



Oral Presentation

Submission from the North American Young Generation in Nuclear, Durham Chapter

In the Matter of

**Ontario Power Generation Inc.,
Pickering Nuclear Generating Station**

Request for a ten-year renewal of its Nuclear Power Reactor Operating Licence for the Pickering Nuclear Generating Station

Commission Public Hearing – Part 2

June 2018

Exposé oral

Mémoire de North American Young Generation in Nuclear, Durham Chapter

À l'égard de

**Ontario Power Generation Inc.,
centrale nucléaire de Pickering**

Demande de renouvellement, pour une période de dix ans, de son permis d'exploitation d'un réacteur nucléaire de puissance à la centrale nucléaire de Pickering

**Audience publique de la Commission –
Partie 2**

Juin 2018



NAYGN-Durham Oral Presentation

**PICKERING LICENSE RENEWAL PUBLIC HEARING
JUNE 26-28, 2018**

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Introduction

The purpose of this submission is to request the Canadian Nuclear Safety Commission to grant the North American Young Generation in Nuclear (NAYGN) Durham Chapter intervener status at the Public Hearing for the Licence Renewal of Ontario Power Generation (OPG) for Pickering Nuclear Generating Station (NGS) for a period of 10 years. NAYGN Durham Chapter strongly supports the Pickering NGS proposal and requests the opportunity to participate in this important public discussion via both a written and an oral submission.

NAYGN is a non-profit organization, whose purpose lies in bringing together young professionals working in the nuclear industry by providing opportunities to develop leadership and professional skills. There are currently 123 chapters operating throughout North America. The NAYGN Durham Chapter was founded in 2008 and it mainly focuses on nuclear advocacy, community and leadership. The majority of our members work for Ontario Power Generation at the Darlington and Pickering Nuclear Generating Stations. NAYGN Durham organizes and participates in educational activities for the general public and provides development opportunities at the local and regional level. The NAYGN Durham Chapter is today the largest and most active NAYGN chapter in Canada and was awarded the best overall NAYGN chapter in Canada.

We support the Pickering NGS operating licence renewal as this facility has not only has been safely operated since its construction to provide 14% of the province's clean and reliable electricity but has also been supplying the world with valuable radioactive isotopes harvested from its nuclear reactors. These isotopes play an important role in global medicine, sterilization, food preservation, lighting, and fusion research. Currently, Ontario's CANDU reactors produce 50 per cent of the world's supply of Cobalt-60 which is extracted every 2 years from the Pickering Nuclear reactors (as well as from Bruce Power).

With the PNGS licence renewal, OPG will continue to demonstrate its ability to safely operate nuclear reactors with public and personnel health and safety as the overriding priority. The province will continue to benefit from this source of clean and reliable electricity which not only supports the Canadian economy but also contributes strongly to our fight against global climate change.

Safety

For more than 3 decades Ontario Power Generation has demonstrated its commitment to the community, environment and safety. As young professionals who are part of the nuclear industry we have witnessed and been part of this commitment first hand, which is why we firmly believe that granting OPG the licence renewal for Pickering Nuclear will help continue this long tradition of excellence in the local community and at large.

Due to their design, multiple safety systems and barriers, CANDU reactors are a proven, robust, and safe technology. In addition, Ontario Power Generation has invested all the required resources to ensure that Pickering Nuclear systems and components meet the safety requirements mandated by CNSC. In doing so, Pickering Nuclear has received the highest possible safety rating of “fully satisfactory” from the CNSC in its most recent Safety Report. A periodic safety report was performed by OPG in 2016 and subsequently reviewed by the CNSC. One major activity of a PSR is to evaluate overall plant safety by integrating reviews of 15 safety factors covering elements related to plant design, condition, performance and operation, as well as to organizational and human performance. The report concluded with the following statement, of which NAYGN wholeheartedly concurs, “OPG is committed to continuous safety enhancement at its nuclear facilities and has robust comprehensive programs in place aligned with industry best practices. The PSR identified no safety issues for continued safe operation of Pickering NGS through 2024, and the actions within this IIP will further enhance safety” [1].

Furthermore, the IAEA’s Operational Safety Review Team concluded, after a 19 day review in September 2016, that Pickering Nuclear can be safely operated to 2024 [2]. This team was comprised of international nuclear safety and operational experts with a total of 396 cumulative years of experience. The report highlights a number of good practices; one of which especially pertinent to today’s hearing is how thorough OPG’s plant obsolescence program is, giving confidence that the plant’s systems, structures and components will reliably operate with the same efficacy as when they were initially installed.

Not only is OPG recognized by international leaders in plant safety but we, the young generation in nuclear, see and hear OPG’s commitment to safety each day. Safety is at the forefront of every individual’s mind from where you would expect it, such as planning large equipment lift jobs, to where you may have never considered it, such as ensuring that you and your coworkers hold the handrail each and every time you use the stairs.

