

# NORTHWATCH

May 23, 2023

Canadian Nuclear Safety Commission  
280 Slater Street, PO Box 1046, Station B  
Ottawa, ON K1P 5S9

Sent by email to [consultation@cnsccsn.gc.ca](mailto:consultation@cnsccsn.gc.ca)

Ref. REGDOC-1.2.3

Re. **Northwatch Comments on Draft REGDOC-1.2.3, *Licence Application Guide: Licence to Prepare Site for a Deep Geological Repository***

On February 27<sup>th</sup>, the Canadian Nuclear Safety Commission announced a 90-day consultation period on Draft REGDOC-1.2.3, *Licence Application Guide: Licence to Prepare Site for a Deep Geological Repository*, stating that the “purpose of the document is to clarify the CNSC’s licensing requirements for preparing a site for a possible future deep geological repository (DGR) facility”. At the same time, CNSC announced that they would host a webinar on March 22<sup>nd</sup> to provide background information and to respond to participants’ questions, and that there would be an opportunity to review and provide feedback on the comments received during the consultation, from May 24 to June 8, 2023.

Northwatch participated in the March 22<sup>nd</sup> webinar and has reviewed the draft regulatory document for the purpose of preparing comments.

Northwatch is a public interest organization concerned with environmental protection and social development in northeastern Ontario. Founded in 1988 to provide a representative regional voice in environmental decision-making and to address regional concerns with respect to energy, waste, mining and forestry related activities and initiatives, we have a long term and consistent interest in the nuclear chain, and its serial effects and potential effects with respect to northeastern Ontario, including issues related to uranium mining, refining, nuclear power generation, and various nuclear waste management initiatives and proposals as they may relate or have the potential to affect the lands, waters and/or people of northern Ontario.

Northwatch’s interest in the development and application of *REGDOC-1.2.3, Licence Application Guide: Licence to Prepare Site for a Deep Geological Repository* is related to a long history of northern Ontario being identified as a candidate region for the siting of a deep geological repository for all of Canada’s high level radioactive fuel waste, and current investigations by the Nuclear Waste Management Organization of a location in northern Ontario as a potential sites for a deep geological repository, as described conceptually in the NWMO’s 2005 “Adaptive Phased Management Plan” and subsequent documents issued by the NWMO, including reference cases published in 2013, 2014, 2017 and 2018, and the more recent “Concept Design Report” and other technical reports made available by the NWMO.



We have reviewed the draft *REGDOC-1.2.3, Licence Application Guide: Licence to Prepare Site for a Deep Geological Repository* and several of the referenced documents and other related documents. Our review is also based on our own extensive organizational experience with AECL's siting efforts in the 1970s and early 1980s, AECL's concept program in the 1980s and 1990s, the Nuclear Waste Management Organization's programs and activities since 2002, and OPG's efforts related to their proposal (now withdrawn) for a DGR beneath the Bruce NGS and their related campaign from 2004 to 2021.

## **General Comments**

We have the following general observations with respect to the draft REGDOC:

- The document is frequently overly general or ambiguous
- The document lacks sufficient footnotes or references; many statements would benefit from a supporting reference or explanation.
- The document conveys a sense, overall, that if a proponent brings forward a license application related to a deep geological repository, such as an application for a licence to prepare the site, it will be approved; it lacks the impartiality or neutrality that would convey that such projects would only be licensed if the proponent had provided a sound and scientific basis for the contents of its application

We make the following comments with respect to the CNSC process for the development of regulatory documents, including REGDOC 1.2.3.:

