Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 26-H100.16

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Written Submission from the Ecological Justice Working Group, Regions East, United Church of Canada

Mémoire du Ecological Justice Working Group, Regions East, United Church of Canada

In the matter of the

À l'égard des

Canadian Nuclear Laboratories

Laboratoires Nucléaires Canadiens

Application to amend the licence and licensing basis for the Gentilly-1 Waste Facility

Demande concernant la modification de leur permis et du fondement d'autorisation pour l'installation de gestion des déchets de Gentilly-1

Hearing in writing based on written submissions

Audience par écrit fondée sur des mémoires

July 2026

Juillet 2026

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Canada

Ecological Justice Working Group
Justice, Mission and Outreach Committee
United Church of Canada, Regions East

Submission to the Canadian Nuclear Safety Commission June 2026

Comments on the Application by Canadian Nuclear Laboratories to Amend the License and Licensing Basis for the Gentilly-1 Waste Facility

Ecological Justice Working Group, Regions East, United Church of Canada
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> *Let us not be guided by corporate agenda, by political motives, by military urging, by fear or by overconfidence.*
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> *Let us be guided by ethical considerations and social values arising from the best efforts of respectful, participatory consultation with the citizens and experts, and by the best of social sciences, natural sciences, and technologies, with the wisdom to acknowledge the uncertainties and limitations of our best.* (United Church 2004)

The United Church of Canada has a long history of policies, documents, and submissions to public calls for input on social, environmental and ethical issues relating to nuclear energy issues. This submission is grounded in that extensive base of information.

In our work, we acknowledge the harmful role that past false assumptions of human separation from and superiority over the natural world has had in the commodification of nature and environmental destruction.

The United Church policies clearly articulate humanity's fundamental integration with the rest of creation along with a call towards responsibility for the care of Creation. Further, the United Church notes that such crucial understandings are at the root of the richness and wisdom of Indigenous worldviews and draws your attention to the importance of that wisdom for our Age.

The focus of this Submission is the scope, the impact assessments and the decision-making process for this decommissioning, and it presents for consideration additional information relevant to these areas of the

decommissioning as presented in the Application[1] and supporting documents on risk assessment[2], decommissioning plan[3] and environment protection[4].

The decommissioning of Gentilly-1 is a first of its kind for Canada and whereas there is no decommissioned CANDU reactor in the world, the impact of this present process carries a responsibility to all those who put their trust and resources into Canada's CANDU.

SCOPE and SOME KEY CONCERNS

In particular, the Environmental Effects Evaluation Form, an addition to the Application after the February 2026 process, indicates in Section F the need for a more inclusive scope. The statement in 84(1)(a) is misleading:

> *To date, the Indigenous Nations and communities that have been identified as being potentially directly impacted by the activities included in CNL's licence amendment application have not expressed any specific concerns with regards to the G1WF application, or any concerns with respect to the federal lands assessment being conducted by the CNSC.*

Those potentially directly impacted have expressed concerns at meetings but those concerns have been termed outside the scope set by the CNL's licence amendment G1WF application and/or outside the scope of the federal lands assessment. Section 84(1)(a) lists some of those key concerns and topics termed outside the scope:

- *the CNSC's policies, processes, and practices, including the CNSC's implementation of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and participant funding;*
- *the potential management of G1WF waste at the Chalk River Laboratories site;*

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[1] Canadian Nuclear Laboratories. Gentilly-1 Waste Facility Licence Amendment Application: Environmental Protection Measures for Decommissioning and Demolition, Revision 1, April 2026. This reference includes the Environmental Effects Evaluation Form: Decommissioning of the Gentilly-1 Waste Facility

[2] Canadian Nuclear Laboratories. Environmental Risk Assessment for the Gentilly-1 Waste Facility, Revision 2, May 2025.

[3] Canadian Nuclear Laboratories. Gentilly-1 Wastes Facility Detailed Decommissioning Plan Volume 1- Program Overview, Revision 1, August 2024.

