

**Comments to CNL regarding the draft revised environmental impact statement submission
 for the proposed WR-1 In Situ Decommissioning Project**

Reference #	Subject Matter Expert (SME)	Reference to EIS	Context and Rationale	Comment to the Proponent
Canadian Nuclear Safety Commission (CNSC)				
CNSC-01	CNSC – Indigenous and Stakeholder Relations Division	Interest and concerns tables for Black River, Hollow Water and Brokenhead	<p>Under the concern, “<i>BON, BRFN, and HWFN expressed an interest in the CEAA 2012 and its requirements for soliciting information from nearby communities.</i>”</p> <p>CNL’s responses says “<i>The EA is being conducted under the CEAA 2012 and Section 5 (1) (c) of the CEAA 2012 states that the assessment of effects is limited to “the current use of lands and resources for traditional purposes.”</i>”</p> <p>However, that is not the only factor from Section 5 (1) (c), which states “For the purposes of this Act, the environmental effects that are to be taken into account in relation to an act or thing, a physical activity, a designated project or a project are (c) with respect to aboriginal peoples, an effect occurring in Canada of any change that may be caused to the environment on (i) health and socio-economic conditions, (ii) physical and cultural heritage, (iii) the current use of lands and resources for traditional purposes, or (iv) any structure, site or thing that is of historical, archaeological, paleontological or architectural significance”</p>	Revise the question and/or response to clarify that current use of lands and resources is not the only factor under 5 (1) (c) of CEAA 2012.
CNSC-02	CNSC – Indigenous and Stakeholder Relations Division	EIS Section 4.2.1	<p>It is not clear what is meant by the statement “<i>While it is recognized that determination of impacts to rights is a Crown responsibility, CNL recognizes that Indigenous engagement activities may give rise to a legal duty to consult.</i>”</p> <p>The duty to consult is raised when the Crown contemplates conduct that might adversely impact potential or established Indigenous and/or treaty rights. The information collected and measures proposed by licensees to avoid, mitigate or offset adverse impacts may be used by the CNSC in meeting its consultation obligations, however engagement activities do not give rise to the legal duty to consult.</p>	Revise this sentence or provide clarification on what is meant by “Indigenous engagement activities may give rise to a legal duty to consult”.
CNSC-03	CNSC – Environmental Risk Assessment Division	EIS Section 6.2.1.4: Description of the Environment EIS Section 6.2.2.4: Description of the Environment	Follow-up to CNSC expectation to include the measurements of air quality parameters in the LSA and RSA for comparison with measurements recorded at the Winnipeg station, and to address limitations of not having site-specific background air quality data for the assessment.	CNSC staff recommend performing air sampling as a monitoring component to verify that parameters in the LSA and RSA are below 65 Ellen Street measurements and to establish baseline before decommissioning activities begin.
CNSC-04	CNSC	EIS Section 6.5.4.2.4: Benthic Macroinvertebrates	Follow-up to CNSC expectation to present results of background studies on benthic species.	CNSC staff recommend performing benthic community and/or sediment monitoring in the future at groundwater seep and upstream/downstream; however, it may also be beneficial to have more complete baseline sediment and benthic invertebrate data to compare the results to as the groundwater plume may affect sediment and benthic invertebrates in the future.

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CNSC-05	CNSC	DSAR Section 2.4.5 DSAR Table 2.4.5-2 Scenario Development	Follow-up to CNSC expectation to provide a table and/or a diagram clearly describing the underlying assumptions of each scenario evaluated in the DSAR.	CNSC staff recommend, for clarity and transparency, that key model parameters used in each scenario be provided in tabular format, to clearly distinguish between the differences in model scenarios. This is considered best practice.
CNSC-06	CNSC	DSAR – General DSAR – Appendix 2.1-1 Concordance Table	CNL makes reference to REGDOC 2.11.1 Volume III, Assessing the Long-Term Safety of Radioactive Waste Management in their concordance table.	CNSC staff recommend that CNL prepare their updated safety case in accordance with REGDOC 2.11.1 Volume III, Safety Case for the Disposal of Radioactive Waste, Version 2.
CNSC-07	CNSC	EIS Executive Summary: Public Engagement EIS Table 5.3.1-1	<p>In the sub-section “<i>Effectiveness of the grout</i>” of the section “<i>Public engagement</i>”, it is mentioned that “<i>The existing structure provides sufficient barrier to releases, and additional grout would not considerably increase the effectiveness of that barrier</i>”, and that “<i>effectiveness of the grout and concrete materials used for the in situ disposal system have been evaluated through the sensitivity analyses carried out as part of the Project assessment modelling</i>”.</p> <p>Also, in the sub-section “<i>Effects on the Environment on the Project</i>” of the section “<i>Public engagement</i>”, it is mentioned that “<i>To provide further confidence, Canadian Nuclear Laboratories modelled a scenario where the concrete foundation of the Whiteshell Reactor Disposal Facility failed</i>”.</p> <p>Further, in the sub-section “<i>Effects on the Environment on the Project</i>” of the section “<i>Public engagement</i>”, it is mentioned that degradation of the barriers to occur earlier than predicted is very unlikely.</p> <p>As mentioned in several IRs, several aspects of the EIS have not been addressed adequately and the above statements may not be claimed until being adequately demonstrated.</p>	CNL should revise their responses when further appropriate analyses will have been performed considering the IRs issued following CNSC staff’s review of the updated EIS.
CNSC-08	CNSC	General	There are references to the 2001 WL Comprehensive Study Report throughout the WR-1 EIS, but once the WL site-wide ERA is finalized (revised submission date of 2023 May 31), some of the statements and conclusions related to ERA may need to be modified. The conclusions within the lagoon and landfill ERA (CNSC comments on draft sent to CNL in 2021) need to also be considered, where they pertain to WR-1 EIS.	CNSC staff recommend CNL submit the WL site-wide ERA and the lagoon and landfill ERA without further delays. CNSC acceptance of these two outstanding ERAs and confirmation that any information they contain that pertains to the WR-1 EIS has been referenced and used, where applicable, instead of the older 2001 Comprehensive Study Report.
Environment and Climate Change Canada (ECCC)				
ECCC-01	ECCC - Canadian Wildlife Service	EIS Table 6.1.2-1 (pg. 6-5)	Table 6.1.2-1 lists valued components and the rationale for their assessment. The table entry related to Barn swallow states that “ <i>because the [Whiteshell Laboratories] site is federally owned, critical habitat of the species will be afforded protection under SARA</i> ” which is incorrect.	The critical habitat prohibitions under the <i>Species at Risk Act</i> (SARA) do not automatically apply on federal lands. The prohibitions only apply if the federal lands are National Park lands, Migratory Bird Sanctuaries, National Wildlife Areas, or if an Order has been put in place. Note that no critical habitat has been identified on the Whiteshell Laboratories Project site. Refer to SARA Section 58.4 for further information. The prohibitions under Sections 32, 33, 77 and 79 of the SARA still apply.

