

DURHAM NUCLEAR HEALTH COMMITTEE (DNHC) MINUTES

Location

Ontario Tech University (OTU)
2000 Simcoe Street North, City of Oshawa
Meeting Room 1058 in the Energy Research Building

Date

September 13, 2019

Time

1:00 PM

Host

Dr. Tony Waker for OTU

Members

Dr. Robert Kyle, Durham Region Health Department (DRHD) (Chair)
Ms. Lisa Fortuna, DRHD
Ms. Mary-Anne Pietrusiak, DRHD
Dr. Tony Waker, OTU, (Presenter)
Mr. Raphael McCalla, Ontario Power Generation (OPG)
Mr. Loc Nguyen, OPG
Mr. Phil Dunn, Ministry of the Environment, Conservation and Parks
Dr. John Hicks, Public Member
Ms. Veena Lalman, Public Member
Mr. Hardev Bains, Public Member
Dr. Barry Neil, Public Member
Dr. David Gorman, Public Member
Dr. Lubna Nazneen, Alternate Public Member
Mr. Alan Shaddick, Alternate Public Member

Presenters/Observers

Mr. Brian Devitt (Secretary)
Ms. Cheryl Johnston, OPG (Presenter)
Mr. Jason Wight, OPG (Presenter)
Mr. Dave Smith, Canadian Nuclear Laboratories (CNL) (Presenter)
Ms. Shernette Muccuth Henry, CNL
Dr. Pepi McTavish, DRHD
Dr. Kirk Atkinson, OTU
Mr. Adam Caly, OTU Research Assistant
Ms. Marta Kocemba, OTU PhD Student
Mr. Caige Boyd, OTU PhD Student
Ms. Amna Hassan, OTU MASc Student

Mr. Saad Al-Bayed, OTU PhD Student
Ms. Sarah Watt, OTU PhD Student
Mr. Lekhnath Ghimire, OTU PhD Student
Mr. Alex Heyden, Ajax Resident
Ms. Deborah Kryhul, Clarington Resident
Mr. A.J. Kehoe, Durham Region Resident

Regrets

Ms. Janice Dusek, Public Member
Ms. Susan Ebata, Public Member
Ms. Jane Snyder, Public Member
Mr. Matthew Cochrane, Alternate Public Member

Robert Kyle opened the meeting, welcomed everyone and thanked Dr. Tony Waker for hosting the meeting at OTU.

1. Approval of Agenda

The Revised Agenda was adopted as written.

2. Approval of Minutes

The Minutes of June 14, 2019 were adopted as written.

3. Correspondence

3.1 Robert Kyle's office received Minutes of the Pickering Nuclear Generating Station (NGS) Community Advisory Council meeting held on April 16, 2019.

3.2 Robert Kyle's office received the Darlington Refurbishment Project Newsletter, *Happening Now*, dated June 29, 2019.

3.3 Robert Kyle's office received the OPG's Neighbours Newsletter for Pickering and Darlington NGSs dated June 2019.

3.4 Robert Kyle's office received the Nuclear Waste Management (NWMO) newsletter, volume 17, issue 2, 2019 concerning several NWMO activities, dated July 2019.

3.5 Robert Kyle's office received the Darlington Refurbishment Project Newsletter, *Happening Now*, dated September 6, 2019.

4. Presentations

4.1 Progress Report by OPG concerning Innovation Projects and Initiatives across its Nuclear Fleet

Jason Wight, Director of Engineering, Pickering Nuclear, OPG, provided insight into OPG's Innovation Projects at its nuclear generating stations (NGSs). Jason titled his presentation *Innovation Velocity* and explained why OPG continues to invest in new technologies and ideas that are based on improving quality and efficiency. The highlights of Jason's presentation were:

- As more sectors of the economy move towards electrification such as transportation, there is a growing demand for OPG to produce clean, safe electricity/power for Ontarians.
- OPG is currently investigating or building renewable clean sources of power from solar power and micro-grids, to small modular reactors and long-term nuclear storage solutions.
- OPG's enterprise innovations includes:
 - Medical and health applications
 - Aerospace applications
 - Electrification solutions
 - Disruptive technologies
- OPG's local innovation at its NGSs includes:
 - Machine learning and equipment diagnostics
 - Digitalization and automation
 - Advanced inspection technologies
- OPG has established its inhouse research centre called *X LAB* that works on solutions for many issues to help improve OPG's operations and performance that includes:
 - Speed and direction
 - Vendor connection
 - Fail fast and cheap
 - Innovation networking with several universities including OTU
 - Networking with *Spark* a Durham Region organization that helps new businesses get established using innovative concepts

Jason Wight or his associates will provide the DNHC with updates concerning OPG's Innovation Projects at Pickering and Darlington NGSs that affect community safety. For more information, Jason can be contacted at jason.wight@opg.com.

4.2 Progress report by Canadian Nuclear Laboratories (CNL) concerning the Port Granby Project

Dave Smith, Project Lead, Historic Waste Program Management Office, CNL, provided a progress report on the Port Granby Project using many excellent visual aids.

