

RD/GD-370, *Management of Uranium Mine Waste Rock and Mill Tailings / Gestion des stériles des mines d'uranium et des résidus des usines de concentration d'uranium*
 Comments received from public consultation / Commentaires reçus dans le cadre du processus de consultation

Comments received:

- during first round (July 28 to Aug. 31, 2011): 34 comments from four (4) reviewers
- during second round (Sept. 14 to 28, 2011): no comments were received

Commentaires reçus :

- lors de la première période (du 28 juillet au 31 août 2011) : 34 commentaires reçus de quatre (4) examinateurs
- lors de la deuxième période (du 14 au 28 septembre 2011) : aucun commentaire reçu

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Name	Organization	Organization Type	Comment	CNSC Response
1	General	Peggy Hallward	Mining and Processing Division, Environment Canada	Government	The Mining and Processing Division of Environment Canada has reviewed the draft regulatory document RD / GD-370 on the Management of Uranium Mine Waste Rock and Mill Tailings. It is well written and clear. We have just a few comments, which appear in red [changed to <u>underline</u> for clarity in this table] in the CNSC text below:	Thank you. We appreciate the time spent by all of the reviewers.
2	General	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	Cameco and AREVA would like to reiterate that our companies recognize and are sensitive to concern about the use of natural water bodies for tailings and mineralized waste rock deposition and continue to emphasize that this is a matter we take seriously when planning waste management strategies. However, as noted in our May 5, 2010 submission, under certain circumstances, the placement of tailings and mineralized waste rock into natural water bodies frequented by fish may prove to be the best scientifically defensible option for environmental protection.	No change to text. CNSC staff agree with the position that in certain circumstances, management of mine waste <u>under water</u> may be the best option. Even in this case, and consistent with the MMER, natural water bodies frequented by fish should be avoided to the extent practicable. It is the responsibility of the industry, through a thorough and transparent assessment of alternatives as described in Environment Canada document entitled: “Guidelines for the assessment of alternatives for mine waste disposal”, to identify the circumstances under which the placement of tailings and mineralized waste rock into natural water bodies frequented by fish may be the best scientifically defensible option for environmental protection.
3	General	R. Liam Mooney (Cameco) Tammy Van	Environmental Affairs and Regulatory Relations, Cameco	Industry	Cameco and AREVA are pleased to see that RD/GD-370 does not categorically prohibit the deposition of tailings or mineralized waste rock into natural water bodies frequented by fish (i.e., the document now states “the deposition of tailings and waste rock	The assessment of mine waste disposal alternatives will determine the best alternative that minimizes environmental impacts and long-term maintenance. CNSC staff also would like to clarify that the document is for new

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		Lambalgen (AREVA)	Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.		<p>into natural water bodies frequented by fish should be avoided, <u>where practicable</u>” [emphasis added]). We are also pleased to see that this document clarified that its intended application is for new uranium mines or mills projects.</p> <p>However, for RD/GD-370 to provide the guidance it is intended to, there remain a number of aspects that should be clarified prior to publication. More specifically, the purpose and scope of the document is ambiguous—particularly given the variety of terms used to describe different mine waste</p> <p>and when it refers to Environment Canada’s <i>Guidance for Mining Proponents: Federal Process for Designating Metal Mines Tailings Impoundment Areas and Undertaking an Assessment of Alternatives for Mine Waste Disposal</i> (2011).</p> <p>Further, there is a need to clarify that the environmental assessment process is the means by [which] much of the alternatives assessment can be conducted in order to avoid regulatory duplication.</p> <p>Below [in additional comments], we have expanded on these aspects for your review and consideration. As well, we have identified in Attachment A where text modifications or deletions should be considered in RD/GD-370 that are consistent with our stated comments.</p>	<p>mine and mill projects as well as new projects at existing facilities; meaning that mines and mills would need to follow the environmental assessment process to assess alternatives for new waste management facilities. The text has been revised to clearly indicate that RD/GD-370 is intended for new uranium mines and mills and for new projects at existing uranium mines and mills.</p> <p>As stated in the preface, the purpose and scope of RD/GD-370 is to provide guidance and clarity regarding the requirements and expectations of the CNSC for the sound management of waste rock and mill tailings. CNSC has considered the use of different terms to identify different mine wastes and the text has been revised as detailed below.</p> <p>Environment Canada’s document “Guidelines for the assessment of alternatives for mine waste disposal” has been published on their website.</p> <p>CNSC staff agrees that there is an opportunity to clarify that the environmental assessment is the means by which much of the alternatives assessment can be conducted in order to avoid regulatory duplication. Section 1.2 Scope (first paragraph) was revised as follows:</p> <p>“Applicants for new uranium mine and/or mill projects or new projects at existing mine and mill sites are required to submit a licence application to the CNSC. A licensing decision is supported by an environmental assessment of alternative means to manage mineralized waste rock or tailings and provides the rationale for the preferred waste management method. The licence application includes the results of the environmental assessment and provides a description of the management method for safe long-term storage of uranium mineralized waste rock and mill tailings. CNSC staff reviews the information contained in the environmental assessment and in the application, and makes recommendations to the Commission on the acceptability of the proposed management method.”</p>