[4] Canadian Nuclear Safety Commission. REGDOC-2.9.1: Environmental Protection: Environmental Principles, Assessments and Protection Measures, Version 1.2, September 2020, REGDOC-2.9.1, Environmental Protection: Environmental Principles, Assessments and Protection Measures, Version 1.2.

- *the transport of nuclear waste;*
- *the scoping of rights-bearing and interested Indigenous Nations and communities in relation to the G1WF; and*
- *the proposed project not being considered a designated project and therefore not being subject to an integrated assessment as per the IAA.*

CNSC notes:

> *CNSC staff remain committed to working with Indigenous Nations and communities to find effective approaches to addressing key issues and concerns raised with respect to the G1WF, the current licence application, the CNSC's processes for assessing projects on federal lands,* ***and broader policy and regulatory concerns****. ….*

In 84(1)(b) CNSC slips back into the limiting scope:
CNSC staff continue to encourage Indigenous Nations and communities to share any Indigenous Knowledge and Traditional Land Use data applicable to the application and associated federal lands assessment*, where applicable.*

Section 84(1)(d) notes

> *The comments received from members of the public and non-governmental organizations highlighted* two *main areas of concern that were within scope of the assessment:*

- *demolition activities and contaminated materials having the potential to impact adjacent lands and the St. Lawrence River; and*
- *danger to workers due to exposure to radioactive dust.*

> *Additional concerns outlined by members of the public and non-governmental organizations were outside of the scope of this assessment. The concerns touched on the following areas and topics*:

- the proposed project not being considered a designated project and therefore not being subject to an integrated assessment as per the IAA;
- CNL's environmental protection information within the Gentilly-1 Waste Facility Licence Amendment Application: Environmental Protection Measures for Decommissioning and Demolition report not being publicly available to support the public comment period;

- the exclusion of transportation and management of G1WF waste at Chalk River Laboratories from the federal lands assessment;
- the opportunity for simultaneous decommissioning of both the G1WF and the Gentilly-2 site;
- the government-owned and contractor-operated model, namely in relation to the management of the project being led by a United States consortium; and
- the Commission proceedings being held as a hearing in writing as opposed to a hybrid hearing with oral interventions.
- CNSC staff have not been made aware of any concerns from members of the public with respect to potential environmental effects or associated impacts that are not appropriately mitigated through CNL's planned mitigation measures.

Clearly, the scope is set too narrow. Certainly, there are several factors that have resulted in this narrow scope that are in policy and regulations. While encouraged by CNSC's commitment, already noted, "to find effective approaches … and broader policy and regulatory concerns," the licensing approach under which CNSC functions does not have the assessment breadth of the IAA process.

We draw your attention to the Scope from the 2025 Life Cycle Assessment study[5] briefly discussed in the next section.

LIFE CYCLE ASSESSMENT (LCA)

