Comment	Topic/Section	Comment/Advice
1	Fire Response (Section 15.7.1) Canadian Codes and Standards	The Initial Project Description (IPD) identifies challenges in the fire response capabilities of nearby communities. *CSA N393- Fire protection for facilities that process, handle, or store nuclear substances* specifies the fire response requirements that need to be met for the proposed project. The Nuclear Waste Management Organization (NWMO) will need to ensure that fire response capabilities at the site meet the requirements of *CSA N393* and that this is clearly identified in the Impact Statement (IS).
2	Emergency Response	The IPD indicated that there will be underground work required for this project during future phases, which requires specialized emergency response teams to always be present during underground work. The NWMO must consider the requirement of having an onsite emergency response team that is trained to respond to underground emergencies and ensure it is clearly indicated in the IS.
3	Canadian Codes and Standards	Several codes and standards and regulatory documents (REGDOCs) referenced throughout the IPD are not the latest published revisions. The NWMO is requested to ensure the IS references the latest published versions.
4	Canadian Codes and Standards	There is no information in the IPD about C*SA N292.7- Deep geological disposal of radioactive waste and irradiated fuel*. This standard should be included in the IS as a key topic-specific Canadian standard on geological disposal.
5	Management Systems (Section 7 of the licensing appendix)	The IPD does not give any information as to whether the NWMO's management system is integrated with the environmental management system, water management system, and so on. *CSA N286-12 - Management system requirements for nuclear facilities* integrates the requirements from management system standards for health, safety, environment, security, economics, and quality. This information should be provided in the IS.
6	Management Systems (Section 7 of the licensing appendix)	The proposed project needs to be managed as any industrial project (organization structures, management functions, pricing, cost control, risk management, contract management, quality management, project type, etc.) following good practices in the project management handbook. The IPD does not provide any information on how the NWMO will manage the contract (e.g., engineering, procurement and construction, integrated project delivery, etc.). If the NWMO has not decided on the project contract type, the IS should indicate that the NWMO will do so in the future.

Comment	Topic/Section	Comment/Advice
7	Sequencing of Ongoing Characterization Work (Sections 9 and 14)	In Section 9.4.2: Listing of Site Preparation Phase Activities of the IPD, site characterization is not included in the list of site preparation activities (though it is mentioned in Section 9.3: Preliminary List of Project Activities Prior to Initial Licence). This raises the question, how will the NWMO communicate with the CNSC and other interested parties on this issue? Dialogue and transparency on this topic should be clarified in the IS. Section 14: Biophysical Environment of the IPD provided more information on ongoing work (including geological site characterization), acknowledged that some activities would be carried out to meet the expectations of a licence application, and that some would be for future licensing stages. It is essential that the NWMO engage with CNSC staff on elements related to ongoing site characterization, the purpose, timing, and location of additional boreholes. NWMO documentation (and statements) about site suitability (e.g., page 99 within Section 14: Biophysical Environment) still need to undergo review and assessment by CNSC staff (this includes the approaches to defining and managing uncertainties). While it is clear that additional site characterization activities are underway, it is not clear in Section 9: Activities, Infrastructure, Structures and Physical Works (notably on page 44) of the IPD whether there would there be temporary facilities/infrastructure related to site evaluation/characterization (e.g., borehole drilling, core storage, etc.). This should be clarified in the IS.
8	Multi-Barrier System (Section 9)	Activities at the Underground Demonstration Facility that are planned to start after its construction are important verification activities for the long-term performance of the multi-barrier system. They should be included as major activities in the appropriate sections of the IS. The specific activities to be performed should be proposed to the CNSC and the results should be formally communicated to the CNSC at key milestones throughout the process.
9	Security Processes (Table 18.1)	The NWMO has not listed REGDOC-2.12.1, *High Security Facilities, Volume I: Nuclear Response Force, Version 2* and REGDOC-2.12.1, *High-Security Facilities, Volume II: Criteria for Nuclear Security Systems and Devices* in the IPD as applicable to the project. These documents contain the requirements and guidance for establishing a nuclear response force, and the systems and devices for the protected area and search and screening. While it is not expected that the details of security processes and equipment would be discussed in the submission due to the confidential nature of the content, CNSC staff request clarification as to how these documents will be considered in the planning of security processes.