Dave provided a brief history of the Port Granby Project that included:

- The Port Hope Area Initiative (PHAI) is a demonstration of Canada's commitment to cleanup and safely manage the historic low-level radiological waste (LLRW) from the former Canadian Crown Corporation, Eldorado Nuclear Limited, from 1933 to 1988 while minimizing the impact on communities.
- The cleanup is based on a legal agreement between the Government of Canada and the Municipalities of Port Hope and Clarington.
- In 2012, the Canadian Government committed federal funding of \$1.28 billion for the clean up of LLRW in both communities that included \$273 million for the Port Granby Project.
- The PHAI manages the two projects known as the Port Hope Project and the Port Granby Project.
- On July 30, 2015, a contract was made for the construction of the Port Granby Long-Term Waste Management Facility (LTWWMF) and construction began in the fall of 2016.
- The contract included relocating approximately 650,000 tonnes of historic LLRW from the existing site into an engineered above-ground mound approximately 700 metres from the north shore of Lake Ontario.

Dave provided an update on the Port Granby Legacy Waste Management Site since the last progress report to the DNHC on November 16, 2018 and the highlights were:

- The original 2016 estimate was to relocate 650,000 tonnes of LLRW but approximately 1,170,000 tonnes has been moved to date.
- The current estimate is to relocate a total of 1,250,000 tonnes of LLRW to the above-ground mound to remediate the site.
- Capping and closing of the mound began by installing a capillary barrier drainage system covered by a layer of sand and a layer of gravel.
- The Port Granby Project Waste Water Treatment Plant provides primary treatment for approximately 600 cubic metres of leachate collected daily from the drainage system that:
 - Is operated 24/7 to maximize residual management operations
 - Processed 176,000 cubic metres of liquid waste in 2019 YTD
 - Processed 135,600 kilograms of solid waste in 2019 YTD
 - A major maintenance issue in 2018 required replacement of the membrane filter system and implementation of its contingency plan.
 - Has achieved record-setting clean water production

Dave provided highlights of the current work underway at the Project that includes:

- The Water Management and Contingency Plan is being improved at the Long-Term Waste Management Facility.
- Remediation verification is being conducted, most of the area to excavated is completed or is in progress of completion.
- Restoration of the site is continuing with shaping cells of the LTWWMF to its final grade to prepare for the cap.

- From August 12-19, 2019, Lakeshore Road remediation required a portion of the roadway to be closed and local residents, stakeholders, user groups and the general public received advance notice of the detour needed.

Dave provided a list of activities to be finished:

- Completing the capping and closing of the mound.
- Completing the remediation, verification and backfilling by the fall 2019.
- Completing the final grading and landscaping by the fall 2020.
- Realigning Lakeshore Road and removing the underpass by the spring 2020.
- Maintaining the very active Public Information Program that includes newsletters, tours and meetings with key stakeholders.
- Transitioning to Phase 3 that will include long-term environmental monitoring and maintenance of the site for many decades.

CNL staff will update the DNHC on the progress of the Port Granby Project next year. More information can be accessed at info@phai.ca and Dave can be contacted at dave.smith@cnl.ca or 905-885-0291. The Historic Waste Management Office is located at 115 Toronto Road, Port Hope, ON L1A 3S4.

4.3 Progress Report by OTU concerning its Faculty of Energy Systems and Nuclear Science

Dr. Tony Waker, Professor, OTU, provided a progress report on the educational and research activities in the Faculty of Energy Systems and Nuclear Science at OTU. The highlights of Tony's presentation were:

- The 2019-20 Undergraduate Programs and student enrolments are:
 - Bachelor of Nuclear Engineering - 55 students
 - Bachelor of Science in Health Physics & Radiation Science – 4
 - Bachelor of Technology (BTech) in Sustainable Energy Systems (programs were approved and commence in the fall of 2020)
 - 2019 graduating class degrees presented were: 55 B.Eng (Nuclear), 4 B.Eng (Energy Systems) and 4 B.Sc (HP&RS)
- The 2019-20 Graduate Programs and student enrolments are:
 - Graduate Diploma in Nuclear Technology (G.Dip) - 29 students
 - Master of Engineering (MEng) – 29
 - Master of Science (MASC) – 32
 - Doctor of Philosophy (PhD) – 22
 - Graduating convocation in June 2019 graduate degrees presented were: 46 G.Dip, 4 MEng, 4 MASc, and 3 PhD

Tony explained that OTU also offers an extensive Internship Program to help introduce young scientists and engineers to the nuclear industry and workplaces. The program partners with many companies and the top 5 employers are: Bruce Power, CNSC, OPG, SNC Lavalin and AECON. In 2019, 8 Co-op and 22 Intern students were involved in the program at OTU.

