

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
<a href="#">Brokenhead Ojibway Nation</a>	BON-1	<p>“...we have a number of concerns that include the following:</p> <ul style="list-style-type: none"> <li>• that all underground and above ground structures and systems should be removed and the earth be totally decontaminated; the removed material should be neutralized</li> <li>• that the rivers and streams be protection from any potential leaching</li> <li>• a large area surrounding the former facility should be totally decontaminated and neutralized</li> <li>• restoration of the site area and as mentioned in your letter that there be long-term care and maintenance activities</li> </ul> <p>For greater certainty, the former site should be free of all contaminants, restored as much as possible to its former state and that there are no long term negative impacts occur to the environment and citizens in general.”</p>	<p>As indicated in the project description (section 3.5), <i>in situ</i> (leaving in place) decommissioning of the Whiteshell Reactor 1 (WR-1 reactor), involves preparing systems and structures for grouting whereby the below-grade sealed structure will encapsulate and contain radiological sources and hazardous materials for a defined period of institutional control. This means, leaving the part of the reactor building that is below ground level in place instead of removing it. As indicated in the project description (section 3.1.2), the objective of this proposed approach is to reduce the risk to workers, both of exposure to radiation, and other industrial hazards, and reduce the risk of releases to the public and the environment during decommissioning by not disturbing, handling, or transporting the radioactive materials. The below-grade concrete structure will isolate and contain the radioactive waste that remains in the entombed material, allowed to reduce through radioactive decay in a safe, isolated state.</p> <p>As per the Canadian Nuclear Safety Commission’s (CNSC) <a href="#">Generic Guidelines for the Preparation of an Environmental Assessment pursuant to the Canadian Environmental Assessment Act, 2012</a> (the Guidelines), the proponent’s Environmental Impact Statement (EIS) will have to identify and assess all potential environmental effects of the project and propose mitigation measures to undertake to avoid or minimize any adverse environmental effects of the project.</p> <p><b>CNSC’s regulatory framework</b>                      Under the CNSC’s regulatory framework, applicants are responsible for selecting and justifying their proposed decommissioning strategy.</p> <p>CNSC staff will assess the Canadian Nuclear Laboratories’</p>

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			<p>(CNL) proposed project, in accordance with the CNSC’s regulatory framework, with safety being the overriding factor. As part of the EA and licensing review process, the proposed project’s design, long-term safety and potential effects to the public and the environment will be assessed against all applicable and relevant requirements and guidance, as follows:</p> <ul style="list-style-type: none"> <li>• CNSC licensing and regulatory requirements and guidance (i.e., NSCA, CNSC REGDOCs G-219, <i>Decommissioning Planning for Licensed Activities</i>, and G-320, <i>Assessing the Long Term Safety of Radioactive Waste Management</i>, CSA standard N294, <i>Decommissioning of facilities containing nuclear substances</i>, etc.)</li> <li>• federal and provincial environmental regulatory requirements and environmental policies, guidelines and standards</li> </ul> <p>Consideration will be given to international guidance and best practice.</p> <p>Information on the long-term safety of the proposed project will be summarized in the EIS and the safety case. Members of the public and Aboriginal groups will be provided the opportunity to review and comment on the draft EIS and supporting documentation during the EA process – a public comment period is anticipated in September 2017 – and through future CNSC public engagement sessions.</p> <p><b>CNSC’s decision-making responsibilities</b>                      The CNSC’s Commission Tribunal (the Commission) is a</p>

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			<p>quasi-judicial administrative tribunal. The Commission is a credible and expert decision-making authority that remains independent from government, licensees and staff.</p> <p>The Commission is the CNSC’s decision-making body that makes EA and licensing decisions for all major nuclear projects. Decisions made by the Commission are not subject to any governmental or political review, nor may they be overturned by the Government of Canada. Only the Federal Court or the Supreme Court of Canada may review and overrule a decision made by the Commission.</p> <p>Prior to making a decision, sufficient information is required for CNSC staff to evaluate and make scientifically defensible recommendations to inform evidence-based Commission decisions as well as to ensure regulatory requirements for safety, security and the environment are met.</p> <p>In making an EA decision, the Commission will take into consideration the proponent’s EIS, CNSC staff’s EA Report and supporting documentation, as well as public comments, to determine if the project is likely to cause significant adverse environmental effects, taking into consideration the implementation of mitigation measures. The Commission will require sufficient information to make a science-based EA decision.</p> <p>If there is a positive EA decision (i.e., project is not likely to cause significant adverse environmental effects, taking into consideration the implementation of mitigation measures), the Commission can then proceed with the licensing decision under the NSCA. In making its licensing decision, the Commission will determine whether the proponent is</p>

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			<p>qualified and will make adequate provision for the protection of the environment, the health and safety of persons, the maintenance of national security and the measures required to implement international obligations to which Canada has agreed. Under the NSCA, no approval is granted/no licence is issued unless the proponent is qualified and makes adequate provision for the protection of the environment and health and safety of persons.</p>
<a href="#">William Turner</a>	WT-1	<p><b>General Comments on the Proposed New Decommissioning Strategy for the WR-1 Reactor</b></p> <p><b>1. What is the problem?</b></p> <p>“CNL appears to have decided on a technology without a thorough examination of the appropriateness of that technology. Except for possibly immediate monetary considerations, CNL has not provided an unambiguous description of the problem it wishes to solve. From the project description provided, all we know is that WR-1 reactor needs to be decommissioned, and that CNL has a licence from the CNSC to do that over an extended period. CNL has provided no justification (only assertions) as why the permanent shutdown of the reactor has to be accelerated. I am not aware of any unacceptable risks to the workers, the public or the environment from the current status of the facility. So, what is the problem?</p> <p>Except for assertions, the proponent provides no evidence that the “in situ decommissioned” facility will result in lower the risks to the environment, the workers and the public compared to current strategy of deferred dismantling. Further, CNL has provided no details that compares the end-state of the proposed undertaking to the resultant end-state of the current strategy. The rush to decommission in situ means the reactor will remain in place forever. This is not the case for the existing</p>	<p><b>Project justification/objectives</b></p> <p>As indicated in the project description (section 3.1.2), the objective of the proposed project is to “safely decommission the WR-1 Reactor ensuring the prompt reduction of Canada’s long-term nuclear legacy liabilities.”</p> <p>A problem definition is not a requirement for an EA under the <i>Canadian Environmental Assessment Act, 2012</i> (CEAA 2012). Rather, as outlined in subsection 4.1 (Purpose of the project) of the <a href="#">Guidelines</a>, the proponent’s EIS will have to document in sufficient detail the justification and rationale for the project. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.</p> <p>As outlined in subsection 4.2 (Alternative means of carrying out the project) of the <a href="#">Guidelines</a>, CNSC staff require that the proponent’s EIS assess all potential environmental effects of the proposed <i>in situ</i> decommissioning approach and of each alternative mean of carrying out the project.</p> <p><b>CNSC’s regulatory framework</b></p> <p>Under the CNSC’s regulatory framework, applicants are responsible for selecting and justifying their proposed decommissioning strategy.</p>

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		approach. Which is better in the long run, a concrete structure that will remain in perpetuity, or a greenfield (or maybe brownfield) site?...”	<p>CNSC staff will assess CNL’s proposed project, in accordance with the CNSC’s regulatory framework, with safety being the overriding factor. As part of the EA and licensing review process, the proposed project’s design, long-term safety and potential effects to the public and the environment will be assessed against all applicable and relevant requirements and guidance, as follows:</p> <ul style="list-style-type: none"> <li>• CNSC licensing and regulatory requirements and guidance (i.e., NSCA, CNSC REGDOCs G-219, <i>Decommissioning Planning for Licensed Activities</i>, and G-320, <i>Assessing the Long Term Safety of Radioactive Waste Management</i>, CSA standard N294, <i>Decommissioning of facilities containing nuclear substances</i>, etc.)</li> <li>• federal and provincial environmental regulatory requirements and environmental policies, guidelines and standards</li> </ul> <p>Consideration will be given to international guidance and best practice.</p> <p>Information on the long-term safety of the proposed project will be summarized in the EIS and the safety case. Members of the public and Aboriginal groups will be provided the opportunity to review and comment on the draft EIS and supporting documentation during the EA process – a public comment period is anticipated in September 2017 – and through future CNSC public engagement sessions.</p> <p><b>CNSC’s decision-making responsibilities</b>                      With respect to the CNSC’s decision-making responsibilities, please see the response to BON-1 above.</p>

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			<p><b>Completeness of the project description</b></p> <p>CEAA 2012 requires that the proponent of a designated project, except projects that are regulated by the CNSC or the National Energy Board, submit a project description to the Canadian Environmental Assessment Agency (the Agency). The <i>Prescribed Information for the Description of a Designated Project Regulations</i> (SOR/2012-148) set out the information that must be included in a project description. The Agency then uses the information in the project description during a ‘screening’ phase to inform a decision on whether an EA of the designated project is required.</p> <p>Although not required for designated projects regulated by CNSC, the CNSC has adopted within its EA process the requirement to submit a project description, as outlined in appendix A of <a href="#">REGDOC-2.9.1: Environmental Protection: Environmental Principles, Assessments and Protection Measures</a>. The purpose of the project description is for CNSC staff to determine if a project proposal meets the definition of “designated project” such that CEAA 2012 would apply. To this end, proponents are referred to the <i>Prescribed Information for the Description of a Designated Project Regulations</i> (SOR/2012-148) for the information that should be submitted within their project description.</p> <p>CNSC staff reviewed CNL’s project description, and determined that sufficient information was provided to:</p> <ul style="list-style-type: none"> <li>• meet the <i>Prescribed Information for the Description of a Designated Project Regulations</i> (SOR/2012-148) such that the project description is deemed complete</li> </ul>

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			<p>and need not be revised</p> <ul style="list-style-type: none"> <li>make a determination on the applicability of CEAA 2012</li> </ul> <p>CNSC staff determined that CEAA 2012 applies to the proposed project, as it is considered a “designated project” in accordance with paragraph 37(b) of the <i>Regulations Designating Project Activities</i>. Following CNSC staff’s EA determination, public comments were sought on the project description to inform the conduct of the EA.</p> <p>Taking into account the public comments received related to scope and CNSC staff’s recommendations, the Commission, as indicated in the Commission’s Record of Decision dated March 8, 2017, has determined that the scope of the factors for this EA include the factors mandated in paragraphs 19(1)(a) to (h) of CEAA 2012, with no additional factors requiring consideration. That is, the Commission did not require, under its discretion in paragraph 19(1)(j) of CEAA 2012, to include any other matters relevant to the EA.</p>
William Turner	WT-2	<p><b>2. What is meant by “in situ decommissioning”?</b>            “The proponent states that the reactor on the Whiteshell site is currently in storage with surveillance with the ultimate objective of removing the reactor. For reasons that are mostly financial, CNL asserts that this situation is not acceptable. Therefore, the proponent is proposing to leave the reactor in place and to encapsulate the hazards by “in situ decommissioning.”</p> <p>However, “<i>in situ decommissioning</i>” is not really defined anywhere in the project description.            [...]            Note the similarities with the IAEA definition of</p>	<p>Yes, CNSC staff understand that “<i>in situ decommissioning</i>” means “entombment” or “<i>in situ disposal</i>” as defined in CNSC REGDOC G-219 and CSA N294, and as indicated in the response to WT-1 above.</p> <p>As indicated in the project description (section 3.5), <i>in situ decommissioning</i> of the WR-1 reactor, involves preparing systems and structures for grouting, whereby the below-grade sealed structure will encapsulate and contain radiological sources and hazardous materials, for a defined period of institutional control. This means, leaving the part of the reactor building that is below ground level in place instead of removing it. As indicated in the project</p>

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		<p>entombment, which is:  <i>Entombment is the strategy in which the radioactive contaminants are <b>encased in a structurally long lasting material</b> until the radioactivity decays to a level that permits release of the facility from regulatory control (Decommissioning Strategies For Facilities Using Radioactive Material, Safety Report Series #50, IAEA, Vienna, 2007)</i></p> <p>In other words, for the WR-1 reactor, “in situ decommissioning” means entombment.”</p>	<p>description (section 3.1.2), the objective of this proposed approach is to reduce the risk to workers, both of exposure to radiation, and other industrial hazards, and reduce the risk of releases to the public and the environment during decommissioning by not disturbing, handling, or transporting the radioactive materials. The below-grade concrete structure will isolate and contain the radioactive waste that remains in the entombed material, allowed to reduce through radioactive decay in a safe, isolated state.</p> <p>As outlined in section 4 (Project description) of the <a href="#">Guidelines</a>, CNSC staff require that the proponent’s EIS describe in sufficient detail the <i>in situ</i> decommissioning approach.</p>
William Turner	WT-3	<p><b>3. Is “entombment” disposal?</b>            “Although never stated explicitly, the proponent does not intend to retrieve any of the radioactive components from the entombed facility, since, once encapsulated, recovery would be virtually impossible. As such this undertaking is actually a proposal for a radioactive waste disposal site. By implication, once the radioactivity has decayed to some acceptable level, the site would eventually be abandoned.</p> <p>That said, I am not aware of any Canadian standards, guidelines or legislation with respect to entombment. Therefore one needs to refer to international guidance, such as the IAEA...”</p> <p>[The intervenor quotes several sections from the IAEA document <i>Decommissioning Strategies For Facilities Using Radioactive Material</i>, Safety Report Series #50, IAEA, Vienna, 2007 pertaining to entombment,</p>	<p>Yes, CNSC staff understand that “<i>in situ</i> decommissioning” means “entombment” or “<i>in situ</i> disposal” as defined in CNSC REGDOC G-219 and CSA N294, and as indicated in the response to WT-1 above.</p> <p>With respect to the <b>CNSC’s regulatory framework</b> for the assessment of the proposed project, please see the response to WT-1 above.</p>



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		determining based on these definitions that “entombment is disposal”.]	
William Turner	WT-4	<p><b>4. Is entombment an acceptable decommissioning strategy for nuclear reactors?</b></p> <p>“Let’s look at another section of the IAEA document <i>Decommissioning Strategies For Facilities Using Radioactive Material</i>, Safety Report Series #50, IAEA, Vienna, 2007 pertaining to the acceptability of entombment as a decommissioning strategy. Section 3.2.3. <i>Entombment</i>, states:</p> <p><i>Entombment is not relevant for a facility that contains long lived isotopes because these materials are not suitable for long term surface disposal. Consequently, reprocessing facilities, fuel fabrication facilities, enrichment facilities or facilities that use or process thorium or uranium would not be appropriate for entombment. However, entombment could be a viable option for other nuclear facilities containing only short lived or limited concentrations of long-lived radionuclides, i.e., in order to comply with the site release criteria.</i> [emphasis added].</p> <p>Although the proponent does not provide inventories of any of the possible long-lived radionuclides remaining in the reactor and its associated structures, there is no doubt that they are there. The guidance quoted above does not explicitly include nuclear reactors. A more recent IAEA document that does address reactors (<i>Decommissioning of Facilities, General Safety Requirements Part 6</i>, IAEA, Vienna, 2014), states that with respect to permanently shutdown reactors entombment is not recommended. To quote the sections 1.9 and 1.10 from this publication: [...]</p>	<p>Yes, the document referenced, IAEA GSR 6, indicates that entombment is not recognized internationally, in principle, as a preferred decommissioning strategy (entombment may be considered a solution only under exceptional circumstances, such as following a severe accident). The IAEA is currently working on a document to provide guidance with respect to their position on entombment <i>in situ</i> decommissioning the applicability of entombment in the context of decommissioning and in particular, the regulatory requirements and expectations for applying entombment as a decommissioning option strategy. There is no scheduled date for the publication of this document; however, CNSC staff will keep apprised of its development to inform this EA and licensing review process.</p> <p>Irrespective of the IAEA guidance document, under the CNSC’s regulatory framework, applicants are responsible for selecting and justifying their proposed decommissioning strategy.</p> <p>CNSC staff will assess CNL’s proposed project, in accordance with the CNSC’s regulatory framework, with safety being the overriding factor. As part of the EA and licensing review process, the proposed project’s design, long-term safety and potential effects to the public and the environment will be assessed against all applicable and relevant requirements and guidance, as follows:</p> <ul style="list-style-type: none"> <li>• CNSC licensing and regulatory requirements and guidance (i.e., NSCA, CNSC REGDOCs G-219, <i>Decommissioning Planning for Licensed Activities</i>, and G-320, <i>Assessing the Long Term Safety of</i></li> </ul>

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		<p><b>Entombment</b>, in which all or part of the facility is encased in a structurally long lived material, <b>is not considered a decommissioning strategy and is not an option in the case of planned permanent shutdown</b>. It may be considered a solution only under exceptional circumstances (e.g., following a severe accident). [emphasis added].</p> <p>In other words, entombment is not an acceptable strategy for the permanent shutdown of the WR-1 reactor.”</p>	<p><i>Radioactive Waste Management</i>, CSA standard N294, <i>Decommissioning of facilities containing nuclear substances</i>, etc.)</p> <ul style="list-style-type: none"> <li>• federal and provincial environmental regulatory requirements and environmental policies, guidelines and standards</li> </ul> <p>Consideration will be given to international guidance and best practice.</p> <p>Information on the long-term safety of the proposed project will be summarized in the EIS and the safety case. Members of the public and Aboriginal groups will be provided the opportunity to review and comment on the draft EIS and supporting documentation during the EA process – a public comment period is anticipated in September 2017 – and through future CNSC public engagement sessions.</p>
William Turner	WT-5	<p><b>5. Can “disposal” be licenced?</b></p> <p>“It is my understanding that under the Nuclear Safety and Control Act, there is no provision for a “disposal” licence. [...]</p> <p>Under current legislation, the only licence that would be available at the end of the institutional control period (which is not really addressed in this project description document) is a licence to abandon. To comply with the regulatory guide G-320, “<i>the predicted impact on the health and safety of persons and the environment from the management of radioactive waste are no greater than the impacts that are permissible in Canada at the time of the regulatory decision</i>” (Section 7.4, Assessment Time Frames, CNSC Regulatory Guide, G-320, page 24). This means that at the time of the application for a licence to abandon, the residual activity in the grouted reactor site will have to meet radioactive clearance criteria.</p>	<p>Yes that is correct, following the end of institutional control the applicant may submit an application for a Licence to Abandon. The requirements for the application of a Licence to Abandon are identified in section 8 of the <i>Class I Nuclear Facilities Regulations</i>. At the time the applicant will apply for a Licence to Abandon, CNSC staff will assess the application in accordance with the applicable regulatory framework in effect.</p> <p>Before issuing a Licence to Abandon, the Commission must be satisfied that the applicant meets all the regulatory requirements related to this type of licence, and has made adequate provision to protect the environment, the health and safety of persons, and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.</p>

