

# Nuclear Mausoleum on the Ottawa River

by Dr. Gordon Edwards, PhD, CCNR President

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*The Age of Nuclear Power  
is winding down*

*The Age of Nuclear Waste  
is just beginning*

*This article appeared with some changes in the July-August 2018 issue of the Madawaska Highlander.  
See [www.ccnr.org/Highlander\\_2.pdf](http://www.ccnr.org/Highlander_2.pdf)*

At Rolphton, Ontario, less than 200 metres from the Ottawa River, sits a dangerously radioactive industrial edifice that extends several levels below the surface. It is the radioactive carcass of Canada's first electricity-producing nuclear reactor, the Nuclear Power Demonstration Plant (NPD), which operated from 1962 until 1987.

In any operating nuclear reactor, the metal and concrete structural materials in the core area, as well as the pipes, pumps, boilers, and other components of the primary cooling system, are permanently transformed into radioactive junk that cannot safely be recycled.

In the final stages of decommissioning such a facility, ordinary demolition practices – blasting, cutting, smashing, crushing – cannot be utilized for fear of spreading radioactive dust and debris far and wide. Such materials can contaminate drinking water, soil and food.

Canada's nuclear authorities have, in the past, promised that the final decommissioning of defunct nuclear reactors will involve carefully dismantling the structure and removing all radioactive material from the site, returning it to a non-radioactive "green field" status. Current practice at OPG is to wait 40 years after shutdown to allow the radioactivity to diminish somewhat, to make it less dangerous for the nuclear demolition crews to work.

But now, a private consortium of multinational corporations that operates under the name of Canadian Nuclear Laboratories (CNL), and receives more than \$500 million per year in taxpayers' money to manage this waste, is seeking permission from the Canadian Nuclear Safety Commission (CNSC) to abandon NDP as a radioactive mausoleum right beside the Ottawa river, upstream from the source of drinking water for millions of people.

CNL proposes to dump radioactive materials into the sub-basement and flood it with cement. At an April meeting with stakeholders, CNL said it is "fast-tracking" the NPD project, hoping to get it approved and underway to realization within the next several months.

According to the International Atomic Energy Agency, the proposed "entombment" of the NPD reactor is not recommended for any nuclear reactor except in extreme circumstances, where dismantling is virtually impossible because of a core meltdown or some other crippling damage to the reactor itself.

Canada's regulatory agency, CNSC, seems prepared to approve this project, having just granted CNL a 10-year operating licence to run the Chalk River Nuclear Laboratories about 30 kilometres downstream from the NPD reactor. In fact, CNSC Commissioners have never refused to grant a licence request for any major project in their entire history (2000-2018).

There is only one voice at the cabinet table on nuclear matters, and that is the Minister of Natural Resources, currently Jim Carr. At present the CNSC reports to parliament through the Minister of Natural Resources, a ministry that has no environmental or health mandate,

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but is charged with promoting, expanding, and marketing nuclear technology. The current Minister has recently announced that Canada is promoting “NICE nuclear”, NICE being an acronym for “Nuclear Innovation: Clean Energy”.

The Canadian Coalition for Nuclear Responsibility (CCNR), in concert with many other organizations, are calling on the government to

- (1) **halt current plans to abandon radioactive wastes** beside major water bodies,
- (2) **initiate public consultations with Canadians** on the subject of long-term management of radioactive wastes, and
- (3) **ensure that an independent science-based body** operating under the auspices of the Minister of Environment be charged with conducting environmental assessments related to radioactive waste management. [See [www.ccnr.org/Trudeau\\_pack\\_5\\_e.pdf](http://www.ccnr.org/Trudeau_pack_5_e.pdf)]

Now is the time for citizens who are concerned about good governance, and who wish to protect the Ottawa River and future generations of Canadians from preventable radioactive pollution, to speak up loud and clear. Tell Justin Trudeau that the Canadian government must not abdicate responsibility to the nuclear establishment on decisions that may adversely affect the future in an irreversible way. Email, call, and write your MP and the Office of the Prime Minister, demanding they comply with the three CCNR goals.

When nuclear reactors were commissioned, the problem of what to do with the radioactive waste was a problem for the future. Now reactors are being decommissioned and we still don't have permanently satisfactory ways to deal with nuclear waste. The only “solution” available now is to store the waste in such a way that it can be retrieved, re-characterized and repackaged on a regular basis until a permanent solution is found – if there is one – in the future. If permanent abandonment of these wastes right beside the source of food and drinking water for millions of people turns out to be a mistake, there will be no way to fix it.

During the last federal election campaign, Justin Trudeau promised to restore a sense of independent and science-based integrity to Canada's environmental assessment process. An Expert Panel advised the government that environmental assessment of nuclear projects should be taken completely out of the hands of the CNSC and put into the hands of an independent agency. The Panel pointed out that the regulatory agency is too closely identified with the nuclear establishment and does not enjoy the confidence of the public.

We are facing a serious problem of “nuclear waste governance” in this country. Concerns about radioactive waste and environmental protection are falling through the cracks. There is a policy vacuum at the federal level when it comes to nuclear waste. The entire text of Canada's current nuclear waste policy is conveyed in 147 words and 3 bullet points – about the size of four tweets. [ See [www.nrcan.gc.ca/energy/uranium-nuclear/7725](http://www.nrcan.gc.ca/energy/uranium-nuclear/7725) ]

The NPD reactor: you can bury this beast, but at present, there is no way to eliminate it.