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4	General	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	<p>Purpose, Scope and Definitions:</p> <p>Section 1.1 does not clearly articulate that RD/GD-370 applies specifically to the consideration of using natural water bodies frequented by fish for the management of uranium mine mineralized waste rock and/or mill tailings. While this is implied in the introductory paragraphs of Section 2 and Section 3, it is absent from the Preface, leaving it unclear as to the specific scope of application of RD/GD-370.</p> <p>In Section 1.1, the introductory paragraph specifies “mine waste rock and mill tailings”. These terms then appear to be combined into a more generic term “mine waste” later in the document. Although “mine waste” is not defined in the glossary, it is the predominant nomenclature used throughout the remainder of the document.</p> <p>Intrinsic to the development of regulatory guidance in this area is the need for a clear understanding of the risks and categorization of mining waste rock and/or mill tailings as well as the nomenclature used by the industry and the regulatory community to describe “mine waste”. The uranium mines owned and operated by Cameco and AREVA have waste rock management programs that manage waste rock from mining activities according to characterizations based on whether or no the waste rock is “clean” (i.e., non-mineralized and/or non acid-generating) or “special” (i.e., potentially mineralized and/or potentially acid-generating). Currently, RD/GD-370 broadly defines the term “waste rock” as “any rock that does not contain any minerals in sufficient concentration to be considered ore, but which must be removed in the mining process to provide access to the ore.” This term is then further used in the document in the discussion pertaining to deposition into natural water bodies frequented by fish. As it is defined in RD/GD-370, the term “waste rock” does not allow for a differentiation between clean rock (i.e., non-mineralized and/or non acid-generating) and potentially mineralized and/or potentially acid-generating waste rock (i.e., what is currently characterized as special waste). As a result, RD/GD-370 could be interpreted in a</p>	<p>Preface and Scope have been revised for clarity. RD/GD-370 is not intended to provide CNSC expectations on one alternative to manage mine waste, such as in natural water body disposal. It is intended to provide CNSC expectations on the requirements for the management of mine waste, including the assessment of disposal alternatives based on the Environment Canada document “Guidelines for the assessment of alternatives for mine waste disposal”. Expectations regarding monitoring and performance measurement are also included in the regulatory document.</p> <p>Agree; for increased clarity, the glossary was revised to include the following (see also comment #33): mine waste Includes tailings and mineralized waste rock but does not include overburden and clean rock.</p> <p>Text has been revised for clarity. CNSC staff agrees that there is a need to clarify the type of waste rock referred to in RD/GD-370.</p> <ul style="list-style-type: none"> • CNSC staff views waste rock as it is currently defined in the proposed RD/GD-370 glossary, i.e., rock that needs to be removed in order to access the ore, which is consistent with the definition provided in Environment Canada’s <i>Environmental Code of Practice for Metal Mines</i>. • RD/GD-370 applies to all waste rock because, in section 2, the document states that: “Overburden and clean rock shall be used as construction material, and/or as a resource, and/or managed on surface through effective rock segregation programs, to the extent practicable and in a manner that is consistent with the concept of waste minimization.” • Hence, the text has been revised as follows: <ul style="list-style-type: none"> ○ the title of the document remains as <i>Management of Uranium Mine Waste Rock and Mill Tailings</i> ○ the term “mineralized waste rock” is used in the document where appropriate and has been added to the glossary ○ the definition of waste rock remain as provided in