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		<p>In other words, “disposal” cannot be licenced (at present). The only option for the proponent is to apply for a licence to abandon at the end of the institutional control period.”</p>	
William Turner	WT-6	<p><b>6. Should CNL be the Proponent?</b>            “If the timeline, for the radioactivity to decay to acceptable levels, is thousands of years into the future (which is likely given that radioactive nuclides present have half-lives that are in this range or greater) institutional controls will be required to cover this time period. The 2nd paragraph on page 7-2 states: <i>The WR-1 Reactor site will be returned to AECL for Institutional Control.</i></p> <p>This is of concern. CNL appears to be making commitments on the part of AECL, (by extension, the Government of Canada) that could last forever. The proponent must be accountable for the entire life of the project, i.e., from design, through construction, commissioning, operations up to and including final closure. Since CNL’s contract with AECL is for a maximum of 10 years, CNL should not be the proponent.”</p>	<p><b>Proponent of the project</b>            Although AECL owns the assets and liabilities of the site, CNL is the legal entity that is managing the site and that has responsibility for complying with the CNSC’s regulatory framework. Consequently, it is CNL that is the current licensee and is proposing the project; therefore, it is appropriate that CNL is the proponent.</p> <p>Furthermore, CNL meets the definition of “proponent”, as per section 2 of CEAA 2012, which means the person, body, federal authority or government that proposes the project. The CNSC’s licensing decision considers whether an applicant is qualified to undertake the proposed activities.</p> <p><b>Institutional control</b>            With respect to institutional control, CNSC staff require that information regarding the lifecycle of the project, including the form, length, and requirements of the institutional control period and post-closure monitoring activities, be addressed in the proponent’s licensing documentation and summarized in sufficient detail in the EIS and the safety case. The length of institutional control will need to be approved by the Commission.</p>
William Turner	WT-7	<p><b>7. Who should be involved in the decision?</b>            “I note that CNL alone appears to have made the decision (i.e., the choice) to change the decommissioning strategy from storage with surveillance (or deferred dismantling) to “in situ decommissioning”. However, from the project description, little evidence is provided that the local population has been involved in the decision to modify</p>	<p>The proposed <i>in situ</i> decommissioning approach is currently being assessed under the CNSC’s EA and licensing review process, which includes public participation. Taking into consideration CNSC staff’s assessment and public comments, both the EA and licensing decisions rest with the Commission.</p>

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		<p>that approved strategy. The public consultation as outlined in the project description amounts to announcements only. This appears to be counter to the guidance given in the IAEA document, <i>Decommissioning Strategies For Facilities Using Radioactive Material</i>, Safety Report Series #50, IAEA, Vienna, 2007.</p> <p>[...]</p> <p>Since disposal is forever, public engagement in the decision process is critical. Because these choices have serious implications for the future of these communities, CNL cannot be the sole decision maker.”</p>	<p>As outlined in subsection 4.2 (Alternative means of carrying out the project) of the <a href="#">Guidelines</a>, CNSC staff require that the proponent’s EIS assess all potential environmental effects of the proposed <i>in situ</i> decommissioning approach and of each alternative mean of carrying out the project.</p> <p><b>Public participation</b></p> <p>With respect to public participation, CNSC staff encourage early engagement by the proponent. CNSC staff require that CNL engages with those members of the public who have expressed an interest in participating during their preparation of the EIS.</p> <p>As outlined in section 6 (Public and stakeholder consultation) of the <a href="#">Guidelines</a>, the proponent’s EIS will describe participation activities in accordance with the CNSC’s <a href="#">RD/GD-99.3, Public Information and Disclosure</a>.</p> <p>Furthermore, the CNSC welcomes public involvement in regulatory matters and has a robust public participation program including a public hearing process and a Participant Funding Program. CNSC staff have been providing opportunities for public participation at various stages during the EA process and will continue to do so. Members of the public and Aboriginal groups will be provided the opportunity to review and comment on the draft EIS and supporting documentation during the EA process – a public comment period is anticipated in September 2017 – and through future CNSC public engagement sessions. Future public participation opportunities also include the review of CNSC staff’s EA Report and Commission member documentation, as well as participation in the EA and licensing public hearings.</p>

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William Turner	WT-8	<p><b>8. Does the Canadian Environmental Assessment Act (2012) apply to this undertaking?</b></p> <p>“I note that in the project description the proponent references the Comprehensive Study Report (Whiteshell Laboratories Decommissioning Project, <i>Comprehensive Study Report</i>, Volume 1: Main Report, Rev 2, 2001 March). To quote from Section 2.1.1 of the Project Description: [...]</p> <p>“... <i>The current approved decommissioning approach for WR-1 is described in the Comprehensive Study Report and includes complete removal of the facility. ...</i>” [emphasis added]</p> <p>Since CNL is proposing to change the decommissioning strategy from complete removal to entombment, I suggest that a modification of this magnitude should reopen the previous Comprehensive Study conducted under the previous CEAA. In other words, the CEAA (2012) does not apply to this undertaking and the Comprehensive Study must be reopened.”</p>	<p>EAs are conducted to make decisions on whether after the implementation of mitigation measures, a project as proposed, is likely to cause significant adverse environmental effects. A comprehensive study EA was completed under the former CEAA with respect to the overall decommissioning framework for the Whiteshell Laboratories (WL) site, including the complete dismantlement of the WR-1 reactor. An EA decision, determining that no significant adverse environmental effects would likely occur, was made in 2002.</p> <p>An EA is a planning tool used to identify, predict, evaluate and mitigate environmental effects of proposed projects or activities. Once completed, EAs do not get reopened on projects. Through an EA follow-up program, and for the whole lifecycle of a project, the CNSC’s ongoing environmental protection framework (see <a href="#">REGDOC-2.9.1: Environmental Protection: Environmental Principles, Assessments and Protection Measures</a>), which includes the conduct of environmental risks assessments at least every 5 years, the CNSC can require adaptive management be implemented if the predictions of the EA were not as expected.</p> <p>In its project description, CNL has proposed a renewed strategic plan, which involves a new approach: the <i>in situ</i> decommissioning of the WR-1 reactor. In effect, the <i>in situ</i> decommissioning of the WR-1 reactor is a new project proposal which is different from the project assessed under the previous EA (comprehensive study).</p> <p>The proposed <i>in situ</i> decommissioning of the WR-1 reactor will require a change to the activities authorized under the current licence and will be considered as part of the licence renewal application process. Any change to activities</p>

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			<p>previously approved by the Commission must be reviewed and accepted by the Commission. In addition, the project as proposed is undergoing, as you are aware, a new EA (as required under CEAA 2012). Therefore, the proponent is no longer bound to the decommissioning strategy proposed in the previous EA carried out under the former Act. As part of this EA and licensing review process, the alternative decommissioning strategies will be assessed.</p>
William Turner	WT-9	<p><b>9. Will the proposed undertaking reduce the nuclear liability?</b></p> <p>“Let us accept that reducing the nuclear liability is the “problem”. Will the proposed undertaking of entombing the WR-1 reactor solve that problem?</p> <p>As stated in Comment 5 above <i>Can “disposal” be licenced?</i>, the only licence available to the proponent is a licence to abandon. From international guidance quoted above, we know that entombment is near surface radioactive waste disposal (which by the way, is not appropriate for long lived radioactive isotopes). We also know that the WR-1 reactor is contaminated with long lived isotopes. Given their half-lives, their activity will never decay away to levels that would allow the site to be abandoned. Thus, the site can never be released from institutional control and an abandonment licence could never be granted. At best, the entombed site will be a perpetually licenced nuclear waste management facility, in post closure mode. In other words, no disposal is actually achieved, and the Government of Canada will never be released from the liability.</p> <p>In conclusion, “in situ decommissioning” of the WR-1 reactor will not solve the nuclear legacy “problem”.”</p>	<p>With respect to <b>project justification / objectives</b>, please see the response to WT-1 above.</p> <p>In addition, information and details regarding the lifecycle of the project, including the form, length, and requirements of the institutional control period and post-closure monitoring activities, will be addressed in the proponent’s licensing documentation and summarized in sufficient detail in the EIS and the safety case.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
William Turner	WT-10	<p><b>10. To Summarize</b></p> <p>“The main arguments presented above are:</p> <ul style="list-style-type: none"> <li>• The proposed strategy of entombment (in situ decommissioning) for WR-1 is not acceptable based on international guidance.</li> <li>• The decision about the long-term future of the reactor site are being made without proper public engagement contributing to the perception that CNL is the sole decision maker. This is inexcusable.</li> <li>• CEAA (2012) does not apply to this undertaking and the previous CSR has to be reopened.</li> <li>• The nuclear liability will never be reduced, and the Government of Canada will never be released from that liability.</li> </ul> <p>Until these are resolved, CNL should withdraw this proposal. If the proponent decides not to withdraw this project, then the proponent should respond to the comments below.”</p>	Please see responses to WT-1 to WT-9 above.
William Turner	WT-11	<p><b>General Comments on Project Description</b></p> <p>“(1) The proponent appears to advocate implementation of a short-term solution to a longer term problem. However, I cannot see that the proposed solution of “in situ decommissioning” is justified since (except for possibly immediate monetary considerations). CNL has not provided a description of the problem it wishes to solve. I note that in Section 3.1.1, a rationale is provided as to why entombment was selected, but selection criteria are meaningless unless there is a clear problem definition. Without an unambiguous definition (see also Comment 1 above, “<i>What is the problem?</i>”), I cannot tell whether</p>	With respect to <b>project justification / objectives</b> , please see the response to WT-1 above.

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>these criteria actually address the problem.</p> <p>[...]</p> <p>Thus CNL must devote more resources to obtaining a clear problem definition. Without that description, I suggest the proponent has fallen into the trap identified by H.L. Mencken many years ago – “<i>For every problem there is a solution which is simple, clean and wrong.</i>”</p>	
William Turner	WT-12	<p>“(2) Note that entombment is forever. In the IAEA document, <i>Decommissioning Strategies for Facilities Using Radioactive Material</i>. March 2007, entombment is essentially a near surface waste disposal site and the criteria for such a facility must be met. Thus, the proponent will need to demonstrate that the project meets the requirements of the CNSC Regulatory Guide, G-320, <i>Assessing the Long Term Safety of Radioactive Waste Management</i>. I see no evidence that CNL has considered the implications of this guidance.”</p>	<p>Yes, CNSC staff require the proponent to follow the guidance provided in CNSC Regulatory Guide G-320, in accordance with the CNSC’s regulatory framework for this proposed project, as outlined in response to WT-1 above.</p>
William Turner	WT-13	<p>“(3) In Figures 5 and 6 the structure to be entombed contains many pipes, cavities, and structures. From the complexity of the reactor depicted in these two figures, I would expect that the viscosity of the grout would have to approach that of water to ensure that all cavities, pipes, rooms, etc. are completely filled with little or no hollows left behind. As far as I am aware, cement (or grout) is considerably more viscous than water. Thus it appears that these spaces will remain in the entombed structure thus leading to its ultimate failure over time.</p> <p>What assurance can the proponent provide that the grout will fill all the cavities and provide an adequate seal to the existing walls (pipes, and structures) such that water infiltration will not occur over the whole life of the project (including any institutional control phase)?”</p>	<p>Detailed information on the grouting method, design and longevity of the containment structure, will be provided in the long-term safety analysis and summarized in sufficient detail in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.</p>



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William Turner	WT-14	<p>“(4) Clause 4.1 of the Schedule (<i>Prescribed Information for the Description of a Designated Project - General Information</i>) to the <i>Prescribed Information for the Description of a Designated Project Regulations</i> (SOR/2012-148) states:</p> <p style="padding-left: 40px;"><i>4.1 A description of any environmental study that is being or has been conducted of the region where the project is to be carried out.</i></p> <p>Since I cannot find a description of any environmental study, the project description appears to be out of compliance with this requirement. What CNL has included is several references to the Comprehensive Study Report (CSR). However, no description of that report is provided. This is a critical omission because the CSR forms the basis for the current decommissioning strategy (see Comment 8 above, “<i>Does the Canadian Environmental Assessment Act (2012) apply to this undertaking?</i>”). What changes have occurred since the CSR was written that would suggest a change in strategy is essential?”</p>	<p>With respect to the <b>completeness of the project description</b>, please see the response to WT-1 above. In addition, CNSC staff require that comments raised about omissions, errors or inconsistencies be addressed in the EIS.</p> <p>With respect to <b>public participation</b>, please see the response to WT-7 above.</p>
William Turner	WT-15	<p><b>Specific Comments</b>  <b>Section 2.3 – Description of Consultation Activities</b>            “Please provide a copy of the information provided to the stakeholders. Without the information it is not clear that the material delivered included a description of “...<i>the risks to public health, safety and security, and the environment posed by the facility or activity ...</i>” (RD/GD-99.3, <i>Public Information and Disclosure</i>, CNSC, March 2012, page 3.)”</p>	<p>As indicated in the response to WT-7 above, CNSC staff require that the proponent’s EIS describe, in sufficient detail, public engagement activities in accordance with the CNSC’s <a href="#">RD/GD-99.3, Public Information and Disclosure</a>.</p>
William Turner	WT-16	<p><b>Section 2.3.1 – Future Engagement Activities</b>            “This section does not meet the requirements of Section 2.2.2 <i>Target audience(s)</i> of the CNSC document, RD/GD-</p>	<p>As indicated in the response to WT-7 above, CNSC staff require that the proponent’s EIS describe, in sufficient detail, public engagement activities in accordance with the</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		99.3, <i>Public Information and Disclosure</i> , March 2012. To quote the first sentence in that section, “ <i>The public information program shall define the target audiences, and the rationale utilized for their inclusion.</i> ” For these future engagement activities, please identify the target audience and the rationale used to determine their inclusion.”	CNSC’s <a href="#">RD/GD-99.3, Public Information and Disclosure</a> .
William Turner	WT-17	<p><b>Section 3.5.1 Preparation for In Situ Decommissioning</b>            “Clause 9 of <i>Prescribed Information for the Description of a Designated Project Regulations</i> SOR/2012-148, states that the project information must include:</p> <p style="text-align: center;"><i>A description of all activities to be performed in relation to the project.</i></p> <p>If figures 5 &amp; 6 are an indication of the current configuration of the reactor building (I see nothing in the description of the current status to indicate otherwise), I’d expect there to be significant work required to remove, dismantle, demolish, cut or otherwise modify the interior of this structure in preparation for the grouting.</p> <p>Please include a description of all preparation activities.”</p>	<p>As outlined in section 4.3 (Scope of project) of the <a href="#">Guidelines</a>, CNSC staff require that the proponent describe and assess in the EIS the potential environmental effects for all phases of the project and their associated activities, including preparation activities. Sufficient information is required for CNSC staff to make scientifically defensible recommendations to inform evidence-based Commission decisions.</p> <p>With respect to the <b>completeness of the project description</b>, please see the response to WT-1 above.</p>
William Turner	WT-18	<p><b>Section 3.1.1 - Project Context (Fourth Paragraph)</b>            “To quote this section:</p> <p><i>“Other decommissioning options have been considered for this project which include:</i></p> <ul style="list-style-type: none"> <li>• <i>Selective remediation of contamination such as the fuel channels,</i></li> <li>• <i>Dismantling of key contaminated systems such as the Primary Heat Transport system or Moderator system,</i></li> </ul>	<p>As indicated in the response to WT-1 above, CNSC staff require the EIS to describe and assess the alternative means of carrying out the project.</p> <p>CNL is currently decommissioning the WL site under a Nuclear Research and Test Establishment Decommissioning Licence (NRTEDL-W5-8.04/2018), which expires December 31, 2018. The overall decommissioning framework for the site, including the safety case and licensing basis, was approved by the Commission in 2002</p>

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		<ul style="list-style-type: none"> <li>• <i>Removal of the reactor vessel, and</i></li> <li>• <i>Complete dismantling of WR-1 Reactor.</i>” [emphasis added]</li> </ul> <p>Please clarify. None of these are actual “options” since they are all required to achieve the original decommissioning strategy of complete removal of the facility.”</p>	<p>and renewed in 2008. The decommissioning approach approved by the Commission under the current licence includes the complete dismantlement of the WR-1 reactor.</p> <p>In its project description, CNL has proposed a renewed strategic plan, which involves a new approach: the <i>in situ</i> decommissioning of the WR-1 reactor. In effect, the <i>in situ</i> decommissioning of the WR-1 reactor is a new project proposal which is different from the project assessed under the previous EA (comprehensive study) and has been determined to require an EA under CEEA 2012.</p> <p>The proposed <i>in situ</i> decommissioning of the WR-1 reactor will require a change to the activities authorized under the current licence and will be considered as part of the licence renewal application process. Any change to activities previously approved by the Commission must be reviewed and accepted by the Commission. In addition, the project as proposed is undergoing, as you are aware, a new EA (as required under CEEA 2012). Therefore, the proponent is no longer bound to the decommissioning strategy proposed in the previous EA carried out under the former Act. As part of this EA and licensing review process, the alternative decommissioning strategies will be assessed.</p>
William Turner	WT-19	<p><b>Section 3.1.2 – Project Objectives</b>            “The objective for the project is stated as:</p> <p><i>“The objective of the project is to safely decommission the WR-1 Reactor ensuring the prompt reduction of Canada’s long-term nuclear legacy liabilities.”</i></p> <p>Please provide a description of the long-term liabilities that this project will reduce. Specifically, what are the costs for maintaining the site as is and the costs for this</p>	<p>As indicated in the response to WT-1 above, the proponent’s EIS will have to document in sufficient detail the justification and rationale for the project.</p> <p>With respect to costs, this comment is outside the scope of this EA, as cost information is not a requirement under CEEA 2012 and not within the CNSC’s mandate.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		project over its entire lifetime?"	
William Turner	WT-20	<b>Section 3.1.2 – Project Objectives</b> “I note that the list provided in this section are project outcomes, and cannot be considered project objectives. Project objectives come from a problem definition.  Please revise the list to address the actual objectives of the project. In other words, please answer the question, what is the problem this project will be designed to solve?”	With respect to <b>project justification / objectives and completeness of the project description</b> , please see the response to WT-1 above.
William Turner	WT-21	<b>Section 3.1.2 – Project Objectives (Last Paragraph)</b> <i>“The WR-1 Reactor site will be returned to AECL for Institutional Control. The duration of the Institutional Control period will be determined through the Environmental Assessment.”</i>  Actually this is not quite true. The institutional control period will be determined by the safety analysis conducted in accordance with the CNSC Regulatory Guide, G-320, Assessing the Long Term Safety of Radioactive Waste Management. Please revise.”	With respect to <b>institutional control</b> , please see the response to WT-6 above. In addition, CNSC staff require the proponent to follow the guidance provided in CNSC Regulatory Guide G-320, in accordance with the CNSC’s regulatory framework for this proposed project, as outlined in response to WT-1 above.
William Turner	WT-22	<b>Section 3.2 Provisions in the Schedule to the Regulations Designating Physical Activities</b> Please see comment above, “Does the Canadian Environmental Assessment Act (2012) apply to this undertaking?” The intervenor questions to whether the regulations cited in this section actually apply to this undertaking.”	Please see the response to WT-8 above.
William Turner	WT-23	<b>Section 3.3.2.1 Radiological Hazards</b> “The following is a table that provides half-life of each of the nuclides identified in this section. It is sorted by half-life. Also included is the percent of total activity from the text. A cursory look at this table would suggest that within a few hundred years, the activity from these short lived nuclides	A comprehensive list of radionuclides will be identified in the proponent’s safety case and presented in sufficient detail in the EIS. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>would present no safety issues.</p> <p>[Table, see <a href="#">submission</a> p.11]</p> <p>It is unlikely this listing is exhaustive since there are no long lived nuclides included. Therefore, a prediction as to when the entombed site will reach the clearance criteria for abandonment cannot be done.</p> <p>The proponent will have to develop a more exhaustive listing of nuclides in order to comply with the CNSC guidance document, G-320.”</p>	
William Turner	WT-24	<p><b>Section 3.3.2.2 Non Radiological Hazards</b></p> <p>“I note that the primary heat transport system contains residual organic coolant. Will this residual coolant be removed from the system before entombment? If not, what are the implications for the entombment process? If it is removed, how will these wastes be managed?”</p>	<p>CNSC staff require that information regarding non-radiological hazards, be addressed in the proponent’s EIS, in sufficient detail. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.</p>
William Turner	WT-25	<p><b>Section 3.7 - Project Phases and Schedule (Table 1)</b></p> <p>“This table is incomplete since there is no estimate of the institutional control period. As such it is misleading.</p> <p>Please provide an estimate of what is meant by “TBD””.</p>	<p>With respect to <b>institutional control</b>, please see the response to WT-6 above.</p>
William Turner	WT-26	<p><b>Section 6.2.1 - Fish and Fish Habitat (Second Paragraph)</b></p> <p>““There is the potential for radionuclide releases to groundwater from the In Situ Decommissioned reactor and radionuclide migration to the Winnipeg River.”</p> <p>This statement appears to indicate that there is no advantage to the environment from implementing this</p>	<p>As outlined in section 4 (Project description) of the <a href="#">Guidelines</a>, CNSC staff require the proponent to provide a project justification and assessment of potential project environmental effects, including the end-state and alternative means of carrying out the project, in its EIS.</p>

