radioactive element. It represents a great opportunity for the plant and for the community. It will be a nice addition to the station's production of cobalt 60.

Richard responded to Council questions:

- *Helium-3 is a rare isotope. Is Canada the first market?*  
There are not many producers of the isotope across the globe. Is there a shortage? I can't answer that question, but the demand for helium-3 is extremely high.
- *Will the product be marketed through a separate company or through OPG?*  
We are looking to manufacture it through Laurentis Energy Partners, which means more job opportunities.
- *Will there be more job opportunities in the community around Darlington?*  
Yes.
- *Congratulations on being ahead of schedule in the refurbishment of Unit 3.*  
We are optimistic but not there yet. But the more margin we can achieve now, the better it will be at the tail end.

Richard noted that there has been an anti-nuclear campaign over the last several weeks, with door-to-door distribution of flyers containing misinformation regarding nuclear power and, in particular, the new nuclear project at the Darlington site. He requested that, if Council members come across such flyers, they bring them to the attention of OPG Community Relations staff so they can publicly respond with factual information. OPG is exploring leading edge technology in nuclear power and has to make sure the public has accurate information about these technologies.

As an example of effective communication to correct misinformation, a Council member referred to a newspaper ad that Durham Region published about a proposed aerobic digester for waste management.

Richard also talked about higher-than-expected hydrogen equivalent levels (Heq) in several fuel channels at the Bruce Power nuclear plant this summer. The hydrogen equivalency level is only a concern when plants are shut down and go cold, at which time there is an opportunity for hydrogen to over-pressurize the fuel channels.

On July 27, the Canadian Nuclear Safety Commission (CNSC) ordered the Bruce, Pickering and Darlington sites to obtain authorization from the Commission prior to the restart of any units or following any outage that results in the cool down of the heat transport system.

- On Sept. 10, OPG presented its perspective to the CNSC. The Commission recognized that the pressure tubes at the Bruce site are much older than those at Pickering and Darlington, where the kinds of Heq levels experienced at the Bruce site have never been seen.
- OPG demonstrated to the Commission a high degree of confidence that the licence limit will not be exceeded at Pickering or Darlington. As well, there are systems in place at the two sites to mitigate any pressure tube failure. We have sampled the pressure tubes at the two sites many times and have never seen nor expect to see numbers like those at the Bruce site. We are very confident there are no operating issues with the pressure tubes at Pickering and Darlington.

#### **Topic #4: Environmental Monitoring Program (EMP) and Groundwater Monitoring Program (GMP)**

Raphael McCalla, Director Environment, Health & Safety, introduced Lindsay Parks, who presented the annual EMP report, and Kristina Bremma, who presented the annual GMP report.

##### **Environmental Monitoring Program (EMP)**

Lindsay Parks, Environmental Advisor, Nuclear Environment, presented the 2020 results of the EMP Report for Darlington and Pickering (Appendix 1).

Key points:

- Site emissions remained at a very small fraction of their respective Derived Release Limits (DRLs are specified in federal legislation for radionuclides that may be released to air and water from the site.)
- 916 laboratory analyses were performed for the 2020 public dose calculation.
- The 2020 site public doses remain 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 of 7,000 becquerels per litre and OPG's voluntary commitment of 100 Bq/L.

## Other Monitoring Programs

- OPG monitors the impact of the discharge of warm water from the Darlington and Pickering stations on the spawning success and larvae development of fish species. There is no indication of a warming trend that would approach the no-effects threshold of less than six degrees Celsius.
- Fish impinged on the water intake screens of the Pickering plant in 2019 was estimated to be 2.87 kilograms per million square meters of station flow. The 2020 Impingement Report was submitted to the CNSC in May 2021.