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ECCC-02	ECCC - Energy and Transportation Directorate	EIS Section 6.2.2: Greenhouse Gasses	<p>ECCC recognizes that climate change was a valued component in the assessment and some greenhouse gas (GHG) information is included in the EIS.</p> <p>While the Strategic Assessment on Climate Change (SACC) does not apply directly to the WR-1 Project as it is being assessed under CEAA 2012, the proponent may find the technical guidance of the SACC helpful in assessing the impacts to climate change and in ensuring consistent, predictable, efficient and transparent consideration of impacts to climate change.</p>	<p>ECCC recommends that the proponent:</p> <ol style="list-style-type: none"> provide details on net GHG emissions by identifying the WR-1 Project’s main sources (as defined in the draft Technical Guide related to the Strategic Assessment of Climate Change (SACC)¹) and describing GHGs for each source; provide yearly estimates of net GHG emissions, including methodology, data, emission factors and assumptions used; provide a qualitative and quantitative description of the potential positive or negative effects of the WR-1 Project on the site’s carbon sink capacity. Additional guidance on the methodology to estimate losses or gains to carbon sinks is available in the draft Technical Guide related to the SACC²; and demonstrate consideration of Best Available Technologies and Best Environmental Practices (BAT/BEP) as described in section 3.2 of the SACC, and the draft Technical Guide related to the SACC.
ECCC-03	ECCC - Energy and Transportation Directorate	EIS Section 6.2.2: Greenhouse Gases EIS Section 6.2.2.5.1: Methods	<p>The proponent stated that “<i>The reporting threshold for the [Greenhouse Gas Reporting Program] GHGRP is 50,000 tonnes of CO₂e</i>”. This is incorrect as the reporting threshold is 10,000 tonnes of CO₂e per year³.</p>	<p>CNL should update any information and assumptions made based on the incorrect reporting threshold.</p>
ECCC-04	ECCC – Nuclear Support and EPOD PNR	Groundwater Flow and Solute Transport Modelling Report Section 4.1.4: Assumptions on the Grout and Table 4-4 EIS Section 3.5.1.2: Grouting of Below Grade Structures and Systems EIS Section 2.5.4.5: Alternative #5 – In Situ Disposal Using Alternative Backfill Materials	<p>ECCC considers the transport of contaminants out of the Whiteshell Reactor-1 disposal facility by groundwater to surface water or other receptors to be a critical potential environmental impact of the WR-1Project.</p> <p>The hydrogeological model uses an equivalent porous media approach, which considers the Whiteshell Reactor-1 disposal facility as a uniform porous media with parameters that are approximated to be “equivalent” to anticipated real conditions. To consider how hydraulic conductivity and by relation real flow will increase as grout degrades, the proponent has applied a step function that multiplies the initial hydraulic conductivity of the grout by increasingly larger values over time. The multiplier values selected for the step function were not scientifically substantiated.</p> <p>As grout ages, fractures and cracks typically form. Such fractures act as preferential pathways for groundwater and depending on the fracture width can result in water flow that is drastically faster than through unfractured grout. Given the prevalence of cold joints that will be present throughout the grout, the risk of large width fractures increases.</p> <p>There is considerable challenge in predicting and modelling groundwater flow through grout over time, given the propensity of grout to fracture and the unpredictability of 1000+ years of grout degradation. Notably, the predictive capacity of the model is only as accurate as the values selected in the hydraulic conductivity step function. For this reason, it is essential that hydraulic conductivity values selected for the model are scientifically substantiated, which requires</p>	<p>ECCC encourages the proponent to consider alternative means approaches or to provide additional scientific evidence to demonstrate no risk to surface water and receptors through the groundwater pathway.</p> <p>Alternative approaches may include, but are not limited to:</p> <ul style="list-style-type: none"> The use of material(s) in lieu of grout for part or all of the in-situ decommissioning that have a well understood hydraulic conductivity and that do not fracture. This may include the consideration of entombment materials that have been used in other forms of disposal for radioactive waste. Some examples (non-inclusive) are the use of a bentonite clay buffer box or using a mixture of bentonite and an aggregate material to meet structural requirements. The consideration of different backfill materials for their longevity, lack of propensity for fracturing and low hydraulic conductivity were not considered in Section 2.5.4.5 of the EIS under Alternative #5: In Situ Disposal Using Alternative Backfill Materials. Removal of the grout from consideration in the model altogether. As fracture flow can be drastically higher than the surrounding subsurface material, such an approach would require modelling contaminants as being instantaneously released to the area outside of the grout and subsequently transported with groundwater. <p>Ultimately, the hydrogeology model should clearly demonstrate that the Winnipeg River will not be contaminated. Supporting evidence and key parameter values used in the model should be scientifically supported. Given the challenge of obtaining scientific information related to groundwater flow through highly degraded and/or fractured grout, and the resulting uncertainty about the</p>

