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Oral presentation

Written submission from Society of High Prairie Regional Environmental Action Committee

In the Matter of the

Ontario Power Generation Inc.

Application for a licence to construct one BWRX-300 reactor at the Darlington New Nuclear Project Site (DNNP)

Commission Public Hearing
Part-2

January 8, 2024

Exposé oral

Mémoire de la Society of High Prairie Regional Environmental Action Committee

À l'égard d'

Ontario Power Generation Inc.

Demande visant à construire 1 réacteur BWRX-300 sur le site du projet de nouvelle centrale nucléaire de Darlington (PNCND)

Audience publique de la Commission
Partie-2

8 janvier 2024

Canada

Dear Canadian Nuclear Safety Commission,

While we are far from the Durham Region, the Greater Toronto area, and in fact from Ontario, we still feel the need to comment on the proposal to build more nuclear reactors, because built anywhere in Canada, nuclear energy affects our future everywhere in Canada.

Nuclear power creates dangerous and toxic waste that must be safely stored for thousands of years. Radioactivity from the earliest produced is still contaminating walking trails in New Mexico. Below my signature is a detailed description of some of the pollution outputs from nuclear power, and why they are so dangerous. Because nuclear plants can take a decade or more to build, it feels like plans to increase nuclear energy are focusing on pulling investment away from technology we actually know works, like renewables. While the cost per kilowatt hour for nuclear power in Canada is estimated between **$5,500 and $8,100** renewable energy ranges from **$0.05 to $0.1.** What possible justification could there be to spend so much for dangerous toxic energy to arrive so late?

Please always consider the time involved and cost comparison; where renewable energy is here now, nuclear will take at least 10 years and cost more than twice as much. Also, please keep in mind that SMR companies have fudged their estimates and come in way over budget in the past.

Thank you for your very careful consideration,

Jule Asterisk,
Project Manager,
The Society of High Prairie Regional Environmental Action Committee

The Samuel Lawrence Foundation, in cooperation with the Scripps Oceanography Institute, held a one-say symposium on Radioactive Waste from Nuclear Reactors in San Diego California on July 24, 2023. Gordon Edwards was on one of the panels and was asked to answer four questions. Here are the questions and the answers.

ROUND 1

- QUESTION for Dr. EDWARDS
- Gordon, let's start with you. The San Onofre nuclear power plant — known as SONGS — was permanently shut down in 2013 and began decommissioning in 2014, about a decade ago. The name of this panel is, again, "Why Are We Worried?" so please tell us precisely why we should indeed be worried.

- Dr. EDWARDS RESPONSE
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- Good question, Lance. If nuclear power were just generating electricity and nothing else, it would be safe. But it is also mass-producing deadly radioactive poisons that were never found in nature before the nuclear age began, just 85 years ago.
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- For instance, Nuclear fuel can be safely handled before it goes into the reactor, but after it comes out it is millions of times more radioactive — and it will kill any nearby human being in a matter of seconds by an enormous blast of gamma radiation.
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- What makes the used fuel suddenly so dangerous? Inside the fuel, there are literally hundreds of brand new varieties of radioactive elements that are created by the splitting of uranium atoms – for example, iodine-131, cesium-137, strontium-90. These are radioactive varieties of non-radioactive elements that exist in nature all around us. They are human made radioactive poisons They're like evil twins.
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- For example, ordinary table salt has a little bit of iodine added to it. It's not radioactive. It goes to the thyroid gland and helps to prevent a terrible disfiguring disease called Goiter. Well, nuclear plants produce radioactive iodine. It also goes to the thyroid gland and causes cancer. 6000 children in Belarus had to have their thyroid glands surgically removed because of radioactive iodine from the Chernobyl accident of 1986.

In northern England and Wales, for 30 years after Chernobyl, sheep farmers could not sell their meat for human consumption when it was contaminated with radioactive cesium. To this day, hunters in Germany and Austria who kill a wild boar cannot eat the meat because of radioactive cesium contamination. From Chernobyl.

- You know, everything is made up of atoms. The only difference is that a radioactive atom will explode. It's called an "atomic disintegration". Radioactive atoms are like little time bombs. If they explode inside you, they damage living cells, especially DNA molecules. When DNA is damaged, it may make things grow in an unnatural way. Radiation-damaged cells can and do develop into cancers of all kinds.
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- What's even worse, If the reproductive cells are damaged, the eggs or the sperm, genetic illnesses can be passed on to children, and grandchildren. And this danger remains as long as the radioactive wastes remain, which is essentially forever.

Every radioactive material has a half-life – that's how long it takes for half of the atoms to disintegrate. Some have very long half-lives. Plutonium-239, for example, has a half-life of 24,000 years. That's five times longer than the Egyptian Pyramids have existed. And when a plutonium atom disintegrates, it turns into another radioactive material that has a half-life of 600 million years.

- So radioactive wastes remain dangerous for millions of years. They are the most toxic wastes ever produced by any industry, ever, They are essentially indestructible. Countless billions of dollars are planned to be spent to keep these materials out of the food we eat, the water we drink, and the air we breathe. At Hanford, in Washington State, the radioactive cleanup is estimated to cost more than $300 billion. By Building more reactors, we are just adding to the burden.

In fact, the real products of a nuclear reactor are radioactive wastes and plutonium which remain dangerous for millions of year. The electricity is just a little blip, a short-term benefit for a few decades. The radioactive legacy lasts forever.