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		<p>project. In fact there is a potential disadvantage since the lifetime for entombed reactor is forever.</p> <p>If the reactor was removed (as originally envisioned), there could be no radionuclide releases to groundwater thus to the Winnipeg River. Please clarify.”</p>	
<a href="#">Michael Stephens</a>	MS-1	<p><b>General Comments (p.1)</b></p> <p>“It is surprising that the proponent is proposing to entomb the WR-1 reactor, which was successfully operated throughout its operating lifetime and underwent a planned permanent shutdown in 1985. Entombment is not an accepted practice in the world’s nuclear community in such a situation. Part 6 of the <i>IAEA General Safety Requirements, Decommissioning of Facilities</i> (GSR Part 6, July 2014, pp 2-3, <a href="http://www-pub.iaea.org/MTCD/publications/PDF/Pub1652web-83896570.pdf">http://www-pub.iaea.org/MTCD/publications/PDF/Pub1652web-83896570.pdf</a>) states that: [...]</p> <p><i>Entombment, in which all or part of the facility is encased in a structurally long lived material, is not considered a decommissioning strategy and is not an option in the case of planned permanent shutdown. It may be considered a solution only under exceptional circumstances (e.g., following a severe accident).</i></p> <p>If, counter to this clearly stated position of the world's nuclear community, the proponent is permitted to implement this project, then the following comments apply.”</p>	<p>Yes, the document referenced, IAEA GSR 6, indicates that entombment is not recognized internationally, in principle, as a preferred decommissioning strategy (entombment may be considered a solution only under exceptional circumstances, such as following a severe accident). The IAEA is currently working on a document to provide guidance with respect to their position on entombment <i>in situ</i> decommissioning the applicability of entombment in the context of decommissioning and in particular, the regulatory requirements and expectations for applying entombment as a decommissioning option strategy. There is no scheduled date for the publication of this document; however, CNSC staff will keep apprised of its development to inform this EA and licensing review process.</p> <p><b>CNSC’s regulatory framework</b></p> <p>Irrespective of the IAEA guidance document, under the CNSC’s regulatory framework, applicants are responsible for selecting and justifying their proposed decommissioning strategy.</p> <p>CNSC staff will assess CNL’s proposed project, in accordance with the CNSC’s regulatory framework, with safety being the overriding factor. As part of the EA and licensing review process, the proposed project’s design, long-term safety and potential effects to the public and the environment will be assessed against all applicable and relevant requirements and guidance, as follows:</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
			<ul style="list-style-type: none"> <li>• CNSC licensing and regulatory requirements and guidance (i.e., NSCA, CNSC REGDOCs G-219, <i>Decommissioning Planning for Licensed Activities</i>, and G-320, <i>Assessing the Long Term Safety of Radioactive Waste Management</i>, CSA standard N294, <i>Decommissioning of facilities containing nuclear substances</i>, etc.)</li> <li>• federal and provincial environmental regulatory requirements and environmental policies, guidelines and standards</li> </ul> <p>Consideration will be given to international guidance and best practice.</p> <p>Information on the long-term safety of the proposed project will be summarized in the EIS and the safety case. Members of the public and Aboriginal groups will be provided the opportunity to review and comment on the draft EIS and supporting documentation during the EA process – a public comment period is anticipated in September 2017 – and through future CNSC public engagement sessions.</p>
Michael Stephens	MS-2	<b>General Comments (p.2, 1<sup>st</sup> paragraph)</b> “The project involves more than completing the decommissioning of a reactor that is now maintained in a safe state, and leaving a site that can be eventually released from regulatory control. “In Situ Decommissioning” is simply another term for “entombment”. As acknowledged by the proponent this is therefore also a disposal project. It entails the creation of a near-surface radioactive waste disposal repository. The accompanying requirements for ensuring the long-term safety of humans and the environment must also be	Yes that is correct, following the end of institutional control the applicant may submit an application for a Licence to Abandon. The requirements for the application of a Licence to Abandon are identified in section 8 of the <i>Class I Nuclear Facilities Regulations</i> . At the time the applicant will apply for a Licence to Abandon, CNSC staff will assess the application in accordance with the applicable regulatory framework in effect.

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		satisfied <u>before</u> the project is allowed to be implemented.”	requirements related to this type of licence, and has made adequate provision to protect the environment, the health and safety of persons, and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.
Michael Stephens	MS-3	<b>General Comments (p.2, 2<sup>nd</sup> paragraph)</b> “To my knowledge, despite contacting “public stakeholder groups” about the project the proponent has not proactively sought two-way direct interactions with members of the public. The proponent should begin such activities as soon as possible to avoid the appearance of having adopted a “Decide-Announce-Defend” approach to public engagement.”	<b>Public participation</b> CNSC staff encourage early engagement by the proponent. CNSC staff require that CNL engages with those members of the public who have expressed an interest in participating during their preparation of the EIS.  As outlined in section 6 (Public and stakeholder consultation) of the <a href="#">Guidelines</a> , the proponent’s EIS will describe participation activities in accordance with the CNSC’s <a href="#">RD/GD-99.3, Public Information and Disclosure</a> .  Furthermore, the CNSC welcomes public involvement in regulatory matters and has a robust public participation program including a public hearing process and a Participant Funding Program. CNSC staff have been providing opportunities for public participation at various stages during the EA process and will continue to do so. Members of the public and Aboriginal groups will be provided the opportunity to review and comment on the draft EIS and supporting documentation during the EA process – a public comment period is anticipated in September 2017 – and through future CNSC public engagement sessions. Future public participation opportunities also include the review of CNSC staff’s EA Report and Commission member documentation, as well as participation in the EA and licensing public hearings.
Michael Stephens	MS-4	<b>General Comments (p.2, 3<sup>rd</sup> paragraph)</b> “How the project will contribute to, “ensuring the prompt	<b>Project justification/objectives</b> As outlined in subsection 4.1 (Purpose of the project) of the



Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		reduction of Canada's long-term nuclear legacy liabilities" is not clear. The project could well increase the liabilities."	<a href="#">Guidelines</a> , the proponent's EIS will have to document in sufficient detail the justification and rationale for the project. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.
Michael Stephens	MS-5	<b>Detailed Comments – Section 2.1.1</b> “The proponent describes the project as changing the currently approved decommissioning approach – complete removal of the WR-1 reactor, leaving only the below grade concrete structure largely in place – to “in Situ Decommissioning” of the reactor. Contaminated materials in the below grade reactor systems would also be left permanently grouted in place, leaving a “permanent, passive decommissioning end state”. Therefore the project creates a near-surface radioactive waste disposal repository at a location that was not selected for that purpose. The potential long-term impacts on human health and the environment must be assessed and shown to be acceptable before the project proceeds. In particular, the proponent will need to conduct an assessment of the long-term safety of the entombed reactor, following CNSC Regulatory Guidance document G-320: <i>Assessing the Long Term Safety of Radioactive Waste Management</i> ( <a href="http://nuclearsafety.gc.ca/pubs_catalogue/uploads/G-320_Final_e.pdf">http://nuclearsafety.gc.ca/pubs_catalogue/uploads/G-320_Final_e.pdf</a> <a href="http://nuclearsafety.gc.ca/pubs_catalogue/uploads/G-320_Final_e.pdf">http://nuclearsafety.gc.ca/pubs_catalogue/uploads/G-320_Final_e.pdf</a> ).”	Yes, CNSC staff require the proponent to follow the guidance provided in CNSC Regulatory Guide G-320, in accordance with the CNSC's regulatory framework for this proposed project, as outlined in response to MS-1 above.  As outlined in section 4 (Project description) of the <a href="#">Guidelines</a> , CNSC staff require the proponent to provide a project justification and assessment of potential project environmental and health effects, including the end-state and alternative means of carrying out the project, in its EIS.
Michael Stephens	MS-6	<b>Detailed Comments –Section 2.3</b> “It is indicated that between 2015 June and 2016 April, communication activities by CNL have informed several “public stakeholder groups” of this project. However there is no indication of direct communications with individual members of the public. Was there any proactive substantive notification and information provided by the	With respect to <b>public participation</b> , please see the response to MS-3 above.

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>proponent, and an invitation to comment on the proposed approach, the alternatives to it, and the rationale for adopting the proposed new approach? What was the public reaction to it? The project was briefly outlined in the latest issue of CNL's <i>Contact</i> public update brochure (which is dated June 2016, and which was received in residents' postboxes in Deep River, Ontario on June 24). There is no mention of any Open Houses, Public Information Sessions or other contacts with the public in the towns near the Whiteshell Laboratories (i.e., Lac Du Bonnet, Pinawa, and Seven Sisters)."</p>	
Michael Stephens	MS-7	<p><b>Detailed Comments –Section 2.3.1</b>            “CNL’s public information program is described as having the overriding objective, “to build public awareness, understanding, and a supportive appreciation of the Laboratories’ value and relevance to Canadians”. There is no indication that CNL seeks to listen to the public and consider accommodating its concerns and preferences in its program. Well-informed local members of the public might lend their support to CNL proposals if their views were sought and responded to before key decisions are made. The vital importance of direct early two-way engagement with the public was a lesson learned the hard way by the United States Department of Energy at similar sites in the US.”</p>	<p>With respect to <b>public participation</b>, please see the response to MS-3 above.</p>
Michael Stephens	MS-8	<p><b>Detailed Comments –Section 3.1.1</b>            “The proponent mentions that four decommissioning options other than entombment have also been considered. All of those options consist of removing more or less of the contaminated reactor and its supporting systems. [...]            There is another option: the status quo. The risk to workers of removing the reactor in the future could be decreased significantly more by simply keeping the</p>	<p>As outlined in subsection 4.2 (Alternative means of carrying out the project) of the <a href="#">Guidelines</a>, CNSC staff require that the proponent’s EIS assess all potential environmental effects of the proposed <i>in situ</i> decommissioning approach and of each alternative mean of carrying out the project.</p> <p>With respect to the <b>CNSC’s regulatory framework</b> for the assessment of the proposed project, please see the response to MS-1 above.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>reactor in its current Storage With Surveillance condition until a repository is available to receive the waste from removing the reactor. An appropriate repository should surely not take many decades to put into place – and likely can be done in a much shorter period than the reactor site has to be protected if the long-lived nuclides are left near the surface.</p> <p>The fact that disposal options for nuclear waste within Canada are currently not available is not a valid reason to advance decommissioning. It is an argument for building appropriate repositories for the different classes of waste, rather than risk creating another problem. AECL has been a world leader in developing waste disposal technology for decades, but has not built or gained access to actual repositories for its wastes. Putting long-lived waste into an unsuitable near-surface condition could leave it in a difficult-to-retrieve state for eventual retrieval and proper disposition when an appropriate repository is available.</p> <p>The problem in leaving long-lived waste in a near-surface entombed reactor is summarized in a 2007 IAEA document <i>Decommissioning Strategies for Facilities Using Radioactive Material</i> (Safety Report Series #50, <a href="http://www-pub.iaea.org/books/IAEABooks/7540/Decommissioning-Strategies-for-Facilities-Using-Radioactive-Material">http://www-pub.iaea.org/books/IAEABooks/7540/Decommissioning-Strategies-for-Facilities-Using-Radioactive-Material</a>)...”</p> <p>[The intervenor then quotes sections 2.4, 3.2.3, 3.3.3, 3.4.3 and 3.9 of this referenced document.]</p>	
Michael Stephens	MS-9	<p><b>Detailed Comments –Section 3.1.2</b></p> <p>“The stated objective of the project is to ensure “the prompt reduction of Canada’s long-term nuclear legacy liabilities”. If the entombed reactor is not licensable as a</p>	<p>With respect to <b>project justification / objectives</b>, please see the response to MS-4 above.</p> <p><b>Human intrusion scenarios</b></p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		<p>near-surface disposal facility because of the long-lived nuclides or hazardous substances, then this project does not reduce the long-term liabilities - it increases them because it will be more difficult and expensive to retrieve them for disposal later.</p> <p>The proponent's suggestion that projected doses to members of the public from the entombed reactor be less than 0.25 mSv per year explicitly excludes any dose from human intrusion. Human intrusion will be a much more credible scenario if masses of metallic wastes containing long-lived nuclides are left near the surface than if they are placed in a deep bedrock repository.</p> <p>There is no discussion of how long institutional control by AECL could be necessary, nor of the short-term and total cost implications of carrying out this project, including the institutional control (rather than, for example, simply maintaining the status quo until AECL has access to a geological repository for its long-lived wastes). Storage With Surveillance for another 50 years will lead to a further great decrease in the inventories of the short-lived radionuclides. What is expected to happen after period of institutional control? Can the proponent show that the ensuing impact on human health and the environment is not of concern?"</p>	<p>With respect to human intrusion scenarios, as per section 7.5.2 (Disruptive Event Scenarios, Including Human Intrusion) of the CNSC's Regulatory Guide <a href="#">G-320, Assessing the Long Term Safety of Radioactive Waste Management</a>, the proponent's safety case will have to assess disruptive event scenarios, in sufficient detail, and identify any actions required to be incorporated into the proponent's strategy to ensure end-state objectives are met. A summary of this assessment will be presented in the EIS.</p> <p><b>Institutional control</b></p> <p>With respect to institutional control, CNSC staff require that information regarding the lifecycle of the project, including the form, length, and requirements of the institutional control period and post-closure monitoring activities, be addressed in the proponent's licensing documentation and summarized in sufficient detail in the EIS and the safety case. The length of institutional control will need to be approved by the Commission.</p>
Michael Stephens	MS-10	<p><b>Detailed Comments –Section 3.3.2.1</b></p> <p>“It is stated that over 99% of the (current) radiological inventory in the reactor is situated in the reactor vessel. The information provided about the specific nuclides present is very incomplete. Since the identified contaminants are associated with irradiated reactor fuels, corrosion/ activation and fission products, longer-lived</p>	<p>Waste volumes, waste inventory, waste acceptance criteria (WAC) and details on the handling and emplacement of the waste will be addressed in the proponent's licensing documentation and will be summarized in sufficient detail in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		nuclides are certainly present. They may not dominate the total radionuclide inventory now, but will dominate in the longer term. What are the inventories of the long-lived radionuclides?"	Commission decisions.
Michael Stephens	MS-11	<b>Detailed Comments –Section 3.3.2.2</b> “Hazardous materials in the reactor include asbestos, residual organic coolant, lead, PCBs, and mercury. What are the estimated quantities of these substances? Is it proposed to leave all of those materials that are in the below grade structures in place? What are the foreseeable consequences to human health and the environment in the long term?”	CNSC staff require that information regarding non-radiological hazards, be addressed in the proponent’s EIS, in sufficient detail. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.
Michael Stephens	MS-12	<b>Detailed Comments –Section 3.5.2</b> “What assurance will there be that the grout seals to the walls of the subgrade structures, that it won’t expand and crack the structure, or shrink and leave fissures, or crack after curing?”	Detailed information on the grouting method, design and longevity of the containment structure, will be provided in the long-term safety analysis and summarized in sufficient detail in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.
Michael Stephens	MS-13	<b>Detailed Comments –Section 3.5.4</b> “It is indicated that an “engineered barrier” will be installed over an “engineered cap” to create an “engineered cover”, but no details are given. What will the barrier consist of? How will its performance be assured? Section 3.5.6 suggests that it may be subject to “subsidence, erosion and animal or other (= human?) intrusion”.”	Information regarding the engineered barrier will be addressed in the proponent’s licensing documentation and summarized in sufficient detail in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.
Michael Stephens	MS-14	<b>Detailed Comments –Section 3.7</b> “Table 1 refers to the last phase of the project comprising institutional control activities starting in 2024 and continuing for an undetermined length of time. Some acceptable minimum time should be discussed with the public and agreed upon (as well as where the necessary	With respect to <b>public participation</b> , please see the response to MS-3 above.  With respect to <b>institutional control</b> , please see the response to MS-9 above.

