

## **DURHAM NUCLEAR HEALTH COMMITTEE (DNHC) MINUTES**

### **Location**

Durham Regional Headquarters  
605 Rossland Road E, Whitby

### **Meeting**

In an effort to help mitigate the spread of COVID-19, this DNHC meeting was a virtual meeting so that presenters, members, and guests could present and participate without meeting together in the Regional Council Chambers.

### **Date & Time**

September 16, 2022 at 1:00 PM

### **Members that Participated**

Lisa Fortuna, Durham Region Health Department (DRHD) (Chair)  
Mary-Anne Pietrusiak, DRHD  
Dr. Kirk Atkinson, Ontario Tech University (OTU)  
Phil Dunn, Ministry of the Environment, Conservation and Parks (MECP)  
Raphael McCalla, Ontario Power Generation (OPG)  
Loc Nguyen, OPG  
Deborah Kryhul, Public Member  
Veena Lalman, Public Member  
Susan Ebata, Public Member  
Dr. Barry Neil, Public Member  
Jane Snyder, Public Member  
Dr. David Gorman, Public Member  
Dr. Lubna Nazneen, Alternate Public Member  
Alan Shaddick, Alternate Public Member

### **Presenters & Assistants**

Paulo Correia, DRHD (Secretary)  
Carrie-Anne Atkins, OPG (Presenter)  
Lindsay Parks, OPG(Presenter)  
Ali Esmaeily, OPG(Presenter)  
Ajit Ghuman, CNL (Presenter)  
Alex Swirski DRHD (Presenter)  
Vinroy Thorpe, OPG  
David Keene, MECP  
Helen Tanevski, DRHD  
Roger Ignacio, DRITD

### **Regrets**

Hardev Bains, Public Member  
Janice Dusek, Public Member  
Dr. Robert Kyle, DRHD

Lisa Fortuna opened the virtual meeting and welcomed everyone.

Land Acknowledgement by Lisa Fortuna.

Lisa Fortuna mentioned that observers who have questions concerning presentations today, should email or discuss their requests with Paulo Correia, DNHC secretary, at [dnhc@durham.ca](mailto:dnhc@durham.ca).

Paulo Correia will follow-up with each of the presenters after the meeting with the observers' questions off-line to prevent any duplication of emails and responses. Paulo will report back to Dr. Robert Kyle the outcomes of the questions received.

### **1. Approval of Agenda**

The Revised Agenda was adopted.

### **2. Approval of Minutes**

The Minutes of June 17th, 2022 meeting were adopted as written.

### **3. Correspondence**

**3.1** Dr. Robert Kyle's office received the Minutes of the Joint Pickering Nuclear Generating Station (NGS) and Darlington NGS Community Advisory Council virtual meeting held on April 19, 2022.

**3.2** Dr. Robert Kyle received a report from James Kilgour, dated July 6, 2022, stating that James did not receive any questions from Observers arising from the June 17 DNHC meeting.

**3.3** Dr. Robert Kyle received an OPG report from Margo Curtis on behalf of Raphael McCalla, Director, Environmental Health and Safety, that provided a link to OPG's 2021 Results of Environmental Monitoring Programs available at <https://www.opg.com/reporting/regulatory-reporting/>.

**3.4** Dr. Robert Kyle wrote a letter on behalf of the DNHC concerning the licence application by Canadian Nuclear Laboratories' (CNL) application for a 10-year renewal of the Port Granby Project of the Port Hope Area Initiative to allow CNL to continue carrying out cleanup activities and continue the monitoring and maintenance of the Port Granby Long-Term Waste Management Facility. Dr. Kyle's letter was dated September 12, 2022.

### **4. Presentations**

**4.1 Progress report by Ontario Power Generation (OPG) concerning the Results of the 2021 Environmental Monitoring Program (EMP) for Darlington and Pickering Nuclear Generating Stations (NGSs)**

Lindsay Parks, Environmental Advisor, Environmental Health and Safety, OPG provided a presentation of the 2021 EMP results for Darlington and Pickering NGSs.