Our personal experiences, as well as the evidence provided by industry experts, leads NAYGN Durham chapter to trust in a future lead by Pickering Nuclear Generation Station and is advocating for its continued operation to 2024.

Environment

We would like to highlight the importance Pickering Nuclear Generating Station has to the Environment.

First Pickering Nuclear is a key contributor to reducing Canada's greenhouse gas emissions. It is estimated that keeping Pickering running until 2024 will reduce CO₂ emissions by 17,000,000 tonnes which is the equivalent of keeping 3.4 million cars off of the roadways [3]. Pickering's contribution to helping Canada and Ontario's reach its CO₂ reduction targets cannot be understated.

We have seen over the past number of years other jurisdictions close nuclear power plants such as California, Florida, and Germany. Often this generation is replaced by fossil fuels, such as natural gas or coal [4]. In Germany, for example, key places such as, the Hambach Forest is quickly being demolished to get the coal needed to meet Germany's power needs [5]. It is likely that if Pickering Nuclear were to shut down today it will be replaced by fossil fuel generation, which has a greater environmental footprint and higher costs [6]. This will make the air around us dirtier as we will all be breathing in the waste from fossil fuel generation.

Secondly Pickering nuclear and nuclear power has a very efficient land footprint. When compared to other forms of generation such as, solar or wind, the land use impact of nuclear is much more efficient. Nuclear power can generate 47.6MWe/km² whereas solar and wind, produce far less power per unit area at 3.1 MWe/km² and 1.6 MWe/km² respectively [7]. This means we get more power from less space, which allows for more livable space for communities, wildlife, and vegetation.

Thirdly Ontario Power Generation and Pickering Nuclear have been excellent Stewards of the environment around its sites. For example in 2017 Pickering has been recognized by the Wildlife habitat Council for its biodiversity and conservation work. These programs include Peregrine falcon nesting and monitoring initiative, involvement in the Bring back the salmon program, and wetland and woodland conservation work done around the site [8].

All around the world regions are facing the impacts of climate change, and until a reliable green source of energy has been implemented nuclear power will have a role to play to meet the world's energy needs. Now we are seeing environmental groups changing their stance on Nuclear power [8,9] to include it as another tool to reduce greenhouse emissions.

As long as Pickering can demonstrate it can be safely run, shutting it down prematurely will cause irreparable harm Ontario's environment. NAYGN believes that if Pickering is shut down early this will have a detrimental impact on the environment.

Community

As young professionals who grew up and received their education in the Durham Region we are very familiar with Ontario Power Generation and the impact the company has on the surrounding community. Aside from the economic benefits of having such a large employer in the region, we have seen first-hand how Pickering Nuclear has truly embodied the OPG mission to deliver “Power with Purpose” by supporting initiatives to help improve the well-being of its host communities. In fact, Pickering Nuclear has been an engaged member in the Durham Region community for over 40 years [11].

Today, Pickering Nuclear, through the Corporate Citizenship Program (CCP), provides charitable, not-for-profit support to over 140 grassroots community initiatives annually in Pickering, Ajax, and Whitby [11].

Some of these initiatives, such as the annual charity campaign, provide financial support for established local charities such as United Way Durham Region, Grandview Children’s Centre, the Humane Society of Durham Region, and Nova’s Ark, to name a few. In 2017, Pickering Nuclear employees raised over \$35,000 in donations for these and other local charities [12].

Other initiatives connect Pickering Nuclear employee volunteers with direct community improvement initiatives. Operation Clean and Sweep, which is co-hosted by NAYGN Durham Chapter, is a biannual initiative that links volunteers with elderly homeowners to assist in yard maintenance in the spring and fall. I have personally attended this initiative the past two years, and it is always a delight to see the joy on seniors’ faces after helping them clean up their yard.

OPG Pickering and Canadian Blood Services team up to host a quarterly blood donation clinic at the Pickering Nuclear Information Citizen [12]. The blood donation clinic is open to the public as well as Pickering Nuclear employees, and it is always well attended. Blood donation is one small way OPG Pickering supports the health care industry.

As an engineering-based company, OPG recognizes the importance of education in developing strong communities [13]. At the elementary school level, Pickering Nuclear fosters scientific curiosity by partnering with Scientists in School (SIS) [11] to send engineers and scientists into classrooms to assist with hands-on workshops, answer questions, and help remove barriers associated with entering STEM fields. OPG also provides teacher resources for teaching students about electricity in grades 1 and 6.

At the secondary school level, OPG also provides free kits to assist teachers in explaining electrical energy and electricity generation topics [13]. OPG provides merit scholarships to graduates from 13 Pickering, Ajax, and Whitby secondary schools entering post-secondary studies in Science, Technology, Engineering, Mathematics, trades, or Business [14].

