

How we can make every Pickering nuclear worker a millionaire and save Ontario electricity consumers \$5 billion

Introduction

Continuing to operate the aging Pickering Nuclear Station to 2024 or longer in the name of saving jobs is a costly and risky gamble. We would actually be much further ahead financially – as well as from a community safety standpoint – by providing the plant’s current workers with a generous severance package. Even with payments of \$1 million per worker, all Ontarians would come out ahead, with savings of billions of dollars on our hydro bills. According to the Canadian Manufacturers & Exporters, the Pickering Nuclear Station’s performance is “persistently abysmal... by any objective measure.”¹

As even Ontario Power Generation (OPG) has admitted, Pickering’s operating costs are higher than those of any other nuclear station in North America.² Specifically, in 2019 Pickering’s operating costs will be 9.2 cents per kWh.³ In contrast, in 2017, Ontario imported water power from Quebec at an average price of 2.2 cents per kWh.⁴

As a consequence, Ontario can lower its electricity costs by \$1.1 to \$1.4 billion per year by simply closing the Pickering Nuclear Station and importing cleaner, safer and lower-cost water power from Quebec (see Appendix A).

Nevertheless, Premier Doug Ford has promised to keep the Pickering Nuclear Station operating until 2024 to protect the station’s 1,900 jobs.⁵ According to Premier Ford: “I believe in made-in-Ontario electricity and made-in-Ontario jobs... I will never apologize for doing the right thing and fighting for Ontario jobs.”⁶

Ontario can lower its electricity costs by \$1.1 to \$1.4 Billion per year by simply closing the Pickering Nuclear Station



Premier Ford’s job protection policy will cost Ontario’s electricity consumers \$6.6 to \$8.4 billion between 2019 and 2024. Specifically, the cost of protecting **each job** at the Pickering Nuclear Station for six years will be **\$3.5 to \$4.4 million**.

The nuclear industry is in decline worldwide. Two giants of the nuclear industry, Areva and Westinghouse, are both essentially bankrupt. In the U.S., reactor operators are asking for special supports to compete with increasingly lower-cost renewable energy and low-cost natural gas fired generation.

To help workers transition away from this dying industry, we recommend that workers at the Pickering Nuclear Station each be given a **\$1 million severance package** if the station is closed in 2018 or early 2019.

This may seem like a very generous payout for well-paid workers with rich pensions, but it would deliver huge benefits to everyone in Ontario:

- **It would lead to a net savings for electricity ratepayers of \$4.7 to \$6.5 billion between now and 2024.**
- It would eliminate the risk of a reactor accident at North America’s 4th oldest nuclear station, which is surrounded by 2.2 million people (within 30 km).
- It would put an end to the creation of significant additional radioactive waste – up to 20,000 toxic and deadly fuel bundles each year that will need to be stored on the Lake Ontario waterfront for the next 100 years or more.

More Work

Closing the Pickering Nuclear Station, however, would not put an end to employment at the plant. If OPG were to follow the International Atomic Energy Agency’s best practice recommendations and embark on immediate dismantling and decommissioning of the plant after closure, it would create 32,000 person years of employment while opening up most of the 750-acre Pickering waterfront site to be revitalized and returned to the local community by 2033.

This huge chunk of prime waterfront real estate could create many new economic and cultural opportunities for the community. In fact, a similar initiative is already underway on the Mississauga waterfront where the site of the now-demolished Lakeview Generating Station is being turned into a vibrant new community.

OPG would prefer to wait 30 years before beginning decommissioning largely because it is in its financial interest to delay making these expenditures for as long as possible (OPG is solely responsible for the Nuclear Decommissioning Fund which already has sufficient funds to pay for the decommissioning of Pickering).⁷ Radiation levels and the complexity of dismantling the old plant will not measurably decrease after 30 years. In fact, by waiting, OPG will ensure that the current workforce that knows the 50-year-old plant best will be unavailable to assist with decommissioning. We need a knowledgeable and trained workforce to safely dismantle the station.

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Workers could also develop new expertise in the growing field of nuclear decommissioning. Most nuclear stations in North America are aging and high risks and high costs are making them increasingly uncompetitive. In the U.S., five nuclear plants have closed since 2013. Almost 20 more have announced plans to shutdown within the next five years.⁸

As well, hundreds of thousands of used radioactive fuel bundles (more than 750,000 as of 2017) are currently stored at the Pickering Station in open water pools and in storage warehouses right next to Lake Ontario. Given that there are no long-term storage sites for used nuclear fuel anywhere in the world currently – and unlikely to be any for some time to come, if ever – OPG needs to do a better job of securing this material onsite. An above-ground bunker-like storage facility should be built further away from Lake Ontario and all waste materials should be transferred to this bomb, missile and airplane-crash proof facility.

Decommissioning and creating an above ground, attack-resistant reinforced-concrete vault for the storage of Pickering’s wastes will create significant economic activity in Pickering over the next two decades and pave the way for new uses of valuable waterfront lands, all while resulting in bill savings for Ontario electricity ratepayers.

Conclusion

\$1 million per nuclear worker is a small price to pay for ensuring Pickering Nuclear workers can comfortably transition to new jobs or retirement, and would pay far more dividends to Ontarians than keeping the plant’s aging reactors operating until 2024 or longer.

We have documented the severe risks presented by operating a 50-year-old nuclear station in the heart of a large urban area, with a Fukushima-scale accident potentially resulting in 26,000 cancer deaths and the decades-long evacuation of more than 650,000 people (cleanairalliance.org/fukushima).