¹ Strategic Assessment of Climate Change (SAAC) - [Draft technical guide related to the strategic assessment of climate change - Canada.ca](#)

² Technical Guide related to the Strategic Assessment of Climate Change - [Draft technical guide related to the strategic assessment of climate change - Canada.ca](#)

³ Greenhouse Gas Reporting Program

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			<p>consideration of how grout will degrade over extremely long timeframes, particularly as it relates to fracture flow.</p> <p>Rationale: It is difficult to develop a scientifically supported model of how grout in the WR-1 Project will degrade over 1000+ years including impacts to groundwater flow. Currently available information is insufficient to assess if the Winnipeg River may at some point be contaminated through the groundwater pathway. Given this uncertainty resulting from the unpredictability of groundwater flow through grout that has degraded over 1000+ years, it may be preferable to consider alternative approaches to preventing the release of contaminated groundwater from the Whiteshell Reactor-1 disposal facility. At a minimum, scientific evidence should be presented that clearly demonstrates that contaminated groundwater will not reach the Winnipeg River.</p>	<p>predicted effects to surface water receiving environments, alternative approaches should be considered.</p>
Health Canada (HC)				
HC-01	HC	ERA Table 4-2 (pg. 67) ERA Table 5-3 (pg. 138)	The ERA does not consider potential radiological exposure of the harvesters via incidental ingestion of/external exposure to soil and sediment for the closure phase (ERA, Table 4-2) or via incidental ingestion of soil and sediment for the post-closure phase (ERA, Table 5-3).	It is recommended that CNL include in the HHRA the radiological exposure of the harvesters via incidental ingestion of and/or external exposure to soil and sediment.
HC-02	HC	ERA Table 3-7 (pg. 49) ERA Table 3-14 (pg. 55) ERA Table 3-16 (pg. 57) ERA Table 3-17 (pg. 60)	<p>a) Uranium is evaluated as a radiological contaminant (ERA, Tables 3-7 and 3-16), but not assessed for its chemical (i.e., non-radiological) health impacts (ERA, Tables 3-14 and 3-17). Note that GCDWQ defines a health-based (i.e., kidney toxicity) guideline value of 0.02 mg/L for non-radioactive uranium⁴. Health Canada also supports a risk assessment for exposure to nonradioactive uranium based on an applicable TRV (0.0006 mg/kg bw-day)⁵.</p> <p>b) The ERA considers two uranium isotopes, U-235 and U-238, in the closure phase, while additional isotopes, such as U-233, U-234, and U-236, are also evaluated in the post-closure phase. It remains unknown why different uranium isotopes are considered for the two project phases.</p>	HC encourages CNL to: <ul style="list-style-type: none"> a) Provide predicted mass concentrations of all uranium isotopes in the environment and conduct a screening against health-based environmental quality criteria, and/or health risk assessment. b) Provide rationale for including different uranium isotopes in the risk assessment for the closure phase and post-closure phase.
HC-03	HC	ERA Appendix D, Section 2.8 (pg. 654) ERA Appendix D, Section 3.3.1 (pg. 665) ERA Appendix D, Section 4.3.1 (pg. 697)	To assess the acceptability of the health risks associated with the Disruptive Events, the predicted radiological doses are compared to the International Atomic Energy Agency (IAEA) reference level ¹ ranging from 1 mSv/yr to 20 mSv/yr (ERA, Appendix D, Sections 2.8, 3.3.1, and 4.3.1). However, the cited IAEA document does not stipulate the range as an “acceptable” dose level and, therefore, the statement can be misleading [see further information in the paragraph 2.15 (e) ⁶]. Please note that the International Commission on Radiological Protection (ICRP) advises the use of an annual dose of 10 mSv as a reference level for ‘human intrusion’ circumstances (see further information in the paragraph 64 of the ICRP Publication 81 ⁴) and a dose range of 1 to 20 mSv/yr for ‘existing exposure situations’ (see further information in Table 8 of the ICRP Publication 103 ⁷).	HC encourages CNL to: <ul style="list-style-type: none"> • Revise the statements about the IAEA reference level to better align them with the cited reference¹; or • Cite an alternative reference (e.g., ICRP Publication 1033) and provide a rationale on how the post-closure exposure scenarios considered in the ERA can represent an existing exposure situation described in the reference; or • Use an alternative reference level (i.e., 10 mSv/yr in the ICRP Publication 81⁴) that may be more relevant to the post-closure exposure scenarios considered in the ERA.

⁴ International Commission on Radiological Protection (ICRP). 2000. ICRP Publication 81, Radiation Protection Recommendations as Applied to the Disposal of Long-lived Solid Radioactive Waste. Vol.28: No.4.

⁵ Canadian Standards Association (CSA). 2014. N288.1-14. Guidelines for calculating derived release limits for radioactive material in airborne and liquid effluents for normal operation of nuclear facilities.

⁶ International Atomic Energy Agency (IAEA). 2011. Disposal of Radioactive Waste. Specific Safety Requirements SSR-5. Vienna: International Atomic Energy Agency. ISBN 978-92-0-103010-8. Available at <http://www-pub.iaea.org/books/iaeabooks/8420/Disposal-of-Radioactive-Waste-Specific-Safety-Requirements>

⁷ ICRP. 2007. ICRP Publication 103, The 2007 Recommendations of the International Commission on Radiological Protection. Vol.37: No.2-4.