- It would benefit the CNSC's public consultation efforts if the agency would publish a calendar forecasting their timeline for future development, review and /or revision of regulatory documents
- REGDOC 1.2.3. addresses topics of which are of significant public concern and the concepts, program and regulatory documents related to the deep geological repository program and the long term management of radioactive waste are complex and there is a high level of intersection between a large number of regulatory documents, including but not limited to REGDOC 1.2.3 and REGDOC-1.2.1, Guidance on Deep Geological Repository Site Characterization, REGDOC-1.2.3, Licence Application Guide: Licence to Prepare Site for a Deep Geological Repository, REGDOC-2.11, Framework for Radioactive Waste Management and Decommissioning in Canada, Version 2, REGDOC-2.11.1, Waste Management, Volume I: Management of Radioactive Waste, and REGDOC-2.11.1, Waste Management, Volume III: Safety Case for the Disposal of Radioactive Waste, Version 2, all of relate directly and specifically to the concept of deep geological repositories as may be proposed in the future and the subject of an application to prepare a site; REGDOC 1.2.3 made too limited an effort to address and describe intersections among these regulatory documents, and even more so failed to adequately describe the role of the CSA standards which – as described elsewhere in these comments – are generally not available to the public, including to Northwatch

In the later stages of the current comment period on REGDOC 1.2.3 the CNSC announced the “Indigenous and Stakeholder Capacity Fund (ISCF)” for which funding opportunities will be announced on a case-by-case basis for Stream 2: Regulatory Policy Dialogue. However, in response to an inquiry from Northwatch CNSC determined that since the consultation period for

REGDOC-1.2.3 began before the ISCF was officially launched, REGDOC-1.2.3 was not eligible for funding; CNSC staff did offer to consider offering funding under Stream 3: Collaboration and Engagement Support as an interim solution to support a meeting with CNSC staff to discuss REGDOC-1.2.3 but did not indicate that a funding request to support technical assistance would be considered and did indicate that no extension of time to allow retention of expert or technical assistance would be considered.

The explanation CNSC provided for not extending the consultation period was that it would “*put the publication timeline of REGDOC-1.2.3 at risk. The Nuclear Waste Management Organization is expected to submit a licence application as early as in 2024. For the sake of regulatory clarity, it is important that the CNSC publish a consolidation of the technical requirements necessary for an application. REGDOC-1.2.3 will provide that consolidation and does not contain any technical requirements that have not been separately developed, publicly consulted upon, and approved by the Commission.*” The CNSC response further indicated that “the risk would be difficult to justify for a single interested party”.

This response raises a number of concerns and questions, included but not limited to the following:

- Northwatch considers the CNSC expectation that the NWMO will be submitting an application to prepare a site for a deep geological repository both unrealistic and revealing, for reasons including:
  - The NWMO’s siting program has repeatedly delayed and extended in its time estimates, including most recently (August 2022) delaying its timeline for selecting a site from 2023 to (now late) 2024
  - The nuclear industry’s DGR program has been underway since 1977 and the NWMO’s site selection process since 2009 (when Ignace first entered the later named “Learn More program” six months before the siting process was launched in May 2010); the notion that an additional 60 or 90 days to complete this regulatory document would be an impediment to this program does not reflect sound thinking
  - The NWMO’s proxy community of Ignace is currently without a mayor or deputy mayor and is in a period of upheaval which is unlikely to resolve itself in the near future, and the location of the NWMO’s second candidate site is in South Bruce where the municipality has committed to holding a referendum but had not yet announced a date; these factors singly and in combination strongly suggest that the NWMO’s required “compelling demonstration of willingness” on the part of a “host community” is at best (from the NWMO’s perspective) some considerable time in the future, and so unless the NWMO intends to proceed to site selection and an application to prepare the site without having first secured at least a semblance of an “informed and willing host community” there is no real world time pressure on the CNSC to complete this regulatory document
- This rationale is a clear indication that the CNSC’s primary motivation is to service the NWMO rather than to serve the public interest
- The presumption that it is a “single party” that has an interest in this regulatory document and would be the sole application for participant funding to support a technical, expert and / or legal review to support comments on this draft regulatory document is offensive to all those who engage in good faith in commenting on CNSC regulatory documents and

disrespectful to the broader public that relies on public interest groups such as Northwatch to undertake technical and expert reviews to support advocating in the public interest

### **Comments on the March 22 Webinar Materials**

Northwatch accepts that the March 22 webinar may have been a good-faith effort to support public participation in the review and development of REGDOC 1.2.3, but the webinar and webinar materials were problematic in several respects, including but not limited to the following:

- The materials persistently represent the CNSC bias which favours deep geological repositories as the CNSC's preferred option for the long term containment of radioactive wastes; for example, on Slide 13 the terminology is promotional, describing a Deep Geological Repository (DGR) as a facility that will isolate, contain and safely manage used nuclear fuel over time; that a DGR will achieve those objectives is a thesis put forward by the nuclear industry which must be neutrally and objectively evaluated by regulators, based on science and considering public input but the CNSC materials – including as presented in this workshop – leaps over the objective and science-based evaluation and presents as if conclusive the nuclear industry's claims
- The webinar terminology included the term “disposal”, which assumes dispositioning of the wastes with no intent or requirement for retrieval, but does not provide a supporting regulatory reference or the federal government's directive that the used fuel will not be available for retrieval after placement in a future (theoretical) deep geological repository
- Slide 13 employs a graphic which depicts a deep geological repository of a very different design than that which has been presented in any of the various reference cases by the Canadian nuclear industry over the last several decades; for example, the graphic depicts ramp access rather than the shaft access which has been proposed in the reference cases that have been developed by Atomic Energy of Canada Limited and the Nuclear Waste Management Organization; given that this is a regulatory document for application to Canadian proposals and given the concerns that have been repeatedly expressed by members of the public over the past decade with respect to NWMO's selection of shaft access the employ of this graphic depiction is confusing at best and could be perceived as wilfully misleading
- Slide 16 states that the draft REGDOC “Points to other sources where details on specific technical requirements can be found” and noted the “Free access to nuclear related CSA standards at <https://community.csagroup.org>”; in preparing these comments Northwatch attempted several times to access the CSA site over a period of several hours, but was unable to access the site, and while we received confirmation of having an account all passwords (including the saved password) were rejected and no link was transmitted by email in order to reset the password and so access the site; these obstacles to CSA standards are persistent, and are a barrier to public comment and participation; Northwatch reserves the right to provide additional comments if and when we are able to access the related CSA documents

- The bulleted wording on Slide 16 creates a definite impression that the applicant / prospective licensee will be required to provide the safety case in order to obtain a licence to prepare a site for a DGR facility while the draft REGDOC is ambiguous in this regard
- The graphic on Slide 18 indicates that the Impact Assessment process will precede the first licensing stage, i.e. for the License to Prepare the Site; this is inconsistent with other presentations by the CNSC and the NWMO
- The final CNSC licensing stage is “licence to abandon”, but the graphic on Slide 18 does not identify this licensing stage and uses substitute language of “post closure” and “release from regulatory control”; this misrepresents the licensing process and stages

## Section-by-Section Comments on Draft REGDOC 1.2.3

Our comments are provided on a section-by-section basis, addressing sections of the draft REGDOC in the order they occur in the draft document.

### Preface

- The preface sets out the reliance of this draft Regulatory Document on other documents which are not readily available to the commenting public, such as CSA N-292.7, Deep geological disposal of radioactive waste and irradiated fuel; as set out in a previous section, while Northwatch does have an account which is expected to provide Northwatch with access to relevant CSA document, the system is dysfunctional and Northwatch was unable to access and consider CSA N-292-7 as part of our review

### Section 1. Introduction

- This section expresses unsupported assumptions, such as that the geological formation in which a deep geological repository (DGR) would be constructed would be stable and that this presumed stability would not be reduced in the process of constructing the DGR
- Similarly, this statement expresses the objective of a DGR isolating and containing the radioactive wastes as if a certainty rather than a requirement for which a proposed DGR must be carefully assessed to determine the likelihood of that objective being achieved
- In the statement that a “DGR is a facility where radioactive waste is placed in a deep, stable, geological formation (usually several hundred metres or more below the surface)” the REGDOC creates the very false impression that there is a “usual” that can be referenced in describing construction or operating experience with a DGR for used fuel waste, which is in direct conflict with the reality that there is no licence or operating DGR for nuclear fuel waste anywhere in the world; false narratives such as these are very problematic, and undermine any potential for public confidence in the regulatory system
- This section directly states that the application for a licence to prepare site and its referenced documents will “provide the safety case”, albeit with the qualifying language that this is “for the site preparation phase of the project”; this is a critical point: to provide the safety case, the project must have moved from “reference case” to a detailed proposal, and there is no



indication that the NWMO will have a developed proposal by 2024 and certainly Ontario Power Generation did not have a complete proposal even at the point of being in the public hearing on their license applications for site preparation and construction; we strongly agree that a licensee must be required to provide a detailed safety case for their proposed project and that the supporting technical work must be available for examination by intervenors, but we are unconvinced that this will be the case