10	Approvals and Permits (Section 18)	From the documentation submitted, CNSC staff were unable to identify any information regarding the approval processes with appropriate jurisdictions for civil works and civil structures (e.g., similar to city and/or provincial approval processes for conventional building permits) other than the general statement that necessary permits and approvals would be obtained prior to the applicable physical work being performed at the site, alongside the high level information provided in Section 18: Indigenous, Federal and Provincial Environmental Approvals in the IPD. The NWMO is requested to explain the process to obtain building/construction permits from the appropriate authorities and jurisdictions. The NWMO will further be requested to provide evidence that the permits are being requested and obtained as required.

Comment	Topic/Section	Comment/Advice
11	Safeguards (Table 2 of the licensing appendix)	A reduced number of safeguards requirements from REGDOC-2.13.1 are applicable to a DGR for an initial licence appliance and phase. This should be clearly identified within the IS. There are no safeguards requirements during this "pre-initial licence" phase, but the CNSC encourages engagement between the CNSC, the NWMO, and the International Atomic Energy Agency on potential safeguards measures for the future facility early in the design process.
13	Key Issues Raised in Engagement Activities (Section 3.2)	The NWMO should ensure that built-in linkages are captured regarding Indigenous engagement key issues (e.g., protect water, land, air, wildlife; involve Indigenous people in data collection; habitat disturbance) and environmental protection requirements in the IS, where feasible (e.g., environmental and emissions reporting).
17	Environmental Risk Assessment	Ecosystem Services are mentioned in Section 14 of the IPD and in earlier NWMO reports, but plans on how to use this information to further the assessment of risk to environment and/or humans should be clarified in the IS.
18	Population and Demographics (Section 15.5)	Three different scenarios are intended to be used to represent the possible range of human population growth. The optimistic growth scenario is intended to serve as an upper bound to population growth and would require substantial in-migration to reach this level of population, but is there a risk of a community arising in closer proximity to the project? If surrounding land is Crown owned, there will be more control. The NWMO should include these considerations when assessing potential future development in nearest publicly owned lands in the IS. Given that the proposed project can also be expected to provide economic benefits to local communities, the IS could consider including community assessments at increasing distance from project to evaluate this impact over time and/or comparison of community benefits with those of mining industry to assist with extrapolation.
19	Valued Components (Table 19.1)	In Table 19.1 of the IPD, the measurement indicators and assessment endpoints for Indigenous peoples are "to be defined by each potentially impacted Indigenous Nations and communities". Recommend adding clarification in the IS for the approach if no concerns or alternatives are raised during engagement and consultation.
20	Pathways of Effects (Table 19.4)	Table 19.4 in the IPD should list "Pathway of Change" in first column since current wording in first column "Project Components/Activities" appears repetitive, but reason why isn't obvious until you scan to third column in table (i.e., considered for a different pathway). Purpose of table is also as titled "Pathways of Change Screening....". This should be corrected within the IS.
21	Pathways of Effects (Section 19.2.3.10.1)	In the IPD's terrestrial pathways of change screening, the carnivores and moose are the only large terrestrial mammals considered, but other large terrestrial omnivores and herbivores such as deer (herbivore) and bear (omnivore) would also be present. White-tailed deer are mentioned in Section 14.10 in the IPD, but then not discussed further with no rationale provided for exclusion from assessment. There is no mention of bear in Section 14.10 of the IPD. Please clarify rationale for inclusion and/or exclusion of large terrestrial mammals considered in the IS.

Comment	Topic/Section	Comment/Advice
22	Emissions (Table 23.1)	Table 23.1 in the IPD contains list of potential waste and emissions. The "Radioactive Waste" category contains "Spills from equipment and machinery" during all project phases, but no spills are captured under "Non-Radioactive Waste". There should also be non-radioactive spills considered during site preparation or construction. This should be corrected/clarified within the IS.
