

NORTHWATCH

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Canadian Nuclear Safety Commission
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NORTHWATCH FEEDBACK ON COMMENTS TO THE CNSC ON DRAFT REGDOC-2.11.1, WASTE MANAGEMENT, VOLUME I: MANAGEMENT OF RADIOACTIVE WASTE

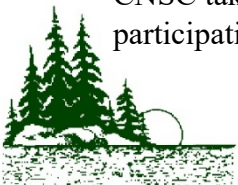
On March 29, 2019, the Canadian Nuclear Safety Commission issued a notice that Draft REGDOC-2.11.1, Waste Management, Volume I: Management of Radioactive Waste was available and open for “consultation: until June 30, 2019. Northwatch provided comments within that comment period.

We have reviewed the comments provided by other stakeholders, and find nothing in those submissions that caused us to alter our assessment of the REGDOC-2.11.1 Volume I or to amend our comments as submitted on June 30th.

Moving forward, we request that the Canadian Nuclear Safety Commission undertake the following as next steps in the development of the suite of documents that comprise REGDOC-2.11.1, Waste Management:

- Complete the first comment period on REGDOC-2.11.1, Waste Management, Volume III: Safety Case for Long-Term Radioactive Waste Management, Version 2
- Complete a dispositioning of comments received on each of the draft REGDOCs in REGDOC-2.11.1 and make those public
- Prepare a second draft on each of the draft REGDOCs in REGDOC-2.11.1 and make those public
- Convene a workshop with balanced participation on REGDOC-2.11.1, Waste Management (Framework and Volumes I to III)
- Invite feedback on second draft of the Framework and each of the REGDOCs in REGDOC-2.11.1, Waste Management second draft REGDOCs
- Provide participant funding to support public participation with technical support
- Complete a dispositioning of comments received on the second draft of each of the framework and the draft REGDOCs in REGDOC-2.11.1 and make those public
- Consider next steps (final draft, final version, additional consultation)

This is an extremely important suite of regulatory documents, and their development merits the CNSC taking a thoughtful and measured approach which includes public and Indigenous participation and is undertaken in an iterative and responsive fashion.



As noted above, we have reviewed the submissions on Draft REGDOC 2.11.1 Volume I. For the most part, our feedback reflects on the joint submission by the nuclear licensees.

Our feedback includes the following:

Section	Northwatch Feedback	Recommendation
General	<p>Northwatch agrees with the industry comment that the draft REGDOC lacks clarity, is imprecise in its language, and this could result in misunderstandings or misinterpretation. However, we strongly disagree with the industry comment that “Clear, accessible language equates to improved compliance and public understanding of the scientific rigor that forms industry’s waste management programs.” Clear language might contribute to compliance or increased public understanding, but it does not “equate” with either compliance or public understanding; in addition, improved public understanding cannot be assumed to conclude that there it is scientific rigour that forms the industry’s waste management plan.</p>	<p>The development of this suite of REGDOCs must be done in an iterative and methodical fashion. A next draft of Volume I should be released for a second round of comment, either preceded or accompanied by a dispositioning by CNSC staff of comments received. The next draft should show marked improvement in structure and terminology to address the deficits of the first draft. Subsequent states of the review should be integrated with further review of the Framework and Volumes I, II and III.</p>
General	<p>The industry’s commentary lacks clarity and consistency of language, and uses not only terminology which is unclear, but acronyms which are never explained. For example, the acronym for Systems, Structures and Components (SCCs) is used repeatedly, but only as the acronym. This section of their commentary is heavily laden with the industry’s internal assumptions, which they fail to set out and certainly fail to justify. For example, they appear to assume that “disposal facilities” are deep geological repositories, but do not state that clearly; they leave the reader to accept their assumption implicitly. Some of the industry comments are unintelligible, such as “for some deep geologic repositories (DGR), SSCs will be “closed” during the operational phase (e.g., used fuel containers and placement panels) and not accessible prior to closure of the DGR and during the postclosure phase” . The meaning is entirely lost, perhaps because it is so assumption laden or perhaps because they provide no explanation of the SCCs they are referring to, or perhaps it was a group write and everyone got a few words in. Their next statement, that “applicability of requirements for these timeframes [pre and post closure] need to clear and should not</p>	<p>The REGDOC should avoid the current lack of clarity displayed in both the draft document and the industry commentary. In particular, the REGDOC should be clear about the management system(s) the requirement or guidance applies to, the time frame for application and compliance, and the rationale for those selections. The REGDOC must absolutely avoid taking up the industry’s proposal that requirements be such that additional margins of safety are not built into the design for systems or facilities the industry (or regulator) estimates to be “low-risk”.</p>