- This section directly states that it will be required that the application for a licence to prepare site ‘demonstrates that any technologies under consideration for the site will be able to withstand the conditions imposed on the facility by the site and its surroundings’ and ‘demonstrates that the site is suitable for a facility’s full lifecycle’; similar to the provision of the safety case, this is a critical point, and we strongly agree that these demonstrations must be delivered as part of the application for the License to prepare the site, but to do so the project must have moved from “reference case” to a detailed proposal, and there is no indication that the NWMO will have a developed proposal by 2024 or 2025 (the variously estimated dates for application submission); we strongly agree that a licensee must be required to provide this detailed information but note that meeting the requirement is unlikely to be achieved within the CNSC’s estimated time frames
- As noted above, this REGDOC sets out that the safety case must be provided as part of the application, but then indicates that “This document is not intended to.... describe the requirements and guidance needed for a safety case for disposal facilities” without setting out clearly and specifically where those requirements and guidance are situated and how they intersect with the requirements and guidance of this regulatory document; a later section identifies REGDOC-2.11.1, *Waste Management, Volume III: Safety Case for Disposal of Radioactive Waste* as a relevant document, but neither draft REGDOC 1.2.3. or REGDOC 2.11.1 describe how these two regulatory documents intersect
- CSA N292.7, *Deep geological disposal of radioactive waste and irradiated fuel* is described in this section as a document “which provides specific criteria associated with many of the topics covered” but as noted above this document was not available to Northwatch for this review, and will have been equally or even more unavailable to others

## **Section 2. Overview of Site Preparation**

- this section describes “development of the post-closure safety case” as an activity which “will continue throughout the lifecycle of the DGR facility” which is potentially in conflict with the unqualified statement in Section 1 that the application provides “provides the safety case for the site preparation phase of the project”, meaning that the safety case for the project will be provided at the site preparation phase of the project
- the unnumbered figure with the title “Title: Pre-closure and post-closure licensing stages and lifecycle activities for a deep geological repository” is confusing and unclear; for example, earlier sections refer to the “safety case” and this figure introduces the term “post closure safety case” and omits any identification of the “safety case” in the table depicting project/application development
- the section on site evaluation describes how “continued evaluation (of site characteristics) ensures that the facility’s design basis and safety case will remain current with potential

changing environmental conditions or modifications to the facility itself, including continued optimization of the facility design up until final closure” which suggests that facility design will be fluid and that there will not be an actual and detailed project design at this first licensing stage (which contradicts earlier sections); the section does not set out any requirements or methodology for site evaluation or any standards or measures by which the licensee’s materials with respect to site evaluation will be assessed