We have also documented the huge risks presented by storing tonnes of radioactive material – including enough plutonium to construct 11,000 nuclear warheads – on the shores of Lake Ontario. More than half of this material is still being stored in open-water pools (cleanairalliance.org/pickerings-big-and-growing-waste-problem).

And we have documented Quebec’s strong interest in signing a money-saving power export deal with Ontario; the availability of sufficient transmission capacity to bring enough power to Ontario to replace what we currently use from Pickering; and the year-round reliability of Quebec as a source of power (cleanairalliance.org/save).

By closing the Pickering Nuclear Station and importing clean, safe renewable power from Quebec we can reduce our electricity costs by billions of dollars and give every nuclear worker a \$1 million pay-out.

The bottom line is that a \$1 million per worker severance package is a great bargain compared to the enormous costs and risks of continuing to operate the Pickering Nuclear Station.

The nuclear industry is in decline worldwide.



Appendix A

Analysis of the Financial Benefits of Closing the Pickering Nuclear Station

Approximately half of Pickering's output is surplus to Ontario's needs and is exported⁹ to the U.S. at a financial loss.¹⁰ Specifically, during many hours of the year (e.g., at night and on weekends) Ontario's nuclear reactors produce more electricity than is consumed in Ontario. Since the inflexible Pickering and Darlington nuclear reactors cannot lower their output during off-peak hours, we are required to export our surplus nuclear generation to the U.S. These exports are typically sold at prices below the cost of production. In fact, in 2016, during 23% of the hours of the year we "sold" our electricity to U.S. customers at a price equal to zero or less (i.e., we often paid our American neighbours to consume our surplus power).¹¹

By closing Pickering, we can avoid the loss of \$737 million per year on money losing electricity export sales.¹² Obviously, if we close Pickering, we will need to find an alternative source of supply to replace its electricity generation that is actually consumed in Ontario (approximately 10 billion kWh per year). The cost of Quebec water power is approximately 50% to 75% lower than Pickering's operating costs. As a result, by importing Quebec water power, to displace Pickering's output that is consumed in Ontario, we can save an additional \$407 million to \$679 million per year.¹³ Therefore, our total annual savings from closing the Pickering Nuclear Station would be \$1.1 billion to \$1.4 billion per year.

The cost of Quebec water power is approximately 50% to 75% lower than Pickering's operating costs.



References

- 1 Ontario Energy Board Docket No. EB-2016-0152, *Submissions of Canadian Manufacturers & Exporters*, (May 29, 2017), page 45.
- 2 Ontario Power Generation, *2015 Nuclear Benchmarking Report*, page 69.
- 3 Ontario Energy Board Docket No. EB-2016-0152, Exhibit L, Tab 6.5, Schedule 7 ED-018.
- 4 Financial Accountability Office of Ontario, *Electricity Trade Agreement: An Assessment of the Ontario-Quebec Electricity Trade Agreement*, (Spring 2018), page 7.
- 5 According to Ontario Power Generation, the Pickering Nuclear Station has 1,899.8 full-time equivalent regular staff employees. Ontario Energy Board Docket No. EB-2016-0152, Exhibit L, Tab 6.5, Schedule 7 ED-020.
- 6 Government of Ontario, *News Release, "Premier-Designate Doug Ford Commits to Protecting Jobs at Pickering Nuclear Station"*, (June 21, 2018).
- 7 Ralph Torrie, Torrie Smith Associates, *Direct Decommissioning of the Pickering Nuclear Station: Economic and Other Benefits*, (March 2016).
- 8 <http://www.beyondnuclear.org/reactors-are-closing/>
- 9 Ontario Energy Board Docket No. EB-2016-0152, Exhibit F2, Tab 2, Schedule 3, Attachment 1, page 12.
- 10 In 2017 Ontario's average electricity export price (Hourly Ontario Energy Price) was 1.6 cents per kWh. <http://www.ieso.ca/en/power-data/data-directory>.
- 11 Financial Accountability Office of Ontario, *Electricity Trade Agreement: An Assessment of the Ontario-Quebec Electricity Trade Agreement*, (Spring 2018), page 8.
- 12 According to Ontario Power Generation, Pickering's total output in 2019 will be 19.4 billion kWh and its operating cost will be 9.2 cents per kWh. In 2017 Ontario's average electricity export price (Hourly Ontario Energy Price) was 1.6 cents per kWh. [19.4 billion kWh x 50% x (9.2 – 1.6 cents per kWh) = \$737 million.] Ontario Energy Board Docket No. EB-2016-0152, Exhibit E2, Tab 1, Schedule 1, Table 1 and Exhibit L, Tab 6.5, Schedule 7 ED-018; and <http://www.ieso.ca/en/power-data/data-directory>.
- 13 As noted above, in 2017, the average price of Ontario's spot market electricity purchases from Quebec was 2.2 cents per kWh. Furthermore, on June 22, 2017 Hydro Quebec offered to sell Ontario 8 billion kWh per year, for 20 years, at a price of 6.12 cents per kWh. In August 2017 Hydro Quebec lowered its proposed price to 5 cents per kWh, but the Government of Ontario still refused to accept the offer. Letter from Steve Demers, Vice President, Hydro Quebec to Peter Gregg, CEO, Independent Electricity System Operator, (June 22, 2017); and Pierre Couture, "Hydro Quebec l'Ontario en ligne de mire", *Journal de Montreal*, (August 16, 2017). [19.4 billion kWh x 50% x (9.2 – 5 cents per kWh) = \$407 million] and [19.4 billion kWh x 50% x (9.2 – 2.2 cents per kWh) = \$679 million.] See also endnote # viii.

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