	inadvertently create other safety issues” is equally opaque.	
1.1	The industry comments are internally inconsistent, both decrying the lack of clarity over storage vs disposal and arguing in favour or perpetuating that lack of clarity, urging that the REGDOC should “also recognize there are varying opinions and conventions on what constitutes storage versus disposal.”	The REGDOC should clearly set out the means, methods and criteria by which radioactive wastes are assigned to the appropriate classification. The classification should be based on rigorous characterization of the various waste types, packages and units. The emphasis should be on management that achieves isolation and containment (and associated shielding and barriers required) over the necessary time frame, rather than on settling the dispute of disposal versus storage. As Asse, Germany demonstrated, “disposal” becomes “storage” when it fails.
1.2	It’s not clear from the industry comments whether they think it would be a good thing or a bad thing to “drive the solutions to address waste management”. However, we do agree that it would not be appropriate for the licensees to be setting the “end goal” for waste management , whether that be for decommissioning or for waste isolation. We strongly disagree that it should be “activities” that are licensed and not “facilities”. In the case of waste management, it is both; the facility design is intrinsically linked to performance, but so are the “activities” of the waste management program, including aspects such as quality control, monitoring, and human performance.	The REGDOC must include clear definitions and terminology, and the method by which performance standards for each waste management system (and system component) will be established and for which time frame, and the means by which those performance standards and their achievement by the waste management system is to be evaluated / verified.
1.3	We agree that the list of relevant legislation is incomplete.	Add the <i>Packaging and Transport of Nuclear Substances Regulations, 2015</i>
2.	The industry is asserting that the REGDOC should differentiate between a waste generator and a waste owner, while at the same time misrepresenting the Radioactive Waste Policy Framework as saying that “ This includes waste generated by another licensee and transferred under a commercial agreement to a waste owner to process, store and dispose ... ”. The Framework clearly does not say that. In contrast, it in no way references any transfers of ownership of radioactive waste from one licensee to another, for commercial or other purposes. Rather, in the very brief three-bullet	The REGDOC must be consistent with the 1996 Radioactive Waste Policy Framework, which clearly sets out that “ <i>The waste producers and owners are responsible, in accordance with the principle of “polluter pays”, for the funding, organization, management and operation of disposal and other facilities required for their wastes</i> ” and

	<p>“Framework” makes two references to “the waste producers and owners” as if a single entity, stating “The waste producers and owners are responsible, in accordance with the principle of “polluter pays”, for the funding, organization, management and operation of disposal and other facilities required for their wastes.”</p>	<p>clearly does not entertain the notion of commercial transactions which would sever the relationship between the waste producers and owners and the wastes that they have generated.</p>
2.1	<p>Industry is proposing that the CSA standard be added to the list of complementary documents. While we would not argue against it being referenced, the industry-set standard is not a substitute for regulation , or even for Regulatory Documents, and the relationship must be clearly stated.</p>	<p>Address industry’s confusion about the relationship between the CSA standards and the regulatory documents by moving requirements into actual regulations under the Nuclear Safety Control Act. In addition, clearly establish that legislation, regulation, and regulatory documents are paramount to industry association documents, including CSA standards.</p>
3.	<p>The industry appears to suggesting that REGDOC-3.6 overrides the Nuclear Safety Control Act; this is in error. The industry is also pursuing their theme of nuclear waste being a commodity that is “handed off” among corporate entities as commercial transactions. This is inconsistent with the Radioactive Waste Policy Framework, and while we appreciate that the industry group may be becoming increasingly dominated by non-Canadian corporations and nuclear executives whose professional experience has largely been outside of Canada, they would do well to accept that the Canadian systems are different than those in the U.S., where we understand that the generation and management of radioactive wastes is largely a private sector for-profit enterprise.</p> <p>Perhaps it is just poor communication, but the industry commentary really does make some exceptional statements; for example: “As currently written, the background section potentially limits the ability for the waste to decay to safe levels ...”</p>	<p>The REGDOC and any future regulations should be consistent with the Canadian policy of waste producers and owners being responsible for the wastes they have generated. The CNSC should not engage with industry in developing an American style system of radioactive waste wheeling and dealing (as Northwatch and others have expressed in the past, the tracking of waste transfers needs to become more rigorous and more transparent).</p>
4.	<p>We find the industry arguments against inclusion of the requirement to “avoid imposing undue burden on future generations” unconvincing and even disingenuous. On the one hand they are arguing against a statement they characterize as “policy” and on the other they are arguing that it not be included because it is not included in the three bullets that constituted the Radioactive Waste Policy Framework. Meanwhile, this is a phrase that is pervasive throughout international discussions of radioactive waste management, and appears in the</p>	<p>Rather than imposing even a “due” burden on future generations, the regulatory regime – delivered through regulation or a REGDOC – require the highest standard of care and maximize isolation of radioactive wastes from the environment. For example, it must include clear method by which performance</p>

