

Response to Draft Policy on Radioactive Waste Management and Decommissioning - March 26, 2022

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██████████ Ottawa, ██████████

It is with a strong sense of uselessness that I submit this response to the NRCan project of developing a new policy for Canada concerning nuclear waste.

The thing I have found most discouraging about this policy development process is that it has essentially been led by the OWMA. Any time I have consulted the OWMA site for information about their work on the “strategy” part of the review process, I have encountered statements that are designed to make the reader believe that the OWMA is the lead agency in nuclear waste policy development. I believe this has been a deliberate effort on the part of the OWMA to mislead the interested public and it has not been challenged by NRCan.

I have been thinking about the difficulty that is generated by the fact that, in Canada, and internationally, there is the assumption that the organizations which generate nuclear waste must be responsible for the cost of providing safe methods of disposing of that waste.

My greatest source of both information and concern is about the nuclear waste closest to where I live – the Chalk River Lands operated by CNL on behalf of AECL since 2015. After decades of shocking AECL inattention to “legacy” wastes at that site, CNL now has a disposal facility construction application proceeding before the CNSC. The application is proceeding under the old Environmental Assessment Act 2012, which requires the careful documentation of **project types** examined and **site locations** examined before a project is considered.

CNL executives and staff associated with the “NSDF” license application have testified during presentations to the CNSC in February 2022, that only sites owned by AECL and operated by CNL have been considered, and only one portion of the AECL land holdings at Chalk River has been considered because only one was suitable for the development of a “mound” – a Near Surface Disposal Facility.

I believe both these decisions have been attributable largely to cost considerations, which lead to an insupportable proposal for dangerous mixed wastes to be placed in an NSDF that will be 1.1 Km from the Ottawa River in one of North America’s major seismic fault zones.

In the case of this particular waste disposal project, the tax-paying public will pay for disposal, because the wastes are “owned” by AECL. But the same is true of other CANDU-generated reactor waste. Either the wastes are owned by AECL, or they are owned by provincial electricity systems. In either instance it is the public that will pay for disposal. Which means it is the public, represented by Government, which should have the decisive input into developing a “New Nuclear Waste Policy for Canada”.

So far, that has not been the case. So far it is the proponents of the nuclear industry in Canada which have shaped the discussions in this waste policy development project and that is a travesty of what should be happening.

Let’s begin with the long-standing and still current effort by the OWMA to develop a DGR, either in Teeswater, not far from Lake Huron, or Revell Lake in North-Western Ontario. In both areas the populations have been subject to significant campaigns by OWMA ranging from pressure on local Councils aimed at influencing the nature of how “consent” for a DGR will be determined, to direct funding of local institutions and events.

Let’s also examine the proposal to build a Near Surface Disposal Facility for “Low- Level” legacy wastes at the Chalk River site owned by AECL. The proposal has been advancing since 2016. The object is to tidy up most of 50 years of nuclear wastes so that CNL can begin the process of creating more waste on the same lands – by way of everything from new “Hot Cell” operations to one or more “research” SMRs.

In neither case have the interested nuclear operators been forthcoming with hard information about their proposals, or truly engaged in open public discussion about the potential problems of their proposals. In both cases they have used financial “donations” to local institutions to gain support from local communities and local elected officials.

The question of whether Canada should have Nuclear Waste Policy that puts spent reactor fuel in a DGR has not been closely examined during the process to develop a new Nuclear Waste Policy in this country. In spite of the fact that many countries, over many years, have contemplated developing DGRs, none is yet operating. The reason is that DGRs may not be a good way to deal with High-Level Nuclear Waste. Burying it deep underground makes it very difficult to be aware of problems and to attempt to deal with problems.

There is another option for High-Level Waste. That is to hold it in a secure way above ground, near where it is generated, but not close to a major water-body. It is possible that a few decades from now nuclear technology will be able to de-energize H-L waste – we would all welcome that advance. But, in the meantime it would seem the better part of wisdom to keep it safely aging in above-ground containers which can be monitored regularly and maintained as required.

High-level waste is not the only difficult nuclear waste problem. World experience with Low-Level and Intermediate-Level nuclear waste “disposal” has not been trouble-free. Here in Ontario wastes produced in the mining and the processing of uranium have been inadequately treated in the past; this has also been the experience in several uranium-mining operations worldwide.