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					<p>manner such that the use of clean waste rock in fish-bearing waters for activities would be subject to the same full alternatives assessment as for mineralized waste rock disposal requiring regulatory control (e.g., the creation of fish habitat in accordance with a fish habitat compensation plan).</p> <p>Cameco and AREVA suggest the document should include a definition for “mineralized waste rock” consistent with definitions used by the International Atomic Energy Agency, as follows: “Mineralized waste—material that is excavated from a mine and which has chemical and/or radiological characteristics which necessitate its management to protect human health or the environment (see http://www-pub.iaea.org/mtcd/publicatons/pdf/pub1134_scr.pdf)]</p> <p>The term “mineralized waste rock” should then be used in the document instead of the more generic “waste rock”.</p> <p>RD/GD-370 would also benefit from a definition for “mine waste”. At present, this term is used broadly, in various contexts. It should be clarified that in the context of this document, “mine waste” refers to tailings and mineralized waste rock. Without this clarification, the other mine wastes generated at uranium mines that do not presently require regulatory control, such as overburden and clean waste (which are terms also used in the document), have the potential to be captured by this broader definition.</p>	<p>Environment Canada’s <i>Environmental Code of Practice for Metal Mines</i>, but the RD/GD-370 definition includes the phrase “waste rock includes mineralized and clean rock.”</p> <p>Text has been revised, but not exactly as suggested. CNSC staff agrees that a definition for “mineralized waste rock” would provide further clarification and it has been added to the glossary. The definition is based on the IAEA version, but refers to “nuclear substances” instead of “radiological characteristics” to be consistent with the definition of “nuclear substances” from the NSCA. The NSCA does not include a definition for “radiological characteristics”. The term “deleterious” was also added, in reference to the Fisheries Act. See also comment #32.</p> <p>mineralized waste rock Rock which has the potential to release hazardous and/or nuclear substances that could have a significant adverse effect on human health or be deleterious to the environment. Mineralized waste rock may be further segregated based on radiological content, contaminants of concern (e.g., nickel, arsenic), and acid generating potential. Mineralized waste rock is often referred as to special waste rock.</p> <p>Text has been revised, but not exactly as suggested. “Waste rock” was kept in the title and purpose of the document since it has expectations for the management of both clean rock and mineralized waste rock (see section 2). “Waste rock” was replaced with “mineralized waste rock” where applicable.</p> <p>Agree; for increased clarity, the glossary was revised to include a definition for “mine waste” (see above).</p>

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5	General	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	<p><i>The Use of Environment Canada Guidance:</i></p> <p>In Section 3, RD/GD-370 references an Environment Canada (EC) document entitled “<i>Guidance for Mining Proponents: Federal Process for Designating Metal Mines Tailings Impoundment Areas and Undertaking an Assessment of Alternatives for Mine Waste Disposal</i>” (2011). Cameco and AREVA have a number of concerns about the use of this document. To begin with, this document does not appear to be publicly available. A search on the Environment Canada website did not turn up any results, nor did contacting the official Environment Canada communications department. We were able to obtain a copy of a document entitled “<i>Guidelines for the Assessment of Alternatives for Mine Waste Disposal</i>” (“EC Guidelines”), but we have concerns about the use of a document that does not appear to be readily available to proponents and that might not yet be finalized.</p> <p>The uranium mining industry in northern Saskatchewan leads the Canadian mining industry sector in its understanding of waste rock and mill tailings management. Over the last two decades, the lessons learned from historical uranium mining practises have been examined and used within an adaptive management framework to minimize the potential long term environmental effects of waste rock and tailings management activities. Furthermore, we consider ourselves to be Canadian mining industry leaders in meeting the requirements of EC’s <i>Metal Mining Effluent Regulations (2009 Annual Report on Uranium Management Activities—Environment Canada and Canadian Nuclear Safety Commission)</i>.</p> <p>Cameco and AREVA agree that a comprehensive evaluation of alternatives is appropriate when considering the use of a natural water body frequented by fish as a “tailings impoundment area”.</p> <p>However, based on the ambiguities in the scope of RD/GD-370</p>	<p>Text has been revised. The title of reference [7] has been changed to reflect the final title of the document. Environment Canada’s document “Guidelines for the assessment of alternatives for mine waste disposal” was officially approved on September 28th 2011 and has been published on their website.</p> <p>Thank you for the comment. No change to text.</p> <p>CNSC staff assert that a comprehensive evaluation of alternatives is appropriate and necessary not only when considering the use of a natural water body frequented by fish, as per the EC Guidelines document, but when considering all management practices for mineralized waste rock and mill tailings. CSNC staff have addressed the nomenclature issue in comment 4, and have addressed the reliability of the EC Guidelines in comment 5.</p> <p>As for the EC guidelines and the RD/GD-370 being redundant, these</p>