Lindsay explained the key objectives of EMP are to:

- Demonstrate the effectiveness of containment and effluent control, independent of effluent monitoring
- Demonstrate compliance with limits on the concentration and intensity of contaminants and physical stressors in the environment and
- Provide data to assess the level of risk on human health and the environment and to confirm predictions made by environmental risk assessments

The highlights of the 2021 EMP presentation:

Maps illustrating the Sampling Point locations emphasised:

- Sample locations associated with the annual monitoring program and the locations of the Potential Critical Groups.
- Calculated annual radiation dose for representative people in critical groups. Dose is calculated for 3 age categories (infant, child, adult).
- Critical groups are groups of people with similar habits and diets
- Dose is calculated for 3 age categories (infant, child, adult).
- Calculations include station emissions, meteorological data, sample data around the stations from the critical groups.
- For Darlington, the Critical Groups include the West/East Beach residents, farm residents, rural residents, and dairy farmer.
- For Pickering, the Critical Groups include the urban resident, industrial worker, sport fisher and dairy farm.
- Sample collections include tritium in air samplers and noble gas detectors highlighted in red on the map.
- C-14 air samplers represented by green dots.
- Additional samples of fruit, vegetables, poultry, eggs, animal feed, milk, beach sand, lake water, well water and municipal water are collected and analyzed and indicated by different colours on the legend.
- Radiation dose image from the CNSC illustrated radiation doses from various sources and the units in millisieverts.
  - The annual dose limit for Pickering and Darlington is one millisievert. The typical dose near a nuclear power plant is approximately 0.001 millisievert or one microsievert.
  - Cross Canada flight is approximately 20 microsieverts.
  - A chest x-ray is approximately 100 microsieverts.
- The 2021 EMP public dose results from Pickering was 2.0 microsieverts and from Darlington was 0.6 microsieverts. This represents 0.2% of the annual regulatory limit for Pickering and less than 0.1 % of the annual regulatory limit for Darlington.

- Station radiological emissions remained at very small fractions of their respective Derived Release Limits (DRLs).
  - The DRL is a rate that corresponds to an exposure at a legal public dose limit. Maintaining emissions below DRLs, ensure that the annual dose limit is not reached.
- Dose calculations and annual report were reviewed and verified by an independent third party.
- 2021 EMP report was submitted to CNSC on April 25, 2022 and is available on [www.opg.com](http://www.opg.com).
- The 2021 public dose for Darlington was 0.6 microsieverts.
  - Tritiated water (HTO), C-14, and noble gases are the main dose contributors.
  - Darlington public dose is consistent with the 2020 dose.
  - The 2021 dose is less than 0.1% of annual regulatory limit of 1000 microsieverts.
- The 2021 public dose for Pickering was 2.0 microsieverts.
  - HTO and noble gases are the main dose contributors.
  - Pickering public dose is consistent with the 2020 dose.
  - The 2021 dose is 0.2% of annual regulatory limit of 1000 microsieverts.
- A table showed the total radiological emissions from Darlington, Pickering and their respective DRLs.
  - Radiological emissions to air include Tritium Oxide, Elemental Tritium from the Tritium Removal Facility at Darlington, Noble Gas, I-131, Particulate and C-14.
  - Radiological emissions to water include Tritium Oxide, Gross Beta/Gamma and C-14.
  - Pickering Gross beta-gamma are reported to be 6% of the DRL.
- 2021 Tritium air results were reviewed. Tritium is measured at 6 boundary locations for Darlington and 6 for Pickering.
  - Tritium to air emissions for Darlington were  $2.6 \times 10^{14}$  Bq. Average tritium in air at Darlington Site Boundary was 0.87 Bq/m<sup>3</sup>.
  - Tritium to air emissions for Pickering were  $5.2 \times 10^{14}$  Bq. The average tritium in air concentration at the Pickering site boundary was 5.2 Bq/m<sup>3</sup>.
- Tritium concentrations monitored at Water Supply Plants (WSPs) remained below OPG's commitment of less than 100Bq/L and below the Ontario Drinking Water Quality Standard of 7000 Bq/L.
  - Samples collected from 3 WSPs near Darlington and 4 water supply plants near Pickering. Average for the year:
    - Bowmanville WSP 4.8 Bq/L for the year.
    - Oshawa WSP 6.6 Bq/L for the year.
    - Ajax WSP 4.9 Bq/L for the year.
    - F.J Horgan WSP 3.5 Bq/L for the year.
- Results of Non-Radiological Monitoring.
  - 2021 emissions continue to be reported through 2022, the 2021 EMP Report also summarized the complete set of emissions for 2020.