Tony provided some very interesting technical information on the research projects that he and his associate professors were working on with their students in the well-equipped nuclear laboratories at OTU. Tony arranged for several students to explain the research projects underway and the highlights were:

- Determination of total ionizing radiation doses in human tooth enamel in Durham Region using Electron Paramagnetic Resonance dosimetry to address public concern about their exposure to low doses of Anthropogenic Radiation from NGSs.
- Environmental monitoring of radiation exposure using shelled species to determine if shelled species can be used as dosimeters in the case of accidental radiation exposure scenarios and environmental monitoring.
- Measuring radiation damage in rainbow trout eye-lenses to determine the effect radiation has on this sensitive tissue with relevance to both human and non-human biota radiation protection.
- Design and construction of a one-dimensional particle tracker for measurement of alpha particle stopping power.
- Hot particle dosimetry for use in a severe NGS accidents, during refurbishment, decommissioning and nuclear weapons testing.
- Design and development of a radiation detector with rapid radon rejection capabilities to prevent the nuisance alarms triggered by radon in situations during refurbishment and decommissioning at NGSs.
- Design and construction of twin ion-chambers for monitoring gamma radiation and airborne radioactivity during a severe NGS accident.

Dr. Tony Waker or his associates will update the DNHC next year on the progress of the Faculty of Energy Systems and Nuclear Science at OTU. More information can be accessed at nuclear.otu.ca or by contacting Tony at anthony.waker@uoit.ca.

5. Communications

5.1 Community Issues at Pickering Nuclear

Cheryl Johnston, Manager, Corporate Relations and Communications, Darlington Nuclear, OPG, provided an update on Community Issues at Pickering Nuclear and the highlights were:

- Pickering Units 1, 4, 6, 7 and 8 are operating at or close to full power.
- Pickering Unit 5 is in a planned maintenance outage.
- Pickering successfully hosted its annual *Tuesdays on the Trail Program* on select Tuesdays in July and August that was attended by several hundred individuals who enjoyed family-friendly activities for children aged 6 to 12 years. Free educational and environmental programs were provided with assistance of high school volunteers and in conjunction with OPG's many community partners.

- On August 14, Pickering completed an Assembly and Accounting Drill as required by CNSC every five years with assistance of DRPS to allow moving 1,100 vehicles leaving the site in 1.5 hours. Near site residents and businesses were notified in advance of the drill by hand delivered letters.
- From October 28 to November 8, Pickering Nuclear will host the World Association of Nuclear Operators (WANO) for its bi-annual Peer Review.
- In October, the Fall edition of the *Neighbours* newsletter will be distributed.

Analièse St. Aubin, Manager, Corporate Relations and Communications, Pickering Nuclear, OPG, can be reached at (905) 839-1151 extension 7919 or by email at analièse.staubin@opg.com for more information.

5.2 Community Issues at Darlington Nuclear

Cheryl Johnston, Manager, Corporate Relations and Communications, Darlington Nuclear, OPG, provided an update on the Community Issues at Darlington Nuclear and the highlights were:

- Darlington Units 1, 3 and 4 are operating at close to full power.
- Darlington Unit 2 is undergoing refurbishment.
- Darlington successfully hosted its annual *Tuesdays on the Trail Program* on select Tuesdays in July and August that was attended by several hundred individuals who attended family-friendly activities for children aged 6 to 12 years. Free educational and environmental programs were provided with the assistance of high school volunteers and in conjunction with OPG's many community partners.
- On August 14, Darlington hosted John Gorman, President, Canadian Nuclear Association, for a visit to the station.
- On October 26, Darlington will host its annual Darlington Refurbishment Open House from 10:00 am to 4:00 pm starting at the Darlington Energy Complex. The Open House will provide visitors with more information about OPG's refurbishment project, a reality tour of the inside of a nuclear facility and an informative bus tour around the Darlington NGS.
- In October, the Fall edition of the *Neighbours* newsletter will be distributed.

Cheryl Johnston, Corporate Relations and Communications, Darlington Nuclear, OPG, can be reached at (905) 623-6670 extension 7038853 or by email at cheryl.johnston@opg.com for more information.

6. Other Business

6.1 Topics Inventory Update

Robert Kyle indicated the Topics Inventory will be revised to include the presentations made today.

6.2 Future Topics for the DNHC to Consider

Robert Kyle indicated the next DNHC meeting scheduled for November 22, 2019 will likely include:

- Progress report by CNSC concerning the 2018 Safety and Performance Reports for the Darlington and Pickering Nuclear Power Plants.
- Progress report by OPG concerning the Darlington Refurbishment Project.
- Progress report by OPG on its redesigned reporting method for Groundwater Monitoring data collection.

6.3 Scheduled DNHC Meetings in 2020

Robert Kyle mentioned the 2020 DNHC meetings will be held at Regional Headquarters in the Council Chambers on the following dates:

- January 17
- April 24
- June 19
- September 18
- November 20

7. Next Meeting

Location

Durham Regional Headquarters
605 Rossland Road East
Town of Whitby, Ontario
Lunch in Meeting Room 1B
Meeting in Council Chambers

Date

November 22, 2019

Time

12:00 PM Lunch served, 1:00 PM Meeting begins

8. Adjournment 4:15 PM