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		resources will come from and how they will be funded) before this project is allowed to proceed.”	
Michael Stephens	MS-15	<b>Detailed Comments –Section 5.3</b> “Will a CNSC licence to “abandon” the small WR-1 site be necessary and sought at some point?”	<p>Yes that is correct, following the end of institutional control the applicant may submit an application for a Licence to Abandon. The requirements for the application of a Licence to Abandon are identified in section 8 of the <i>Class I Nuclear Facilities Regulations</i>. At the time the applicant will apply for a licence to abandon, CNSC staff will assess the application in accordance with the applicable regulatory framework in effect.</p> <p>Before issuing a Licence to Abandon, the Commission must be satisfied that the applicant meets all the regulatory requirements related to this type of licence, and has made adequate provision to protect the environment, the health and safety of persons, and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.</p>
Michael Stephens	MS-16	<b>Detailed Comments –Section 6.1.3</b> “Abandoned farm fields on the Whiteshell Laboratories site are mentioned. Farming in the area might restart in the future, so this possibility should be included in the long-term safety assessment of the entombed reactor.”	Information regarding the evaluation of land use will be provided in the long-term safety analysis and summarized in sufficient detail in the EIS and safety case.
Michael Stephens	MS-17	<b>Detailed Comments –Section 6.2.1</b> “It is indicated that, “There is the potential for radionuclide releases to groundwater from the in Situ Decommissioned reactor and radionuclide migration to the Winnipeg River”. This in itself is sufficient reason to conduct an assessment of the long-term safety of the site to both the environment and humans who may be located along the migration path.”	As part of the EA and licensing review process for this project, a long-term safety analysis is required by the proponent, in accordance with the CNSC’s regulatory framework (as outlined in response to MS-1 above).

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
<a href="#">Peter Baumgartner</a>	PB-1	<p>“...The real issue that the CNL Americans are raising for AECL’s legacy low- and intermediate-level waste (LILW), wittingly or unwittingly, is the lack of a Canadian strategy and a fund to move forward on the disposal of all Canada’s used fuel...”</p>	<p>This comment is outside the scope of this EA and not within the CNSC’s mandate; the CNSC is the nuclear regulator and is independent from political decisions.</p>
Peter Baumgartner	PB-2	<p>“What Canada really needs is a LILW disposal strategy for its legacy wastes, which is not included in the Nuclear Legacy Liabilities Program (NLLP) that was initiated in 2006. There is no mention that any legacy LILW will be disposed before 2076. [...] Adding the disposal target and date into the NLLP should be one of the chief recommendations coming out of the Environmental Assessments for the proposed in situ disposal of the WR-1 and NPD reactors and the LLW Near-Surface Disposal Facility project...”</p>	<p>This comment is outside the scope of this EA and not within the CNSC’s mandate; the CNSC is the nuclear regulator and is independent from political decisions.</p> <p>The outcomes of an EA decision are legal conditions, rather than recommendations, that the proponent must comply with, specifically with respect to avoiding and/or minimizing adverse environmental effects. EA decision conditions typically include the implementation of mitigation measures and EA follow-up programs, which are developed to confirm the predictions of the EA and the effectiveness of the mitigation measures. Following a positive CNSC licensing decision, the conditions, mitigation measures and follow-up programs established in CEAA 2012 EA decisions are incorporated into licences and Licence Conditions Handbooks (LCHs) as the mechanisms used to verify and ensure compliance.</p>
<a href="#">Peter Baumgartner and co-authors</a>	PBCO-1	<p><b>3.1 Long-lived Radionuclides Associated with the Irradiated WR-1 Core Components</b></p> <p>“In the proposed license amendment for WR-1, CNL has provided an inventory of radionuclides that appears to be taken from a decades-old AECL technical note which listed the "key radionuclides" associated with the WR-1 irradiated reactor core metals (McIlwain 1992). Note that this inventory was produced by modelling and is not verified by sampling and testing. In the proposed license amendment, CNL did not attribute any safety</p>	<p>A comprehensive list of radionuclides will be identified in the proponent’s safety case and presented in sufficient detail in the EIS. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>significance to the long-term decay characteristics of a number of the radionuclides in this inventory. However, the inventory clearly includes irradiated reactor core components that are intermediate-level radioactive waste (ILW), which is defined on the CNSC website (<a href="http://nuclearsafety.gc.ca/eng/waste/low-and-intermediate-waste/index.cfm#Intermediate-level">http://nuclearsafety.gc.ca/eng/waste/low-and-intermediate-waste/index.cfm#Intermediate-level</a>) as "... waste that has been exposed to alpha radiation, or that contains long-lived radionuclides in concentrations that require isolation and containment for periods beyond several hundred years ...." In contrast to LLW, ILW typically has relatively high activity levels and relatively long decay half-lives, so the safe disposal of ILW generally requires a more rigorous degree of containment and isolation than can be provided by near-surface disposal facilities."</p>	
Peter Baumgartner and co-authors	PBCO-2	<p><b>3.2 Long-lived Radionuclides Associated with Corrosion Wear and Fuel Failures</b></p> <p>"Examples of potential long-lived waste forms in the WR-1 reactor core and the Primary Heat Transport (PHT) system include "crud," which is a colloquial term for chemical, corrosion and wear products (e.g., precipitates, films, rust particles) within a nuclear reactor that become radioactive when irradiated during the operation of the reactor. As a result of periodic fuel failures from experimental fuel testing during WR-1 's operational history, the reactor core and PHT system also still contain irradiated fuel residues (Saunders and Sochaski 2015). The quantity of the residues remaining in WR-1 is likely to be small, but this nevertheless constitutes a form of long-lived, high-level radioactive waste (HLW), comparable to the highly irradiated used fuel that is removed from commercial nuclear power reactors. In the proposed license amendment, CNL has acknowledged but</p>	Please see the response to PBCO-1 above.



Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		<p>omitted to quantify the "loose" radioactive components from the PHT system crud and from the residues from failed fuel elements, so neither contribution is considered in their radionuclide inventory. However, like the irradiated reactor components, the precipitates, corrosion and wear products and irradiated fuel residues are also examples of long-lived radionuclides that require quantification and verification for inclusion in the radionuclide inventory for disposal.”</p>	
Peter Baumgartner and co-authors	PBCO-3	<p><b>3.3 Long-term Radiological Hazards Posed by Near-surface Disposal of a Nuclear Reactor Core</b>            “The documented presence of long-lived, intermediate-level radioactive isotopes and spent nuclear fuel fragments in the irradiated WR-1 core will pose potential radiological risks to the environment and human safety for hundreds of years and beyond if their containment is compromised.</p> <p>To illustrate this point, we have produced Figure 1 [see original submission], a standard log-log plot of radioactive decay based on the inventory of key radionuclides provided by CNL (Klukas 2016). The figure provides a context for the radiological hazard from the primary reactor components, which are largely composed of the irradiated stainless steel, zirconium-alloy and ozhennite fuel channels, aluminum calandria tubes and the stainless steel calandria vessel. Figure 1 indicates how the radioactivity of the WR-1 inventory of nuclides, in decays per second (i.e., Becquerels or Bq), will change over time, starting with the activity levels in the reactor core at the time of shutdown (1985), when the initial total radioactivity associated with the irradiated reactor core materials was <math>4.7 \times 10^{16}</math> Bq. The radioactivity then decreased to about <math>1.3 \times 10^{15}</math> Bq by 2012. The figure</p>	<p>CNSC staff agree that the potential, long-term radiological risks to the environment and human health of the proposed project need to be considered and evaluated and require this assessment as part of the EA and licensing review process. Information on the long-term safety of the proposed project will be summarized in the EIS and the safety case.</p> <p><b>CNSC’s regulatory framework</b>            Under the CNSC’s regulatory framework, applicants are responsible for selecting and justifying their proposed decommissioning strategy.</p> <p>CNSC staff will assess CNL’s proposed project, in accordance with the CNSC’s regulatory framework, with safety being the overriding factor. As part of the EA and licensing review process, the proposed project’s design, long-term safety and potential effects to the public and the environment will be assessed against all applicable and relevant requirements and guidance, as follows:</p> <ul style="list-style-type: none"> <li>• CNSC licensing and regulatory requirements and guidance (i.e., NSCA, CNSC REGDOCs G-219, <i>Decommissioning Planning for Licensed Activities</i>, and G-320, <i>Assessing the Long Term Safety of Radioactive Waste Management</i>, CSA standard N294, <i>Decommissioning of facilities containing</i></li> </ul>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>indicates that the total radioactivity drops by a factor of about 100 after about 4000 years, and by an additional factor of 10 by the year 200,000 (to about 1012 Bq). Thereafter, the radioactivity diminishes by about half every 76,000 years, which is a function of the half-life of Ni-59.</p> <p>In terms of individual radionuclides, Figure 1 illustrates that the greatest initial contributors to radioactivity in the irradiated materials of the reactor core are isotopes of iron and cobalt (Fe-55 and Co-60). These radioactive nuclides decay away significantly on a time frame of decades, but other radionuclides associated with the irradiated core materials in WR-1, such as Ni-59 and Ni-63, will maintain significant levels of radioactivity for tens of thousands of years and longer.</p> <p>[Figure 1, see <a href="#">submission</a> p.4]</p> <p>CNL' s proposed near-surface location for the disposal of WR-1 may result in substantially greater risk to humans and the environment on a shorter time frame than what would be provided by deeper geological disposal, where as much as hundreds of metres of overlying rock and favourable hydrogeological conditions would provide long-term barriers to radionuclide transport and release to the environment. The radionuclide Ni-59 is a particular long-term concern. With its half-life of about 76,000 years, its abundance in the reactor core will not begin to diminish until far in the future. This extended time frame is of particular concern in radioactive disposal safety scenarios for northern countries such as Canada when one puts the radionuclide inventory and decay rate on a scale that is comparable with the timing of past and predicted</p>	<p><i>nuclear substances</i>, etc.)</p> <ul style="list-style-type: none"> <li>• federal and provincial environmental regulatory requirements and environmental policies, guidelines and standards</li> </ul> <p>Consideration will be given to international guidance and best practice.</p> <p>Information on the long-term safety of the proposed project will be summarized in the EIS and the safety case. Members of the public and Aboriginal groups will be provided the opportunity to review and comment on the draft EIS and supporting documentation during the EA process – a public comment period is anticipated in September 2017 – and through future CNSC public engagement sessions.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		future continental-scale glaciations in North America and Europe (Passe 2004, Garisto et al. 2010, Hallet 2011, Hella et al. 2014) that could erode tens of metres of overburden and rock from the earth's surface. A timeframe of 76,000 years also would raise uncertainties about the leaching behaviour of cement-based grouts over such long time periods relative to the proposed near-surface disposal of WR-1.”	
Peter Baumgartner and co-authors	PBCO-4	<b>3.4 Need for a Detailed Radiological Safety Assessment to Support the "Disposal" Amendment</b> “We are concerned that in the proposed license amendment CNL has not addressed the full extent of the radiological hazard from the WR-1 reactor components and other sources of long-lived radioactive waste within the reactor. Consequently, the scope of an EA and the subsequent EIS for near-surface in situ disposal of WR-1 and its radioactive wastes should also require a detailed radiological safety evaluation of the proposal that addresses the potential long-term safety and environmental effects from the release of long-lived radionuclides associated with ILW and HLW. The proponent, CNL, should be asked to provide a clearly documented radiological safety case that analyses the probability and effect of future releases of these long-lived nuclides from the site over time. We strongly recommend that among the scope of factors identified for a licensing decision, the CNSC should consider the need for a <i>full-scale radiological safety assessment for the proposed amendment</i> , comparable to the CNSC requirement for that of Ontario Power Generation's (OPG) Deep Geologic Repository (DGR) for Low- and Intermediate-Level Radioactive Waste (LILW) on the Bruce Site in Tiverton, Ontario. The Canadian public needs to be assured that the CNL site investigation work	Please see the response to PBCO-3 above.

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		and derived Safety Case for the WR-1 proposal in "shallow overburden" meets the same safety and environmental standards for its long-lived radioactive wastes as for the proposed OPG DGR at much greater depth in low-permeability bedrock."	
Peter Baumgartner and co-authors	PBCO-5	<p><b>3.5 Uncertainties about the Proposed In Situ Grouting Activity as an Engineered Barrier</b></p> <p>“The WR-1 reactor and PHT system were designed to contain water, terphenyl and steam internally and to remain dry externally. All other structures inside of the reactor building were designed to be maintained in a dry state, including the mild steel reinforcing bars (rebar) of the concrete structures. However, after the sealing of the subsurface structures with a cement-based grout during the "entombment" of the reactor, the entire non-homogenous mass of the underground WR-1 structure will become water saturated. Complex leaching and corrosion processes will begin immediately since not all of the grout water will be taken up by the cement. Internal voids cannot be prevented, only minimized. Shrinkage and shrinkage cracking of the grout is expected due to thermal expansion effects if excessive heat of hydration is generated.</p> <p>Delays in grouting pours to prevent excessive heating will promote the creation of construction joints between the individual pour layers. Voids, shrinkage, cracking and construction joints will enhance the potential for moisture migration and the subsequent rate of leaching of the cement-based materials. Gases will likely be generated by the corrosion processes, such as by galvanic corrosion of dissimilar metals under the alkaline conditions associated with cement-based materials. Rebar will rust and expand, leading to fracturing of the surrounding</p>	<p>Detailed information on the grouting method, design and longevity of the containment structure, will be provided in the long-term safety analysis and summarized in sufficient detail in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>concrete.</p> <p>Although the grouts may be tailored to reduce compatibility issues, the pre-existing structural and shielding concretes in the WR-1 facility may upset the desired chemical environment needed for long-term performance. In addition, the deposition of radiological contaminated equipment from the above-grade PHT room and any additional debris and residues (e.g., terphenyl oil residue in PHT piping) will compromise the integrity of the grout and will also increase the complexity of component interactions over the long term. Any grouts placed within two metres from the surface will require air entrainment to reduce, not eliminate, the effects of freeze-thaw cycling.”</p>	
Peter Baumgartner and co-authors	PBCO-6	<p><b>3.6 Site Characteristics and Disturbances</b></p> <p>“CNL’s request for an amendment to the decommissioning license has demonstrated a general understanding of the regional surficial geology of the Whiteshell site. What is not demonstrated, and in fact is less understood at present, is the effect of localized hydraulically conductive features present within the interbedded clay and till layers and at the soil/bedrock discontinuity, particularly the basal sand drift extending from the WR-1 foundation to the Winnipeg River (AECL 2001). These conductive features will control the groundwater flow from the grouted reactor monolith to the Winnipeg River, and these features will be challenging to find, map and characterize at the necessary level of detail. Investigative drilling must be taken with great care to properly sample the site characteristics. The installation of monitoring equipment and the procedures for conductivity testing must be properly planned and implemented sufficiently far in advance so as to provide the necessary baseline data and analyses before a Safety</p>	<p>Detailed information on groundwater flow paths will be provided in the long-term safety analysis and summarized in sufficient detail in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>Case can be developed. Experience from the instrumentation in and around the Waste Management Area may be illustrative if the network has been properly maintained and not compromised by siltation. However, stabilization of piezometer measurements for baseline hydrogeological information may take years in the low conductivity clay-based layers, given the annual climactic variations.</p> <p>Furthermore, the immediate area around many buildings and other structures on the WL site has been highly disturbed from its "natural" state by the initial construction work at the site. This includes not just the building foundations and seepage drains but also the network of underground piping and cabling and other forms of excavation that may have been undertaken over the years. These disturbances of the natural environment are also potential preferred groundwater flow paths proceeding to and issuing from the reactor monolith, and they, too, would need to be identified and characterized in detail to develop a robust safety case for the long-term performance of the in situ disposal of WR-1.”</p>	
Peter Baumgartner and co-authors	PBCO-7	<p><b>4. Quality Assurance Considerations and Qualified Personnel</b></p> <p>“The radioactive hazard presented by the proposed shallow disposal of ILW demands an unprecedented rigor in terms of the geotechnical understanding of the site, the compatibility of source and sealing materials and the long-term performance of the corrosion and leaching processes that are dictated by the geological time frame and events (e.g., climate change and continental glaciation). A Quality Assurance Program (e.g., CAN/CSA N286-05 and ISO 9001) should be a mandatory requirement to achieve quality management</p>	<p>The activities at the WL site are broadly governed under the CNL corporate management system, and more specifically defined in the <i>WL Decommissioning Quality Assurance Plan</i> which is required by licence condition 2.1 in the existing licence (Nuclear Research and Test Establishment Decommissioning Licence). The Quality Assurance Plan is in accordance with CSA N286.6-98, <i>Decommissioning Quality Assurance for Nuclear Power Plants</i>. CNSC staff will ensure, through regulatory oversight that CNL proceeds to carry out the activities with respect to the <i>in situ</i> decommissioning of the WR-1 reactor in accordance with this quality assurance program.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>standards.</p> <p>An independent review team should be established to oversee the geotechnical investigations and assessments, the materials compatibility issues, and the production of the Safety Case.</p> <p>Moreover, the review team should be composed of experts at arms-length from the member companies of the CNEA.”</p>	<p>In addition, the CNSC is an independent regulator with highly trained scientific and technical staff in a broad range of disciplines, including nuclear science and engineering, safety analysis, safety management, human factors, personnel training and certification, geoscience, environmental and radiation protection, security, nuclear emergency management, safeguards, and nuclear non-proliferation. As a full lifecycle regulator, the CNSC has the ability to maintain a high level of competence and knowledge in nuclear-related matters to achieve continuity and ensure robust science-based regulatory processes throughout the lifecycle.</p> <p>A dedicated team of CNSC staff have been established for the EA and licensing review process of the proposed project. The CNSC also relies on other federal authorities’ jurisdictional expertise. A federal review team has been established – including Natural Resources Canada, Environment and Climate Change Canada, Parks Canada and Health Canada – to participate and provide specialist expertise in the EA and licensing review process of the proposed project.</p>
Peter Baumgartner and co-authors	PBCO-8	<p><b>5. Need for Long-term Institutional Controls at the Site</b></p> <p>“CNL states that after the disposal operations are complete, institutional controls and surveillance activities are a necessary requirement to monitor the environmental performance of the disposed WR-1 facility (Klukas 2016). Given the potential radiological hazard posed by the release of long-lived radionuclides from the WR-1 reactor core if the grout-based containment should fail, these would be remarkably long time spans for continuing surveillance and monitoring (including the maintenance</p>	<p>With respect to the <b>CNSC’s regulatory framework</b> for the assessment of the proposed project, please see the response to PBCO-3 above.</p> <p>With respect to institutional control, CNSC staff require that information regarding the lifecycle of the project, including the form, length, and requirements of the institutional control period and post-closure monitoring activities, be addressed in the proponent’s licensing documentation (post-closure safety assessment) and summarized in sufficient detail in the EIS and the safety case (Safety Analysis</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		<p>of the required institutional controls). This is a key reason that deep geological disposal is increasingly being considered internationally as a preferred approach for ILW disposal, particularly in northern climes where continental glaciation occurs. This is also acknowledged by the CNSC (2006): "Long term management options should not rely on long term institutional controls as a safety feature unless they are absolutely necessary."</p> <p>The decommissioning plan for the WL site that was approved by the CNSC in 2003 had as its final end state the specification that all significant radioactive waste would be removed from the site, such that "...the dismantling and/or decontamination and refurbishment of all structures, infrastructure and services and the remediation of all lands in the project area, except for 8 ha where continued management of radioactive waste under CNSC licence is proposed to continue in the future" (AECL 2001). For all remaining areas, "...decommissioning is intended to render the aforementioned facilities, buildings and lands to a condition acceptable for release from CNSC licensed control" (AECL 2001). Final end state was defined as "The target final condition of the decommissioned site. Normally this is the state achieved when release from regulatory control or establishment of continuing controls is approved" (AECL 2001).</p> <p>The decommissioning plan also stated that "...The approach for WR-1 is to fully remove and package all activated and contaminated components for disposal in offsite facilities, to decontaminate the facility structure and then to demolish the building to achieve unrestricted release criteria ..." including "... remediation of the site to</p>	<p>Report). The length of institutional control will need to be approved by the Commission.</p>



Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		<p>a "natural" state" (AECL 2001). Natural end state was defined as "A state in which lands are released for unconditional public use by the CNSC and where radiation levels approximate background levels in the area" (AECL 2001). Nowhere within the approved decommissioning plan is the term "Natural End State" used other than in the glossary of terms. But the term "more natural condition" is frequently used and is defined by the following statement "As the decommissioning of each facility is completed, the land on which it is located will be restored to a more "natural" condition, that is, the land will be seeded with natural grasses and left to develop as nature allows" (AECL 2001).</p> <p>The proposed license amendment for in situ disposal of WR-1 within tens of metres from the surface environment is likely to require an indefinite period of institutional presence at the location to conduct maintain and to secure the surveillance and monitoring activities and assets as long as the potential long-term hazard persists (i.e., "<i>The WR-1 Reactor site will be returned to AECL for Institutional Control. The duration of the Institutional Control period will be determined by the Environmental Assessment</i>" (Klukas 2016). Disposal implies passive safety without the need for monitoring, surveillance and controls. Surely, the Environmental Assessment will <u>not</u> be able determine the longevity of an institution. In view of the hazardous lifetime of some of the toxic constituents of the waste, the institutional control period may well exceed the lifetime of any current institution, including AECL, and any of its progeny, if any. In situ disposal of WR-1 carries the risk for placing the burden on future generations, not eliminating it.</p>	

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>In essence, this hazard and potential risk converts the WR-1 site from a quasi-natural end state to a final end state requiring surveillance and monitoring for generations - an outcome that was not part of the original agreement between AECL, the CNSC and the citizens of Canada. Moreover, long-term extended monitoring would necessarily be expanded over a greater area of the WL site than the original 8 ha as a result of the proposed amendment, thereby increasing the future continuing cost burden to be borne by Canadian taxpayers over an indefinite period of time.”</p>	
Peter Baumgartner and co-authors	PBCO-9	<p><b>6. Options for WR-1 Source Term Reduction</b>            “Possible source term reduction activities include the removal of radiologically contaminated or activated systems and equipment for safe disposal elsewhere. In order to effectively conduct source term reduction activities, the radiological and chemical hazards must be identified to determine the appropriate decommissioning procedures and detailed waste management path.</p> <p>CNL also stated (Klukas 2016) "...Other decommissioning options have been considered for this project which include:</p> <ul style="list-style-type: none"> <li>• Selective remediation of contamination such as the fuel channels,</li> <li>• Dismantling of key contaminated systems such as the Primary Heat Transport system or Moderator system,</li> <li>• Removal of the reactor vessel, and</li> <li>• Complete dismantling of WR-1 Reactor."</li> </ul> <p>CNL has identified <i>in situ</i> disposal of WR-1 as their preferred approach, with no documentation or references</p>	<p>CNSC staff require that the potential, long-term radiological and hazardous risks to the environment and human health of the proposed project be identified and evaluated as part of the EA and licensing review process. Information on the long-term safety of the proposed project will be summarized in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.</p> <p>In addition, the reviewer has accurately described the other alternative options to the proposed decommissioning approach and quoted examples of world-wide projects. CNSC staff note there is international precedent for all approaches described by the reviewer: from entombment, partial dismantling, and reactor vessel removal, to full dismantling.</p> <p>As outlined in subsection 4.2 (Alternative means of carrying out the project) of the <a href="#">Guidelines</a>, CNSC staff require that the proponent’s EIS assess all potential environmental effects of the proposed <i>in situ</i> decommissioning approach and of each alternative mean of carrying out the project. The</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>to show that the relative advantages and disadvantages were objectively compared in a systematic and traceable fashion as per CNSC Regulatory Guide G-219 (CNSC 2000). We note that several of the other options listed, which involve first removing many accessible contaminated components of the reactor and its PHT system, would have the potential to reduce the long-term radiological source term represented by WR-1 prior to disposal of the reactor.</p> <p>For example, WR-1 was specifically designed to conduct research on coolant materials, fuel channel designs and materials and fuel and fuel cladding designs and materials. The reactor was fully equipped to safely remove and replace fuel channels, a standard operating procedure performed on numerous occasions with the fuel channel transfer flask. Equipment and components remain in the WR-1 complex that are available to transfer irradiated fuel channels and other radioactive assemblies to storage blocks and transfer bays for processing or removal for disposal elsewhere. Similarly, the WR-1 PHT system was designed to remove the heat produced in the reactor core. The PHT system was divided into three circuits (i.e., A, B and C circuits). The majority of "C" circuit was safely removed and placed in on-site interim storage during the first phase of WR-1 decommissioning between 1989 and 1994. The successful removal of "C" circuit suggests the remaining PHT systems and ancillary systems could also be safely dismantled and removed for disposal elsewhere.</p> <p>There is international precedent for the complete dismantling and removal of nuclear reactors from a site during decommissioning, which is the other option CNL</p>	<p>examples cited represent options that CNL has identified will be evaluated in the alternative means assessment of the EIS.</p> <p>With respect to the <b>CNSC's regulatory framework</b> for the assessment of the proposed project, please see the response to PBCO-3 above.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>stated it had considered. Several reactor vessels have been successfully removed as intact units, including three U.S. Department of Energy test and research reactors at Idaho National Labs (Szilagyi 2012), a research reactor in Germany (WNN 2015) and U.S. commercial nuclear power reactors in Oregon and Connecticut (Lackey 1997, IAEA 2008). Several other nuclear power reactors in the U.S. are currently being decommissioned by cutting and removing segments from the reactor vessel for shipment and disposal elsewhere (Cooke and Spann 2013, Rod et. al. 2013). This approach demonstrates a practical decommissioning strategy that provides the advantage that long-lived radioactive wastes are removed from the reactor for long-term storage or disposal in a dedicated facility.”</p>	
Peter Baumgartner and co-authors	PBCO-10	<p><b>7.1 Nomenclature</b>            “CNL uses nomenclature that obfuscates the issue of storage as opposed to disposal. Clearly, their intent is near-surface disposal of ILW (i.e., a repository). CNL should be compelled to use the identical language promoted by the CNSC. The closest that CNSC nomenclature comes to "in situ decommissioning" is the term "in situ disposal" used in Regulatory Guide G-320 (CNSC 2006). Glossary definitions in that regulatory guide include the following :</p> <ul style="list-style-type: none"> <li>• <u>Defence-in-depth</u> - The application of more than one protective measure for a given safety objective, such that the objective is achieved even if one of the protective measures fails.</li> <li>• <u>Disposal</u> - Placement of radioactive waste without the intention of retrieval.</li> <li>• <u>Institutional controls</u> - The control of residual risks at a site after it has been decommissioned.</li> </ul>	<p>CNSC staff require that the proponent provide sufficient information in the EIS, including clear descriptions of the project activities and project-environment interactions, for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		<p>Institutional controls can include active measures (requiring activities on the site such as water treatment, monitoring, surveillance and maintenance) and passive measures (that do not require activities on the site, such as land use restrictions, markers, etc.).</p> <ul style="list-style-type: none"> <li>• <u>Long term</u> - In radioactive waste disposal, any period of time after active institutional controls can be expected to cease.</li> <li>• <u>Storage</u> - The holding of radioactive waste in a facility that provides for its containment with the intention of retrieval”</li> </ul>	
Peter Baumgartner and co-authors	PBCO-11	<p><b>7.2 Regulations</b>            “In a discussion paper on Radioactive Waste Management and Decommissioning (CNSC 2016), long-lived ILW is clearly defined as ranging from &gt; 104 Bq/yr to typically &lt;10<sup>16</sup> Bq/m<sup>3</sup> of long- lived beta/gamma (e.g., <sup>14</sup>C, <sup>36</sup>Cl, <sup>63</sup>Ni, <sup>9</sup>Zr, <sup>94</sup>Nb, <sup>99</sup>Tc and <sup>129</sup>I) with an unshielded contact dose rate &gt;2 mSv/h, which is consistent with the description provided by CNL (Klukas 2016).</p> <p>The CNSC discussion paper also considers the development of new waste regulations aligned to the risk and nature of proposed activities for three types of waste operations and activities with their associated licence application requirements, as follows:</p> <ul style="list-style-type: none"> <li>• <u>Waste Disposal Facilities (Repositories)</u> - for the disposal of waste nuclear substances (regardless of inventory) where there is no foreseeable intention of future retrieval;</li> <li>• <u>Waste Management Facilities</u> - for the management and/or processing of waste nuclear</li> </ul>	With respect to the <b>CNSC’s regulatory framework</b> for the assessment of the proposed project, please see the response to PBCO-3 above.

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		<p>substances where the inventory is <math>&gt; 1 \times 10^{15}</math> Bq; and</p> <ul style="list-style-type: none"> <li>• <b>Waste Storage Facilities</b> - for the management and/or processing of waste nuclear substances where the inventory is <math>&lt; 1 \times 10^{15}</math> Bq.</li> </ul> <p>Clearly, "in situ decommissioning" of WR-1 would constitute disposal (a repository) if and when these new waste regulations and proposed licensing requirements are accepted and implemented.</p> <p>We also note that the IAEA Safety Standard for the Decommissioning of Facilities endorses the <b>good/best practice</b> of immediate dismantling and deferred dismantling as two possible decommissioning strategies applicable for all facilities. The standard also states "Entombment, in which all or part of the facility is encased in a structurally long lived material, is not considered a decommissioning strategy and is not an option in the case of planned permanent shutdown. It may be considered a solution only under exceptional circumstances (e.g., following a severe accident)" (IAEA 2014)."</p>	
Peter Baumgartner and co-authors	PBCO-12	<p><b>7.3 CNL Subject Matter Experts</b></p> <p>"We find it surprising and disturbing that apparently, as noted on the Revision History page of the proposal, that none of the available and highly experienced nuclear waste disposal technology staff at WL were formally involved as coauthors or reviewers of CNL's requested amendment to the Decommissioning Plan (Klukas 2016)."</p>	<p>This comment is outside the scope of this EA. However, as indicated in the response to PBCO-7 above, the CNSC's subject matter experts and the federal review team will participate and provide their specialist expertise in the EA and licensing review process of the proposed project.</p>
Peter Baumgartner and co-authors	PBCO-13	<p><b>7.4 Public Involvement</b></p> <p>"Given the emphasis that is placed on the need for public involvement for environmental actions that are likely to affect local residents, we were surprised that CNL has</p>	<p><b>Public participation</b></p> <p>With respect to public participation, CNSC staff encourage early engagement by the proponent. CNSC staff require that CNL engage with those members of the public who have</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>developed and submitted this proposed amendment to the CNSC with little or no prior formal communication of these plans to the locally affected communities. For example, no formal public announcement of <i>this</i> proposed change in the site decommissioning plan has been made to the municipalities near the WL site, nor has the proposed action been publicized on CNL's website, in CNL's Community Information Bulletins, or by means of Contact newsletters to the local affected communities.</p> <p>This approach seems contrary to the approach generally followed by the international nuclear waste disposal community, as summarized by the Nuclear Energy Agency (NEA) in a 2002 report on the status, approaches, and challenges of decommissioning and dismantling nuclear facilities: "It is widely accepted that openness and transparency are essential for the winning of public approval for D&amp;D plans. The local public is increasingly demanding to be involved in such planning." (NEA 2002). Another statement from the same report also seems relevant to this lack of communication: "Of wider, national significance is the likelihood that communities where nuclear facilities are located may be willing to accept that wastes and other remnants of a former facility may remain in storage in the community after the facility ceases to operate, but they are likely to be concerned about the possibility of storage becoming disposal." (NEA 2002).</p> <p>CNL has not indicated whether or not they produced any preliminary studies or seriously consulted the local communities before forwarding the proposed amendment to its existing decommissioning license for WR-1 to the CNSC and CEAA. In this respect, CNL could take a</p>	<p>expressed an interest in participating during their preparation of the EIS.</p> <p>As outlined in section 6 (Public and stakeholder consultation) of the <a href="#">Guidelines</a>, the proponent's EIS will describe participation activities in accordance with the CNSC's <a href="#">RD/GD-99.3, Public Information and Disclosure</a>.</p> <p>Furthermore, the CNSC welcomes public involvement in regulatory matters and has a robust public participation program including a public hearing process and a Participant Funding Program. CNSC staff have been providing opportunities for public participation at various stages during the EA process and will continue to do so. Members of the public and Aboriginal groups will be provided the opportunity to review and comment on the draft EIS and supporting documentation during the EA process – a public comment period is anticipated in September 2017 – and through future CNSC public engagement sessions. Future public participation opportunities also include the review of CNSC staff's EA Report and Commission member documentation, as well as participation in the EA and licensing public hearings.</p> <p><b>CNSC's decision-making responsibilities</b>            The CNSC's Commission Tribunal (the Commission) is a quasi-judicial administrative tribunal. The Commission is a credible and expert decision-making authority that remains independent from government, licensees and staff.</p> <p>The Commission is the CNSC's decision-making body that makes EA and licensing decisions for all major nuclear projects. Decisions made by the Commission are not subject to any governmental or political review, nor may they be</p>

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		<p>lesson from OPG regarding the development of their Deep Geologic Repository (DGR) for LILW at the Bruce site.</p> <p>Prior to any intent to apply for or the actual application for a licence to prepare site and construct the DGR (OPG 2005, OPG 2007), OPG did its homework. Consultation formally began in 2002 April with the signing of a Memorandum of Understanding (MOU) between OPG and the Municipality of Kincardine, setting out the terms to develop a plan for the long-term management of LILW at the Bruce site. Feasibility and options studies (Golder Associates 2003, Golder Associates 2004) outlined the possible solutions leading to the signing of a Hosting Agreement (OPG and CMK 2004) that was acceptable to the public.</p> <p>The apparent optimistic approach and time line employed by CNL to date is worrisome. The integrity of the nuclear industry can be damaged by their over simplification in the proposed amendment. Perhaps CNL should consult in this regard with OPG and their contractor, the Nuclear Waste Management Organization (NWMO), who have the greatest experience in public consultation in Canada regarding nuclear waste disposal.”</p>	<p>overturned by the Government of Canada. Only the Federal Court or the Supreme Court of Canada may review and overrule a decision made by the Commission.</p> <p>Prior to making a decision, sufficient information is required for CNSC staff to evaluate and make scientifically defensible recommendations to inform evidence-based Commission decisions as well as to ensure regulatory requirements for safety, security and the environment are met.</p> <p>In making an EA decision, the Commission will take into consideration the proponent’s EIS, CNSC staff’s EA Report and supporting documentation, as well as public comments, to determine if the project is likely to cause significant adverse environmental effects, taking into consideration the implementation of mitigation measures. The Commission will require sufficient information to make a science-based EA decision.</p> <p>If there is a positive EA decision (i.e., project is not likely to cause significant adverse environmental effects, taking into consideration the implementation of mitigation measures), the Commission can then proceed with the licensing decision under the NSCA. In making its licensing decision, the Commission will determine whether the proponent is qualified and will make adequate provision for the protection of the environment, the health and safety of persons, the maintenance of national security and the measures required to implement international obligations to which Canada has agreed. Under the NSCA, no approval is granted/no licence is issued unless the proponent is qualified and makes adequate provision for the protection of the environment and health and safety of persons.</p>



Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
Peter Baumgartner and co-authors	PBCO-14	<p><b>7.5 Cost vs. Safety</b></p> <p>“We are concerned that CNL, as part of its limited-term commercial contract with AECL, appears to be implementing the decontamination and decommissioning of the WL site with an emphasis on an accelerated schedule and by proposing changes - such as the in situ disposal of WR-1 - that seem more focused on cutting costs and improving their bottom line, than on the implications for long-term safety and protection of the environment at the WL site.</p> <p>CNL claim that they have examined a number of WR-1 decommissioning options. Presumably, details of these evaluated options will be discussed as part of a formal EIS. It is reasonable to expect that source-term reduction activities should be given serious consideration as appropriate measures to prevent or mitigate adverse effects on the environment and future generations if in situ disposal is accepted.</p> <p>We note that CNL's remarkably compact "Project Phases and Schedule" for the disposal of WR-1 provides essentially no time to carry out the necessary baseline site investigation work and the collection of relevant monitoring data needed to generate the EIS, nor does the proposed schedule allow for the time needed for the CEAA's EA process.”</p>	<p>Although CEAA 2012 does not set regulated timelines for EAs conducted by the CNSC (because it was recognized that the CNSC's timelines are covered under its respective statute), the CNSC has committed to completing all EA processes within the 24-month federal timeline for a licensing decision (pursuant to the <i>Class I Nuclear Facilities Regulations</i> and the <i>Uranium Mines and Mills Regulations</i>). Adherence to this schedule depends on the completeness of information received from applicants. Insufficient and incomplete information may prolong the timeline. CNSC staff will ensure that the requirements of the NSCA and CEAA 2012 are met for this proposed project within this regulatory review time frame.</p> <p>CNSC staff will never compromise safety and require sufficient information to make scientifically defensible recommendations which inform evidence-based Commission decisions to ensure the protection of the environment and health and safety of persons. The robustness and rigor of the CNSC's EA and licensing review process will not be diminished. All key steps in the EA process – such as public participation opportunities – will be carried out.</p> <p>The following measures have been put in place to ensure an efficient, robust and coordinated EA and licensing review process, in accordance with the CNSC's regulatory framework:</p> <ol style="list-style-type: none"> <li>1) A regulatory program, with a dedicated team, was established for the management of the regulatory activities related exclusively to the three CNL projects (Nuclear Power Demonstration Project, Near Surface</li> </ol>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
			<p>Disposal Facility, and the <i>In Situ</i> Decommissioning of the WR-1 reactor). The objective of the program is to ensure an efficient, controlled, collaborative and technically integrated manner to ensure quality and appropriate EAs, licensing technical assessments, regulatory oversight programs and Aboriginal consultation activities have been conducted, commensurate with the complexity of each of the projects and in accordance with the regulatory framework of the CNSC.</p> <p>2) A federal review team led by CNSC staff have also been established – including Natural Resources Canada, Environment and Climate Change Canada, Parks Canada and Health Canada – to participate and provide specialist expertise in the EA and licensing review process of the proposed project and ensure a coordinated regulatory approach.</p> <p>3) An Administrative Protocol between CNSC and CNL is currently under development (similar to the Administrative Protocols signed by both parties for the Nuclear Power Demonstration Project and the Near Surface Disposal Facility Project). The purpose of this protocol is to outline the administrative framework, milestones and service standards for the EA and licensing activities for the renewal of the Whiteshell Laboratories decommissioning licence and the proposed <i>in situ</i> decommissioning of the WR-1 reactor, CNL’s submission of the technical information associated with the licence renewal application and the CNSC review of this technical information. This protocol aims to provide efficient project management for the regulatory review of information submitted by CNL associated with these</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
			two proposals. Once finalized, the Administrative Protocol will be posted and made available to the public on the CNSC website.
Peter Baumgartner and co-authors	PBCO-15	<p><b>8. Conclusions</b></p> <p>“... ”</p> <ul style="list-style-type: none"> <li>• Apparently no preliminary work has been performed by qualified persons to evaluate the potential viability of this proposal, to outline the key technical issues that may have to be addressed in future and to assess the alternatives, cost and duration options, including the EA process, before the proposed amendment was submitted to the CNSC;</li> <li>• No waste disposal technology subject matter experts have coauthored or reviewed the proposed amendment to provide technical guidance to CNL management; and</li> <li>• No formal notification process to the public has been performed by CNL prior to or since the submission of this proposed amendment to the CNSC, including in their bulletins and newsletters. This lack of openness to the public by CNL is worrisome and counter to good management, especially tarnishing the integrity of the nuclear industry (e.g., Taylor 2016 Jun 11).”</li> </ul>	Please see the responses to PBCO-1 to PBCO-14 above.