- Emissions to air include sulphur dioxide, nitrogen dioxide, carbon dioxide, ammonia, hydrazine and ozone-depleting substances (ODS).
- In 2020, there were three ODS releases of R134a (tetrafluoroethane) refrigerant at DN, in excess of 100kg. The spills were reported to the Spills Action Centre and regulatory authorities.

Lindsay summarized the EMP results.

- Site emissions remained at a small fraction of DRL.
- 935 laboratory analyses performed for the 2021 dose calculation.
- 2021 site public dose remains a small fraction of both the legal dose limit and the annual natural background radiation.

Other monitoring programs captured in the presentation:

- Annual reporting of fish impingement is required by Fisheries and Oceans Canada (DFO) to ensure ongoing compliance with conditions of the PN Fisheries Act Authorization issued to OPG in January 2018.
- Results of the 2021 monitoring program are presented in the Pickering Nuclear 2021 Impingement Monitoring Report submitted to both DFO and CNSC and will be available on OPG.com.
- 2022 monitoring program results will be issued in 2023.

Environmental Risk Assessments (ERA):

- The updated 2020 Darlington ERA has been completed and is available on [www.OPG.com](http://www.OPG.com). The results of the following are included in the ERA:
  - 2019 study on hydrazine concentrations in lake water indicate that there are no health risks for human receptors due to the exposure of hydrazine in drinking water.
  - 2019 study on the filtered and unfiltered concentrations of aluminum did not exceed screening criteria, aluminum deemed not a chemical contaminant of concern for the ERA.
- The updated 2021 Pickering ERA has been completed and submitted to the CNSC and will be available online once reviewed by the CNSC.

Final summary:

- MECP performed audits of the Health Physics Laboratory in February and August, 2021. No non-compliant findings.
- CNSC Field Inspection completed March 5, 2021. No adverse conditions found.
- In 2021, no major changes to the routine sampling program identified.
- No supplementary studies are planned for 2022 EMP.
- Changes to the EMP as a result of the latest PN and DN ERAs will be identified and captured in the next EMP design review in 2023.

Lindsay Parks or associates will continue to update the DNHC on EMP Report results. Full EMP Reports are available at [opg.com](http://opg.com).

## **4.2 Progress report by OPG concerning the Results of the 2021 Groundwater Monitoring Program (GWMP) at Pickering and Darlington NGSs**

Ali Esmaeily, Section Manager Environment Programs, Environmental Health and Safety, OPG, provided a presentation of the results of the 2021 GWMP for Pickering and Darlington NGSs.

Ali reviewed the key objectives of the 2021 GWMP:

- Verify groundwater flow direction.
- Monitor changes to on-site groundwater quality, identify new issues in a timely manner, and assess historical issues.
- Monitor groundwater quality at the site boundary to confirm no adverse off-site impacts.

Pickering NGS Program overview:

- Picture of site with sample locations shown.
- 300 samples were taken from 125 sampling locations.
- Majority of monitoring locations are near the operating units. Additional ground water wells are located further out at the site boundary in all directions.
- Groundwater flow patterns verified. Groundwater flows follow a similar pattern from previous years.
- Tritium in groundwater is the main focus.
- Tritium concentrations measured in becquerels per litre (Bq/L) continue to trend downwards.
- 2020 issues with Unit 1 were addressed. Witnessed migration of Tritium from Unit 1 to the Vacuum Building Ramp Sump which collects water from Unit 1 and 2.
- Unit 3 and 4 areas have had stable tritium concentrations and a decline is being observed.
- Irradiated Fuel Bay between Units 2 and 3 saw an increase attributed to a heavy water leak that occurred in the 3<sup>rd</sup> quarter of 2020. The groundwater in this area flow towards an area of containment.
- Unit 5 and 6 areas have seen stable tritium concentrations similar to 2020. Unit 6 sump saw an increase in tritium concentration due to a defective Unit 6 valve that was addressed and levels declined after the repair.
- Unit 7 and 8 areas have seen concentrations that are stable or decreasing.
- Irradiated Fuel Bay located between Units 6 and 7 saw an increase from the flow of water from Unit 6. This area will continue to be monitored.

Pickering Summary Graph

- No offsite impacts from groundwater in 2021.

Darlington NGS Program overview:

- Picture of site with sample locations shown.
- 180 samples were taken from 81 sampling locations.

- Groundwater flow patterns verified. Groundwater flows follow a similar pattern from previous years.
- Locations sampled near the reactors and site boundary.
- Tritium concentrations are low, stable and have a downward trend.

#### Darlington Summary

- No offsite impacts from groundwater in 2021.
- Tritium concentrations at the site boundary continue to be low and confirmed by sampling completed in 2021.

#### 2021 Ground Water Monitoring Summary

- Ground water flow patterns remain consistent for both Pickering and Darlington NGS.
- Groundwater data collected remains stable.
- There were no indications of off-site impacts.
- 2021 Ground water Report and GIS Maps are available at [opg.com](http://opg.com).

Ali Esmaeily or associates will continue to update the DNHC on OPG's Ground Water Monitoring Program results. More information is available at [opg.com](http://opg.com).

### **4.3 Progress report by the Canadian Nuclear Laboratories concerning the Port Granby Project**

Ajit Ghuman, Manager of Long-Term Waste Management Facilities), provided an update on Port Granby Project.

Ajit commenced the presentation with the project's commitment to Indigenous and community engagement.

#### Port Granby Engineered Storage Mound completed

- Approximately 1.3 million tons of historical, radioactive waste now contained at the facility.
- Completion of the cap cover was a significant milestone.
- Final Stage is the long-term monitoring and maintenance of the site.

#### Restoration of the site.

- Focus on tree planting, Goal to plant 21,000 trees by end of 2022.
- Deconstruction and removal of site infrastructure.
  - Lakeshore road realignment and underpass removal.
  - Remove internal roads.
- Construction of berm on west side of the wastewater treatment plant.
- Final Stage is the long-term monitoring and maintenance of the site.
  - Air, water, groundwater, soil, plants, wildlife monitoring continues.
  - Continued safety oversight to ensure site is properly managed to reduce risk to people and environment.
  - Long-term Waste Management Facility will continue to be monitored and maintained.

- Wastewater collected will be transported and stored at licensed offsite location.

#### Port Granby Nature Reserve Proposal

- Proposal to create a nature reserve.
- Atomic Energy of Canada has established a working group for the long-term vision for the lands surrounding the storage mound.
- The site is surrounded by approximately 270 hectares of crown lands.

#### Port Hope Area Initiative-10 year Licence Renewal Application

- CNL requesting to consolidate the Port Hope licence and the Port Granby Project Waste Nuclear Substance Licence into a single, ten-year Port Hope Area Initiative (PHAI) licence.
- CNL's goal is continue the cleanup and maintenance work of both sites without the requirements of maintaining two separate licences.
- Request to intervene to the CNSC by October 14<sup>th</sup>, 2022.
- Public Hearing to be held November 22, 2022.
- Decision to be posted by CNSC approximately 12 weeks later.
- Visit PHAI.ca to participate or for more information.

Question raised about the location of the Environmental Monitoring Program? CNL will provide a response and follow-up will occur with the member.

Ajit Ghuman or his associates will continue to keep the DNHC updated on the Port Granby Project. More information is available at [phai.ca/port-granby-project](http://phai.ca/port-granby-project).

