

**Darlington Nuclear Generating Station  
Community Advisory Committee  
and  
Pickering Nuclear Generating Station  
Community Advisory Council  
at  
Darlington Nuclear Information Centre  
Meeting Minutes, November 28, 2017  
Highlights**

**Site Update**

Brian Duncan presented a Darlington site update, noting that the three on-line units at the site are operating at full power (Unit 2 is off-line for refurbishment). He also talked about winter maintenance activities, the enormous increase at the workforce on site due to the refurbishment, improvements to the waterfront trail, and other matters.

**Public Affairs**

Analiese St. Aubin presented an update on recent and forthcoming Darlington and Pickering activities in the community.

**Darlington Refurbishment Update**

Scott Berry noted that, in spite of many new workers coming to Darlington, safety performance at the station is good, and the refurbishment project is ahead of schedule and on budget. He noted that the refurbishment of Unit 2 has just completed preparations for disassembly and moved to removing reactor components. He also talked about a state-of-the-art system to process and package nuclear waste from the refurbishment.

**“X-Lab” Innovation at OPG**

Jason Wight talked about a number of innovations that the X-Lab group is involved in: voice activated Google safety glasses, 3D printing, drones, robotics and other activities. Council members found his presentation very interesting.

**Darlington Nuclear Generating Station  
Community Advisory Committee  
and  
Pickering Nuclear Generating Station  
Community Advisory Council  
at  
Darlington Nuclear Information Centre  
Meeting Minutes, November 28, 2017**

**Pickering CAC:**

John Earley  
Mary Gawan  
Bill Houston  
Tim Kellar  
Greg Lymer  
Sean McCullough  
Zachary Moshonas  
Deborah Wylie

**Darlington CAC:**

Jim Boate  
Steven Cooke  
Jim Cryderman  
Maryann Found  
Sheila Hall  
Brenda Metcalf  
Mary Novak  
Pat Pingle

Regrets:

Jim Dike  
Donna Fabbro  
Keith Falconer  
Donald Hudson  
Dinesh Kumar  
Pat Mattson  
Moe Perera  
Helen Shamsipour  
Kira Shan  
Dan Shire  
Ralph Sutton

**OPG:**

Scott Berry  
Laura Brooks  
Brian Duncan  
Jennifer Knox  
Analiese St. Aubin  
Jason Wight

**PDA:**

Francis Gillis  
John Vincett

**Pickering New Advertiser:**

Keith Gilligan

**Topic #1: Darlington Site Update**

Brian Duncan, Senior Vice President at Darlington, presented a site update:

- Unit 2 is off-line, undergoing refurbishment. The remaining units (1, 3, and 4) are operating at full power.

- Intake screen maintenance at the plant is easier and costs less during the winter. We have replaced a number of screens and the new screens are fibreglass as opposed to the older stainless steel material. Divers are currently vacuuming the shells of zebra mussels off the intake cap – they complete about one third of the task each year and this is sufficient to maintain the intake waterflow. During the summer months, OPG chlorinates the mussels, then dechlorinates the water before releasing it back into the lake.
- Because of the refurbishment, the workforce on the site has gone from 2200 to 5500. This number includes both permanent employees and temporary workers. So it's a busy site and has required additional buildings and parking to accommodate this increase.
- Due to the expanded workforce, there has been a huge increase in traffic on the 401. They are building an overpass to address this increased volume. Occasionally, traffic is diverted along Energy Drive and the roundabout has caused some confusion for some of the diverted traffic.
- We have made improvements on the portion of the Waterfront Trail running by the site, including paving improvements and viewing area improvements, benches and signage.
- Pickering has produced Cobalt 60 for years. As Pickering moves toward its closing date, we are adapting the Darlington station to produce those isotopes. Currently, Pickering produces a little less than 50 percent of Ontario's Cobalt 60 isotopes. The CANDU reactor allows such adaptations. We are also meeting to consider what other medical isotopes could be produced at Darlington in the longer term and what the economics of that activity might look like.
- Planning with the refurbishment team at Darlington is well underway. In some ways, refurbishment is more complicated than building new reactors.

Brian responded to Council questions:

- *Is Bruce Power also a potential vendor of Cobalt 60?*  
The situation looks good for us. Given the size of the market, Bruce Power could never meet the demand.
- *How long before the 401 become less disruptive?*  
Probably 18 months.
- *Is the increasing use of drones causing any security concerns?*  
Yes, drones are taken into consideration in our security planning. On the positive side, we have used drones in the inspection of the vacuum building instead of scaffolding. Drones are much more efficient and thorough.