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					<p>and the inconsistent use of the mine waste nomenclature, including the reference to the EC Guidelines, the purpose of Rd/GD-370 remains unclear. If the intent is to clarify the regulatory requirements for the management of mine waste in natural water bodies frequented by fish, then we suggest RD/GD-370 will likely become redundant with the finalization of the EC Guidelines.</p> <p>However, if the intent of RD/GD-370 is to expand the scope of the EC Guidelines to all uranium mine waste rock and/or mill tailings facilities, irrespective of their location, as suggested in Section 3.1 (which states: “CNSC recommends applicants conduct an appropriate assessment of all [emphasis added] mine waste disposal alternatives pursuant to EC 2011 [7]”), then it is problematic. Such requirements taken individually may not be considered particularly onerous, but when combined with an already comprehensive environmental assessment and regulatory regime, there is potential for regulatory duplication and overlap, as well as delay.</p>	<p>two documents were developed simultaneously and although the EC document provides guidance on information needed to determine the suitability of when lake disposal would become acceptable, the CNSC regulatory document uses the EC guideline approach for the management of both tailings and mineralized waste rock, regardless of the whether the intent is to dispose the waste in natural water bodies or not. RD/GD-370 and the EC Guidelines co-evolved – in consideration of the <i>Cabinet Directive on Streamlining Regulation</i>, Environment Canada and CNSC staff worked together in finalizing their documents. As a result, the EC guidelines document is presented in RD/GD-370 as a support document.</p> <p>RD/GD-370, by referencing guidance from EC, assures that duplication does not occur and that the requirements for EC and CNSC are identical. The EC guidelines require an assessment of all potential tailings and waste rock (and effluent) management options. EC would then consider the suitability of in-lake disposal based on this assessment because that is the only option that requires EC approval. RD/GD 370 requires the same analysis for all options that require CNSC approval.</p> <p>RD/GD-370 is applicable to new uranium mine and mills projects <u>and new projects at existing uranium mines and mills</u>. Regarding potential regulatory duplication and overlap, the CNSC is the lead Regulatory Authority and considers other responsible authority comments and assessments. Every effort is made to avoid duplication and delays among the federal regulatory agencies. CNSC staff believe that RD/GD-370 and the EC guideline document will accelerate the approval process by clarifying expectations on mine waste management. Clarity of expectations leads to improved quality of submissions and faster approvals, as the preferred option is supported by a transparent alternatives assessment.</p>

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6	General	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	<p><i>Environmental Assessment versus Licensing Requirements:</i></p> <p>As noted briefly in RD/GD-370, new mineralized waste rock or tailings deposition facilities would require an environmental assessment under the <i>Canadian Environmental Assessment Act</i>, and the CNSC is typically the lead Regulatory Authority for this process. It has been our experience that much of the information required related to the Alternatives Assessment for waste management options, including mineralized waste rock and/or tailings is rigorously evaluated through this process. As currently drafted, RD/GD-370 leaves it open that the Alternatives Assessment might also be required as part of the licensing process, which could result in a duplication of effort in this regard. We would encourage the CNSC to clarify in RD/GD-370 that the licensing process will rely on the outcomes of the environmental assessment process in this regard—rather than duplicate the efforts.</p>	<p>Text in section 1.2 has been modified as follows:</p> <p>“Applicants for new uranium mine and/or mill projects or new projects at existing mine and mill sites are required to submit a licence application to the CNSC. A licensing decision is supported by an environmental assessment of alternative means to manage mineralized waste rock or tailings and provides the rationale for the preferred waste management method. The licence application includes the results of the environmental assessment and provides a description of the management method for safe long-term storage of uranium mineralized waste rock and mill tailings. CNSC staff reviews the information contained in the environmental assessment and in the application, and makes recommendations to the Commission on the acceptability of the proposed management method.”</p>
7	1.2	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	<p>Scope—first paragraph, third sentence—Add: “Following approval through the environmental assessment process” before “CNSC staff reviews the information...”</p>	<p>Text revised; see response to comment 6, above.</p>