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HC-04	HC	EIS Table 6.2.1-9 (pg. 368)	<p>Baseline levels of 1-hr NO₂ and SO₂, and 24-hr PM_{2.5} are derived from the 90th percentile data values from a National Air Pollution Station (NAPS) (Table 6.2.1-9). However, the applicable air quality screening criteria, or the Canadian Ambient Air Quality Standards (CAAQS)⁸ [see new IR 223_R2 in the IR Table 3], are based on the annual 98th percentile concentrations (PM_{2.5} and NO₂) or 99th percentile concentrations (SO₂).</p> <p>Note that, since the last EIS review in September 2017, the CAAQS came into effect, replacing the Canadian National Ambient Air Quality Objectives. The CAAQS also provides more protective screening values than Manitoba Ambient Air Quality Criteria.</p>	HC encourages CNL to establish baseline levels of air contaminants based on the NAPS data with appropriate statistics and averaging periods that are associated with CAAQS values.
HC-05	HC	ERA Table 4-5 (pg. 78-79) ERA Table 4-6 (pg. 80)	<p>a) While the Canadian Standards Association⁵ recommends estimating radiological exposure based on the 95th percentile intake rates for food, water, soil and air, the ERA estimates the Farm A and Farm F residents’ radiological exposure based solely on mean intake rates (ERA, Table 4-5). The approach may not be sufficiently conservative to protect vulnerable subgroups (e.g., ‘heavy’ consumers of foods).</p> <p>b) Additionally, it appears that the food intake rates for Indigenous children and infants are estimated by scaling down the adult intake rates for local Indigenous communities⁹ based on the age group-specific intake ratios for the general Canadian population⁸ (ERA, Table 4-6).</p>	<p>HC encourages CNL to:</p> <p>a) Provide the health risk values based on the 95th percentile intake rates for food, water, soil and air, as well as the mean intake rates, to determine the health risks for vulnerable subgroups.</p> <p>b) Discuss uncertainties associated with the use of the age-dependent food intake ratios for the general Canadian population to estimate Indigenous communities’ food consumption patterns</p>
HC-06	HC	ERA Table 5-19 (pg. 176)	In the ERA, health risks related to the ingestion exposure route are calculated based on out of date Toxicological Reference Values (TRVs) for cadmium (1.00E-03 mg/kg-bw/day) and lead (1.85E-03 mg/kg-bw/day) (ERA Table 5-19). Please note that Health Canada published new or revised TRVs ¹⁰ in March 2021, including revised provisional TRVs/TDIs for cadmium (0.0008 mg/kg bw-day) and lead (0.0005 mg/kg bw-day). The use of new TRVs is expected to provide adequate protection to sensitive subgroups, such as toddlers and children. Since lead is a non-threshold contaminant, for which there is no safe level of exposure, consider project improvements to keep lead emissions as low as reasonably achievable.	HC recommends CNL use current Health Canada (2021) TRVs for cadmium and lead in the human health risk assessment (HHRA). Alternatively, provide further rationale on how the use of the select TRVs can provide adequate protection to sensitive subgroups.
HC-07	HC	EIS Table 6.4.2-5 (pg. 519)	The Guidelines for Canadian Drinking Water Quality (GCDWQ) levels cited in table 6.4.2-5 (pdf pg.519) for copper are indicated as not available, and levels for lead are indicated as 10 µg/L. Note that the most recent GCDWQ ¹¹ defines maximum acceptable concentrations of 2,000 µg/L for Cu and 5 µg/L for Pb, respectively.	HC encourages CNL to include values in the Table 6.4.2-5 from the most recent Guidelines for Canadian Drinking Water Quality (Health Canada 2022).
HC-08	HC	ERA Section 4.2.4.1 (pg. 80)	The ERA states that “(a)ny radionuclides not already included in the IMPACT TM database were added with appropriate parameter values (including Ac-225, Ac-227, Ag-108m, Bi-210, Ca-41, Gd-152, Ni-59, Pa-231, Pa-233, Pa-210, Pb-210, Po-210, Ra-223, Ra-224, Ra-225, Ra-228, Th-227, Th-230, Th-231)” (Section 4.2.4.1). However, the Pa-210 appears to be an erroneous entry as the element does not exist.	HC recommends CNL verify the list of radionuclides used in the IMPACT TM database.

⁸ Canadian Council of Ministers of the Environment (CCME). Canadian Ambient Air Quality Standards. Available at: <https://www.ccme.ca/en/air-qualityreport#slide-7>

⁹ Canadian Nuclear Laboratories (CNL). 2018a. Aboriginal Food Intake Survey. Memo from Jesse Gordon to Brian Wilcox. WLDP-26000-021-000, September 2018

¹⁰ Health Canada. 2021. Federal Contaminated Site Risk Assessment in Canada: Toxicological Reference Values (TRVs), Version 3.0. Available at: https://publications.gc.ca/collections/collection_2021/sc-hc/H129-108-2021-eng.pdf

¹¹ Health Canada. 2022. Guidelines for Canadian Drinking Water Quality. Available at: https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/ewhsemt/alt_formats/pdf/pubs/water-eau/sum_guide-res_recom/summary-tables-sept-2022-eng.pdf