	documents produced by the nuclear industry in Canada. Our own discomfort with the phrase is the permissiveness of avoiding “undue” burdens, as if to say that a certain undefined level of burden <u>is</u> the rightful due of future generations.	standards for each waste management system (and system component) will be established and for which time frame, and the means by which those performance standards and their achievement by the waste management system is to be evaluated / verified. The performance standard must be one of full isolation of radioactive wastes from the environment, with the system evolution designed to allow improvements over time and replacements over time. This will require retrievability of the wastes, and ability to conduct detailed monitoring to verify performance and detect failures or degradation in the system.
4.	The industry comments present the notion that the purpose is “to Demonstrate to the public that waste is being safely managed in a manner commensurate with the potential hazard of the waste”. We would argue that the purpose is less “demonstration to the public” than it is the isolation of radioactive wastes from the environment. Further, we are troubled by industry’s repeated assertion that improved performance is not to be pursued in conditions the industry deems to be “low risk”.	The resulting systems and approaches to the management of radioactive wastes must incorporate continuous improvements, seeking to move from “low risk” to “very low risk” and so on’ if the risk is low, bring it lower. A “graded approach” that results in a less-than-optimum management condition is not acceptable.
5	The industry is again arguing that the REGDOC be limited by what is the CSA standard <i>N286-12</i> . This is inappropriate.	In an appendix, set out the relationship between any requirements in this REGDOC and other regulations, REGDOCs and/or other information pieces such as CSA standards.
6.	In their comments, the industry argues against the draft REGDOC statement that “Due to its long-lived radionuclides, ILW generally requires a higher level of containment and isolation than can be provided in near surface repositories”, stating that “The 4th bullet is a potentially misleading or biasing statement. There are current plans to place ILW in aboveground mounds.” This is a significant statement. WHERE are there plans to place ILW in above ground mounds? Where? In Canada? Perhaps in Chalk River, in the so-called “Near Surface Disposal Facility” as	The REGDOC should avoid relying on terms such as “geological repositories” or “near surface facilities” as they are inconsistently applied and do not in and of themselves convey any information about the level of isolation or containment that would be provided, as these are design and site specific.

