

## **Natural Resources Canada Roundtable on Decommissioning May 18, 2021**

### **Questions:**

1. What do you feel are important policy considerations that should influence the choice of decommissioning strategies by nuclear operators and should be considered as part of Canada's radioactive waste policy?
2. In what ways should Canada's policy address the setting of end-state objectives for decommissioning?

Submitted: May 25, 2021

### **Thank you for this opportunity to comment on the questions above**

I am a member of the Old Fort William Cottagers' Association (OFWCA). We are residents and cottagers in the community of Sheenboro/Fort William, Quebec. We are the first community downriver from Chalk River, Ontario. We have been paying close attention for the past five years to Canadian Nuclear Laboratories' (CNL) two proposals for radioactive waste disposal on the Ottawa River, at Chalk River and Rolphton, Ontario.

Recommendations for policy are based on information and experience over these past five years. Comments here will focus on CNL and the NPD reactor in Rolphton.

I have submitted comments previously on the prior Roundtables - Waste Minimization, Disposal and Storage (I have attached copies in this email).

### **Question 1:**

## **Decommissioning strategies must be considered as part of Canada's radioactive waste policy**

**The IAEA (International Atomic Energy Agency) clearly recognizes only two decommissioning options: Immediate and Deferred**

The IAEA does not recognize in-situ decommissioning (on-site entombment) as an option for planned permanent shutdown of a reactor.

Canada must not be considering in-situ decommissioning unless there is an emergency (eg. an accident) as specified by IAEA. Planned decommissioning of a so called “legacy reactor” is not an emergency situation and does not justify this option. The IAEA’s peer-reviewed report (2020) on Canada’s nuclear safety stated that in-situ decommissioning is “not consistent” with IAEA safety standards and that this should be revised and in-situ decommissioning option removed.

It is believed that CNSC (Canadian Nuclear Safety Commission) defers to the nuclear industry and has devised this exception for legacy reactors under pressure from project proponents. By accommodating the nuclear industry, CNSC is also setting the stage for decommissioning future small modular nuclear reactors (SMRs). To continue along this unacceptable path by not adhering to IAEA standards is ignoring public health and safety and the protection of the environment.

### **In-situ decommissioning creates a waste disposal site**

Encasing radiative waste and components of a reactor in concrete and grout makes it virtually impossible to retrieve the waste. Many reactors are close to water bodies making this even more unacceptable.

This is crucial as right now there are two in-situ decommissioning proposals in Canada - the NPD reactor in Rolphton, Ontario and the reactor at Whiteshell Laboratories in Pinawa, Manitoba. Both these proposals are entirely unacceptable. The radioactive wastes at these sites are dangerous and must be kept out of the biosphere for as long as they pose a radioactive hazard (many thousands to millions of years).

Our association, Old Fort William Cottagers’ Association (OFWCA), situated approximately 30 km downriver from the NPD reactor, passed a resolution in July 2018 in strong opposition to CNL’s in-situ decommissioning proposal. The planned decommissioning of the NPD reactor is not an emergency. OFWCA’s resolution included the following statements concluding that entombment of radioactive waste and its ultimate abandonment are unacceptable.

“The NPD reactor vessel and components are highly contaminated with “post-fission” radioactive materials (including both low-level and intermediate-level). Entombing plutonium and other human-made radioactive materials (by-products of nuclear fission) as well as other mixed wastes such as mercury, lead, asbestos

and PCBs is completely against International Atomic Energy Agency (IAEA) standards.

Entombing and abandoning these same radioactive materials that will be hazardous for hundreds of thousands of years as well as other toxic mixed wastes a hundred metres from the Ottawa River, where all surface water and groundwater migrates to that river, is totally unacceptable.

There are no guarantees that the grouting will not crack allowing water to infiltrate this shallow underground grave. And there are no guarantees that the concrete will last anywhere near as long as the radioactive materials will remain hazardous”.

There is no doubt that grout and concrete would break down at the NPD reactor especially with earthquakes and the freezing and thawing of weather conditions. Radionuclides will migrate to the biosphere - the Ottawa River is only about 100 metres away. This is not a plan that Canada should support.

### **Encasing radioactive waste and components of a reactor in concrete and grout makes it impossible to retrieve the waste**

In-situ decommissioning creates a waste disposal site. Many reactors are close to water bodies making this even more unacceptable.

### **Radioactive waste must not be disposed of without the possibility of retrieval and must not be abandoned**

### **Canada must focus on the management of radioactive waste in storage facilities**

Focus should be on the types of storage facilities that will be needed for the wastes that exist now and in the future. Nuclear reactors are being decommissioned and many will be decommissioned in the near future. Planning must begin. Much time and money is being wasted. Where will secure facilities be located so that they are situated away from water bodies and long-distance transport is avoided?

### **Policy decisions must not be left in the hands of the private sector and nuclear industry**

### **It is unacceptable that Canada's Radioactive Waste Strategy has been put in the hands of the nuclear industry - the Nuclear Waste Management Organization (NWMO)**

NWMO is owned by the waste producing utilities of Ontario, Quebec and New Brunswick.

## **Public and Indigenous involvement is essential in development of policies regarding decommissioning and the safe management of radioactive waste**

(Please see submission on Storage sent originally on May 13/21 to NRCan by email and attached to this email.)

### **Question 2:**

## **Policy Recommendations for Decommissioning**

### **1. In-situ decommissioning must be prohibited in Canada except in a case of emergency**

CNSC must revise decommissioning requirements to align with IAEA regulations. In-situ decommissioning is not an option. Radioactive waste must not be disposed of, without the possibility of retrieval, and abandoned.