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HC-09	HC	ERA Section 4.2.3.1 (pg. 74-76) ERA Section 4.2.4 (pg. 76) ERA Section 5.2.4 (pg. 148) ERA Table 4-5 (pg. 78-79)	The ERA states that shielding factors ¹² are considered in the calculation of radiological doses (Sections 4.2.3.1, 4.2.4 and 5.2.4). However, shielding factors are not included in the list of exposure factors used in the calculation of radiological doses (Table 4-5).	HC recommends CNL include shielding factors in the list of exposure factors used to calculate radiological doses.
Manitoba Métis Federation (MMF)				
MMF-01	MMF	Related to IR #1 (round 1)		The MMF accepts the rationale used by CNL in the application of the terms “ <i>Aboriginal</i> ”, “ <i>Indigenous</i> ”, “ <i>First Nations</i> ” and “ <i>Métis</i> ” within the EIS. However, the MMF continues to raise concern about how the application of baseline information, concerns, commitments, and plans are considered through a distinctions-based lens, ensuring that the unique values and concerns of First Nations and Métis are always understood independently, rather than addressed collectively as though consideration for Indigenous interests.
MMF-02	MMF	Related to IR #2 (round 1)		The MMF appreciates the changes CNL has provided to the EIS and executive summary. However, the MMF note that they are in the ongoing process of redefining their relationship with Canada and as a result, the description of the relationship the MMF and the Red River Métis hold with the Crown and the proponents is continuously evolving. The MMF expect that as additional information is made available regarding these relationships, CNL will continue to work with the MMF to understand the implications for the Whiteshell site, and have that information reflected in living and future documents.
MMF-03	MMF	Related to IR #4 (round 1)		The MMF acknowledges that CNL has included language speaking to the potential impacts of the project on physical health as a result of the ingestion of country foods; however, this only represents a relatively small portion of the larger discussion on socioeconomic impacts. CNL fails to consider the long-term and psycho-social impacts in the form of behavioral shifts or loss of identity, health impacts related to changes in diet as a result of a reduced intake of country foods, and economic losses as a result of perceived impacts to quality of commercially harvested fish or wildlife. Additionally, assessment of these impacts must be considered over an indefinite period of time in which cultural perceptions and relationships with nuclear projects may shift. As a result, CNL must provide a much more in-depth discussion on this topic.
MMF-04	MMF	Related to IR #9 (round 1)		The MMF is concerned that while CNL has provided a logical breakdown of key concerns raised by Indigenous communities, including the MMF, CNL fails to respond substantially to the concerns raised. Specifically, concerns regarding “ <i>Accidents and Malfunctions</i> ”, “ <i>Business and Employment Opportunities</i> ”, “ <i>Future Land Use and Tenure for the Whiteshell Laboratories Site</i> ”, and “ <i>Participation in Environmental Monitoring</i> ” all are addressed by CNL committing to continue to work with all communities on issues. While the MMF appreciate that CNL is willing to commit to working with the MMF and other, the MMF lack confidence in these commitments to drive meaningful issue resolution. Therefore, the MMF believe that CNL needs to work with communities during the contemplation of the proposed WR-1 to

¹² Canadian Standards Association (CSA). 2014. N288.1-14. Guidelines for calculating derived release limits for radioactive material in airborne and liquid effluents for normal operation of nuclear facilities
 E-Doc: 7009876

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				<p>properly address outstanding concerns as per the spirit and intention of CNSC’s <i>Generic EIS Guidelines</i>, p.8.</p> <p>The MMF also note that under the concern headings “<i>The In Situ Disposal Approach</i>” and “<i>Alternative Means Assessment</i>”, CNL acknowledges the fundamental difference in position between CNL and the MMF and Sagkeeng First Nation; however, CNL doesn’t provide any meaningful description of how they will resolve this impasse. This lack of meaningful discussion is substantiated in EIS Section 2 “<i>Purpose of the Project and Alternatives Assessment</i>”, speaking further to this impasse without providing an attempt to reach a resolution.</p>
MMF-05	MMF	Related to IR #10 (round 1)		<p>This Information request largely deals with engagement with the general public, rather than specifically with the MMF. However, the MMF note that CNL continues to present only a partial analysis of the Alternatives Means Assessment leading to the conclusion that in-situ disposal is the preferred option. While it is valid that CNL’s analysis does lead CNL to this conclusion, it fails to recognize the caveats discussed in greater depth in the section of the EIS, which acknowledge the inherent subjectivity in any alternatives analysis. While the MMF is not in a position to confirm whether the information presented in revised EIS text accurately reflects that which was shared with the general public and stakeholders, the MMF are concerned that if this is indeed what was shared, the information does not serve the public in informing meaningful options of the project.</p> <p>The MMF is concerned that the information presented regarding key concerns and issues raised and CNL’s responses to each of the concerns and issues raised during public and stakeholder engagement activities carried out to date does not explore the depths of particular concerns raised, nor the potential impacts beyond them being identified as concerns. While the general public and stakeholders do not have rights protected in the manner that Indigenous communities would through section 35 of the <i>Constitution Act</i>, the MMF note that many Red River Métis citizens may use public engagement as a preferred mode of engaging with CNL rather than through the MMF. As a result, it is essential that CNL not only identify concerns, but then understand the resulting impacts in order to effectively consider how to mitigate impacts on all who are affected by the project.</p>
MMF-06	MMF	Related to IR #28 (round 1)		<p>In presenting information on how public and Aboriginal engagement influenced the alternative means assessment, CNL continues to only provide window dressing rather than truly consider the factors selected to perform the alternatives assessment. For example, the MMF has repeatedly noted that psycho-social factors (fear, anxiety, behavioral modification), long-term maintenance and cost, and generational threats must be appropriately considered in the alternatives assessment. To date, CNL continues to focus on short-term factors within the Alternatives Assessment. Additionally, the MMF has repeatedly raise the concern of whether an in-situ decommissioning approach represents the best feasible alternative that reflects the public interest. Finally, the MMF and others have raised concerns regarding the subjective nature of the alternatives assessment. The additional language fails to appropriately quantify the degree of subjectivity in the assessment and as a result, CNL continue to present an alternatives assessment that is favorable to the alternative that is presented, without acknowledging the validity of other approaches or contemplating the limitations of CNL’s approach.</p> <p>Ultimately, in considering feedback regarding public and Aboriginal engagement, CNLs fail to make a compelling case on how an alternatives assessment that identifies in-situ decommissioning as the</p>