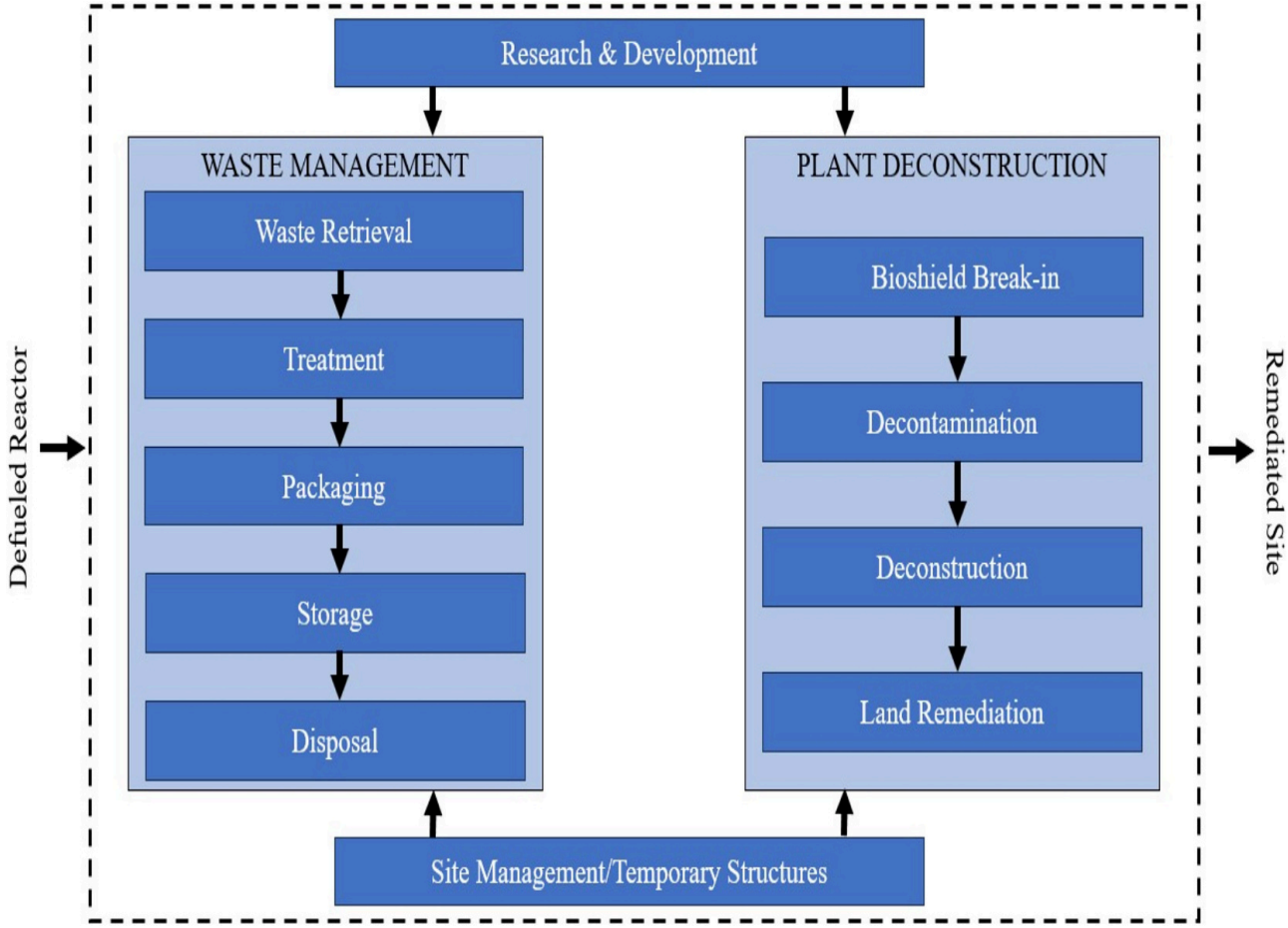
Concerns about inadequacy of the planning and the impact assessments for the decommissioning of G1WF have been raised for this CNL Application, and for many of the decommissioning processes being done on other models of nuclear power plants in other countries.

[5] Kirk, Joel, Rachael Clayton, Anthony Banford, Laurence Stamford. Environmental impacts of decommissioning a nuclear power plant: A life cycle assessment of a Magnox site. Environmental Impact Assessment Review. 113 (June 2025) id. 107880

In an attempt to bring both wider scope of impacts and more granular detail in assessments, we bring to your attention the LCA study done for a Magnox nuclear reactor at Trawsfynydd Site, UK on a similar decommissioning timeframe as G1WF.

The Scope is outlined in this visual from the LCA study and quoted text gives some detail; however, please see the document for full detail.

Figure 1. System boundaries of study.



