

NEIGHBOURS

PICKERING NUCLEAR • DARLINGTON NUCLEAR



SUMMER 2018

Pickering's Bring Back the Salmon Clean-up Day

In late spring, a mighty team from St. Elizabeth Seton Catholic School students joined OPG, Toronto & Region Conservation Authority (TRCA) and Ontario Federation of Anglers and Hunters in Brock Ridge Park for the Duffins Creek clean-up, as a part of the Salmon Hatchery classroom program 'Bring Back the Salmon.'



The students removed litter and debris from the creek to promote healthy habitat development, prior to releasing the salmon they raised at Pickering Nuclear.

The clean-up activities are one component of a four-tiered educational program that also includes hatchery activities, Yellow Fish Road program, and the promotion of environmental stewardship. ■

Pickering Nuclear Operating Licence Renewal

In August 2017, OPG submitted its licence renewal application to the Canadian Nuclear Safety Commission (CNSC) for a ten-year term. This would cover the period between Sept. 1, 2018 and Aug. 31, 2028, allowing for operations to continue to 2024, followed by the beginning of safe storage activities.

"Today, one in seven homes and businesses are supplied with electricity generated by Pickering Nuclear with virtually no greenhouse gas emissions," said Randy Lockwood, Senior Vice President, Pickering Nuclear. "Thanks to our dedicated employees and continuous investments in plant components and equipment, our safety performance is in the top quartile. Operating Pickering to 2024 allows us to continue providing 14% of Ontario's electricity during the overlapping refurbishments of the Darlington and Bruce nuclear stations."

OPG has posted to opg.com the various reports and technical reviews that have been submitted as part of the licence application. CNSC staff have reviewed the application, and recommend it be approved by the Commission. The relicensing hearing will be held June 25-29 in Pickering, and you can learn more about the process by visiting www.nuclearsafety.gc.ca. ■

Tuesdays on the Trail

Summer is back and so are OPG's Tuesdays on the Trail programs. These family friendly programs are designed for children ages 6-11 and are fun, educational and free! Be sure to check out our Tuesdays on the Trail flyer insert for further program details. ■



TUESDAYS ON THE
TRAIL LINEUP

UNIT 2 RECURBISHMENT
UPDATE

OPG'S ENVIRONMENTAL
MONITORING PROGRAM

DARLINGTON'S NEW
POLLINATOR HABITATS

ONTARIO **POWER**
GENERATION

Unit 2 Reactor Reassembly in Progress at Darlington Nuclear

After having safely removed components from the Unit 2 reactor at Darlington Nuclear Generating Station, OPG and our project partners have begun the next phase on the Darlington Refurbishment project: rebuilding the reactor.

"This is a pivotal stage in the project," said Mike Allen, Senior Vice President of Nuclear Refurbishment. "So far, we've been safely taking the reactor apart. Now, we're inspecting and installing new components, putting the unit back together for 30 more years of service."

The project team is also undertaking a lot of other important work that will maintain Darlington's record as one of the safest and most reliable nuclear plants in the world.

"We're over-hauling our turbines and generators — the equipment that helps produce electricity," said Allen. "We're also rebuilding or replacing close to 1,000 valves inside the reactor, and refurbishing our fuel handling equipment."

To get all this work completed, OPG is relying on more than 200 companies across Ontario who are supplying quality components and specialized tooling to keep Darlington Refurbishment moving forward, on time and on budget.

"Close alignment between OPG and our project partners is directly responsible for the team's success to date, and for our readiness to get the job done well in this critical phase," said Allen.

Visit www.opg.com to watch a new Darlington Refurbishment video explaining what's happening on the project during reactor reassembly. ■



Feeder tubes being prepared for shipment to Darlington Nuclear Generating Station where they will be installed in the Unit 2 reactor.



Staff in discussion on the turbine floor of the Darlington Nuclear Generating Station, April 2018.

A Bright Future for OPG's Next Generation



Matthew recently received the Individual Achievement Award at NAYGN's annual conference in Atlanta, presented by NAYGN President Abbey Donahue.

North American Young Generation in Nuclear's Matthew Mairinger is just one of the many young talented professionals working in today's nuclear industry.

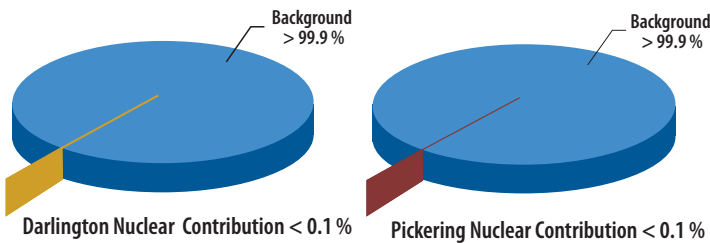
Matthew's appreciation for nuclear power began in university, where he studied Nuclear Engineering at the University of Ontario Institute of Technology. While his current role in Performance Engineering is focused on taking care of environmentally qualified safety-related components, he's held various roles at OPG, providing him with a deep appreciation for the highly-skilled and varied positions at OPG. "I consider OPG to be a leader in the nuclear industry in terms of innovation and technology" says Mairinger.