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				preferred option is the superior to other scenarios presented in which in-situ decommissioning identifies other options as preferred.
MMF-07	MMF	Related to IR #54 (round 1)		The MMF recognizes that this IR needs to be continually updated until the submission of the final EIS. As the MMF is currently in the final stages of negotiating a Modern Treaty with Canada, the MMF request that in addition to routine updates, CNL engage specifically with the MMF following the signing of the Treaty to gain specific understanding of how the Modern Treaty will influence the MMF’s relationship with CNL, Canada, Manitoba, and other parties for the purpose of this project. The bill empowering the Modern Treaty is expected to be delivered to the House of Commons by summer 2023.
MMF-08	MMF	Related to IR #124 (round 1)		CNL does not make a meaningful attempt to demonstrate how additional Traditional Knowledge obtained from the MMF and Red River Métis citizens was used in understanding the relationship between the proposed activities and the exercise of rights and the use of Traditional Knowledge. CNL fails to connect how traditional knowledge is maintained and how traditional land use is conducted within the lens of the Whiteshell WR-1 project, which must consider both the historic changes in behaviour, knowledge, and practice by Red River Métis citizens, as well as how a decision to approve in-situ decommissioning would perpetuate impact to behaviour, knowledge, and practice. This fundamental connection is lost in presenting and analyzing valued components.
MMF-09	MMF	EIS Section 2.4: Design Principles from External Sources	<p>CNL outlines 15 requirements considered in the development of the WR-1 decommissioning plan to align with International Atomic Energy Agency (IAEA) General Safety Requirements Part 6, <i>Decommissioning of Facilities</i>. Requirement 8 states that the licensee shall select a decommissioning strategy that will form the basis for the planning of decommissioning. The strategy shall be consistent with the national policy on the management of radioactive waste. In response, CNL states “<i>In absence of a well-defined national waste strategy, CNL continues to pursue a risk-based approach to radioactive waste management that complies with all CNSC regulations, applicable legislation, and where appropriate aligns with international guidance and best practices.</i>”</p> <p>In 2022, Canada released a draft entitled: <i>Modernizing Canada’s Policy for Radioactive Waste Management and Decommissioning</i>. While this policy remains a draft, it does represent the most relevant and up to date position from Canada on the handling of radioactive waste material and decommissioning approaches. Section 2.5 of the policy states waste producers and owners will “<i>work in partnership with First Nations, Inuit and Métis communities to gain a greater understanding of their Indigenous Knowledge, approaches and advice in implementing the siting, construction, operation and monitoring or radioactive waste management and decommissioning projects</i>”.</p> <p>Additionally, Section 2.6 of the policy states waste producers and owners will “<i>engage with Indigenous peoples, provinces, territories, interested communities, scientific experts and other interested persons in Canada to develop and maintain an integrated strategy for radioactive waste management and decommissioning activities that defines, reports on and sets out approaches for the long-term</i>”</p>	<p>Given the direction provided by this draft policy, which CNL should be aware of and be prepared to align with, assuming it will be adopted by Canada, the MMF requests CNL provide an overview on how they view the alignment of ISD and the approach outlined in the project description with Section 2.5 and 2.6 of <i>Modernizing Canada’s Policy for Radioactive Waste Management and Decommissioning</i>.</p> <p>CNSC Note: To be addressed through the licensing process and not part of the EA review</p>

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			<p><i>management, including disposal, of all Canada’s current and future radioactive wastes”</i>. Input from both the MMF and First Nations affected by this project has overwhelming demonstrated opposition to ISD as the preferred approach.</p>	
MMF-10	MMF	EIS Section 2.4: Design Principles from External Sources	<p>In 2022, Canada released a draft entitled: <i>Modernizing Canada’s Policy for Radioactive Waste Management and Decommissioning</i>. While this policy remains a draft, it does represent the most relevant and up to date position from Canada on the handling of radioactive waste material and decommissioning approaches.</p> <p>Section 1.4 of the draft policy recognizes the federal government’s responsibility to “<i>recognize the long time scales associated with the management of radioactive waste and the associated obligations to ensure ongoing stewardship of radioactive waste disposal facilities and sites once closed, so that they remain safe and secure for people and the environment in perpetuity. The federal government ensures that responsibility for maintaining institutional controls over the very long-term is assign to an appropriate entity, and that there is continuity of responsibility over successive entities if necessary, and, where no appropriate entity is available, it work with other levels of government to develop arrangements to ensure that such controls are maintained.</i>”</p> <p>The MMF recognizes the complex relationship between CNL, AECL, the CNSC and other Ministries, agencies and departments within the federal government providing operations, ownership, and oversight over the WL site. While responsible for decommissioning of the WR-1 reactor, CNL is not specifically responsible in perpetuity for maintaining operational control over the WL site. This is further complicated in that CNL, although an enduring entity that is a wholly-owned subsidiary of AECL, is managed by a contractor (currently a consortium named the Canadian National Energy Alliance) that must undergo contract renewal on a recurring basis. As a result, AECL, the CNSC, and Canada are better position to describe the long-term planning for the site including application and maintenance of institutional controls.</p>	<p>The MMF requests AECL and/or the CNSC provide an overview on how the WL site will be managed, including how institutional controls will be applied and maintained in perpetuity or until radioactive material no longer poses a risk to the public or the environment, in accordance with direction outlined in the draft policy <i>Modernizing Canada’s Policy for Radioactive Waste Management and Decommissioning</i>.</p> <p>CNSC Note: To be addressed through the licensing process and not part of the EA review</p>
MMF-11	MMF	EIS Section 2.4: Design Principles from External Sources	<p>CNL outlines 15 requirements considered in the development of the WR-1 decommissioning to align with IAEA General Safety Requirements Part 6, <i>Decommissioning of Facilities</i>.</p> <p>Requirement 15 states “<i>On the completion of decommissioning actions, the licensee shall demonstrate that the end-state criteria as specified in the final decommissioning plan and any additional regulatory requirements have been met. The regulatory body shall verify compliance with the end-state criteria and shall decide on termination of the authorization for decommissioning.</i>”</p> <p>Given the importance of end-state planning to not only complying with international guidelines of decommissioning, but also to accomplishing the overall goals for this project, an end-state plan is vitally important to consider prior to the approval of the WR-1 project.</p>	<p>The MMF requests that CNL work with the MMF in co-drafting an “end-state” management plan that identifies specific goals and actions to be taken at all phases of the decommissioning and post-closure, such that the end-state for WR-1 and the overall WL site reflect the vision and values of the Red River Métis.</p> <p>CNSC Note: To be addressed through the licensing process and not part of the EA review</p>