## Topic #2: Public Affairs

Analièse St. Aubin, Manager of Corporate Relations and Communications at Pickering Nuclear, presented an update on recent and forthcoming Darlington and Pickering activities in the community (see Appendix 3 for details).

## Topic #3: Darlington Refurbishment Update

Scott Berry, Manager Nuclear Issues and Waste at OPG, presented an update on Darlington refurbishment (Appendix 1).

Scott noted that more than 2,100 community members visited an open house at the Darlington Energy Complex on Oct. 28, the highest attendance to date for a one-day open house. This was a very successful day, including an indigenous trade fair, and will probably become an annual event. A Council member who had attended the refurbishment open house commented that a great variety of types of information was presented. Unions, colleges, vendors and other agencies were on hand to answer questions from the public. Scott noted that public support for the refurbishment project is 85 percent.

Scott outlined the steps involved in refurbishing a unit:

1. Defuel & Isolate
2. Prepare for Disassembly
3. Remove Reactor Components
4. Install Reactor Components
5. Restart Reactor

Just this week, Darlington moved from Step 2 to 3 in refurbishing Unit 2.

In spite of many new workers coming to Darlington, safety performance at the station is good. And the project is ahead of schedule and on budget.

Scott talked about OPG's management of nuclear waste arising from the refurbishment. Intermediate level waste from the project is being stored on an interim basis in a purpose built building, awaiting eventual permanent storage off-site. He described a state-of-the-art system to process and package low and intermediate-level refurbishment waste for maintenance inspection.

Scott, and Brian Duncan, responded to Council questions:

- *You talked about the cutting of end fitting assemblies to separate sections of low and intermediate level waste. What happens to the filings from such cutting?*  
Scott: They are collected during the cutting process and included in the waste stream.
- *How long do you expect to store waste in the purpose-built building on the site?*

Scott: Until the proposed Deep Geologic Repository is built at the Bruce site.

- *How do you ensure reporting of near misses?*

Scott: Mechanisms are in place to encourage employee reporting of near misses.

Brian: OPG has to encourage reporting, particularly by not punishing employees for doing so. OPG has to ensure safety training is implemented. A lot of audio visual programs are used for training. And a lot more communication is used during operations; for example, there is taping of operations.

- *Is Darlington updating the control room?*

Brian: We are updating the control room all the time. But where appropriate we are sticking with early, very simple software, which is well known to our operators.

#### **Topic #4: “X-Lab” Innovation at OPG**

Jason Wight is Director of Engineering at Pickering and leads the X-Lab group, which focuses on innovation. The group aims to take advantage of world technology.

Jason introduced Laura Brooks, who is a member of his team.

He mentioned a number of innovations that the group is involved in:

- Voice activated Google safety glasses connected to a pocket dosimeter that will signal a high dose of radiation
- 3D printing; e.g. X-Lab has 3D printed a part of a pump unit to check the health of batteries
- Virtual reality opportunities: for use in radiation training (X-Lab can create a virtual reality air lock; could do a whole virtual plant.)
- Drones for maintenance inspection (used in place of scaffolding as mentioned by Scott earlier this evening)
- Robotics
- Scanning: e.g. for an item or part that is no longer being manufactured
- Monitoring and diagnostic test
- Working on a technology to scrub tritium out of the air

Jason responded to Council questions:

- *Are you making presentations to regulatory bodies?*  
Yes, we are working with the regulators on innovative opportunities.
- *Do you work with UOIT?*  
Yes, But we need to leverage input from the whole community. They are a source of great ideas that we would never think of. There is, however, a small hurdle with artificial intelligence; we need to protect our information.
- *Are you doing a lot of work with such departments as purchasing and legal?*  
Innovation represents a huge opportunity for them. If those departments get into it, we would be happy to go along with them.
- *Are you tracking savings from innovation?*  
Yes and no. The hardest job is convincing others that innovation is worth it. And we have to allow for failures. However, a lot of these technologies are very inexpensive. (Laura noted that X-Lab can achieve savings by taking off-the-shelf products and adapting them to a nuclear plant's needs.)

Jason added the barrier net in the lake works well in keeping algae away from the plant intake, but it has to be taken down and put back each year. This is an innovation opportunity that could potentially save a lot of money.

Council members appreciated Jason's presentation, which they found fascinating.

**Next Meeting of Pickering CAC  
Tuesday, January 16, 2018, 6 pm  
Pickering Nuclear Information Centre  
(supper available at 5:30 pm)**