

**Pickering Nuclear Generating Station
Community Advisory Council
Pickering Nuclear Information Centre
Meeting Minutes, January 16, 2018
Highlights**

Site Update

Randy Lockwood talked about the current productivity status of the plant as well as record breaking achievements in 2017 in minimizing injuries (0.06 injuries per 200,000 hours worked) and in the equipment reliability index score. He also talked about a significant reduction in the work order backlog, station operations coming in under budget, and other topics.

Public Affairs

Analiese St. Aubin presented an update on OPG's involvement in community activities. Among the items mentioned were employee contributions to charity, the station's partnering with a local school in the Bring Back the Salmon educational program, and OPG plans for the March Break Madness week.

Exercise Unified Control

Steve Lesiuta and Neal Kelly reviewed the major emergency drill based on a Pickering Nuclear scenario on Dec. 6 and 7, 2017. The exercise tested key elements of emergency response plans involving Pickering Nuclear as well as more than 30 participating agencies at all levels of government.

Environment Program Update

Raphael McCalla presented an update on environmental protection at Pickering Nuclear, focusing on groundwater monitoring and on measures to reduce fish impingement on the plant's intake screens. The station has a comprehensive Environmental Protection Program designed to continually minimize impacts of its operation on the environment and human health.

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Pickering CAC:

John Earley
Donna Fabbro
Keith Falconer
Kristin Hall
Nalalie Harder
Bill Houston
Donald Hudson
Greg Lymer
Pat Mattson
Sean McCullough
Zachary Moshonas
Dan Shire
Ralph Sutton
Anna-lisa Tersigni
Deborah Wylie

Guests:

John Miseresky
John Stirrat

OPG:

Steve Gregoris
Neal Kelly
Steve Lesiuta
Randy Lockwood
Raphael McCalla
Analiese St. Aubin

PDA:

Francis Gillis
John Vincett

Regrets:

Jim Dike
Tim Kellar
Dinesh Kumar
Moe Perera
Helen Shamsipour
Kira Shan

Topic #1: Introduction

Facilitator John Vincett opened the meeting by welcoming two new CAC members, Kristin Hall and Anna-lisa Tersigni, who are students in environmental studies at Durham College. He also welcomed guests John Stirrat and John Miseresky, both of whom are retired engineers and members of Pickering Naturalists. They will sit in for Council member Dan Shire, while he is away during February and March.

John also noted holiday greetings were sent to the Council from Mitzie Hunter, MPP for Scarborough-Guildwood.

Topic #2: Review of Minutes

The minutes of the joint meeting of the Pickering and Darlington CACs on November 28, 2017 were approved.

Topic #3: Site Update

Senior Vice President Randy Lockwood presented a site update:

- Units 1, 4, 5, 7, and 8 are operating at essentially full power. (Units 2 and 3 are in safe storage). Unit 6 went into a planned outage on January 4 and will remain so until well into spring.
- As employees return from the holiday break, the station has been particularly focused on human safety performance.
- The all-injury record for 2017 was 0.06 injuries per 200,000 hours worked, significantly better than the goal of 0.22 injuries. In 2017, there were zero High Maximum Reasonable Potential for Harm (MRPH) events, a record-breaking achievement for the site. OPG is proud of the Pickering team for this performance.
- In 2017, the station achieved a significant reduction in the work order backlog. A backlog of 115 work orders was reduced to 25 (the goal was 28).
- The equipment reliability index score was 81, the highest on record (the goal was 72).
- In the 2017 Charity Campaign, station employees contributed over \$35,000, the highest contribution ever.
- In generation, the target of 20.13 TWh for 2017 was achieved and the actual number was 21.4 TWh.
- Performance on the Operations and Maintenance budget was also excellent and funds were returned to corporate, as work was completed on time and under budget.
- It has been a very busy fall. Unit 1 came back on line January 3, after a six-month planned outage. There were unscheduled outages in Unit 7 and Unit 8; both were recently returned to power. A maintenance outage of Unit 4 is planned for March, lasting to the end of May or early June.
- A World Association of Nuclear Operators (WANO) evaluation was completed on December 15. They will deliver a final report in February. Overall the station did well. The evaluation team acknowledged the teamwork on site and the transparency of information in working with the community. They also acknowledged that Pickering

Nuclear is definitely in the forefront of industry in terms of the use of innovative technologies to find more effective and efficient ways to solve maintenance and operations challenges, and commended OPG on its involvement with the City of Pickering Fire Training Centre.