- the statement that “Site evaluation activities carried out during the pre-closure period of a DGR facility include site characterization and the development and iterative updates of a safety case for both the pre- and post-closure safety assessment” is utterly ambiguous; to provide any meaningful guidance, the requirements for site evaluation activities and documentation of the site evaluation must be clearly set out, including what aspects or values are being evaluated and what the evaluation criteria is and what the consequence for license application approval would be given one evaluation outcome versus a different evaluation outcome
- the subsection in “site characterization” outlines that the applicant must describe the planned activities and provide data about the site characteristics in their application for but provides no direction or setting out of requirements for a) how site characterization activities are to be carried out, b) what site characterization activities must be carried out, c) how site characterization activities will be documented, d) how the outcome / findings of site characterization activities will be documented, and e) what requirements will be in place for public disclosure, f) how the CNSC will evaluate site characterization activities, documentation and outcomes, and g) how the CNSC will engage the public and Indigenous peoples in their evaluation of site characterization activities, documentation and outcomes
- this section states that “Site characterization data demonstrates how radioactive waste will be contained and isolated from the environment over a geologically long timeframe and is supported by the post-closure safety ” which again identifies a set of biases, assumptions or pre-suppositions on the part of the CNSC or at least on the part of the draft REGDOC authors; in reality, quality site characterization data would be expected to support an evaluation of how radioactive waste might be contained and isolated from the environment over a geologically long timeframe and to support an evaluation of the potential for post-closure safety; repeatedly, the REGDOC makes statements and assertions about the generic long term safety of a deep geological repository, in the absence of any repository design, site information, or scientific or technical evaluations
- the section states that CNSC’s requirements for site characterization for radioactive waste disposal facilities, which include DGRs, are found in REGDOC-2.11.1, Waste Management, Volume I: Management of Radioactive Waste and REGDOC-2.11.1, Waste Management, Volume III: Safety Case for the Disposal of Radioactive Waste; Northwatch wishes to refer CNSC staff reviewing REGDOC 1.2.3. to Northwatch’s comments on REGDOC-2.11.1, Volumes I and III for an outline of concerns with respect to those documents and identified deficiencies
- the section states that the applicant must provide a post-closure safety case in support of a licence to prepare site application for a DGR facility and references REGDOC-2.11.1, Waste Management, Volume III for a description of requirements and guidance for developing a post-closure safety case are provided; as per the preceding comment, Northwatch wishes to

refer CNSC staff reviewing REGDOC 1.2.3. to Northwatch's comments on REGDOC-2.11.1, Volumes III for an outline of concerns with respect to that document and identified deficiencies

### **Section 3. Regulatory Requirements and Guidance**

- this section sets out that for each Safety Control Area (SCA) the applicant should also provide information to address the associated guidance, relative to the design of the proposed DGR facility; as set out in the preface to the document, the word "Should" is used to express guidance or that which is advised"; Northwatch strongly holds the view that each safety control area must be addressed, and that the term "DGR facility" must throughout this regulatory document be taken as referring to the DGR itself and all associated surface facilities, including but not limited to the used fuel packaging plant, all waste management and waste treatment facilities and functions including for liquid wastes, for exhaust air, the ventilation system, and all water management systems such as holding and retention ponds and other water retaining structures
- the subsection on management systems identifies that the applicant's management system must include procedures to control the effectiveness of assessments and engineering activities performed in the different stages of the site evaluation process, including records of all work carried out during site evaluation and characterization, which must include a description of the measures for preservation of the records but fails to identify how these records will be added to the public record and made available to the public for review, scrutiny and considering during various licencing, review, and permitting processes and for the more general purpose of public oversight and community information
- the subsection on management systems identifies that the applicant's management system must include documentation on the results of studies, including models and simulations, and investigations in sufficient detail to permit independent review but fails to identify how these records will be added to the public record and made available to the public for review, scrutiny and considering during various licencing, review, and permitting processes and for the more general purpose of public oversight and community information
- the subsection on management systems identifies that the applicant's management system should account for numerous items including data control, verification and validation, data format, traceability of data, configuration control, including data, for environmental, meteorological, geological, geophysical, survey, hydrological, biological factors, measuring and test equipment, use and control of computer modelling, field and laboratory work control, calculations and analyses, measures to ensure that the results of the site characterization are accurate, complete, reproducible, traceable and verifiable, reporting the results of all site evaluation work, laboratory tests and geotechnical analyses and evaluations, and changes to prescribed information; as set out in the preface to the document, the word "Should" is used to express guidance or that which is advised"; Northwatch strongly holds the view that the applicant's management system must account for these items
- the subsection on management systems identifies that the applicant's management system should account for numerous items, as listed immediately above; in addition to amending this from a "should" to a "must", this subsection should include clear requirements that these data



items and data areas and associated records and documentation records will be added to the public record and made available to the public for review, scrutiny and considering during various licencing, review, and permitting processes and for the more general purpose of public oversight and community information