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
<a href="#">Leonard A. Simpson</a>	LAS-1	<p>“...AECL’s original intention was to monitor the site in what they called safe storage, and leave the expenses of decommissioning for future generations. [...]</p> <p>It is worrisome that the plan is to be altered as described in the CNL proposal with little or no R&amp;D to support the change. The original plan was supported by nearly one billion dollars of research, reviewed by several independent panels and is now approved by parliament...”</p>	<p>Under the CNSC’s regulatory framework, applicants are responsible for selecting and justifying their proposed decommissioning strategy</p> <p>CNSC staff will assess CNL’s proposed project, in accordance with the CNSC’s regulatory framework, with safety being the overriding factor. As part of the EA and licensing review process, the proposed project’s design, long-term safety and potential effects to the public and the environment will be assessed against all applicable and relevant requirements and guidance, as follows:</p> <ul style="list-style-type: none"> <li>• CNSC licensing and regulatory requirements and guidance (i.e., NSCA, CNSC REGDOCs G-219, <i>Decommissioning Planning for Licensed Activities</i>, and G-320, <i>Assessing the Long Term Safety of Radioactive Waste Management</i>, CSA standard N294, <i>Decommissioning of facilities containing nuclear substances</i>, etc.)</li> <li>• federal and provincial environmental regulatory requirements and environmental policies, guidelines and standards</li> </ul> <p>Consideration will be given to international guidance and best practice.</p> <p>Information on the long-term safety of the proposed project will be summarized in the EIS and the safety case. Members of the public and Aboriginal groups will be provided the opportunity to review and comment on the draft EIS and supporting documentation during the EA process – a public comment period is anticipated in September 2017 – and through future CNSC public engagement sessions.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
Leonard A. Simpson	LAS-2	<p>“...The general level of community consultation of the CNL activities has been abysmal in spite of the fact that this is where we live and are expected to support an entombed site under institutional control effectively for ever.”</p>	<p>With respect to public participation, CNSC staff encourage early engagement by the proponent. CNSC staff require that CNL engage with those members of the public who have expressed an interest in participating during their preparation of the EIS.</p> <p>As outlined in section 6 (Public and stakeholder consultation) of the <a href="#">Guidelines</a>, the proponent’s EIS will describe participation activities in accordance with the CNSC’s <a href="#">RD/GD-99.3, Public Information and Disclosure</a>.</p> <p>Furthermore, the CNSC welcomes public involvement in regulatory matters and has a robust public participation program including a public hearing process and a Participant Funding Program. CNSC staff have been providing opportunities for public participation at various stages during the EA process and will continue to do so. Members of the public and Aboriginal groups will be provided the opportunity to review and comment on the draft EIS and supporting documentation during the EA process – a public comment period is anticipated in September 2017 – and through future CNSC public engagement sessions. Future public participation opportunities also include the review of CNSC staff’s EA Report and Commission member documentation, as well as participation in the EA and licensing public hearings.</p>
Leonard A. Simpson	LAS-3	<p>“The proposal to entomb WR 1, if approved, would set a dangerous precedent for future reactor decommissioning such as NPD, Douglas Point and our utility-owned reactors. I understand that this concept is already proposed for NPD. While I don’t support this, the difference is that NPD is under control of Chalk River Labs and institutional control will be relatively easy to deal with. It is almost unheard of to entomb a large reactor</p>	<p>CNSC staff note that to date, although limited, there is international precedent (i.e., United States, Republic of Georgia, Switzerland, Italy) for the use of this proposed strategy for decommissioning projects.</p> <p>As outlined in subsection 4.2 (Alternative means of carrying out the project) of the <a href="#">Guidelines</a>, CNSC staff require that the proponent’s EIS assess all potential environmental</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		core in this industry, at least in OECD countries...”	<p>effects of the proposed <i>in situ</i> decommissioning approach and of each alternative mean of carrying out the project. CNSC staff require that the potential, long-term radiological and hazardous risks to the environment and human health of the proposed project be identified and evaluated as part of the EA and licensing review process. Information on the long-term safety of the proposed project will be summarized in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.</p> <p>With respect to the <b>CNSC’s regulatory framework</b> for the assessment of the proposed project, please see the response to LAS-1 above.</p>
<a href="#">Whiteshell Laboratories Community Regeneration Partnership</a>	WLCRP-1	“...The purpose of this letter is to ensure that the concerns of the region are gully included in the scope of the Environmental Assessment. It is expected that the scope of the Environmental Assessment will cover, at a minimum, safety of people and the environment...”	Yes, the considerations in the EA and licensing review process will cover all the requirements of CEAA 2012 and the NSCA, including taking into account the potential environmental and health effects of the proposed project and comments from the public.
Whiteshell Laboratories Community Regeneration Partnership	WLCRP-2	<p>“...the Partnership are requesting that the Socioeconomic impacts of the presence of an entombed reactor be considered as part of the Environmental Assessment. The Partnership would like to explore a future nuclear project for the site, for example a demonstration Small Modular Reactor. If successful in developing that project or a similar scope project, the presence of an entombed reactor would be consistent with the future of the site. However, if there is not going to be a future for nuclear at the site, then the presence of an entombed reactor would be a significant hurdle for future economic development of the site. [...]</p> <p>The limitations on options for the site could mean there</p>	<p>This comment is beyond the scope of this EA; the CNSC’s authority in the area of socio-economic issues is bound by the NSCA and CEAA 2012 which does not include direct socio-economic considerations.</p> <p>Direct effects on the socio-economic environment are not requirements for consideration under CEAA 2012. The scope of the EA is limited to the definition of environmental effects which results from a change caused to the environment. Only indirect-socio-economic effects such as those effects that result from changes to the environment as a result of the project are considered in the assessment. In addition, the NSCA does not contain provisions for socio-economic considerations.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>would be no replacement of the remaining 350 jobs on the site. The region has already suffered the loss of over 800 jobs when the site closure plans began to be implemented in 1998. The economic impact of these job losses would be devastating to the economy of the region. Therefore, the Socioeconomic impacts of the proposed In Situ Decommissioning of the WR-1 reactor must be included in the Environmental Assessment.”</p>	
<a href="#">Northwatch</a>	NW-1	<p>“...the Project Description provides no actual statement of the Project’s purpose. Nor does it provide a clear statement on the basis for bringing forward an alternative approach at this time, mid-point in the implementation of the already approved decommissioning plan. And while the Project Description states that “project activities are limited to In Situ Decommissioning of the WR-1 Reactor” with various other directly related activities are “covered under the existing Comprehensive Study Report” it provides no clear delineation between which activities under the already approved plan are to be retained and which are to be replaced with a “new approach”.</p> <p>In fact, as evidenced by statements in Section 3.1.2 of the Project Description, there is not yet an actual project to be described:  <i>The In Situ Decommissioning plan is currently under development, but will adhere to several functional requirements.”</i></p>	<p><b>Project purpose</b>            As indicated in the project description (section 3.1.2), the objective of the proposed project is to “safely decommission the WR-1 Reactor ensuring the prompt reduction of Canada’s long-term nuclear legacy liabilities.”</p> <p>As outlined in subsection 4.1 (Purpose of the project) of the <a href="#">Guidelines</a>, the proponent’s EIS will have to document in sufficient detail the justification and rationale for the project.</p> <p>As outlined in section 4.3 (Scope of project) of the <a href="#">Guidelines</a>, CNSC staff require that the proponent describe and assess in the EIS the potential environmental effects for all phases of the project and their associated activities, including clear descriptions of the project activities and project-environment interactions.</p> <p>Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.</p> <p><b>CNSC’s regulatory framework</b>            Under the CNSC’s regulatory framework, applicants are responsible for selecting and justifying their proposed decommissioning strategy.            CNSC staff will assess CNL’s proposed project, in accordance with the CNSC’s regulatory framework, with</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
			<p>safety being the overriding factor. As part of the EA and licensing review process, the proposed project’s design, long-term safety and potential effects to the public and the environment will be assessed against all applicable and relevant requirements and guidance, as follows:</p> <ul style="list-style-type: none"> <li>• CNSC licensing and regulatory requirements and guidance (i.e., NSCA, CNSC REGDOCs G-219, <i>Decommissioning Planning for Licensed Activities</i>, and G-320, <i>Assessing the Long Term Safety of Radioactive Waste Management</i>, CSA standard N294, <i>Decommissioning of facilities containing nuclear substances</i>, etc.)</li> <li>• federal and provincial environmental regulatory requirements and environmental policies, guidelines and standards</li> </ul> <p>Consideration will be given to international guidance and best practice.</p> <p>Information on the long-term safety of the proposed project will be summarized in the EIS and the safety case. Members of the public and Aboriginal groups will be provided the opportunity to review and comment on the draft EIS and supporting documentation during the EA process – a public comment period is anticipated in September 2017 – and through future CNSC public engagement sessions.</p> <p><b>Completeness of the project description</b>                      CEAA 2012 requires that the proponent of a designated project, except projects that are regulated by the CNSC or the National Energy Board, submit a project description to the Canadian Environmental Assessment Agency (the Agency). The <i>Prescribed Information for the Description of</i></p>



Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
			<p><i>a Designated Project Regulations</i> (SOR/2012-148) set out the information that must be included in a project description. The Agency then uses the information in the project description during a ‘screening’ phase to inform a decision on whether an EA of the designated project is required.</p> <p>Although not required for designated projects regulated by CNSC, the CNSC has adopted within its EA process the requirement to submit a project description, as outlined in appendix A of <a href="#">REGDOC-2.9.1: Environmental Protection: Environmental Principles, Assessments and Protection Measures</a>. The purpose of the project description is for CNSC staff to determine if a project proposal meets the definition of “designated project” such that CEAA 2012 would apply. To this end, proponents are referred to the <i>Prescribed Information for the Description of a Designated Project Regulations</i> (SOR/2012-148) for the information that should be submitted within their project description.</p> <p>CNSC staff reviewed CNL’s project description, and determined that sufficient information was provided to:</p> <ul style="list-style-type: none"> <li>• meet the <i>Prescribed Information for the Description of a Designated Project Regulations</i> (SOR/2012-148) such that the project description is deemed complete and need not be revised</li> <li>• make a determination on the applicability of CEAA 2012</li> </ul> <p>CNSC staff determined that CEAA 2012 applies to the proposed project, as it is considered a “designated project” in accordance with paragraph 37(b) of the <i>Regulations Designating Project Activities</i>.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
			<p>Following CNSC staff's EA determination, public comments were sought on the project description to inform the conduct of the EA.</p> <p>Taking into account the public comments received related to scope and CNSC staff's recommendations, the Commission, as indicated in the Commission's Record of Decision dated March 8, 2017, has determined that the scope of the factors for this EA include the factors mandated in paragraphs 19(1)(a) to (h) of CEAA 2012, with no additional factors requiring consideration. That is, the Commission did not require, under its discretion in paragraph 19(1)(j) of CEAA 2012, to include any other matters relevant to the EA.</p>
Northwatch	NW-2	<p><b>Summary of Findings</b>            “The document provides no substantive discussion of alternatives to the proposed approach, how they were evaluated, and the basis for the selection of the preferred alternative, i.e., “in situ decommissioning”; in particular, it provides no clear rationale for the major alteration in the approved decommissioning plan, i.e., the shift to “in situ decommissioning”; we note the discussion in Section 3.1.1. would be the reasonable location for such a rationale, but what appears in this section lacks sufficient substance or supporting information.”</p>	Please see the response to NW-1 above.
Northwatch	NW-3	<p>a) “The document is tedious in its over-generalization and failure to provide basic information in a straightforward fashion; for example, in describing the public consultation program, the document indicates that meetings of the Public Advisory Committee are twice yearly, and that meetings with Sagkeeng First Nation “have been less frequent than with the PLC”, rather than simply stating the frequency of number of meetings held.”</p>	With respect to the <b>completeness of the project description</b> , please see the response to NW-1 above. In addition, CNSC staff require that information in the EIS and supporting documentation be provided in sufficient detail and/or with relevant references to substantiate any statements made.

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
Northwatch	NW-4	b) “The document claims that In Situ Decommissioning of the WR-1 Reactor will meet the project criterion of isolating and containing contamination and ensure that the potential effects on humans and the environment both during and after decommissioning are within acceptable limits, but provides no supporting information.”	CNSC staff agree that the potential and long-term radiological risks to the environment and human health of the proposed project need to be considered and evaluated. CNSC staff require this assessment as part of the EA and licensing review process. Information on the long-term safety of the proposed project will be summarized in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.
Northwatch	NW-5	c) “As with the Project Description for the proposed decommissioning of the Nuclear Power Demonstration Project which Northwatch reviewed and commented on recently, throughout the document there are numerous statements that the underground structures will be sealed by grouting, but there are no descriptions of the grouting, the grouting material or the grouting methods; there are references to the use and/or production of concrete; the document raises the question of whether CNL is using the terms “grout” and “concrete” interchangeably and illustrates in a key area how the document fails to provide a clear and substantive description of the project.”	Detailed information on the grouting method, design and longevity of the containment structure, will be provided in the long-term safety analysis and summarized in sufficient detail in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.
Northwatch	NW-6	d) “The project description utilizes non-sequiturs and attempts to assign relationships to unrelated statements; this occurs in what are some of the most fundamental aspects of the decommissioning project. For example, in Section 7 the document states: “In Situ Decommissioning results in a concrete monolith which provides a robust and durable containment to allow for continued radioactive decay”. In situ decommissioning does not in and of itself result in a concrete monolith. It may be that CNL is proposing a concrete monolith in an in situ decommissioning	With respect to the <b>completeness of the project description</b> , please see the response to NW-1 above. In addition, CNSC staff require that information in the EIS and supporting documentation be provided in sufficient detail and/or with relevant references to substantiate any statements made.