23	Canadian Codes and Standards (Section 24)	In Section 24 of the IPD, there is mention of the version for *CSA N288.8-17*, but not for *CSA N288.4, N288.5 or N288.7*. In the IS, ensure there is consistency in how CSA standards are reported throughout the document.
24	Interactions with the CNSC	In the IPD, there is no mention of dialogue with the CNSC. Dialogue with the CNSC from the inception of the proposed project enabled pre-licensing activities to be conducted that include monitoring NWMO's siting/ research activities to verify that they meet CNSC's expectations and best international practices, conducting independent research focusing on safety, developing regulatory documents to define requirements, and clarifying regulatory expectations. This information should be added in the IS where appropriate.
25	Transportation (Section 9.3)	The IPD states that the proposed project does not include transportation of used fuel from reactor sites to the project beyond primary and secondary access roads at the proposed project site as this is regulated separately under CNSC certification and uses existing transportation infrastructure. Although CNSC staff agrees that the transport of nuclear substances is regulated by the CNSC and Transport Canada, this needs further justification considering that the number of shipments each year of nuclear fuel that will take place for this project, if approved, will be significantly higher than the current transportation of used fuel taking place in Canada. NWMO's web site references a generic study conducted on dose rate assessment to public and workers for different modes of transport of used fuel. However, no reference is made to these reports in this document. The NWMO is requested to provide additional justification for how the current regulations ensure that there will be insignificant impact on the environment from the proposed project and confirm if the results of these previous studies remain valid for the proposed project.
26	Transportation (Table 4.1 and Section 1.7)	The IPD references lessons learned from international used fuel management organizations in Sweden and Finland who have transport regulations in place which are similar to Canada. The NWMO should provide additional details on the international benchmarking conducted for how transport was considered in those projects and how it compares to the proposed project.
27	Waste (Table 23.1)	Table 23.1 in the IPD provides a broad overview of the wastes (conventional, hazardous, radioactive) that will be generated at the different licencing stages. The level of detail is sufficient for the IPD; however, as per the General Nuclear Safety and Control Regulations, the name, quantity, form, origin, and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed, or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste, will be required for the activities that will be encompassed at the first licencing stage. This should be considered in the IS.
28	Waste Management (Section 9.6.2)	Although alluded to throughout the IPD, the Waste Management Program was not described. It would be beneficial if there were a short section in the IS describing the broad principles of waste management (minimization, characterization, segregation). The details do not need to be exhaustive but the commitment to implement the steps are important.

Comment	Topic/Section	Comment/Advice
29	Canadian Codes and Standards	Though Section 18.5 in the IPD indicates that some structures will be governed by *CSA N291*, the NWMO is requested to provide an exhaustive list of civil structures for the project, and to specify which civil structures will comply with NBCC requirements and which structures will comply with *CSA N291* requirements in the IS.
30	Effects of the Environment on the Project	CNSC staff were unable to find any information in the IPD on the site's susceptibility to natural phenomena such as seismic events, tornadoes, and flooding. - For seismic design of the overall facility, it is CNSC staff expectation that the return periods selected for the design must reflect the nuclear waste repository context. The return periods typically considered in the NBCC (2 475 years, or a probability of exceedance of 2% in 50 years), or *CSA N289* series (10 000 years, or a probability of exceedance of 0.01% per year), may not be sufficient for the proposed project. To guarantee that load factors used for earthquake loading in codes and standards are appropriate, the return period of earthquakes in codes and standards are several orders of magnitudes higher than the lifespan of the facility. Because of the long-lived nuclear waste and the associated long lifespan of the proposed project the return period considered for the overall design should be established accordingly and thoroughly justified. The NWMO is requested to provide more information on this matter in the IS. - For natural phenomena other than seismic, the NWMO is requested to provide more information on the strategy to address these matters and demonstrate the design of the facility will be adequate from a safety perspective in the IS.