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To contact the Prime Minister go to <https://pm.gc.ca/eng/connect> .

For more information on nuclear issues go to [www.ccnr.org](http://www.ccnr.org) .

CCNR critique of the EIS for the proposed NPD entombment: [www.ccnr.org/CCNR\\_NPD\\_pack.pdf](http://www.ccnr.org/CCNR_NPD_pack.pdf) .

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# Nuclear Power Demonstration Reactor

## 1962 - 1987



*The NPD reactor seen from the air in its later years, looking north.  
The Ottawa River, in the background, flows from left to right.  
Note the large training centre. (Photo courtesy of AECL)*



# NUCLEAR WASTE DUMP ON THE OTTAWA RIVER

By Dr. Gordon Edwards

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At Rolphton, Ontario, just 500 metres from the Ottawa River, sits a dangerously radioactive industrial edifice that extends several levels below the surface. It is the radioactive carcass of Canada's first electricity-producing nuclear reactor, the Nuclear Power Demonstration Plant (NPD), which operated from 1962 until 1987.

Canada's nuclear authorities have, in the past, promised that the final decommissioning of defunct nuclear reactors will involve carefully dismantling the structure and removing all radioactive material from the site, returning it to a non-radioactive "green field" status. Current practice at OPG is to wait 40 years after shutdown to allow the radioactivity to diminish somewhat, to make it less dangerous for the nuclear demolition crews to work.

But now, a private consortium of multinational corporations, Canadian Nuclear Laboratories (CNL), who receive over \$500M/yr. in taxpayer money to manage this waste, is seeking permission from the Canadian Nuclear Safety Commission (CNSC) to abandon NDP as a radioactive mausoleum right beside the Ottawa River, upstream from the source of drinking water for millions of people. CNL proposes to dump radioactive materials into the sub-basement and flood it with cement. At an April meeting with stakeholders, CNL said it is "fast-tracking" the NPD project, hoping to get it approved and underway within the next several months.

*According to the International Atomic Energy Agency, the proposed "entombment" of the NPD reactor is not recommended for any nuclear reactor except in extreme circumstances, where dismantling is virtually impossible because of a core meltdown or some other crippling damage to the reactor itself.*

Canada's regulatory agency, CNSC, seems prepared to approve this project, having just granted CNL a 10-year operating licence to run the Chalk River Nuclear Laboratories just a few kilometres downstream from the NPD reactor. In fact, the CNSC Commissioners have never refused to grant a licence request for any major project, in their entire history (2000-2018).

We are facing a serious problem of "nuclear waste governance" in this country. Concerns about radioactive waste and environmental protection are falling through the cracks. There is a policy vacuum at the federal level when it comes to nuclear waste. The entire substance of Canada's current policy is conveyed in 147 words and 3 bullet points. [www.nrcan.gc.ca/energy/uranium-nuclear/7725](http://www.nrcan.gc.ca/energy/uranium-nuclear/7725)

The Canadian Coalition for Nuclear Responsibility (CCNR), in concert with many other organizations, is calling on the government to:

1. Halt current plans to abandon radioactive wastes beside major water bodies
2. Initiate public consultations with

Ordinary demolition practices could spread radioactive dust far and wide and could contaminate drinking water, soil and food. Right: 1 of 128 100-tonne steam generators from Bruce reactors, enroute to be stored as radioactive waste.

Canadians on the subject of long-term management of radioactive wastes

3. Ensure that an independent science-based body operating under the auspices of the Minister of Environment be charged with conducting environmental assessments related to radioactive waste management.

Now is the time for all citizens to protect the Ottawa River and future generations of Canadians from preventable radioactive pollution, to speak up loud and clear. Tell Justin Trudeau that the government must not abdicate responsibility to the Nuclear Establishment on projects having potential disastrous and irreversible environmental consequences. Email, call, and write your MP and the Office of the Prime Minister, demanding they comply with the three CCNR goals

When nuclear reactors were commissioned, the problem of what to do with the waste was a problem for the future. Now reactors are being decommissioned and we still don't have permanent ways to deal with nuclear waste. The only solution available now is to store nuclear waste in a way that it can be retrieved and recharacterized on a regular basis until a permanent solution is found – if there is one – in the future. If permanent abandonment above ground, beside the source of food and drinking water for millions turns out to be a mistake, there will be no way to fix it.



Metal and concrete structural materials in the core, pipes, pumps, boilers, components of the primary cooling system, are permanently transformed into radioactive junk that can't safely be recycled and stay dangerous for 1000s of years. Contaminated materials contaminate other materials on contact, and newly contaminated materials contaminate other materials...

You can bury this beast, but at present, there is no way to eliminate it.

To contact the Prime Minister:  
[pm.gc.ca/eng/connect](http://pm.gc.ca/eng/connect)

For more information consult  
[www.ccnr.org](http://www.ccnr.org)



Dr. Edwards has been a consultant on nuclear issues for governmental and nongovernmental agencies for over 40 years. A gold medal winner in Mathematics and Physics from the University of Toronto, he directed a nation-wide Study of the Mathematical Sciences for the Science Council of Canada. He has given keynote addresses on nuclear matters at conferences in every province and territory of Canada, as well as in Stockholm, Hong Kong, Johannesburg, Madrid, Helsinki, and New York. He has been accepted as a nuclear expert in law courts in Canada and the USA.