"Being a millennial, I believe that youth today have the ability to help shape the future of nuclear power in Canada. Knowing that our generation is genuinely concerned about pollution and global warming, there are many advantages to nuclear power, which operates virtually emissions free while also meeting the province's electricity needs."

Matthew serves as the Canadian Affairs Chair and also as President of the North American Young Generation in Nuclear (NAYGN) Durham Chapter, which includes hundreds of young professionals interested in nuclear science and technology in the region. Of special note, the Durham chapter was recently awarded Best Chapter at the NAYGN's annual conference in Atlanta. Matthew also sits on the steering committee of the Society of Energy Professionals - Young Professionals Network and the Society NextGen, both of which are focused on developing young people in the energy industry. ■



Environmental Monitoring Program Annual Report



Typical Radiation Doses	
Source	Exposure (in microsieverts)
CNSC regulatory limit	1,000
Natural background in Durham	1,400
Chest X-ray	100
Airplane Flight (2 hrs)	12
Darlington 2017 EMP results	0.7
Pickering 2017 EMP results	1.8

OPG has a number of processes in place to ensure that any emissions from Darlington and Pickering Nuclear remain a small fraction of the allowable regulatory limit, as they have been for the entire operating history of both stations.

Each year, results from OPG's Environmental Monitoring Program (EMP) are analyzed to determine any environmental impacts from our nuclear generating stations. Thousands of environmental samples are taken from a variety of sources, including air, lake water, beach sand, fish, vegetables, milk, and soil.

The 2017 EMP report concluded that Darlington's annual public dose equivalent was 0.7 microsieverts, while Pickering's annual public dose equivalent was 1.8 microsieverts, both of which are a fraction of the annual regulatory limit of 1,000 microsieverts set by the CNSC, and a very small fraction of the estimated natural background dose of 1,400 microsieverts that comes from sources such as cosmic rays, soil, rocks, and radon.

The findings were validated by a third-party expert and by independent testing carried out by the Canadian Nuclear Safety Commission. The full report can be reviewed at: opg.com/news-and-media/Pages/reports.aspx. ■

Enhancing Pollinator Habitats at the Darlington Site

This spring, Darlington staff launched a new environmental initiative, 'Pollinating Partners,' in support of native bees, butterflies, birds, bats and other pollinators. Biodiversity enhancements at the Darlington site this year include the installation of native plants, and placement of logs to support the turtle population.

Students from Courtice High School mentored Grade 5 students from Courtice North Public School to build bee and butterfly hotels, which were installed on the Darlington Site alongside the upper soccer fields and the Energy Complex, as well as at Enniskillen Conservation Area. Staff from Central Lake Ontario Conservation Authority also provided students with an overview of pollinators and their importance to the environment. In late May, the students returned to the sites of the bug hotels to plant pollinating gardens, and this fall they will return to observe the bug hotels and check the progress of the gardens.

"This program, which is focused on the enhancements of natural habitats across the site, is a great way to get a new generation involved and excited about biodiversity," said Helen Spencer, Environmental Section Manager.

In 2017, both the Darlington and Pickering Stations were awarded Gold Certification by the Wildlife Habitat Council (WHC) for their biodiversity programs. The WHC is an international organization which promotes habitat conservation



On May 22, students planted over 1,000 native pollinating plants on site.

and management on corporate lands through partnerships and education. OPG has been a member of the WHC since 1997 and has certified many of its generating facilities. ■

On-Site CNSC Team Provides 24/7 Inspections

Did you know that Canadian Nuclear Safety Commission (CNSC) inspectors are on site daily at Pickering and Darlington Nuclear?

These inspectors have a thorough understanding of nuclear operations and oversee adherence to the Nuclear Safety and Control Act.

Site inspectors perform a wide range of activities, including:

- program level inspections to ensure alignment with regulatory and engineering requirements,
- field inspections to verify the implementation of and adherence to programs and processes, and
- event report reviews and ongoing monitoring to verify compliance with CNSC regulatory documents. ■

Did you Know?

The Canadian Nuclear Safety Commission (CNSC) assesses the ability of Canadian nuclear power stations to safely withstand and respond to credible external events, including earthquakes.

Following the 2011 earthquake in Fukushima, Japan, an action plan was developed to further strengthen safety through enhancements to defence-in-depth, emergency response and communication and public education. You can read more about these safety improvements at www.nuclearsafety.gc.ca/eng/resources/educational-resources/feature-articles/fukushima-lessons-learned.cfm. ■



Pickering Nuclear Emergency Mitigating Equipment - diesel pumps and generators.

Meet a CNSC Safety Inspector



Dean Hipson,
Senior Power Reactor Site Inspector

Dean works in the CNSC's Darlington Regulatory Program Division as part of the Directorate of Power Reactor Regulation. He grew up in Ajax, and went on to attend the University of Ontario Institute of Technology, where he earned a degree in nuclear engineering.

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