Canada’s painful experience trying to cope with nuclear waste mirrors problems that also plague other nations that mine uranium or use nuclear reactors and other nuclear-based facilities. The plain fact is that nuclear power is a dangerous form of energy, both in operation and in the wastes it generates. It is a form of energy that requires ferocious regulation, but doesn’t get that anywhere in the world, as far as I can make out – and certainly not in Canada. In this country in the last 2 decades we’ve seen a Chair of the CNSC get fired because she refused to re-license a nuclear reactor that she believed, accurately, was dangerous.

The following notes from Ottawa Citizen reports outline the story

2008

Jan. 8: The Conservative government fires Linda Keen, amid accusations that public health and confidence in nuclear safety have been jeopardized by her handling of the Chalk River medical isotope scare.

2009

May 15: AECL shuts down the NRU because of a leak of radioactive water. A predicted one-month reopening stretches to the plant being off-line through 2009.

Dec. 3: After 202 days of work and a \$70-million repair, the NRU appears to be ready to resume production of one-third of the world’s medical isotopes by March 2010.

2010

June 17: The Citizen reports that the isotope reactor is fully repaired and production at the site could resume in late July.

Aug. 12: The NRU, the world’s oldest operating nuclear reactor, is poised to restart after a 15-month shutdown.

2011

May 15: A planned 33-day shutdown of the NRU isotope reactor allows the first major inspection since repairs ended the previous August.

Aug. 12: The NRU, the world’s oldest operating nuclear reactor, is poised to restart after a 15-month shutdown.

<https://ottawacitizen.com/news/national/nru-timeline>

Then there was the case in which the then Chair of the CNSC lobbied public servants working on regulations to be attached to the new Environmental Assessment Act. What he wanted to do was prevent a regulation that would automatically require an assessment of Small Modular Reactors. What he achieved was a regulation that assured no reactor that was rated at 200 MWth or less would automatically be subject to an assessment, and no combination of nuclear reactors that together produced 900MWth or less, and were to be located on an existing nuclear reactor site, would automatically be assessed under the new EAA. This information came to light when a Greenpeace FOI produced documentation of his activity in 2018.

This is not the “independent nuclear regulator” posited in Section 1.2 of The DRAFT FOR PUBLIC COMMENT”, surely?

Section 1.3 says the federal government may accept responsibility for “historic radioactive waste liabilities for which the producer no longer exists and the current owner cannot reasonably be held responsible”. Which is like the experience with abandoned oil and gas facilities. Look where that got us. The experience in uranium mining has a historical similarity:

Legacy mine rehabilitation

The Saskatchewan Research Council (SRC) is undertaking remediation of several mine and mill sites in northern Saskatchewan including Gunnar mine (operated 1955-64) and Lorado mill as well as 35 satellite mine sites near Lake Athabasca. This is under Project CLEANS (Cleanup of Abandoned Northern Sites) – a multi-year project funded by the governments of Saskatchewan and Canada. The estimated cost for Gunnar is C\$ 280 million. In the 1960s and 1970s most northern sites were subject to minimal clean-up and rehabilitation and the operating companies are long defunct.

<https://world-nuclear.org/information-library/country-profiles/countries-a-f/canada-uranium.aspx> (updated to 2021)

Section 1.4 says the federal government has “very long term” responsibility for maintaining institutional controls over nuclear waste.

Section 1.5 says that the re-processing of nuclear fuel waste can only occur if approved by the federal government after “due consideration” of the dangers inherent in that technology.

Sections 1.8 - 1.10 say that waste producers and owners “as far as practicable” should prevent and minimize nuclear wastes in operations, decommissioning and closing of their facilities and sites, keep complete records about wastes, and decommission facilities and sites as promptly as possible “recognizing that alternative approaches may be justified, subject to approval by the regulator”.

I would especially like to comment on Section 1.9, which is about the obligation of waste producers and owners to keep records about the wastes for which they have responsibility.

“Waste producers and owners will:characterize, classify and document their radioactive waste in order to define and implement waste management and decommissioning solutions that are commensurate with their risks in both the short and long term;”

Let us be absolutely clear: This is not the policy now, and the likelihood is very small that it will be future policy in Canada. We can test that assumption.