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		<p>approach they will bring forward for the NPDP site and a Whiteshell, and it may be that a concrete monolith could provide robust and durable containment, but one does not necessarily follow the other, and certainly CNL has not provided sufficient project description to even hypothesize that this will be the case at either site. This determination may be possible at some later stage, but it is not possible at this point, and cannot be assumed.”</p>	
Northwatch	NW-7	<p>e) “The document provides inadequate information about the site, site conditions, past land uses, and related residual hazards; in particular, it provides inadequate information about how the new proposed project of “in situ decommissioning” for the reactor at Whiteshell interacts with other decommissioning activities at the Whiteshell property; a cumulative effects assessment is required.”</p>	<p>The consideration of cumulative effects in an EA is a requirement of CEAA 2012 as outlined in paragraph (a) of subsection 19(1), factors to be considered. As per section 9.4 (Cumulative effects) of the <a href="#">Guidelines</a>, CNSC require the proponent to identify and assess the project’s potential environmental effects, including cumulative effects, in the EIS.</p>
Northwatch	NW-8	<p><b>Roles and Responsibilities</b>            “In addition to considering the above comments on the project description as provided by the Canadian Nuclear Laboratories, we request that the Canadian Nuclear Safety Commission, as the Responsible Authority in this environmental assessment, consider the appropriateness of having the Canadian Nuclear Laboratories as the sole proponent.</p> <p>As the CNSC is well aware, the CNL is managing the AECL properties – and this project – on behalf of AECL under a “government owned, contractor operated” arrangement. This is a relatively new arrangement and is being undertaken as a business venture on the part the Canadian National Energy Alliance (CNEA) who are the contractor operator (CNEA being a consortium of CH2M, Atkins, Fluor, SNC-Lavalin Inc, and Rolls-Royce).</p>	<p><b>Proponent of the project</b>            Although AECL owns the assets and liabilities of the site, CNL is the legal entity that is managing the site and that has responsibility for complying with the CNSC’s regulatory framework. Consequently, it is CNL that is the current licensee and is proposing the project; therefore, it is appropriate that CNL is the proponent.</p> <p>Furthermore, CNL meets the definition of “proponent”, as per section 2 of CEAA 2012, which means the person, body, federal authority or government that proposes the project. The CNSC’s licensing decision considers whether an applicant is qualified to undertake the proposed activities.</p> <p><b>CNSC’s decision-making responsibilities</b>            The CNSC’s Commission Tribunal (the Commission) is a quasi-judicial administrative tribunal. The Commission is a</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		However, Atomic Energy of Canada is the crown corporation who has responsibility for the site, on behalf of the federal government.”	<p>credible and expert decision-making authority that remains independent from government, licensees and staff.</p> <p>The Commission is the CNSC’s decision-making body that makes EA and licensing decisions for all major nuclear projects. Decisions made by the Commission are not subject to any governmental or political review, nor may they be overturned by the Government of Canada. Only the Federal Court or the Supreme Court of Canada may review and overrule a decision made by the Commission.</p> <p>Prior to making a decision, sufficient information is required for CNSC staff to evaluate and make scientifically defensible recommendations to inform evidence-based Commission decisions as well as to ensure regulatory requirements for safety, security and the environment are met.</p> <p>In making an EA decision, the Commission will take into consideration the proponent’s EIS, CNSC staff’s EA Report and supporting documentation to determine if the project is likely to cause significant adverse environmental effects, taking into consideration the implementation of mitigation measures. The Commission will require sufficient information to make a science-based EA decision.</p> <p>If there is a positive EA decision (i.e., project is not likely to cause significant adverse environmental effects, taking into consideration the implementation of mitigation measures), the Commission can then proceed with the licensing decision under the NSCA. In making its licensing decision, the Commission will determine whether the proponent is qualified and will make adequate provision for the protection of the environment, the health and safety of</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
			<p>persons, the maintenance of national security and the measures required to implement international obligations to which Canada has agreed. Under the NSCA, no approval is granted/no licence is issued unless the proponent is qualified and makes adequate provision for the protection of the environment and health and safety of persons.</p>
Northwatch	NW-9	<p><b>Conclusions</b>            “We are requesting the following decisions of the Canadian Nuclear Safety Commission at this time:            1) That the Project Description be revised and resubmitted, in response to the deficiencies identified by Northwatch and others who provide comment during this review period            2) That the Canadian Nuclear Safety Commission give careful consideration to the respective roles of Canadian Nuclear Laboratories and Atomic Energy of Canada Limited and consider naming AECL as co-proponent for the project            3) That the project be referred to an independent review panel for the conduct of the environmental assessment of the proposed undertaking.”</p>	<ol style="list-style-type: none"> <li>1) Please see the response to NW-1 above.</li> <li>2) Please see the response to NW-8 above.</li> <li>3) In accordance with subsection 38(6) of CEAA 2012, there is no option for CNSC-led projects to be referred to an EA by a review panel. As indicated in the response to NW-8 above, the Commission is the CNSC’s decision-making body that makes EA and licensing decisions for all major nuclear projects. As a quasi-judicial administrative tribunal, the Commission is a credible and expert decision-making authority that remains independent from government, licensees and staff.</li> </ol>
<a href="#">Canadian Environmental Law Association</a>	CELA-1	<p>“... We recommend the following:            1) That the Project Description be revised and resubmitted, in response to the deficiencies identified by Northwatch and others who provide comment during this review period            2) That the Canadian Nuclear Safety Commission give careful consideration to the respective roles of Canadian Nuclear Laboratories and Atomic Energy of Canada Limited and consider naming AECL as co-proponent for the project            3) That the project be referred to an independent review panel for the conduct of the environmental assessment of the proposed undertaking...”</p>	<ol style="list-style-type: none"> <li>1) <b>Completeness of the project description</b>            CEAA 2012 requires that the proponent of a designated project, except projects that are regulated by the CNSC or the National Energy Board, submit a project description to the Canadian Environmental Assessment Agency (the Agency). The <i>Prescribed Information for the Description of a Designated Project Regulations</i> (SOR/2012-148) set out the information that must be included in a project description. The Agency then uses the information in the project description during a ‘screening’ phase to inform a decision on whether an EA of the designated project is required.</li> </ol>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
			<p>Although not required for designated projects regulated by CNSC, the CNSC has adopted within its EA process the requirement to submit a project description, as outlined in appendix A of <a href="#">REGDOC-2.9.1: <i>Environmental Protection: Environmental Principles, Assessments and Protection Measures</i></a>. The purpose of the project description is for CNSC staff to determine if a project proposal meets the definition of “designated project” such that CEAA 2012 would apply. To this end, proponents are referred to the <i>Prescribed Information for the Description of a Designated Project Regulations</i> (SOR/2012-148) for the information that should be submitted within their project description.</p> <p>CNSC staff reviewed CNL’s project description, and determined that sufficient information was provided to:</p> <ul style="list-style-type: none"> <li>• meet the <i>Prescribed Information for the Description of a Designated Project Regulations</i> (SOR/2012-148) such that the project description is deemed complete and need not be revised</li> <li>• make a determination on the applicability of CEAA 2012</li> </ul> <p>CNSC staff determined that CEAA 2012 applies to the proposed project, as it is considered a “designated project” in accordance with paragraph 37(b) of the <i>Regulations Designating Project Activities</i>.</p> <p>Following CNSC staff’s EA determination, public comments were sought on the project description to inform the conduct of the EA.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
			<p>Taking into account the public comments received related to scope and CNSC staff's recommendations, the Commission, as indicated in the Commission's Record of Decision dated March 8, 2017, has determined that the scope of the factors for this EA include the factors mandated in paragraphs 19(1)(a) to (h) of CEAA 2012, with no additional factors requiring consideration. That is, the Commission did not require, under its discretion in paragraph 19(1)(j) of CEAA 2012, to include any other matters relevant to the EA.</p> <p>2) <b>Proponent of the project</b>            Although AECL owns the assets and liabilities of the site, CNL is the legal entity that is managing the site and that has responsibility for complying with the CNSC's regulatory framework. Consequently, it is CNL that is the current licensee and is proposing the project; therefore, it is appropriate that CNL is the proponent. Furthermore, CNL meets the definition of "proponent", as per section 2 of CEAA 2012, which means the person, body, federal authority or government that proposes the project. The CNSC's licensing decision considers whether an applicant is qualified to undertake the proposed activities.</p> <p>3) <b>EA by review panel</b>            In accordance with subsection 38(6) of CEAA 2012, there is no option for CNSC-led projects to be referred to an EA by a review panel. The Commission is the CNSC's decision-making body that makes EA and licensing decisions for all major nuclear projects. As a quasi-judicial administrative tribunal, the Commission is a credible and expert decision-making authority that remains independent from government, licensees and</p>



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			staff.
Canadian Environmental Law Association	CELA-2	<b>Encapsulation proposal</b> “No descriptions of the grouting, the grouting material or the grouting methods have been provided in the document, throughout. Similarly, there is no description of concrete use, type, and methodology; it may even be that “concrete” and “grout” are being used interchangeably and failing to provide a clear and adequate description of the project. As a key aspect of the proposed project the methodology intended to be followed for encapsulation including this additional specificity is essential to the project description.”	Detailed information on the grouting method, design and longevity of the containment structure, will be provided in the long-term safety analysis and summarized in sufficient detail in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.
Canadian Environmental Law Association	CELA-3	<b>Hazardous Wastes</b> “Section 2.4 states that the project may generate small quantities of hazardous wastes but these are not described. Section 3.3.2.2 contains a list of “examples” beginning with asbestos. A complete list of hazardous wastes that remain in the WR-1 Reactor should be provided along with a more complete description as to how they will be handled. In section 3.6.2, specific information as to which wastes will remain on site and which ones will be shipped, and to which “appropriate” facilities should be provided. This is important to ensure that there is appropriate capacity at those facilities and that a sufficient level of planning has occurred in order to allow for a complete environmental assessment of the project.”	CNSC staff require that information regarding non-radiological hazards, be addressed in the proponent’s EIS, in sufficient detail. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.
Canadian Environmental Law Association	CELA-4	<b>Studies</b> “There is no reference to prior studies in the body of the project description. The references listed in section 8 specific to prior work on conditions at Whiteshell are scanty, listing only the Whiteshell Laboratories Decommissioning Project Comprehensive Study Report	CNSC staff agree that the topics of the reports and studies identified by the reviewer, such as alternative means, need to be considered and evaluated. CNSC staff require detailed information on these assessments as part of the EA and licensing review process. Sufficient information is required for CNSC staff to make scientifically defensible

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry, reference #80124</a> )	<b>CNSC response</b>
		<p>Volume 1, and the CNSC 2002 Record of Proceedings concerning the application to decommission. Assuming there are additional references that detail the conditions at the Whiteshell, these should be listed; and the main findings that are pertinent to the project description should be included in the text of the proposed project description. In particular, since the project description notes that there have been “two significant changes” since the EA decision in 2002, in terms of the timeframe and the change to in situ decommission instead of complete removal, one would expect to have documentation and studies justifying these changes at the Whiteshell in particular. If any such studies and reports exist, they should be included in the references list to the project description and any particular findings relevant to the project description should be included in the text. This is particularly important since the project description in section 7, Summary of the Project Description, details certain proposed advantages from the project as the preferred approach including reduced risks. One would expect studies have been conducted to reach these conclusions vis a vis radiological and industrial hazards and exposures to workers, transport and waste handling risks to workers, the public and the environment, and effective nuclear liability reduction. The section also references lower costs and that the project is “more technically feasible”. Any work and reports that has already been conducted to justify these statements should be listed and made available to the public for the environmental assessment. Since there is a list of other decommissioning options apparently considered for this project (see section 3.1.1), the report and studies on those options should be referenced in the project description and made available to the public for review on this environmental assessment. Similarly any reports or studies</p>	<p>recommendations which inform evidence-based Commission decisions. In addition, the proponent must comply with all applicable Acts and regulations at each jurisdictional level (i.e., federal, provincial, municipal).</p> <p>With respect to the <b>completeness of the project description</b>, please see the response to CELA-1 above. CNSC staff require that information in the EIS and supporting documentation be provided in sufficient detail and/or with relevant references to substantiate any statements made. In addition, CNSC staff require the proponent to ensure that all references included in the EIS and supporting documentation are either publicly accessible or can be made available to the public upon request, as outlined in the <a href="#">Guidelines</a>.</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
		to justify the statements about lack of expected effects on fish habitat, or migratory birds should be listed in the project description and made available to the public for the environmental assessment.”	
Canadian Environmental Law Association	CELA-5	<b>Monitoring</b> “Section 3.5.6, “Preparation for Institutional Control” lacks adequate specificity. It states that routine surveillance “may include” certain activities such as inspection for erosion. No specificity as to the purpose or scope of groundwater monitoring is provided in the project description. No other references to monitoring are included in the project description, which is a significant shortfall. The full range of proposed monitoring subjects and purposes should be included in the project description so as to ensure that the EA is adequately scoped. This should include radiological monitoring before, during and after the proposed project.”	Detailed information regarding ongoing and post-closure monitoring activities will be provided in sufficient detail in the EIS and the long-term safety analysis. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.  With respect to the <b>completeness of the project description</b> , please see the response to CELA-1 above.
Canadian Environmental Law Association	CELA-6	<b>Description of Radiological Hazards</b> “Section 3.3.2.1 lists the radiological hazards remaining in the WR-1 Reactor; the studies and reports that provide this information should be listed in the references and made available to the public; in particular any updated reports and studies since the 2002 EA decision should be listed and made available.”	A comprehensive list of radionuclides will be identified in the proponent’s safety case and presented in sufficient detail in the EIS. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions. In addition, CNSC staff require the proponent to ensure that all references included in the EIS and supporting documentation are either publicly accessible or can be made available to the public upon request, as outlined in the <a href="#">Guidelines</a> .
Canadian Environmental Law Association	CELA-7	<b>Performance Claims</b> “We echo the concern noted by Northwatch in the Rolphton project description where this same statement was made: “ <i>In situ decommissioning results in a concrete monolith which provides a robust and durable containment to allow for continued radioactive decay</i> ” (found in the Whiteshell proposal in section 7 Summary). As Northwatch stated, “In situ decommissioning does not	With respect to the <b>completeness of the project description</b> , please see the response to CELA-1 above.  In addition, CNSC staff require that information in the EIS and supporting documentation be provided in sufficient detail and/or with relevant references to substantiate any statements made.

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		<p>in and of itself result in a concrete monolith. It may be that CNL is proposing a concrete monolith in an in situ decommissioning approach they will bring forward for the NPDP site, and it may be that a concrete monolith could provide robust and durable containment, but one does not necessarily follow the other, and certainly CNL has not provided sufficient project description to even hypothesize that this will be the case. This determination may be possible at some later stage, but it is not possible at this point, and cannot be assumed.”</p>	
Canadian Environmental Law Association	CELA-8	<p><b>Adverse Impact Potential</b>            “Section 6.2.1 mentions the potential for radionuclide releases to groundwater and radionuclide migration to the Winnipeg River. While it states that the EA will assess potential impacts on fish, fish habitat and aquatic species, it does not reference impacts on other species nor on human health and these additional potential impacts should be included in the project description and subsequently in the EA’s assessment of potential adverse impacts. Similarly the potential for future impacts should be referenced and included in the EA; the assessment should not be conducted simply in the context of current use as implied in section 6.2.4.”</p>	<p>CNSC staff agree that the potential and long-term radiological risks to the environment and human health of the proposed project need to be considered and evaluated. CNSC staff require this assessment as part of the EA and licensing review process. Information on the long-term safety of the proposed project will be summarized in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible Commission decisions.</p> <p>With respect to the <b>completeness of the project description</b>, please see the response to CELA-1 above.</p>
Canadian Environmental Law Association	CELA-9	<p><b>Roles and Responsibilities</b>            “In addition to considering the above comments on the project description as provided by the Canadian Nuclear Laboratories, we request that the Canadian Nuclear Safety Commission, as the Responsible Authority in this environmental assessment, consider the appropriateness of having the Canadian Nuclear Laboratories as the sole proponent. As the CNL is managing the AECL properties – and this project – on behalf of AECL as stated in section 2.1.1, we submit that AECL should also be a proponent on this project. As AECL states on its website, its</p>	<p><b>Proponent of the project</b>            Although AECL owns the assets and liabilities of the site, CNL is the legal entity that is managing the site and that has responsibility for complying with the CNSC's regulatory framework. Consequently, it is CNL that is the current licensee and is proposing the project; therefore, it is appropriate that CNL is the proponent.</p> <p>Furthermore, CNL meets the definition of "proponent", as per section 2 of CEAA 2012, which means the person, body, federal authority or government that proposes the project.</p>

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		<p>mandate is “As a federal Crown corporation, AECL’s mandate is to enable nuclear science and technology and fulfill Canada’s radioactive waste and decommissioning responsibilities.””</p>	<p>The CNSC’s licensing decision considers whether an applicant is qualified to undertake the proposed activities.</p> <p><b>CNSC’s decision-making responsibilities</b>            The CNSC’s Commission Tribunal (the Commission) is a quasi-judicial administrative tribunal. The Commission is a credible and expert decision-making authority that remains independent from government, licensees and staff.</p> <p>The Commission is the CNSC’s decision-making body that makes EA and licensing decisions for all major nuclear projects. Decisions made by the Commission are not subject to any governmental or political review, nor may they be overturned by the Government of Canada. Only the Federal Court or the Supreme Court of Canada may review and overrule a decision made by the Commission.</p> <p>Prior to making a decision, sufficient information is required for CNSC staff to evaluate and make scientifically defensible recommendations to inform evidence-based Commission decisions as well as to ensure regulatory requirements for safety, security and the environment are met.</p> <p>In making an EA decision, the Commission will take into consideration the proponent’s EIS, CNSC staff’s EA Report and supporting documentation to determine if the project is likely to cause significant adverse environmental effects, taking into consideration the implementation of mitigation measures. The Commission will require sufficient information to make a science-based EA decision.</p> <p>If there is a positive EA decision (i.e., project is not likely to cause significant adverse environmental effects, taking into</p>

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			<p>consideration the implementation of mitigation measures), the Commission can then proceed with the licensing decision under the NSCA. In making its licensing decision, the Commission will determine whether the proponent is qualified and will make adequate provision for the protection of the environment, the health and safety of persons, the maintenance of national security and the measures required to implement international obligations to which Canada has agreed. Under the NSCA, no approval is granted/no licence is issued unless the proponent is qualified and makes adequate provision for the protection of the environment and health and safety of persons.</p>
Canadian Environmental Law Association	CELA-10	<p>“We urge the CNSC as the responsible authority under the <i>Canadian Environmental Assessment Act</i> to make a determination so as to enlarge the scope of the project to include the gaps and deficiencies identified above, along with any deficiencies identified in submissions provided by other members of the public.</p> <p>We refer you to the decision of the Supreme Court of Canada in <i>MiningWatch Canada v. Canada (Fisheries and Oceans)</i>, [2010] 1 SCR 6, 2010 SCC 2 (CanLII) in that respect, which confirms your authority to do so. See also <i>Bow Valley Naturalists Society v. Canada (Minister of Canadian Heritage)</i>, [2001] 2 FCR 461, 2001 CanLII 22029 (FCA) in which the responsible authority’s duty to ensure that the project is properly scoped remains good law under <i>CEAA, 2012</i> as a result of the issuance of SOR/2012-148 (see below).</p> <p>We also note that the gaps and deficiencies described above demonstrate the failure of the proposed project description to comply with the requirements of the Prescribed Information for the Description of a</p>	<p>CNSC staff have considered and addressed the gaps and deficiencies raised, as outlined in responses to CELA-1 to 9 above. With respect to the <b>completeness of the project description</b>, please see the response to CELA-1 above.</p>

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		Designated Project Regulations (SOR/2012-148).  For example, these failures include, but are not limited to, the failure to adequately provide the context of the project; and inadequate description of all activities to be performed in relation to the project, all of which are explicitly required under Regulation SOR/2012-148. In particular the vague generalities and lack of specificity in relation to the description of the project must be remedied.”	
<a href="#">Manitoba Métis Federation Inc.</a>	MMF-1	“...Although the MMF appreciates the opportunity to comment on the Project Description, we feel we do not have the capacity to comment in a substantive way, given the highly technical decommissioning measures proposed for the project. The MMF would need to engage a subject matter expert, the MMF can only provide the preliminary comment that we are exceptionally concerned about the potential impacts the project could have on the nearby Winnipeg River which our citizens rely on to exercise their Aboriginal rights.”	<p>The CNSC offered funding through its Participant Funding Program to assist members of the public, Aboriginal groups and other stakeholders in participating in the EA, licence application review and Commission hearing processes. Funding was awarded to the MMF to hire a consultant to conduct a review of the EIS, EA and Commission member documentation to determine the project’s potential impacts on their land use, Aboriginal rights and interests, including the Winnipeg River and identify deficiencies in the documentation, if any.</p> <p>In addition CNSC staff are available to provide MMF, members of the public and other Aboriginal groups with objective scientific and regulatory information in relation to the proposed project, in order to help MMF with their participation in the EA and licensing review process.</p>
Manitoba Métis Federation Inc.	MMF-2	“As the MMF is not in position to comment on the highly technical portions of the Project Description, the MMF would like to offer the following rudimentary comments for clarity on the Project Description: f) In a variety of places within the Project Description, it discusses the presence of hazardous waste and how such waste will be handled. Please provide clarity on the methodology used to assess the hazardous	As per sections 9 (Effects assessment) and 10 (Mitigation) of the <a href="#">Guidelines</a> , the proponent’s EIS will have to identify and assess the hazardous materials and their potential effects to human health and/or the environment as well as propose mitigation measures to undertake to avoid or minimize any identified adverse environmental effect.