- In February, OPG will host a Nuclear Safety Review Board Inspection, an internal review process used by OPG.
- Currently, there is a rollout across the site of the achievements of 2017 and a refocus on the challenges for the site business plan for 2018.

Topic #4: Public Affairs

Analiese St. Aubin, Manager of Corporate Relations and Communications at Pickering Nuclear, talked about OPG involvement in recent and forthcoming community activities:

- In addition to the Charity Campaign, Pickering Nuclear employees participated in the Durham Regional Police toy drive. They also participated in the Generating Change collection, contributing over \$2,600 to benefit St. Paul's on the Hill Community Food Bank, Big Brothers Big Sisters, and Herizon House.
- On Feb. 2 the Bring Back the Salmon educational program will bring in a new school partner, St. Elizabeth Seton Catholic School Grade 6 students.
- The March Break Madness line up is being developed. The station is looking forward to a new program partnership with the Robert McLaughlin Art Gallery. Let's Talk Science, Windreach Farm, Scientists in Schools and a number of other programs are being planned.
- On Feb. 13 and 15, Pickering Nuclear will hold Stakeholder Information Sessions with a variety of different organizations that have an interest in the site, including municipalities, First Nations, Métis and environmental NGOs, to provide details on the station's licence application.
- OPG will be participating at the annual Canadian Nuclear Association conference in Ottawa in February.
- The next edition of Neighbours Newsletter will be distributed in March.

Randy noted that a main feature of the Canadian Nuclear Association (CNA) event in Ottawa is a trade show. OPG often provides the keynote speaker to enlighten the industry on regulatory changes and other issues. This is "a good event," he said, for sharing knowledge among nuclear stations, especially on matters of common interest.

Topic #5: Exercise Unified Control

Steve Lesiuta (Director, Emergency Management) and Neal Kelly (Director, Media Relations) reviewed the major emergency drill based on a Pickering Nuclear scenario on Dec. 6 and 7, 2017 (Appendix 1).

Steve reviewed the highlights of ExUC. The objective of the two-day exercise was to test key elements of emergency response plans, involving Pickering Nuclear as well as more than 30 participating agencies at the local, municipal, provincial and federal levels. The scenario was a loss of coolant at Pickering Nuclear. During the exercise, the situation evolved to the point where an evacuation within a three-kilometre radius of Pickering Nuclear was ordered. Steve said that the outside agency that facilitated the exercise was still working on an evaluation, but that the drill was successfully carried out.

Neal was involved in helping to coordinate public communications before, during and after the exercise. A promotional video was used to launch the drill in November, and there were news releases just before and immediately after the exercise. Neal's office posted a video that told the story of what happened, which was picked up by the CBC and Durham Radio.

Neal noted that there were also internal communications before and after the event. A focus group was brought together and, on Day 2 of the exercise, studied the public communications and provided feedback.

Each participating organization's ability to respond to the emergency in their communications was tested. A communications working group formed for the exercise is going to be kept active and will meet on a regular basis. The group is a great way for OPG Media Relations to connect with municipalities.

On Day Two of the exercise, CAC member Bill Houston participated in the focus group that Neal talked about. This group included people skilled in communications. They emphasized the importance of holding regular briefing meetings throughout an event, whether there is any news or not.

Francis Gillis of Public Dialogue Alternatives participated in the VIP group that observed the exercise on Day One. He remarked that the event was extremely well organized and reassured observers that OPG and agencies from the various levels of government were well prepared to respond in the unlikely event of a nuclear emergency.

The VIP group was briefed at the Pickering Learning Centre where, among other items of information, they were given a detailed review of the role of the vacuum building in containing and managing radioactive releases and buying time for coordinating a response to a nuclear emergency. The group also visited the Corporate Emergency Operations Facility in Whitby and the Provincial Emergency Operations Centre (PEOC) on Keele Street near Hwy 401. There was a very informative Q&A session at the PEOC with government representatives who talked about how experts from various provincial and federal departments would be called upon to help coordinate the response.

Francis remarked on the wide range of expertise in the observer group, including representatives of Public Health Durham, the Durham Nuclear Health Committee, Point Lepreau nuclear plant, Bruce Power, Michigan Homeland Security, the Israeli Atomic Energy Commission, the Curve Lake First Nation and a number of others.