- again, the persistent use of “should” instead of “must” throughout this section is a matter of concern; case in point: the applicant must involve workers with extensive experience, knowledge and appropriate technical and engineering experience who can analyse and synthesize data from multiple disciplines to provide correct information about the site’s current state and reliable and science-based estimates of the site’s future state when establishing management system parameters related to site evaluation; similarly, evaluations must be reviewed and verified by individuals or groups that are independent of those who did the work and the criteria for any review or verification activity should be documented (note that this should be changed to must rather than should); as per previous comments, this documentation must be added to the public record and made available to the public for review, scrutiny and considering during various licencing, review, and permitting processes and for the more general purpose of public oversight and community information
- the subsection on operating performance should stipulate that the applicant will fully disclose their characterization of the risks to health, safety and the environment that may be encountered by workers and the public and associated mitigation measures and strategies
- the subsection on safety analysis should stipulate that the applicant will fully disclose the hazard analysis, analysis of the potential and consequence of design-basis events and beyond-design-basis events including those with the potential for a catastrophic increase in the severity of consequences, and the post-closure safety assessment and all supporting information, documentation and analysis; as per previous comments, this documentation must be added to the public record and made available to the public for review, scrutiny and considering during various licencing, review, and permitting processes and for the more general purpose of public oversight and community information
- the subsection on Physical design should more clearly state that the references to what the application must include apply to the deep geological repository and to the supporting / surface facilities, including all associated surface facilities, including but not limited to the used fuel packaging plant, all waste management and waste treatment facilities and functions including for liquid wastes, for exhaust air, the ventilation system, and all water management systems such as holding and retention ponds and other water retaining structures
- the subsection on Physical design sets out that “The applicant must also provide information on the proposed exclusion zone, including size and boundary, and on the proposed emergency planning regions”; Northwatch is strongly of the view that rather than the applicant selecting the size and boundary of the exclusion zone, direction for the establishment of the exclusion zone should be set out in regulation, based on best international practice, sound science and the precautionary principle
- the subsection on Environmental protection must be amended to include requirements that the applicant must prepare and include a full inventory of natural / ecological / environmental and social values (including recreational, land uses) in the study area and host watersheds and that these inventories be prepared prior to surface or subsurface disturbance at the site, and that a full plan for the remediation of all site disturbance be

prepared with financial assurances be posted to ensure that the remediation activities are fully carried out and the monitored for effectiveness

- the subsection on Indigenous and public engagement must stipulate that the applicant's public information and disclosure program must include stipulation that each of the areas of documentation identified in previous comments as being documentation to be added to the public record and made available to the public for review, scrutiny and considering during various licencing, review, and permitting processes and for the more general purpose of public oversight and community information are added as per Northwatch's comments

## **Conclusion and Request**

REGDOC 1.2.3 deals with matters that are of great public concern.

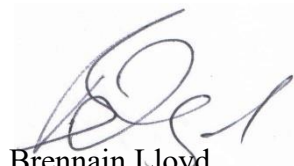
It is of utmost importance not only that there be clear rules and requirements for licence applications related to each of the licensing stages for nuclear facilities, including currently conceptual facilities such as deep geological repositories for nuclear fuel waste, but that there be a public perception that there are clear, sound and reliable rules in place and that there be public confidence in the regulatory regime.

The current regulatory regime in general and the current draft of REGDOC 1.2.3 do not and cannot achieve that without significant revisions both of the process and the product.

To that end, we request the following:

- That Northwatch and other commenters on draft REGDOC 1.2.3 be provided with a full dispositioning by CNSC of their comments and of the comments by other parties
- That the opportunity to provide feedback on the comments received during the consultation, currently scheduled to take place from May 24 to June 8, 2023, be rescheduled to not commence until at least 30 days after the CNSC has provided a full dispositioning by comments submitted by all parties
- That the CNSC convene workshops or roundtable discussions of the comments received after they have provided a full dispositioning of the comments by all parties
- That funding under the Indigenous and Stakeholder Capacity Fund (ISCF) be made available to support technical, expert and legal reviews of REGDOC 1.2.3 and related documents and that the timeline for this review period be extended accordingly
- That following completion of the steps set out immediately above a second draft be produced and circulated for public comment prior to finalizing of the document for presentation to the Commission

Thank you for your consideration.



Brennain Lloyd  
Northwatch Project Coordinator