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MMF-12	MMF	EIS Section 2.5.4.3.2: Economic	In the alternatives assessment, CNL provides a discussion on the economic feasibility for each proposed alternative. As presented, the scope of the EIS fails to consider long-term maintenance costs and requirements for the ISD approach. Human-made materials such as grouting have a finite lifespan which degrade over time. In order to preserve the functionality of ISD, structures using these materials must be maintained.	The MMF requests that CNL provide an assessment of the estimated lifespan of the primary materials used to entomb the WR-1 reactor to support the ISD approach. Included in this assessment, the MMF requests a summary of probable maintenance, as well as a timeline for that maintenance to be undertaken. Finally, the MMF requests that costs (corrected for predicted inflation) be incorporated into the total cost estimate to ensure that the full life cycle costs are appropriately accounted for and considered.
MMF-13	MMF	Sagkeeng Alternative Means Assessment Section 2.8: Approach and Findings	Sagkeeng First Nation offer their own Alternative Means Assessment which outlines vulnerabilities in CNL’s Alternative Means Assessment, specifically in regards to the influence of scope and weighting on determining the final outcome. The MMF recognizes the value of Sagkeeng’s assessment and appreciate the effort and resources that went into this exercise. Sagkeeng has requested a “ <i>true multi-party and multiple accounts evaluation</i> ” that “ <i>would look at differing perspectives and findings, and try to find a jointly preferred, or at minimum a jointly acceptable, solution</i> ”. CNL has stated that they strongly considered Sagkeeng’s views, opinions and interests and have ongoing recommendations and activities that reflect their input on alternative means. CNL believes that conducting additional Alternative Means Assessments, including by way of another assessment tool such as multiple accounts evaluation, will not yield any additional insights that have been already made clear. The MMF is disappointed by CNL’s dismissal of Sagkeeng’s request and sees value in conducting this further iteration of alternatives assessment.	The MMF requests that CNL conduct a multi-party and multiple accounts evaluation, including perspectives of Sagkeeng First Nation and the MMF within the formal alternatives assessment.
MMF-14	MMF	EIS Section 6.5.4.3: Assessment Cases	CNL has characterized the environment prior to ISD as a “Base Case” to compare any closure or post-closure effects to the environment. The MMF are extremely concerned that the proponent has adopted a shifting baseline and is negligent in their protection of the aquatic environment and the fish harvesting rights of the Red River Métis. Baseline data (before any WL construction or activities) should be used to assess any project related effects to the aquatic environment.	The MMF requests CNL revisit the pathways analysis to determine which pathways project activities are likely to effect or have already affected the aquatic environment compared to baseline as opposed to the negligent “Base Case” scenario. The MMF requests that CNL conduct subsequent assessment of the aquatic environment and re- perform assessment steps 4-8 for the entire decommissioning of WR-1 which were entirely absent from the revised EIS due to CNL’s limited commitment to adequate protection of the aquatic environment under their base case definition and framework.
MMF-15	MMF	EIS Section 6.5.6.2.1: No Linkage Pathway	CNL claims that best management practices are used for any work within 30 meters of water at the WR-1 Project but does not provide said best management practices for review of adequate measures in place on site to protect the aquatic environment.	For review of adequate protection measures for the aquatic environment, the MMF requests that CNL provide the best management practices that groundcrews use when conducting work near water. These best management practice packages should include as a minimum: <ul style="list-style-type: none"> • monitoring criteria and methods; • frequency of monitoring; • evaluation criteria of sediment retention measures such as silt curtains and strawbales; • action plan in the event of an erosion control structure failure; and • mitigation measures that are immediately available in the case of said failures.
MMF-16	MMF	General	Conditions of the high-level waste disposal program (Integrated Waste Strategy Objectives) created by the CNSC in the 1990s stipulated that the waste must be	The MMF believes the alternative of moving the radioactive material to a final disposal site should be seriously considered. In terms of exposure modelling and access to the site, adopting a model that