### **.4.4 Update by (DRHD) concerning Durham Region Health Neighbourhoods: Release 4**

Alex Swirski, Epidemiologist, Health Analytics & Research, DRHD, provided a presentation on the updated Health Neighbourhoods: Release 4

Alex provided an overview of the Health Neighbours Project.

- Last updated in 2017 with 89 Indicators.
- Release 4 updated in June 2022 with 96 indicators.
- 50 Health Neighbourhoods. Municipalities may have 1 neighbourhood or as many as 12.
- Neighbourhoods designed to have an equal number of residents in each, but not possible due to rural and urban population and geographic boundaries.
- Based on the 2016 census, the average population size of each neighbourhood was 12,800 but varied from 8,300 in Westney Heights (Ajax) to 22,000 in Ajax Northeast. Generally, neighbourhoods in rural areas, particularly the north, have smaller populations than the urban neighbourhoods in the south.
- Release 4 delayed due to COVID.
- Health neighbourhoods provides key social determinants of health such as:



- Access to Health services
- Housing
- Income
- Education
- Employment
- Many more indicators were displayed on the slide.

Alex explained the benefit of Health Neighbourhoods:

- Allows analysis below the municipal level.
- Provides local data for evidence informed decision making.
- Helps identify priority populations geographically and address the social determinants of health.
- Increases awareness of how community can affect health.
- Facilitates work with other departments, organizations, and community partners.

Alex explained how neighbourhoods in close proximity can be vastly different.

- Two neighbourhoods, 3km apart, had large differences in household income, life expectancy and number of domestic incidents.
- There are 7 priority neighbourhoods in Durham.
- Priority neighbourhoods have the lowest income levels in Durham.
  - Community can affect health.
  - Highlighting priority neighbourhoods can assist in supporting community.
  - 1 in 6 Durham residents live within a priority neighbourhood.
  - These areas have many community strengths and assets that can be used to improve health and well-being.

What's new in Release 4?

- New map viewer platform.
- Online dashboards replaced the PDF indicator summaries and Neighbourhood Profiles used in earlier releases.
- Neighbourhood data can be explored, filtered, and downloaded through the open data portal.

Alex reviewed screen shots of the new platform and improvements to new release.

- New platform allows more flexibility with searching by indicator or neighbourhood.
- Can quickly compare different indicators and time periods.
- Able to compare Health Neighbourhoods, municipality, Durham Region, and Ontario.
- Health Neighbourhood profiles display all available data for the neighbourhood or municipality.
- Can filter data based on higher or lower values.
- Easy to find points of interest: Services, schools, childcare, health care, housing, transportation, and more.

- Easy to navigate on mobile and desktop.
- All data is available on Durham Region's Open Data site.
  - Data can be explored, filtered, and downloaded.
- Durham.ca/neighbourhoods has many additional resources, FAQs, information on indicator changes, etc.
- 20 new indicators added.
- 10 indicators modified or re-named.
- Updated time comparisons with more years of data.

Health Neighbourhoods is an evolving project and future updates to include:

- New dashboard for timepoint comparison.
- New and updated indicators,
- Inclusion of 2020 census data,
- Creating new knowledge, translation, transfer products, and infographics.
- Additional improvements to be considered from feedback and needs of community.

Alex completed her presentation by comparing two Health Neighbourhoods: Frenchman's Bay and Darlington that include both Pickering and Darlington Nuclear stations

- Several slides compared 100 people and how Health Neighbourhoods data can easily compare the two neighbourhoods.
- **Visit [durham.ca/neighbourhoods](https://durham.ca/neighbourhoods) for completing your own comparison.**

Questions:

A question was asked about correlation between the environment, socio economic and health?

Alex responded to the question.

- There aren't many environmental indicators captured on the project.
- Environment factors may play a role. Exposure to radon, air pollution, UV, and pollen were examples used that can have an impact on a person's health. The impact goes beyond the neighbourhood.
- Difficult to link an exposure when the exposure may impact the region as a whole and not a particular neighbourhood.
- Weather may also be a factor and difficult to associate with a neighbourhood.