At the post-secondary school level, OPG provides scholarships to students from many diverse backgrounds in a wide range of studies [15]. Closer to home, Pickering Nuclear has strong ties with many post-secondary schools across Ontario, providing co-op and internship opportunities for numerous

students every year. Barb Keenan, Senior Vice President of People & Culture at Ontario Power Generation, stated in the recent Student Work-Integrated Learning Program press conference held at the Darlington Energy Complex, “By bridging the gap between formal studies and hands-on experience, we are investing in our industry’s future leaders and positioning Ontario as a world leader in the electricity sector” [16].

In conclusion, we believe that Pickering Nuclear is an excellent corporate citizen and neighbour who consistently demonstrates a strong connection with its host community. Pickering Nuclear, through its charity support, volunteer initiatives, and commitment to educational excellence, directly improves the well-being of its host communities. As such, NAYGN Durham Chapter is advocating for continued operation of Pickering Nuclear to 2024.

Conclusion

As young Canadians seeking to continue to enjoy the high quality of life Ontario affords, we rely on clean, dependable electricity supply to power our fast-paced lives: from charging our phones and computers everyday, to powering advanced, life-saving medical equipment, to eventually replacing carbon fuels as the primary vehicle fuel source. We look forward to Ontario supporting Canada in meeting the Paris agreement emissions targets, and we look forward to the higher quality of life associated with clean, inexpensive, dependable electricity supply.

North American Young Generation in Nuclear (NAYGN) Durham Chapter strongly advocates for the continued operation of Pickering Nuclear Generating Station and the renewal of their Power Reactor Operating License to 2024. We believe continued operation of the plant is in the best interests of the residents of Pickering and the surrounding community, as an excellent neighbour and corporate citizen; Ontarians in general, as an inexpensive, dependable source of baseload power; and Canadians at large, as a 99% carbon-free energy source that will help us meet our Paris agreement emissions targets.

Thank you for considering our statement in your decision.

References

- [1] Periodic Safety Review Report, “Pickering NGS PSR2 Safety Review 2 (PSR2) Integrated Implementation Plan”, 2016.
- [2] IAEA Report, “Report of the Operational Safety Review Team (OSART) Mission to the Pickering Nuclear Plant Canada”, 2016.
- [3] “Pickering 2024: A Key Part of Ontario’s Nuclear Advantage”
<https://www.pickering2024.com>
- [4] “Fort Calhoun becomes fifth U.S. nuclear plant to retire in past five years”
<https://www.eia.gov/todayinenergy/detail.php?id=28572>
- [5] “Ancient Forest Home of Squatter Communities Is Doomed by Coal”
<https://news.nationalgeographic.com/2018/04/hambach-forest-germany-logging-coal-conservation-science/>
- [6] “Get the facts on nuclear power and energy pricing in Ontario”
<https://ontariosnuclearadvantage.com/>
- [7] “The Canadian Nuclear Factbook 2017” <https://cna.ca/wp-content/uploads/2017/01/2017-Factbook-EN-WEB-FINAL.pdf>
- [8] “Eastern Ops and Lennox GS receive top recognition for conservation work”
<https://www.opg.com/news-and-media/our-stories/Pages/Eastern-Operations-and-Lennox-GS-receive-top-recognition-for-conservation-work.aspx>
- [9] “Why We Still Need America’s Nuclear Power Plants — At Least for Now”
<http://blogs.edf.org/energyexchange/2017/04/17/why-we-still-need-americas-nuclear-power-plants-at-least-for-now/>
- [10] “Prominent Environmentalists Embrace Nuclear”
<https://cna.ca/news/prominent-environmentalists-embrace-nuclear/>
- [11] Ontario Power Generation, “Pickering Nuclear in the community”, retrieved April 25, 2018 from <https://www.opg.com/communities-and-partners/host-communities/Pickering-Ajax-Whitby/Pages/pickering-ajax.aspx>.
- [12] E-mail, A. St. Aubin to K. Palinka, “RE: Pickering License Renewal”, April 19, 2018.
- [13] Ontario Power Generation, “Teacher and Student Resources”, retrieved April 25, 2018 from <https://www.opg.com/communities-and-partners/teachers-and-students/Pages/teachers-and-students.aspx>.
- [14] Corporate Citizenship Program Summary Report 2005-2010, “The Power of Community”, retrieved April 25, 2018 from https://www.opg.com/communities-and-partners/Documents/Corporate_Citizenship_Report_2005-10.pdf.

- [15] Ontario Power Generation, "*Student Awards*", retrieved April 25, 2018 from <https://www.opg.com/communities-and-partners/Scholarships/Pages/default.aspx>.
- [16] Employment and Social Development Canada, "*Government of Canada creates 750 paid work placements for students with electricity industry partners like Ontario Power Generation*", April 10, 2018.