The scope includes all activities required to fully decommission a Magnox power plant that can be practicably modelled and the system boundary for this study is considered gate to grave which starts once the power plant has been defueled and ends with a remediated site. This includes intermediate decommissioning activities such as waste treatment, conditioning and final disposal of waste arisings, which can be seen in Fig. 1 and described more

granularly in Table 1–3. The transport of materials and waste produced has been considered throughout the Study.
(Tables 1 through 3 referenced here are inventory data.)

This study provides information on how LCA allows the cumulative impacts of decommissioning activities on any given valued element to be assessed and the more impactful activities to be identified, and it supports planning to mitigate impacts.

For visual example, Figure 3. shows all impacts of decommissioning Trawsfynydd site by the decommissioning activities on each of all the valued elements, with the length of colour-coded bar related to level of impact.

For the copy of Figure 3 from the study, the text is small so it is given here:
The decommissioning activities (colour coded) responsible for impacts include those related to:
Site Management
Research and development
Waste retrieval
Temporary structures
Non-radioactive waste Treatment
LLW Waste Treatment
LLW Waste Packaging
LLW disposal Facility operation
LLW disposal Facility construction
Land remediation
Interim Storage Operation
ILW Waste Packaging
ILW disposal Facility operation
ILW disposal Facility construction
Decontamination
Deconstruction
Bioshield break in and deconstruction

The impacts affect:
CC – Climate change (kg CO2 eq.),
CCb – Climate change including biogenic carbon (kg CO2eq.),
PMF – Fine particulate matter formation (kg PM2.5 eq.),
FD – fossil depletion (kg oil eq.),

FC – freshwater consumption (m3),
FET - Freshwater ecotoxicity (kg1,4 DB eq.),
FE - Freshwater eutrophication (kg P eq.),
HTc – Human toxicity, cancer (kg 1,4-DB eq.),
HTnc – Human toxicity, non-cancer (kg 1,4-DB eq.),
IR –Ionising radiation (kBq Co-60 eq. to air),
LU – Land use (Annual crop eq.y),
MET – marine ecotoxicity (kg 1,4-DB eq.),
ME – Marine eutrophication (kg N eq.),
MD –metal depletion (kg Cu eq.),
POFe – Photochemical ozone formation, ecosystems (kg NOx eq.),
POFh – Photochemical ozone formation, human health (kg NOx eq.),
SOD – Stratospheric ozone depletion (kg CFC-11 eq.),
TA – Terrestrial acidification (kg SO2 eq.),
TET – terrestrial ecotoxicity (kg 1,4 DB eq.)]