### **2. Canada's radioactive waste policy must include two decommissioning options: Immediate and Deferred and conform to IAEA safety standards**

### **3. A new Independent Waste Management Agency must establish decommissioning policies (not the CNSC and apart from Ministry of Natural Resources)**

This new independent agency must be created to establish policies for decommissioning nuclear reactors and the management of radioactive waste overall (as stated previously in prior comments).

All new policies must be implemented by this new independent body (not CNSC). Remove decision-making from nuclear industry.

There should be a moratorium on any decommissioning proposals and all current proposals regarding management of radioactive waste until this new agency is established and functioning.

### **4. Decommissioning regulations need to be mandatory**

## **5. End state objective - to dismantle and remediate**

Whether this will be immediate decommissioning or deferred will depend on the unique situation and the current status of available short- and long-term storage facilities.

The **ideal** is to return the site to “greenfield status”. To reach this end state it must be confirmed that the site is fully remediated and entirely safe.

## **6. Decommissioning objectives - protection of human health and the environment**

There must be measurable objectives for ground and surface water, soil and air.

## **7. Detailed information is required in determining decommissioning strategy prior to approval of decommissioning plans**

- Full descriptions of site and site conditions
- Radioactive waste characterization - with complete list of radionuclides including half-lives
- Complete inventory of radioactive waste and other hazardous material
- Exposure risks to workers

## **8. Nuclear Decommissioning Oversight Committee**

When a reactor is to be shut down a nuclear oversight committee should be formed to include government officials, environmental and technical experts. Community and Indigenous groups’ representatives affected must be included. This decommissioning oversight committee is key for protecting the safety and financial interests of the workers and community members most impacted by the facility's closure. **Decisions must be taken out of the hands of the industry and put in the hands of the public and indigenous communities.**

## **9. Public and Indigenous Involvement in decommissioning decisions at all stages is essential**

Opportunities must be provided for the public and Indigenous communities to comment on decommissioning strategy, waste management and waste transport.

It should be noted that CNL (Canadian Nuclear Laboratories) did not engage with Indigenous communities, local communities or other Canadians prior to deciding on its decommissioning strategy for NPD and Whiteshell reactors. CNL abruptly announced its plan for in-situ decommissioning of these two reactors without any public engagement. This should not have occurred and CNL’s proposals should come to an end to prevent an environmental disaster and before any further time or taxpayer money is lost.

**10. Decommissioning plans are required prior to licensing of a new reactor in accordance with IAEA**

This is particularly relevant to any “small” modular nuclear reactor (SMR). SMRs will use different types of fuels presenting the country with complex problems that must be debated.

It is notable that Global First Power did not submit a decommissioning plan for the SMR to be sited at Chalk River Laboratories. This must not happen in future. Indigenous communities and the public must be able to comment on plans.

**11. All decommissioning regulations must apply to small modular nuclear reactors.**

No in-situ decommissioning of these reactors (no matter their size). Canada must prevent the radioactive waste and the carcasses of SMRs from creating permanent and abandoned radioactive waste sites around the country.

**12. Transparency is crucial throughout decommissioning process**

If private companies are involved they must agree to transparency.

**13. Site Remediation**

- Decontamination, dismantling
- Contaminated soil under and around a reactor must be removed and stored as radioactive waste

**14. No long-distance transport of radioactive waste**

**15. Traceability**

Must be able to trace the movement of all radioactive materials during decommissioning.

Records regarding radioactive waste placement in storage facilities and location of storage facilities must be kept.

**16. Inventory of all radioactive waste must be available, maintained and communicated to public and Indigenous people**

**17. Additional stage(s) to decommissioning process required**

Four stages of decommissioning as indicated by NRCAN are insufficient. Monitoring of the environment both on-site and off-site and security must continue for as long as oversight committee, Indigenous and other communities

deem necessary. All monitoring data must be shared with public. Reassessment of site needs must be ongoing. Oversight may continue forever.

**18. Decommissioning fund ~ financial guarantees must be in place for decommissioning and long-term management of the site and waste storage**

- to dismantle the facility
- to conduct site restoration and remediation
- to ensure radiation protection
- to provide nuclear security
- to provide funding towards emergency management and response
- to provide financial and project reporting to the public to ensure transparency regarding project status and costs
- to provide funds for long-term management of site and radioactive waste including security and monitoring

Currently Canada has no mechanism to provide financial resources for decommissioning. New regulations in this regard are required. Financial burden must not be left on the backs of taxpayers.

**19. Liability of \$1 billion is totally inadequate**

**20. Clear, detailed information about the care of radioactive waste to be transferred from one generation to the next**

**21. Remediation plan urgently needed for Chalk River legacy wastes and decommissioning plan for reactor**

## **Conclusion**

Canada requires decommissioning policies and national radioactive waste policies overall that protect human health and the environment.

An independent Waste Management Agency should be created to establish and implement policies.

Radioactive waste must not be disposed of and abandoned. In-situ decommissioning is not in compliance with international standards and is unacceptable.

There is no mandate from the public for any new nuclear power. It is the nuclear industry that is pushing for and lobbying for small modular nuclear reactors. Action needs to happen now to mediate the climate crisis - not in ten years. Investment in renewable energy is the course the government must take.

Please see article May 25, 2021 in the National Observer by Charles Mandel  
**Opposition grows to small nuclear reactors over alarming risks**  
<https://www.nationalobserver.com/2021/05/25/news/opposition-grows-small-nuclear-reactors-over-alarming-risks>

Canada must make important decisions:

- Stop producing radioactive waste
- Phase out nuclear power
- Stop investing in new nuclear reactors
- Focus on decommissioning and remediation not expansion and more waste generation
- Establish policies for the safe management of radioactive waste with protection of human health and the environment the primary objectives
- Invest now in renewable energy

Thank you, once again, for the opportunity to comment.

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May 25, 2021