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		material and potential risks it may cause to human and/or environmental health.”	
Manitoba Métis Federation Inc.	MMF-3	g) “The Project Description indicates that hazardous materials will be encapsulated within the facility’s lower level and capped. As portions of the facility, including hazardous materials, will be left in place as part of the In Situ Decommissioning, please provide further clarity on how the facility will be monitored to ensure risk mitigation.”	CNSC staff require that information regarding non-radiological hazards, be addressed in the proponent’s EIS, in sufficient detail. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.  <b>Institutional control</b> With respect to institutional control, CNSC staff require that information regarding the lifecycle of the project, including the form, length, and requirements of the institutional control period and post-closure monitoring activities, be addressed in the proponent’s licensing documentation and summarized in sufficient detail in the EIS and the safety case. The length of institutional control will need to be approved by the Commission.
Manitoba Métis Federation Inc.	MMF-4	h) “Given the fact that the location of the facility is located directly beside the Winnipeg River, the MMF is especially concerned about potential risks to water and species, which are reliant on the river. Please provide clarity on the methodologies used to assess risks to the Winnipeg River and any emergency response plans that have been put in place to mitigate risks to the environment.”	CNSC staff require that information regarding risk mitigation and emergency response plans, be addressed in the proponent’s EIS, in sufficient detail. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.
Manitoba Métis Federation Inc.	MMF-5	i) “The Project Description identifies the institutional control periods for the monitoring of the facility following decommissioning. Can you please provide clarity on what the institutional control monitoring entails? For instance, a 200-year control period has	With respect to institutional control, please see the response to MMF-3 above.



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		been identified for the lower level waste trenches (Section 3.1.1 – Project Context); please provide clarity on how such monitoring is planned to be carried out over a 200-year period.”	
Manitoba Métis Federation Inc.	MMF-6	j) “The Project Description states that the lower level portion will be encapsulated and encased by grouting. Please clarify if the grouting method itself poses any potential environmental risk, such as grout erosion or contamination.”	Detailed information on the grouting method, design and longevity of the containment structure, will be provided in the long-term safety analysis and summarized in sufficient detail in the EIS and the safety case. Sufficient information is required for CNSC staff to make scientifically defensible recommendations which inform evidence-based Commission decisions.
Manitoba Métis Federation Inc.	MMF-7	k) “A significant concern to the MMF is the lack of identification of the Manitoba Metis Community within the Project Description. The document identifies the location of the facility as being within the traditional territory of various First Nation communities. The MMF would like to take this opportunity to inform the Proponent that the location is also within the traditional territory of the Manitoba Metis Community.”	<p>The CNSC ensures that all of its EA and licensing decisions under CEAA 2012 and the NSCA uphold the honour of the Crown and consider Aboriginal peoples’ potential or established Aboriginal and/or treaty rights pursuant to section 35 of the <i>Constitution Act</i>, 1982.</p> <p>CNSC staff have identified First Nation and Métis groups who may have an interest in the project and provided each identified group with a notice of the commencement of the EA, the opportunity to apply for participant funding and a copy of the project description for comment.</p> <p>CNSC staff have offered to meet to discuss MMF’s initial concerns regarding the project. CNSC staff will be working collaboratively with MMF in order to ensure that they are meaningfully involved in the EA and licensing review process.</p> <p>CNSC staff will continue to provide interested Aboriginal groups with timely project updates and information at key points during the EA process including the review of CNL’s EIS, CNSC staff’s EA Report, and CNSC staff’s and CNL’s Commission member documentation and related public</p>

Source	Number	<b>Comment excerpts</b> (all original submissions can be found on the <a href="#">Canadian Environmental Assessment Registry</a> , reference #80124)	<b>CNSC response</b>
			<p>Commission hearings.</p> <p>As per the requirements and guidance of <a href="#">REGDOC-3.2.2, Aboriginal Engagement</a>, CNSC staff expect that CNL will be engaging with MMF and other identified Aboriginal groups to identify potential concerns related to impacts on Aboriginal and/or treaty rights as a result of the proposed project and working collaboratively with the identified communities on addressing these concerns, where appropriate. CNL is required to report to the CNSC regarding their engagement activities and it is expected that further details will be provided in the EIS.</p> <p>CNSC staff have communicated this omission to CNL and expect inclusion of this reference in their Aboriginal engagement report and the EIS.</p> <p>CNL has committed to work with identified First Nation and Métis groups to establish working relationships and to develop engagement work plans. To this end, CNL has offered to meet with interested Aboriginal groups, including MMF, to discuss the project.</p>
Manitoba Métis Federation Inc.	MMF-8	1) “The Project Description indicates, in relation to Aboriginal people, that the “cultural integrity of the site has been lost” (Section 6.2.4 – Effects on Aboriginal People). The MMF can appreciate that the land in question has been occupied by the facility since the 1960’s however the Metis citizens utilize the area proximate to the facility to exercise Aboriginal harvesting rights. The Winnipeg River is a waterbody of significance to Metis citizens, who use it for harvesting practices. Although Aboriginal people may not harvest directly at the facility location, the surrounding environment is significant. Also to note,	<p>As per sections 9 (Effects assessment) and 10 (Mitigation) of the <a href="#">Guidelines</a>, the proponent’s EIS will have to identify and assess all potential environmental effects of the project and propose mitigation measures to undertake to avoid or minimize any adverse environmental effects of the project. As per the requirements and guidance of <a href="#">REGDOC-3.2.2, Aboriginal Engagement</a>, CNSC staff expect that CNL will be engaging with MMF and other identified Aboriginal groups to identify potential concerns related to impacts on Aboriginal and/or treaty rights as a result of the proposed project and working collaboratively with the identified communities on addressing these concerns, where</p>

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		<p>when the facility was created in the 1960's, no recognition of Aboriginal rights or the legal duty to consult was established at that time. As such, no Aboriginal consultation has taken place on the location of the facility and it may still hold cultural significance as a part of Aboriginal traditional territory. It is the position of the MMF that impacts to Aboriginal people may occur, despite the fact that the facility has occupied the land since the 1960's..."</p>	<p>appropriate. CNL is required to report to the CNSC regarding their engagement activities and it is expected that further details will be provided in the EIS.</p> <p>CNSC staff have offered to meet to discuss MMF's initial concerns regarding the project. CNSC staff will be working collaboratively with MMF in order to ensure that they are meaningfully involved in the EA and licensing review process.</p> <p>CNL has held an introductory meeting with the MMF and has planned follow-up meetings. CNL has committed to work with identified First Nation and Métis groups to establish working relationships and to develop engagement work plans.</p>
<a href="#">Eva Pip</a>	EP-1	<p>“My concerns with in situ decommissioning are:</p> <ol style="list-style-type: none"> <li>1. Will the area be comprehensively dug up to find and properly dispose of this large amount of distributed waste?”</li> </ol>	<p>As per sections 9 (Effects assessment) and 10 (Mitigation) of the <a href="#">Guidelines</a>, the proponent's EIS will have to identify and assess all potential environmental effects of the project and propose mitigation measures to undertake to avoid or minimize any adverse environmental effects of the project.</p> <p>With respect to the CNSC's decision-making responsibilities, please see the response to BON-1 above.</p>
Eva Pip	EP-2	<ol style="list-style-type: none"> <li>2. “Will the reactor and spent fuel rods be safely contained in concrete and an ‘engineered cap’ that will not crack, disintegrate, chemically alter or otherwise erode for about 25,000 years at the minimum? Guaranteed? Since most concrete is porous, presumably a very special completely and forever-nonporous and forever-impermeable substance will be invented for this purpose, and adequately tested to prove that it is indeed stable for thousands of years.”</li> </ol>	<p>No fuel bundles are present in the WR-1 reactor as the reactor has been defueled. The nuclear fuel is currently inventoried, stored, and monitored in the Whiteshell Laboratories (WL) Waste Management Area. As such, the fuel bundles are not included in the scope of this project; no nuclear fuel (or high-level waste) is to be placed in the proposed entombment structure.</p> <p>As per sections 9 (Effects assessment) and 10 (Mitigation) of the <a href="#">Guidelines</a>, the proponent's EIS will have to identify and assess all potential environmental effects of the project and propose mitigation measures to undertake to avoid or</p>

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			minimize any adverse environmental effects of the project.  Detailed information on the design and longevity of the containment structure will be provided in the long-term safety analysis and summarized in sufficient detail in the EIS and the safety case.  With respect to the CNSC's decision-making responsibilities, please see the response to BON-1 above.
Eva Pip	EP-3	3. "Can CNL warrant that no geological events will affect the area to cause fractures, faults, hydrologic changes or other compromises to the integrity of the surrounding matrix for about 25,000 years?"	As outlined in subsection 9.3 (Accidents and malfunctions) of the <a href="#">Guidelines</a> , the proponent's EIS will have to assess all potential health and environmental effects from postulated accident and malfunction scenarios, including potential naturally occurring events.  As per section 7.5.2 (Disruptive Event Scenarios, Including Human Intrusion) of the CNSC's Regulatory Guide <a href="#">G-320, Assessing the Long Term Safety of Radioactive Waste Management</a> , the proponent's safety case will have to assess disruptive event scenarios, in sufficient detail, and identify any actions required to be incorporated into the proponent's strategy to ensure end-state objectives are met. A summary of this assessment will be presented in the EIS.
<a href="#">Wabaseemoong Independent Nations</a>	WIN-1	"...this project directly implicates WIN because the In Situ Decommissioning will take place on WIN's traditional territory where our members assert their Aboriginal and treaty rights. We would like to reiterate the significance of this: pursuant to Haida Nation v British Columbia (Minister of Forests), WIN must be consulted where a project potentially affects WIN's asserted Aboriginal or treaty rights..."	The CNSC ensures that all of its EA and licensing decisions under CEAA 2012 and the NSCA uphold the honour of the Crown and consider Aboriginal peoples' potential or established Aboriginal and/or treaty rights pursuant to section 35 of the <i>Constitution Act</i> , 1982.  CNSC staff have identified First Nation and Métis groups who may have an interest in the project and provided each identified group with a notice of the commencement of the EA, the opportunity to apply for participant funding and a copy of the project description for comment. CNSC staff have offered to meet to discuss WIN's initial concerns

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			<p>regarding the project and are currently organizing the logistics with WIN representatives for this first meeting.</p> <p>CNSC staff will be working collaboratively with WIN in order to ensure that they are meaningfully involved in the EA and licensing review process.</p> <p>CNSC staff will continue to provide interested Aboriginal groups with timely project updates and information at key points during the EA process including the review of CNL's EIS, CNSC staff's EA Report, and CNSC staff's and CNL's Commission member documentation and related public Commission hearings.</p> <p>As per the requirements and guidance of <a href="#">REGDOC-3.2.2, Aboriginal Engagement</a>, CNSC staff expect that CNL will be engaging with WIN and other identified Aboriginal groups to identify potential concerns related to impacts on Aboriginal and/or treaty rights as a result of the proposed project and working collaboratively with the identified communities on addressing these concerns, where appropriate. CNL is required to report to the CNSC regarding their engagement activities and it is expected that further details will be provided in the EIS.</p> <p>CNL has also offered to meet with interested Aboriginal groups, including WIN, to discuss the project. CNL has committed to work with identified First Nation and Métis groups to establish working relationships and to develop engagement work plans.</p>
Wabaseemoong Independent Nations	WIN-2	<p>"...The Winnipeg River is a significant waterway in which many of our members practice traditional knowledge, exercise their rights, and rely on as a source of sustenance. We are concerned that these activities might</p>	<p>As per sections 9 (Effects assessment) and 10 (Mitigation) of the <a href="#">Guidelines</a>, the proponent's EIS will have to identify and assess all potential environmental effects of the project and propose mitigation measures to undertake to avoid or</p>

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		<p>cause irreparable damage by either contaminating the water or by disrupting the marine life behavior. Given our past experience with water contamination, specific to catastrophic industry events, we know that either of these outcomes will impair our rights and increase food insecurity. At present, however, we would like to engage in dialogue with the CNSC about the likelihood of contamination and the counter-measures being deployed. This will ensure members are fully informed in the process and that your project managers are informed of our concerns.”</p>	<p>minimize any adverse environmental effects of the project.</p> <p>As per the requirements and guidance of <a href="#">REGDOC-3.2.2, Aboriginal Engagement</a>, CNSC staff expect that CNL will be engaging with WIN and other identified Aboriginal groups to identify potential concerns related to impacts on Aboriginal and/or treaty rights as a result of the proposed project and working collaboratively with the identified communities on addressing these concerns, where appropriate. CNL is required to report to the CNSC regarding their engagement activities and it is expected that further details will be provided in the EIS.</p> <p>CNSC staff have offered to meet to discuss WIN’s initial concerns regarding the project and are currently organizing the logistics with WIN representatives for this first meeting. CNSC staff will be working collaboratively with WIN in order to ensure that they are meaningfully involved in the EA and licensing review process.</p> <p>CNL has also offered to meet with interested Aboriginal groups, including WIN, to discuss the project. CNL has committed to work with identified First Nation and Métis groups to establish working relationships and to develop engagement work plans.</p>
Wabaseemoong Independent Nations	WIN-3	<p>“WIN also like to express concerns over the quantity of nuclear waste being stored. As we understand, there will be used fuel bundles of radioactive waste being stored in situ. Should the nuclear waste spill, the contamination would decimate our members’ personal, environmental, economic, and cultural security. Moreover, we expect to be consulted not only on the environmental measures but also the traditional security measures, such as counterterrorism measures, cyber-security measures, and</p>	<p>No fuel bundles are present in the WR-1 reactor as the reactor has been defueled. The nuclear fuel is currently inventoried, stored, and monitored in the Whiteshell Laboratories (WL) Waste Management Area. As such, the fuel bundles are not included in the scope of this project; no nuclear fuel (or high-level waste) is to be placed in the proposed entombment structure.</p> <p>CNSC staff have offered to meet to discuss WIN’s initial</p>

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		<p>natural disasters relief measures. WIN recognizes that these issues are all increasingly prominent security issues and, because these threats directly implicate WIN's human security, we would like to be informed on the measures to the extent possible..."</p>	<p>concerns regarding the project and are currently organizing the logistics with WIN representatives for this first meeting. CNSC staff will be working collaboratively with WIN in order to ensure that they are meaningfully involved in the EA and licensing review process. CNL has also offered to meet with interested Aboriginal groups, including WIN, to discuss the project. CNL has committed to work with identified First Nation and Métis groups to establish working relationships and to develop engagement work plans.</p>
Wabaseemoong Independent Nations	WIN-4	<p>"In addition, WIN recognizes that this project requires the nuclear waste be transported to and from the site and that there are significant risks associated with this. We would like to formally express our concerns about the environmental and security measures. Should these transportation-related risks ever become a reality, the resulting contamination could also devastate our traditional practices, human security, and economy. Therefore, we would like to again assert that there is a constitutionally required duty to consult our community on this aspect of the project. In particular, we would like to be informed, ask questions, and voice our concerns about all measures being utilized to prevent radiological contamination during transportation through our traditional territory. Engaging in dialogue is ultimately the only means by which we, in partnership with CNSC, can develop adequate mitigation measures while ensuring the waste is transported as efficiently as effectively as possible..."</p>	<p>As indicated in the project description, the proposed project may generate small quantities of hazardous wastes and transport these to registered off-site disposal facilities. Transport of these wastes will require compliance with the Manitoba <i>Dangerous Goods Handling and Transportation Act</i> and the federal <i>Transportation of Dangerous Goods Act</i>, 1992, which set out requirements for the handling and transportation of dangerous goods and hazardous waste. Please note that the scope of this proposed project does not include the transportation of radioactive (nuclear) waste off-site. <i>In situ</i> decommissioning of the WR-1 reactor involves preparing systems and structures for grouting whereby the below-grade sealed structure will encapsulate and contain radiological sources and hazardous materials for a defined period of institutional control. This means, leaving the part of the reactor building that is below ground level in place instead of removing it. The objective of this proposed approach is to reduce the risk to workers, both of exposure to radiation, and other industrial hazards, and reduce the risk of releases to the public and the environment during decommissioning by not disturbing, handling, or transporting the radioactive materials. The below-grade concrete structure will isolate and contain the radioactive waste that remains in the entombed material, allowing it to</p>

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			continue to decay away.  CNSC staff will be working collaboratively with WIN in order to ensure that they are meaningfully involved in the EA and licensing review process. The relationship with WIN and other First Nation and Métis groups is important to the CNSC.
Wabaseemoong Independent Nations	WIN-5	"...WIN should be notified of any and all activities occurring at the Pinawa site. If WIN is aware of all activities occurring at the Pinawa site, there is a much greater likelihood that our members will accept this project as their own and support it."	As indicated in the response to WIN-1 above, CNSC staff will provide interested Aboriginal groups, including WIN, with timely project updates and information at key points during the EA and licensing review process.
Wabaseemoong Independent Nations	WIN-6	"Finally, WIN would like to express our desire to develop a long-term strategic approach to participate in contract procurement and employment. WIN strives to become a self-sufficient nation with a flourishing private sector and a fully employed band membership. As a result, the opportunity to procure work contracts on your project is a substantial priority for us. Should your project provide us with business and employment opportunities, the community is far more likely to participate in the nuclear waste storage project, open discussions and view our relationship with CNSC as a partnership."	This comment is outside the scope of this EA and not within the CNSC's mandate. However, CNSC staff provided this comment to CNL for their consideration.  CNSC staff will be working collaboratively with WIN in order to ensure that they are meaningfully involved in the EA and licensing review process. The relationship with WIN and other First Nation and Métis groups is important to the CNSC.  In addition, CNL has offered to meet with interested Aboriginal groups, including WIN, to discuss the project. CNL has committed to work with identified First Nation and Métis groups to establish working relationships and to develop engagement work plans.