



**Written submission from
William L. Shore**

**Mémoire de
William L. Shore**

In the Matter of

À l'égard de

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

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

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

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

Commission Public Hearing – Part 2

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

June 2018

Juin 2018

Submission to CANADIAN NUCLEAR SAFETY COMMISSION re Extension of Pickering Licence

This will be a written intervention only.

My name: William L. Shore

1. Climate Change is upon us and we don't have global emissions room to keep on using fossil fuel trying to refurbish Pickering reactors - or Darlington & Bruce either! Many experts have pointed out that our present goals for reducing greenhouse gases in Canada are not adequate to meet Canada's promises to the world at COP 21.

Further backup for this opinion is the following website - last updated in Feb 2018:

<https://www.theguardian.com/environment/2016/feb/25/fossil-fuel-use-must-fall-twice-fast-thought-contain-global-warming>

This report gives us **eleven** years before we reach the number of total global emissions beyond 2015, where our scientists are fairly certain that this is as warm as the planet can go, (2 degrees centigrade warming limit) and still avoid most of the catastrophes to come.

2. The electrical output from Pickering is not needed in Ontario, we export more than it produces, and most of our exports are done so at a loss - because we export electricity at a price that recovers only about 20% of its cost! One example is typical of recent years: In 2016, the Ontario Society of Professional Engineers reported that the 2016 exports lost us about \$500 million, if we don't count the natural gas exports. Even with the gas exports (which are supposed to be used for Ontario emergencies) our total exports were sold that year for a remarkably small price of roughly 1 cent per kwh! This would be about 12% of the cost of generation!
3. Following the accident at the American Three Mile Island nuclear station in 1979, an all-party committee of the Ontario Legislature (the Select Committee on Hydro Affairs) investigated Ontario's nuclear policies. In its 1980 report to the legislature, the committee concluded that:

“It is not right to say that a catastrophic accident (in a CANDU reactor) is impossible ... The worst possible accident could involve the spread of radioactive poisons over large areas, killing thousands immediately, killing others through increasing susceptibility to cancer, risking genetic defects that could affect future generations, and possibly contaminating, for further habitation, large land areas...

Accidents, mistakes and malfunctions do occur in [CANDU] nuclear plants: equipment fails; instrumentation gives improper readings; operators and maintainers make errors and fail to follow instructions; designs are inadequate; events that are considered 'incredible' happen...no matter how careful we are, we must anticipate the unexpected.”

4. As reactors age, components and safety systems degrade, increasing the potential for accidents. I have seen lists of at least 10 accidents at Pickering station. It is well known that 2 reactors at Pickering A were permanently shut down in 1997 never to be started again. The other two reactors at Pickering A were both down for repairs, one for 6 years and one for 8 years, with repair costs way over budget. If reactors 2 & 3 had to be shut down in 1997, then it's certainly time for 1 & 4 to be shut down also.
5. I do not trust the OPG or the Ontario governments to properly provide electricity for Ontario because there are too many persons who want to go on providing nuclear generated electricity in the face of much cleaner, safer and less expensive options. (Water power from Quebec has been offered to Ontario at 5 cents per kwh - **and the Ontario government has refused!**) Apparently nobody at OPG tells the government to stop exporting power at a loss. It must be because OPG gets paid the full price for the exports from the IESO. Then, of course, the taxpayers pay for the IESO losses!
6. One more reason for my distrust is the fact that the 2013 Long Term Energy Plan from our government promised with much fanfare, that no new electricity generators would be built before all reasonable conservation measures were taken. The slogan was "Conservation First". But the government could not bring itself to admit that rebuilding Bruce and Darlington (*\$13 billion projects*) involved any new sources of electricity! Furthermore, the government pours billions into rebuilding Darlington, while the independent electricity system operator, (IESO) reports that **there are still major conservation projects** waiting for action. (According to a report prepared for the IESO, energy efficiency investments can cost-effectively reduce the province's total electricity consumption by 31% by 2035. See Nexant, Achievable Potential Study: Long Term Analysis, (June 30, 2016), pages 3 & 4) *So much for Conservation First!*
7. The Pickering nuclear station kills millions of fish annually and harms aquatic ecosystems because it uses and pollutes the water from Lake Ontario to cool the station's four reactors. Therefore we should stop this harm to the lake environment.
8. There is not supposed to be a major accident (like Chernobyl or Fukushima) at Pickering, although it was reported that the CNSC managers refused to let the public know how much trouble CNSC staff foresaw in just such an event. If it did happen, the problems of civilian evacuation appear to be highly inadequate. Let's cut the risks to civilians by closing Pickering.
9. The Pickering nuclear station is a pre-September 11th design and is not designed to resist a terrorist attack. New reactor designs are required to be more robust to withstand certain

terrorist attacks, but OPG is not willing to spend the money to upgrade Pickering and better protect public safety.

10. The Pickering station is also closer to larger numbers of people (Toronto) than any other nuclear plant in the world. For that reason, regulatory authorities would not allow a new plant to be built at Pickering today.
11. Canadian reactors have produced approximately 40,000 metric tonnes of high-level radioactive waste. Canadians surely do not want more waste from Pickering. No country has yet come up with plans for keeping this stuff out of the environment for thousands of years.
12. The more we keep mining uranium and leaving the rock waste on the ground to blow where it will, the more people get lung cancer from radon. This is the leading cause of lung cancer in non smokers and the second leading cause in smokers. Premature deaths from these cancers are in the range of 16%. Let's reduce the need for more uranium mining by closing Pickering.

SUMMARY - ONTARIO NEITHER NEEDS NOR WANTS PICKERING

Conclusions:

The provincial government elected on June 7th should reject OPG's request to continue operating Pickering beyond its design life.

Second, the Canadian Nuclear Safety Commission (CNSC) MUST, for the moment, forget its role in promoting nuclear-generated power. Instead, it should acknowledge that the risks of continuing to operate the Pickering nuclear station in the Greater Toronto Area are no longer acceptable, whereas the benefits are negligible. CNSC should instruct OPG to close Pickering.

Thirdly, the government should offer workers who become redundant - jobs in the decommissioning of Pickering.