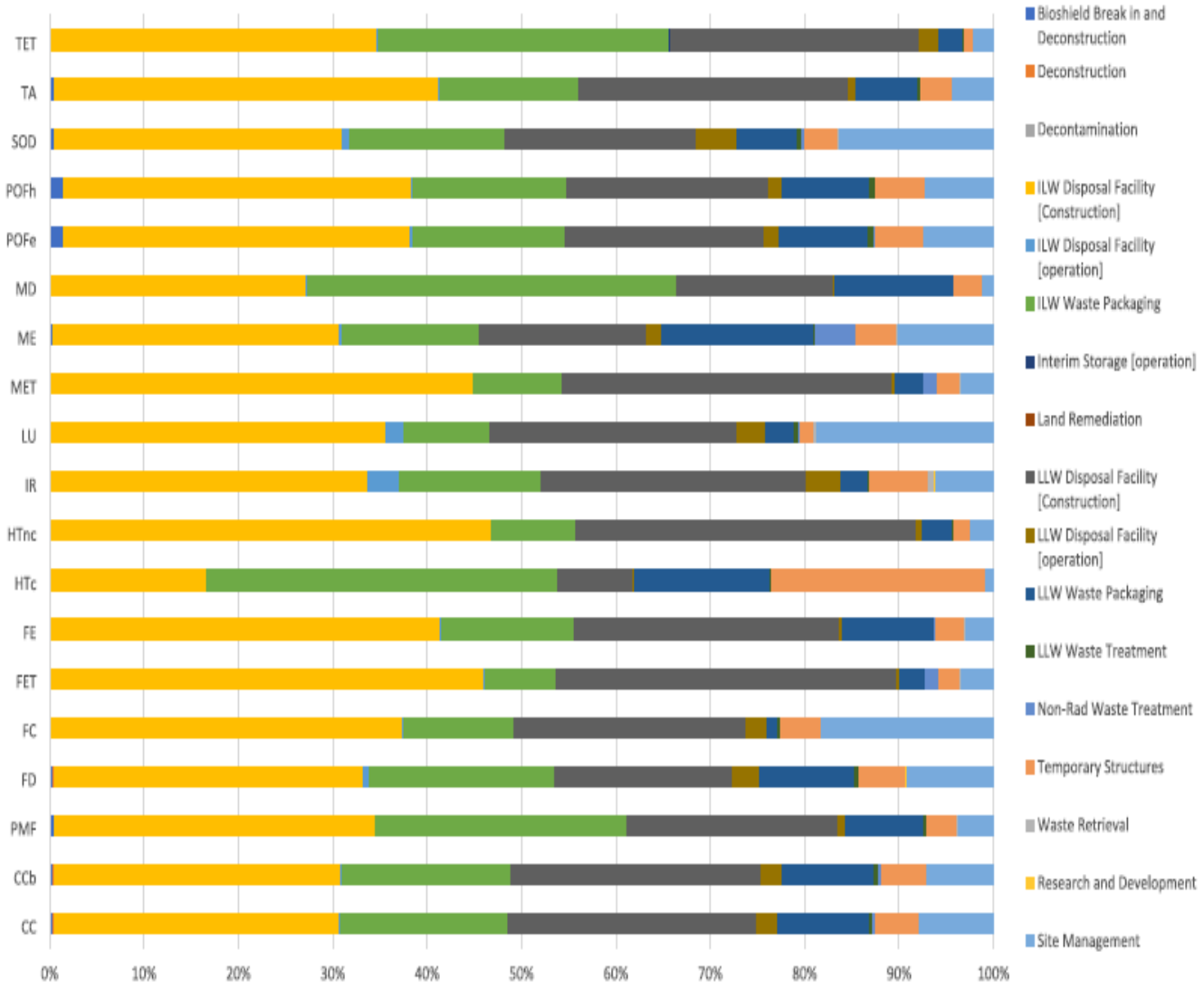


Fig. 3. Impacts of decommissioning the Trawsfynydd Site by activity [CC – Climate change (kg CO2 eq.), CCb – Climate change including biogenic carbon (kg CO_2 eq.), PMF – Fine particulate matter formation (kg PM2.5 eq.), FD – fossil depletion (kg oil eq.), FC – freshwater consumption (m^3), FET - Freshwater ecotoxicity (kg 1,4 DB eq.), FE - Freshwater eutrophication (kg P eq.), HTc – Human toxicity, cancer (kg 1,4-DB eq.), HTnc – Human toxicity, non-cancer (kg 1,4-DB eq.), IR – Ionising radiation (kBq Co-60 eq. to air), LU – Land use (Annual crop eq.y), MET – marine ecotoxicity (kg 1,4-DB eq.), ME – Marine eutrophication (kg N eq.), MD – metal depletion (kg Cu eq.), POFe – Photochemical ozone formation, ecosystems (kg NOx eq.), POFh – Photochemical ozone formation, human health (kg NOx eq.), SOD – Stratospheric ozone depletion (kg CFC-11 eq.), TA – Terrestrial acidification (kg SO_2 eq.), TET – terrestrial ecotoxicity (kg 1,4 DB eq.)]

A collection of more targeted analyses are given for impacts and the primary causes for those impacts. These analyses may give direction for further impact assessment of the G1WF site, to provide better worker and environmental protection and mitigation priorities.