Neal noted that a video on the exercise is being put together and will be shared with the CAC.

Steve and Neal responded to Council questions:

- *What was the area of response to the scenario, the so-called sandbox?*
Neal: The “sandbox” included the whole province. (This was in reference to Neal's comments about there being two kinds of communications activities in play during the exercise: those within the exercise (the sandbox), and those involving the general public to explain to them what was going on and how the exercise helps to improve capability in emergency response.)
- *Several years ago there was a major drill at Darlington. Did you utilize any of the feedback from that exercise?*
Neal: Yes, we always draw lessons from previous exercises and apply them in subsequent exercises.
- *The recent false alarm sent to cell phones in Hawaii highlights the importance of effective and accurate communication to these devices. What are your abilities with cell phones? And can emergency messages reach the cell phones of people driving through the area?*
Steve: Cell phone messaging will be happening. Telecommunications is under the jurisdiction of the CRTC (federal). A recent CRTC decision, to be introduced this spring, will empower the provincial Emergency Management Office to make these interventions directly to cell phones. The ExUC included a pilot exercise that worked well. Cell phone users are only notified if they are actually in the region. If they are outside the region, they will not be notified.
- *How is information derived from the exercise shared beyond the nuclear industry, and internationally?*
Steve: Yes, I'm involved in sharing that information, and there is an active audience in the professional emergency management world that eagerly tracks this kind of information. Also, there are various forums and conferences where presentations are shared.
- *There were also innovative communications activities as a part of this exercise. Is there a forum to include the sharing of communications aspects beyond the nuclear industry, and internationally?*
Neal: That is a useful point to look into, but currently there is no such forum.
- *How frequently are major emergency drills held?*

Steve: Since 2014, a drill has been required every three years. As well, between the major drills, there is a very robust schedule of exercises at each site.

- *I noticed that the meeting in November that launched the drill got a lot of media attention.*

Neal: Yes, people knew about it. We tried to tell as many people as we could.

Analiese: We did not receive any calls from the public who were confused about what was going on during the exercise.

Topic #6: CAC Report to the Community

Council members made final comments on the report before publication. It was agreed that the three bullet points on page one, about the benefits of Pickering Nuclear continued operations to 2024, needed clarification. John said that any further comments about the newsletter would be needed by Friday, Jan. 19.

Topic #7: Environment Program Update

Raphael McCalla, Director Environmental Operations Support, presented an update on environmental protection at Pickering Nuclear (Appendix 2). Raphael noted that OPG has incorporated its various environmental programs so that, since 2012, a single, corporate wide environmental management program has been in place at OPG. He talked about the various aspects of Pickering performance that are monitored, focusing on groundwater monitoring and fish impingement. Regarding external environmental monitoring, he noted that staff actually go out into the community, including door-to-door visiting to ensure that they have an accurate understanding of the ways that people living in the community interact with their environment, including information about food sources and recreational activities out of doors.

Environmental Risk Assessment (ERA) at Pickering looks at contaminants of potential concern, in particular at impacts on the fish environment. Pickering Nuclear is required to do an ERA every five years.

Groundwater Monitoring Program

Raphael listed the objectives of the annual groundwater monitoring program where 140 wells are actively monitored on the site:

- Verify groundwater flow direction
- Monitor changes to on-site groundwater quality to identify new issues in a timely manner and assess past contamination issues
- Monitor site boundary groundwater quality to confirm no adverse off-site impacts

Summary of ERA at Pickering and Darlington:

- At Pickering, predominant groundwater flow pattern remains unchanged from the original interpretations

- Discrete, local change to Darlington's groundwater flow condition within the Protected Area continued in 2016
- Legacy groundwater quality results at both sites continue to improve and monitoring will continue
- Emerging issues identified at Unit 5/6 area at Pickering, and mitigation work will continue
- No indications of adverse, off-site migration of tritium at either site
- Annual groundwater monitoring results reports for both sites are submitted to CNSC

Fish Impingement

Raphael noted that, in 2008, the CNSC required Pickering Nuclear to reduce fish impingement by 80 percent and entrainment by 50 percent. (Impingement refers to fish being killed on the plant intake screens, representing actual loss; entrainment refers to fish eggs being taken into the plant with the cooling water, representing loss of fish that do not achieve maturity.)