	<p>proposed by Canadian Nuclear Laboratories to contain only LLW, then amended to include ILW, the amended to be only LLW. Is it now to include intermediate level waste? We would further note that “plans” to include ILW in a surface mound is not in itself a refuting of the statement that “ILW generally requires a higher level of containment and isolation than can be provided in near surface repositories”. In addition, internationally a reference to “near surface” facilities generally are references to near <u>sub</u> surface facilities, not “mounds” which are on-surface.</p> <p>Industry notes that “The current wording does not provide sufficient guidance as to the range of factors that should be considered when determining containment and isolation requirements, which may lead to inappropriate requirements.” The larger issue (larger than inappropriate requirements) is inadequate containment.</p>	
6.2	<p>In response to the industry question “At what stage(s) of the full life cycle waste management process is documented waste characterization applicable?” we would propose that a full characterization be undertaken at the time of generation or shortly thereafter, and prior to each change in management condition, i.e. at discharge to the irradiated fuel bay, from the irradiated fuel bay to dry cask, from dry cask to hardened on-site storage, etc. unless these are very short intervals of time.</p>	<p>We agree with industry that there should be a consistent approach taken to waste characterization, but have a somewhat different remedy than that suggested by industry. The REGDOC requirement should be edited to read “Waste characterization shall include assessing the physical, mechanical, chemical, biological, thermal and/or radiological properties of the waste material.”, removing the “as applicable” qualifier, which – as industry pointed out – could lead to inconsistencies. In addition, in this or a companion document specific methodologies should be set out for determining material and methods for shielding and containment of various wastes.</p>
7.5	<p>Industry’s comment is that “the section on storage needs to be clarified. The requirement to differentiate ‘staging’ versus ‘storing’ should be broadened. As an example, for Routine LLW and ILW, a licensee can hold or stage the waste pending out-of-facility shipment” but their meaning is not clear. The section on storage (7.5) makes no reference to “staging”, so the requirement they are proposed be broadened is unknown. We could surmise</p>	<p>The current wording in the draft REGDOC “The licensee shall store radioactive waste safely, in a manner that provides for the protection of people and the environment, and in accordance with regulatory requirements” is more consistent with the</p>

	that this is part of their overall theme of trade and traffic in radioactive wastes, and that the “staging” is referring to storage prior to off-site transfer, but that would be purely speculation on our part. The only context in which we are familiar with the term “staging” in relation to radioactive waste is in the case of large radiological release as part of the emergency response, but we are not speculating that is the context the industry is wishing to draw attention to in this document.	Radioactive Waste Policy Framework than changed wording proposed by industry to “The licensee shall store, or make arrangements for the storage of, radioactive waste”.
7.6	The industry is proposing an amendment to Section 7.6 to read, “The licensee shall dispose of radioactive waste safely, in a manner that provides for the protection of people and the environment, and in accordance with regulatory requirements at the time of the licence application ”, seemingly attempting to freeze legal requirements in time and avoid having to meet emerging regulatory requirements. This is particularly problematic given past experience of the industry’s applying for licenses years prior to project commencement. This is even more the case when the reference is simply to “license” which could include a license to prepare the site prior to the facility design even being completed or the waste fully characterized (as is the case with OPG’s proposed deep geological repository for low and intermediate level radioactive wastes).	Reject the industry’s proposed amendment.
9.1, 10.1, 10.2, 10.5	While industry characterizing it as a “As a matter of principle” that draft REGDOCs “should only reference other REGDOCs that are currently published and not out for review” we consider it to be a matter of practical importance.	As noted above, the development of this suite of REGDOCs must be done in an iterative and methodical fashion. A next draft of Volume I should be released for a second round of comment, either preceded or accompanied by a dispositioning by CNSC staff of comments received. The next draft should show marked improvement in structure and terminology to address the deficits of the first draft. Subsequent states of the review should be integrated with further review of the Framework and Volumes I, II and III.
10.2	We agree with the industry observation that “As currently written, this section inappropriately suggests that only DGRs are an acceptable method of waste disposal.” We disagree that inserting “near surface” and/or “intermediate depth disposal” would be a remedy.	The REGDOC should focus on containment and isolation of radioactive wastes, and the necessary precursors to that, including waste characterization, design and execution of

	We also agree that “the phrase “long-term waste management” should be used instead of “disposal” where appropriate throughout the document” and would suggest that it would be appropriate in every instance.	containment, monitoring and measuring performance, and response and replacement based on performance assessment. The generic concepts of “geological repositories” or “disposal” do not contribute to assessing or achieving the actual requirements of long term management / isolation of radioactive wastes.
10.3	The industry comments on specific bullets to not appear to co-relate to the bullets in the text of the draft REGDOC.	As was the case in Northwatch’s comments on Section 10 of the Draft REGDOC, our review of the industry submissions on this section will be incorporated into our comments on <u>REGDOC-2.11.1, Waste Management, Volume III: Assessing the Long-term Safety of Radioactive Waste Management</u>

Submitted by Northwatch, 1 August 2019