Since 2016 CNL has been attempting to get CNSC approval for Canada’s first nuclear fission waste disposal project – the NSDF at Chalk River. For approximately five and a half years, during many rounds of back and forth between CNL, and staff and Commission members of the CNSC, the public STILL has no idea how much material of what half-life/radionuclide content could be placed in the Facility, whose construction might begin as early as next year.

I can hear the rebuttal: “These are legacy wastes from a time when radioactive waste characterization and record-keeping were not uppermost in the minds of the owner – AECL.”

But the fact is that if the proposed Section 1.9 were to be adopted as part of a “modernized” nuclear waste policy for Canada, the NSDF would not be allowed to be built. Nothing in all the public documents that have gone back and forth about this venture has “documented” what is really the character and the classification of radioactive waste going into this Facility. There is a list of radiological wastes, there is a list of their half-lives, there is a list of their Becquerels/g, but there is no list that tells an interested reader how much of what is intended for disposal in the NSDF. This habit is now strongly entrenched in Canadian experience. Why should we expect it will change?

An additional point about Section 1.9. It’s hard to figure what that last mention of “alternative approaches” could mean. Does it mean that the remains of an SMR nuclear reactor which operated for one round of fuel use in a remote Northern Community could be allowed to linger for a long time?

Or does it mean – hopefully – that instead of DGR burial, spent fuel rods could be appropriately retained, packaged and monitored under a new “rolling stewardship” policy?

In the last part of the DRAFT, Section 3.3 says Canada will “respect” international nuclear waste policy, but with the caveat that Canada may implement “alternative” approaches to environmental protection “that are approved by Canada’s Nuclear Regulator”. This is definitely a “maybe”.

Section 3.4 is another “maybe”. Canada will manage its own nuclear waste, and not wastes from other countries EXCEPT, maybe, “repatriated” “disused” radioactive materials.

We know what this means at the present time: it means the repatriation of nuclear wastes generated abroad by commercial technologies sourced in Canada. In the future, could this include wastes from “Canadian” Modular Reactors sold abroad?

Where is the DRAFT FOR PUBLIC COMMENT offering any clear new direction for Canada’s Nuclear Waste Policy?

My view is that the current effort to “modernize” Canada’s policy for radioactive waste management and decommissioning needs a re-start.

The process should be designed to be clearly led by a government department – Environment and Climate Change would be much more suitable than NRCan. The NWMO should not be allowed to assume the role of public leader in the process. And the policy should be reviewed and debated by Parliament. There should be thought given to establishing the post of an Officer of Parliament who would oversee all matters related to the Canadian nuclear industry and who would report to Parliament on a regular basis, as is the case with the Auditor General of Canada.

So much of the decision-making process attached to nuclear waste management, both in the mining of uranium and the decisions about how and where reactor waste is managed and facilities de-commissioned, should intimately and ultimately involve the will of Indigenous Peoples. The record so far has been abysmal. And that pattern continues in spite of Parliament’s acceptance of the UNDRIP commitment.

For example on Jan 31, 2022 the CNSC recently received a formal request from the Kebaowek First Nation [REDACTED] asking that the CNSC licensing hearings for CNL construction of the proposed Near Surface Disposal Facility at Chalk River be halted until such time that there is an appropriate agreed framework for full and appropriate consultation. The request included a description of a much more satisfactory working arrangement with a different agency:

“As a comparison Kebaowek, Wolf Lake and Temiskaming First Nations are currently engaged in an environmental assessment under CEAA 2012 at the Temiskaming Dam Complex on the Ottawa River. Here the Federal proponent Public Services and Procurement Canada (PSPC) and

the communities have developed a consultation framework agreement in advance of carrying out the assessment. Furthermore, UNDRIP principles are incorporated in the review as part of this rights based environmental assessment. It appears that the TDQRP Federal Consultation is much more robust on Indigenous consultation and engagement than the CNSC regulatory scheme. It is for these reasons that for some time KFN has been seeking to provide some structure to the exercise of the NSDF consultation requesting the CNSC funding of an over arching Consultation Framework Agreement.”

The Chair of the CNSC announced at the recent (February) hearing on the licensing of construction of the NSDF that a Commission decision on this request, when it was made, would be posted on the CNSC site – pretty dismissive.

There is work to do on Canada’s Nuclear Waste Management Policy, and it’s worth doing it well.