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8	1.3	Jesica Moreno-Colacci	Environmental Protection Operations Division – Ontario; Environment Canada	Government	Page 2, Section 1.3 - Relevant Regulations: A list of federal legislations relevant to the control of mine waste and mill tailings is provided in this section of the RD. The list includes subsections of the <i>Fisheries Act</i> , such as subsections 36(3), 36(6), 38(5) and paragraphs 36(4)(a) and (b). CNSC should consider listing paragraph 34(a) to (d) of the <i>Fisheries Act</i> to the list as well since this paragraph sets the context for the other relevant subsections of the <i>Fisheries Act</i> mentioned above, by providing definitions such as that of a "deleterious substance" and "deposit," among other relevant information.	CNSC staff added paragraphs 34(a) to (d) of the <i>Fisheries Act</i> to the list since this paragraph sets the context for the other relevant subsections of the <i>Fisheries Act</i> mentioned above, by providing definitions such as that of a "deleterious substance". CNSC staff did not include a definition of deposit since the term is not used in the RD/GD-370 document.
9	1.3	Chantal Ménard	Pêches et Océans Canada	Government	In order for a natural water body to be designated as a tailings impoundment area, it must be added to Schedule 2 of the MMER, which requires an amendment to the MMER. Should read: In order for a natural water body FREQUENTED BY FISH to be designated as a tailings impoundment area, it must be added to Schedule 2 of the MMER, which requires an amendment to the MMER.	Text revised as suggested.
10	1.3	Peggy Hallward	Mining and Processing Division, Environment Canada	Government	In order for a natural water body <u>frequented by fish</u> to be designated as a tailings impoundment area, it must be added to Schedule 2 of the MMER, which requires an amendment to the MMER. This regulatory amendment triggers a federal Environmental Assessment according to the CEAA. The federal Environmental Assessment must undertake an analysis of alternative options for the disposal of the mine waste, based on environmental, technical, economic and socio-economic criteria.	Text revised; see response to comment 9, above.
11	1.4	Peggy Hallward	Mining and Processing Division, Environment Canada	Government	Guidance for Mining Proponents: Federal Process for Designating Metal Mines Tailings Impoundment Areas and Undertaking an Assessment of Alternatives for Mine Waste Disposal, -- <u>should be replaced with "Guidelines for the Assessment of Alternatives for Mine Waste Disposal"</u> [shorter title, same document]-- Environment Canada (EC) [7]	Text revised as suggested, in both Section 1.4 and in "References".

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12	2	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	First paragraph, first sentence— Second paragraph, first sentence— Second main bullet— Second section, fourth paragraph— Add “mineralized” before “waste rock and mine tailings”.	Text revised as suggested.
13	2	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	Second section, fourth paragraph— Add “active” before “institutional controls”, to clarify that there is a difference between “active” institutional controls and other (i.e., passive) institutional controls.	Agree. Text revised as suggested, although please note the paragraph was modified further in response to other comments.
14	2	Jesica Moreno-Colacci	Environmental Protection Operations Division – Ontario; Environment Canada	Government	Page 3, Section 2 - Requirements for Managing Mine Waste: It is indicated that the mine operator should minimize reliance on institutional controls in the design of waste rock and tailings management systems. It is clear that minimal institutional control would be beneficial to a closed mine, however, this section of the RD seems to refer to an active mine, in which case it is not clear how minimal institutional control would be beneficial to the operation of a mine. Further clarification should be provided.	To improve the clarity, the text was revised as follows: The design of mineralized waste rock and tailings management systems shall minimize the reliance on active institutional controls post decommissioning.

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15	3	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	First paragraph— Add definition to Glossary that clearly articulates that mine waste is referring to mineralized waste rock and tailings. Or, remove “mine waste” and add “mineralized mine waste rock and tailings in both sections of the sentence.	Glossary was revised to include the following: mine waste Includes tailings and mineralized waste rock but does not include overburden and clean rock.
16	3.1	Chantal Ménard	Pêches et Océans Canada	Government	In general, the use of water bodies frequented by fish for the management of mine waste requires: Should read: In general, the use of water bodies frequented by fish for the deposit of waste rock or an effluent that contains a deleterious substance:	Text has been revised as suggested except for using the phrase “management of mine waste” because RD/GD-370 applies to clean rock, mineralized waste rock and tailings.
17	3.1	Peggy Hallward	Mining and Processing Division, Environment Canada	Government	In general, the use of water bodies frequented by fish for the management of mine waste requires: a.. authorization by the Governor in Council by listing the water body on Schedule 2 of the MMER (<u>if the mine waste is deleterious</u>) b.. approval of a habitat compensation plan by Fisheries and Oceans Canada (DFO) c.. a licence from the CNSC	The intent of the comment has been accepted, but the text has been modified as follows. The first paragraph has been revised to state <ul style="list-style-type: none"> “In general, the use of water bodies frequented by fish for the management of mine waste that contains a deleterious substance requires:” thereby negating the need for the qualifier “if the mine waste is deleterious” in the first bullet. Also, “deleterious substance” was added to the glossary, using the definition from Fisheries Act 34a, 34b.