Alex Swirski or associates will continue to update the DNHC on its progress with Durham Region Health Neighbourhoods. More information is available at [durham.ca/neighbourhoods](https://durham.ca/neighbourhoods).

## 5. Communications

### 5.1 Community Issues at Pickering Nuclear and Darlington Nuclear

Carrie-Anne Atkins, Manager, Corporate Affairs, Pickering Nuclear, OPG, provided an update on Community Issues at Pickering and Darlington and the highlights were:

Pickering Nuclear Operational Performance Update:

- Pickering Units 4, 5, 6, 7 and 8, are operating at or near full power, with Unit 1 in a scheduled maintenance outage.

Pickering Vacuum Building Outage (VBO)

- Oct. 6 work will commence on the VB - largest outage since the 2010 VBO. Unit 1 (P2211) already planned to be in an outage, all other units will be shut down during the VBO.

Darlington Nuclear Operational Performance Update:

- Darlington Units 2 & 4 are operating at or close to full power. Units 1 & 3 are currently in refurbishment

Project Updates: Darlington New Nuclear Project (DNNP):

- Advertising in local papers starting Sept 8<sup>th</sup>, 2022.
- Sharing that OPG has received regulatory approval to enter site preparation for the DNNP.
- Work will include non-nuclear infrastructure activities, such as clearing and grading site to build roads, utilities, and support buildings. Work to commence September 2022 and continued into 2025.

Other Community Updates:

1. OPG's Pickering & Darlington Nuclear Information Centre reopened to the public on Monday, July 4.
  2. Tuesdays on the Trail successfully finished another season.
- Summer program ran on select Tuesdays in July and August

Look ahead:

- 2022 OPG Community Open House returning to the Darlington Energy Complex (DEC) on Saturday September 24 for employees and members of the public. Employees from operations and projects will be on hand to answer questions. Tours of the mock up reactor will be offered.

National Day for Truth and Reconciliation:

- OPG has commemorated Orange Shirt Day on Sept. 30 to raise awareness of the impact and legacy of Canada's residential schools. This year, Sept. 30 will also be designated as National Day for Truth and Reconciliation.
- OPG will be hosting an event to commemorate the day at the DEC on Thursday, September 30. The event will be livestreamed for all employees to have the opportunity to participate.

Environmental Stewardship Pickering – Take Pride in Pickering Tree Planting:

- OPG in partnership with the TRCA and the City of Pickering will plant 300 trees on October 1st, 2022.

For more information, Carrie-Anne Atkins, Manager, Corporate Affairs, Pickering Nuclear, OPG, can be reached at 416-528-7766 or by e-mail at [carrie-anne.atkins@opg.com](mailto:carrie-anne.atkins@opg.com).

For more information, Lindsay Hamilton, Manager, Corporate Affairs, Darlington Nuclear, OPG, can be reached at 905-914-2457 or by e-mail at [lindsay.hamilton@opg.com](mailto:lindsay.hamilton@opg.com).

## **6. Other Business**

### **6.1 Future Topics for the DNHC to Consider**

Lisa Fortuna mentioned the next DNHC meeting is scheduled for November 18, 2022. Theme: Safety and Compliance at Pickering and Darlington NGSS

The Draft Agenda will likely include:

- Progress report by the Canadian Nuclear Safety Commission (CNSC) concerning its Annual Regulatory Oversight Report for Darlington and Pickering Nuclear Power Plants for 2021 (TBC)
- Progress Report by Ontario Power Generation concerning the Darlington and Pickering Annual Regulatory Oversight Report for 2021 (TBC)
- Update by Durham Region Health Department (DRHD) concerning Cancer at a Glance (Anjali Pandya, Epidemiologist, Health Analytics & Research)

### **6.2 Scheduled DNHC Meetings in 2022/2023**

- November 18 - Virtual
- January 20, 2023 - TBD

## **7. Next Meeting**

### **Location**

#### **Virtual Meeting**

Durham Region Headquarters  
605 Rossland Road East, Whitby

### **Date & Time**

November 18, 2022 at 1:00 PM

## **8. Adjournment**

2:35 PM