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			isolated from the biosphere and should not be a burden on future generations. The WR-1 decommissioning as described in the EIS will not isolate the waste from the biosphere and requires Institutional Control of the site until 2324, with active monitoring occurring for the first 100 years. This places a commitment on future generations and means that there is the possibility of exposure of released radionuclides to the public and the Red River Métis.	allows for unrestricted access to the site is the conservative approach.
MMF-17	MMF	EIS Section 6.8.1.2: Indigenous Engagement Feedback – Key Interests and Concerns	CNL committed to determining future use of the Whiteshell site in collaboration with Indigenous Nations; however, the MMF finds that this commitment falls short of expectations in understanding the long-term implications of future use. Unlike most other projects that undergo environmental assessments, this project is solely focused on understanding impacts of closure and post-closure. As a result, it is essential to clearly define future use of the Whiteshell site when contemplating the impacts of this project.	The MMF requests that CNL provides examples or scenarios of possible future use based on input for the MMF and First Nations. This information is necessary to understand the longer-term impacts and implications on the future exercise of rights.
MMF-18	MMF	EIS Section 6.8.1.4.3: Assessment Cases	The analysis of reasonably foreseeable developments is flawed given the potential duration of effects which extends for at least 10,000 years as outlined in the temporal boundaries. While the MMF agree it is not possible to foresee projects that far in advance, the analysis must take a different approach to foresee the likelihood of some level of development over at a minimum the 100-year Institutional Control phase. Specifically, there must be acknowledgement that within the temporal scope of the analysis, other development will occur even if not identified.	The MMF requests that CNL develop an assessment methodology to account for development changes over the 100-year Institutional Control phase, the 10,000-year post-Institutional Control phase, as well as provide analysis on potential project interactions over this period. If such a methodology cannot be developed, the MMF requests that CNL develop plausible development scenarios to assess possible interactions. CNSC Note: To be addressed through the licensing process and not part of the EA review
MMF-19	MMF	EIS Section 6.8.1.6.2: Results	The MMF and Red River Métis citizens have directly raised concerns regarding the psycho-social impacts of ISD to those raised by Sagkeeng First Nation. These concerns include potential behaviour modifications impacting the exercise of rights, fear and stigma related to the continued perceived impacts of radioactive material being left in place, environmental racism, and adverse impacts on identity and culture. However, as outlined in the EIS, CNL fails to recognize these psycho-social impacts as they relate to impacted Red River Métis citizens.	The MMF requests that CNL provide evidence on the potential psycho-social impacts to Red River Métis citizens, demonstrating that this information has been collected, assessed, and appropriately addressed in the EIS. It is requested that existing and future psycho-social impacts be appropriately described/predicted, as well as appropriate mitigation measures be employed.
MMF-20	MMF	EIS Section 6.9.2: Indigenous Engagement and Feedback EIS Table 6.9.2-1	Table 6.9.2-1 in Section 6.9.2 of the EIS outlines the psycho-social aspects under the future land use concern; however, it has come to our attention that the psycho-social impacts have not been meaningfully considered throughout the assessment's lifecycle. Given that this is a nuclear project, it is crucial to understand that the threat of radioactivity is often misunderstood, which means that the presence of any radioactive material in the environment is sufficient to influence behaviour and therefore represents a threat to Red River Métis rights. Limiting or omitting such considerations until the monitoring, follow-up, and post-closure phases is likely to result in an amplification of psycho-social and perceptions-based impacts on Red River Métis rights. Furthermore, it has been noted that the Proponent states “ <i>Psychosocial aspects are important to SFN, and as such CNL has included them in Section 6.9.6.2.2 Secondary Pathways</i> ” (p. 6-511). However, the records show that through the previous submissions, the MMF has also highlighted the importance of psycho-social inclusion throughout all phases of the assessment multiple times. It is therefore imperative that the psycho-social impacts are meaningfully considered and addressed throughout the entire assessment's lifecycle to ensure that the Red River Métis rights are adequately protected.	The MMF requests that CNL provides supporting evidence to their residual effects assessment demonstrating that there will not be permanent irreversible impacts on behaviour and cultural-spiritual relationships with the land as a result of the ISD approach. As an example, CNL is requested to provide data that demonstrates the ISD approach will not result in harvesting avoidance behaviour among Métis harvesters surrounding the project site. It is essential to understand the potential and long-term psycho-social impacts of the ISD approach to ensure that it does not adversely impact the rights and well-being of the Red River Métis.

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MMF-21	MMF	EIS Section 6.9.6.2: Results EIS Table 6.9.6-1	CNL in the draft EIS noted, “ <i>To the extent feasible, CNL will work with interested Indigenous peoples to provide employment opportunities during decommissioning activities. For example, CNL worked to enhance options to better match capabilities of First Nation members and Red River Métis citizens with their contracting needs, including adding provisions to its procurement process that encourages the use of Indigenous and local small and medium sized businesses...</i> ” (p.6-575). CNL must clarify how they plan to encourage and empower the use of Indigenous local communities in terms of employment, procurement, and contracting.	The MMF requests to review any procurement strategies and employment plans that favour Indigenous and local businesses. The proponent is requested to clarify how they plan to enhance Indigenous employment and contracting throughout the project.
MMF-22	MMF	EIS Section 6.9.6.2.2: Secondary Pathways	The EIS states “ <i>The implications of the change in decommissioning activities associated with WR-1 does not necessarily alter the number of new employment and/or contracting opportunities during the closure phase, but rather indirectly changes the nature of the employment and/or contracting opportunities available. Previously, the above- and below-grade infrastructure of WR-1 would have been dismantled, packaged and dispositioned to appropriate disposal sites. This would have resulted in construction and transport opportunities. The proposed change will increase the requirements for engineering and construction, while decreasing the amount of transportation labour required. In addition, the Project creates an opportunity, which may go to a local contractor, to encase the below-grade structures with grout before constructing a concrete cap and engineered cover for the below-grade structure</i> ” (p.6-578). As mentioned above, the implementation of the ISD approach is expected to alter the employment landscape, with a shift towards engineering and construction roles and a decline in opportunities in transportation and labour. It remains unclear how this transformation will align with Indigenous capacities and its potential impact on Indigenous employment prospects, as well as contracting and procurement.	The MMF requests that CNL provides breakdown of employment types and associated qualifications, while also presenting a blueprint of the procurement and contracting opportunities that will be accessible to the MMF.
MMF-23	MMF	EIS Section 6.9.6.2.2: Secondary Pathways	In the EIS, CNL states “ <i>In terms of fostering economic development in the region, CNL provides support for the Community Regeneration Partnership, which has been established to create a feasible socio-economic plan for the region, facilitate economic development and hopefully provide high-quality employment to replace the losses associated with the overall WL site closure</i> ” (p.6-579).	The MMF requests to access and review the Community Regeneration Partnership to consider appropriate measures for mitigation of socio-economic impacts, and opportunities for Red River Métis citizens.
MMF-24	MMF	EIS Section 4.2.4.2.2: Interests and Concerns, Monitoring and Control of the Proposed WR-1 Disposal Facility and the Decommissioning WL Site.		In discussing the MMF’s interests and concerns, CNL states that “ <i>The Manitoba Métis Federation stressed the importance of ongoing monitoring and accountability for the WR-1</i> ”, including concerns related to the necessity of maintenance and monitoring for 300 years, and that there is no guarantee for the future commitment of resources. CNL then goes on to determine that “ <i>CNL’s view is that the steps CNL has taken adequately address this area of interest to the extent possible, pending the funding and implementation of the wildlife and environmental monitoring program initiative</i> ” However, the MMF remains concerned that it is not clear how CNL will make commitments for the indefinite control phase of the project or in the post-closure phase after 2326. In the MMF’s view, the funding and implementation of the wildlife and environmental monitoring program initiatives are critically important but do not adequately speak to the issue of accountability for the WR-1 site, if decommissioned in situ, for hundreds or thousands of years.