Around 2012, the station started to get really good performance in reducing impingement and entrainment.

On the night of November 16 – 17 a higher than normal amount of fish were impinged at the plant, an event that occurred a few days after the removal of the fish diversion system (FDS) (the net in the lake around the plant intake). OPG has learned that a significant amount of alewife came into the station during that episode. OPG will look into this phenomenon and share information with the CNSC as to why this unseasonal event happened.

Raphael noted that the fish diversion system cannot address entrainment. To compensate for entrainment, OPG did some restoration work in Duffins Creek, partnering with the Ontario Federation of Anglers and Hunters (OFAH) in the Bring Back the Salmon program. OPG is also involved in a restoration program at the Bay of Quinte, also managed by OFAH.

Raphael responded to Council questions:

- *Does the monitoring program include groundwater under the Pickering waste management facilities?*
Yes, there are a number of wells in that location. We have found elevated tritium concentrations in groundwater observed in the Units 5 to 8 irradiated fuel bay (IFB) area. A project is underway to mitigate releases from the IFB.
- *You mentioned that you verify groundwater flow direction. What if you find changes in flow direction?*
We would take all the information we have to determine where the flow will go next. Such changes are very unlikely, and we look for reasons when this is observed. However, we dig to put in foundations on the site, so flow direction changes happen from that perspective. Having understood the change, we then monitor the situation to make sure that our conclusions were correct.

- *Do you quantify what you get from entrainment?*
Yes, we do. We have to take all species into account, so we use a combination of sampling the screens for species and projections based upon waterflow to calculate entrainment estimates.
- *Did the flooding we had last year impact impingement numbers?*
Yes it did. Before that event, we were having the best year ever. In such events in the future, we will have people looking at the shoreline for additional evidence about species that got stranded in flooding situations.

ERA/PEA

Raphael noted that the Environmental Risk Assessment (ERA) and Predictive Effects Assessment (PEA) assess both human and non-human impacts. Pickering Nuclear does an ERA every five years and also ensures that a current ERA is available whenever the station applies for a licence.

The PEA will cover the 10-year period for the Pickering Nuclear licence. It will evaluate the potential for adverse effects to human health and the environment resulting from activities associated with transitioning PNGS from operations to a safe storage state.

Raphael noted, for example, that once the units are de-watered, the volume of water intake will decline significantly, so the fish diversion net will probably no longer be required. But we do not yet know what happens when the station is no longer emitting the warm water which fish have been enjoying? The PEA will be looking at these and many other issues.

In his concluding summary, Raphael stated that Pickering Nuclear has a comprehensive Environmental Protection Program designed to continually minimize impacts of station operation to the environment and human health. "We provide a lot of environmental information to the regulator," he said.

Raphael responded to further questions from the Council:

- *How often do you upgrade the fish diversion net?*
Every three years we replace the net. During the season, a team of divers works along the net to scrape off the algae that accumulates. This process takes about three weeks, and then they start again.
- *Why take it down for the winter?*
There is no capability to work on the net over the winter months. The net could get damaged over the winter and parts could break off and be drawn into the plant. However, we do account for impingement through the entire year. In addition, the behaviour of the fish species in the area near the intake is different during different seasons.
- *I understand that there is a regulatory limit to a differentiation of 11 degrees celsius*

between water going into and coming out of the plant. What is Pickering Nuclear's performance in this area?

At PNGS there is a difference of seven to 10 degrees.

- *Is the water temperature monitored all year round?*
Yes.
- *Surface water will contain salt during the winter, so there is a salt bloom in the lake every spring. Do you monitor this in the lake around the plant?*
Not currently. It is not required by the Ministry of the Environment.
- *Increased tritium levels in groundwater or lake water could be from OPG or from elsewhere, including background levels in the soil.*
We are looking for potential impact from our operations. Tritium remains quite low year over year. If we do not see increased tritium levels close to the plant, then we know we're not releasing an undue amount. If tritium levels rise elsewhere, it is clearly not from here.
- *Are materials from elsewhere coming onto the site an issue?*
That is not an issue at Pickering Nuclear but, if it did happen, our monitoring system would pick it up.

Topic #8: CNSC News

For selected news items from the CNSC, please see Appendix 3.

Next Meeting
Tuesday, February 20, 2018, 6 pm
Pickering Learning Centre
(supper available at 5:30 pm)