Raphael responded to Council questions:

- *Do you measure tritium in drinking water?*  
We measure tritium emissions from the plant, which is distinguished from tritium that occurs naturally in the lake. As part of its operation, the facility releases small quantities of tritium into the lake, well below a level that would be a regulatory concern. The plant releases five to 10 becquerels per litre in the water around the water supply plant versus the regulatory limit of 7,000 becquerels per litre.
- *Do the variations in the charts indicate incidents at the plant?*  
Those are just normal variations over the course of the year.
- *Will the small reactors that OPG is looking at produce smaller radioactive releases into the water?*  
I know very little about these technologies but, yes, we anticipate a smaller scale of releases from them.

Richard remarked that there is still a lot of work needed to gauge the environmental impact of Small Modular Reactors. Size is an obvious factor, but design could be another factor. But OPG expects very tight regulatory requirements around these new reactors.

## Groundwater Monitoring Program

Kristina Bamma, Senior Manager Environment Health & Safety, presented the 2020 results of the GMP Report for Pickering and Darlington. She noted that tritium is the main focus of groundwater monitoring (Appendix 2).

Key results:

- For both Darlington Nuclear and Pickering Nuclear, the groundwater flow patterns remain consistent with original interpretations.
- Groundwater data collected from the key areas remained stable, indicating consistent environmental performance.
- There were no indications of offsite impacts from DN and PN groundwater.

## Topic #5: Public and Community Affairs

Carrie-Anne Atkins, Manager Corporate Affairs, presented an update on Darlington Nuclear's involvement in community activities:

- PowerON Tuesdays was a curbside pickup program that ran on select Tuesdays in July and August. 1,500 activity kits were picked up by members of the public over the four weeks. Community partners included the Toronto and Region Conservation Authority, Earth Rangers, public libraries and others.
- Region of Durham nuclear public alerts will take place on Monday, Oct. 18 and Tuesday, Oct. 19.
- The Summer edition of the Neighbours Newsletter arrived in mailboxes in July. The next edition will arrive in November.
- Over the last few weeks some homes in GTA communities have received flyers from an anti-nuclear organization, containing misinformation related to nuclear power and to OPG efforts to progress plans for a new nuclear reactor at the Darlington site. OPG wants to make sure that, as informed stakeholders, Council members have the right information and the ability to counteract misinformation. There is a fact sheet on our clean energy future that you may consider sharing (Appendix 3). You can also subscribe to OPG's [online newsletter here](#). Other resources you can access include:
  - [Climate change | OPG](#)
  - [Darlington new nuclear | OPG](#)
- OPG is a finalist for the Whitby Chamber of Commerce (WCC) Business Achievement Award for organizations in the 50+ employee category. A fully virtual event celebrating this award will take place on Wednesday, Nov. 10 from 6:30 pm to 8 pm (Zoom link to be provided).
- OPG's The Climate Challenges Podcast was launched in September and will run to December 2022. [Media release > New OPG podcast focuses on building a post-carbon future - OPG](#)
- On Sept. 25, over 300 families from Durham Region picked up free black chokeberry shrubs at the Darlington site, affording them an opportunity to safely plant the shrubs in their own backyard. The Toronto and Region Conservation Authority and the Municipality of Clarington partnered with OPG for this event.
- OPG should hear from the CNSC by early November regarding the application for the site preparation licence renewal for the Darlington New Nuclear Project.

The DNNP team will be coming to present at the joint Darlington and Pickering Community Advisory Council meeting on October 19.

- In August, members of Curve Lake First Nation visited the Darlington site for an in-person tour of the DNNP lands.
- OPG's Wesleyville site recently received the 2020 Ontario Nature Corporate Award for its contribution to improving nature conservation in the Wesleyville area. Site initiatives included restoration activities for Wesleyville Creek for brook trout, monitoring and research at Wesleyville coastal marsh, and tree swallow and wood duck nesting box and osprey platform program.

## **Topic #6: Concluding Remarks**

Richard thanked CAC members for the time they devote to Council activities. He added that OPG is looking for feedback on how to improve Council meetings.

### **Next Meeting (Virtual)**

#### **Joint Meeting of DNGS and PNGS Community Advisory Councils**

Tuesday, October 19, 2021

5:30 pm – 7:30 pm