31	Sealing System	In Section 9.6.1 of the IPD, the operations activities and physical works planned for the project are presented. It is mentioned that, once a placement room is filled, it would be sealed from the main tunnel by a special seal made of two parts: one uses bentonite to stop water from getting through and the other uses a concrete barrier to hold everything in place, making sure that everything stays securely sealed. CNSC staff were unable to find any information on the design of the concrete part of the sealing system described in the IPD. The NWMO is requested to provide more information on this matter in the IS and to provide CNSC staff with the documents/reports/specifications/drawings in which the details are/will be elaborated, once available. The NWMO is also requested to explain how the concrete will be considered/modelled into NWMO analyses and how its impact on the environment (e.g. groundwater and surface water, fauna and flora, release of contaminants, etc.) will holistically be evaluated for the entire life of the facility.
32	Cementitious-Based Materials	In the IPD, CNSC staff were unable to identify any information related to the details of the use of the several different types of cementitious-based materials (grout, concrete, etc.), as well as of the justification of their very long-term behavior in a nuclear waste management context. The NWMO is requested to provide more information on this matter in the IS and to provide the documents/reports/specifications/drawings in which the details are/will be elaborated, once available
33	Quality Management	In the IPD, CNSC staff were unable to identify specific information related to the Quality Management System (Quality Control, or QC, and Quality Assurance, or QA) for design, engineering and construction activities related to civil works and civil structures. In particular, it would be expected that QC and QA activities would be performed separately and in a fully independent fashion. The NWMO is requested to explain the process it intends to implement with regards to QA/QC for design, engineering and construction activities related to civil works and civil structures in the IS, and to provide CNSC staff with the documentation in which these are documented, once available.

Comment	Topic/Section	Comment/Advice
34	Climate Change	It is unclear how the effects of climate change will be incorporated into the design of the proposed project, including incorporating its effects on the proposed project's fitness for service from a long-term perspective. The NWMO is requested to provide more information on this matter in the IS.
35	Contingency Plans	In Section 9.1 of the IPD, it is mentioned that "*Once operations are complete, there would be an approximate 100-year phase of extended monitoring, decommissioning and closure under CNSC licence. During this 100-year period, the DGR would be monitored for several decades to confirm that the natural and design features are performing as expected and containing the radioactivity of used fuel bundles"*. It is unclear what contingency plans are being / will be developed should it be found that natural and design features don't perform as expected. The NWMO is requested to provide more information on this matter in the IS.
36	Description of the Project	In general, the IPD only identifies used CANDU fuel to be placed in the DGR. However, *Chapter 12 - Services provided to other owners of nuclear fuel waste* indicates that used fuel from AECL including used fuel from Canadian research reactors in tables 12-1 and 12-2 would also be part of the DGR inventory. Reference to the 2024 Fuel projection report is also made which also mentions other fuel types than CANDU Fuel. The NWMO is requested to provide the specific information on all used fuel to be placed in the DGR in the IS.
37	Nature of Hazard	Appendix 3 describes the hazards associated with used CANDU fuel; however, there is no description of the hazards associated with other types of used fuel to be placed in the DGR. The NWMO is requested to provide detailed information on this matter in the IS.
38	Status of Used Nuclear Fuel in Canada (Appendix 4)	The projected inventory only describes the total inventory of 5.9 million used fuel bundles from the current fleet of reactors to end of life, as outlined in the NWMO's 2024 Nuclear Fuel Waste Projections Report (NWMO, 2024). The NWMO is requested to provide the projected inventory of all used types to be placed in the DGR in the IS.
39	Description of the Project	The terms long term storage and disposal are used interchangeably. The website refers to the project as long term storage and isolation of the Used Fuel, but the IPD mentions long term storage, isolation, management and disposal. REGDOC 3.6 defines long term management as "The long-term management of radioactive nuclear waste by means of storage or disposal" from a regulatory standpoint we will need to be clear on if the project is for the storage or disposal of used fuel. The NWMO is requested to provide more information on this matter in the IS.