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18	3.1	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	Section 3.1, first bullet— Remove « authorization by the Governor in Council by listing the water body on Schedule 2 of the MMER as Schedule 2 of the MMER is only for the listing of Tailings Impoundment Areas. It is inaccurate to generalize that this parliamentary process is required for any undertakings other than what is specifically referenced in the MMER. Before the second paragraph, consider adding a statement to the effect of “In addition, the use of water bodies frequented by fish for the management of tailings also requires authorization by the Governor in Council by listing the water body on Schedule 2 of the MMER”.	No change to text. CNSC staff disagree. Authorization by the Governor in Council by listing the water body on schedule 2 of the MMER is not only for the listing of tailings impoundment areas, and this is clarified in Section 5 of the MMER which states the following: <i>Despite section 4, the owner or operator of a mine may deposit or permit the deposit of waste rock or an effluent that contains any concentration of a deleterious substance and that is of any pH into a tailings impoundment area that is either:</i> <i>(a) a water or place set out in Schedule 2; or</i> <i>(b) a disposal area that is confined by anthropogenic or natural substances or by both, other than a disposal area that is, or is part of, a natural water body that is frequented by fish.</i> Therefore, CNSC staff clarified with Environment Canada that authorization by the Governor in Council is also required for the deposition of any mine waste that contains a deleterious substance. This is also confirmed on page 1 of the EC Guidelines for the assessment of alternatives for mine waste disposal.
19	3.1	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	Section 3.1, fourth paragraph— In general, the use of the term “alternative” should be further refined. For example, the first sentence of the fourth paragraph should use “option” or “plan” instead of “alternative”	Text has changed as detailed below. CNSC staff agrees – “Alternative” means one of a number of things from which one <u>must</u> be chosen; “Option” on the other hand, means something chosen or available as a choice. CNSC staff have made sure the terms are used appropriately throughout the document: <ul style="list-style-type: none"> • In section 1.3, last paragraph, “options” was removed and “alternatives” was left. • In section 3, first paragraph and section 3.1, subtitle, the term “alternative” was used because the sentence indicates that a decision has to be made. • In section 3.1, 4th paragraph: <ul style="list-style-type: none"> • first line, CNSC disagrees with Cameco and maintained “alternative” as it relates to a decision to be made between

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						<p>the options proposed.</p> <ul style="list-style-type: none"> • fifth line, we kept “alternative” as the process must lead to the choice of an option. • last line, we used the term “alternative” because it is linked to a decision or choice that has to be made. <ul style="list-style-type: none"> • In section 3.2, 1st paragraph: <ul style="list-style-type: none"> • first line, the terms “alternatives” and “options” are used where appropriate. • third line, we kept “alternative” because we discuss the assessment of alternatives. • fourth line, we replace “the cost of each alternative” by “the cost of each option” because it does not relate to a choice that has to be made. • In section 3.2, bulleted list: <ul style="list-style-type: none"> • first bullet, we used the term “option” because at this stage, it is only collection of all possible options and a choice is not required at this step. • second bullet, we replaced “screening of alternatives to a reduced number of options” with “screening of options to a reduced number” and changed “preferred alternative” to “preferred option” • third bullet, we kept “alternative” because these are the options to choose from. • fourth bullet, we kept “alternative” because these are the ones we will choose from. • fifth bullet, we kept “alternative” as it is part of the description of the assessment of alternative.
20	3.1	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada	Industry	The second sentence in this paragraph should state “...In order to do so, CNSC staff recommends applicants conduct an appropriate assessment of all mine waste disposal alternatives pursuant to EC 2011 [7], <u>where appropriate.</u> ”	No change to text. CNSC staff disagree, an alternatives assessment as described by EC 2011 should always be used as it allows industry and regulators to make clear and transparent decisions based on environmental, social and economical issues.

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21	3.2	Chantal Ménard	Pêches et Océans Canada	Government	<p>Le choix du terme "solutions" me semble un excellent choix pour la traduction de "Alternatives".</p> <p>J'ai seulement une petite suggestion que vous pourriez soumettre à vos traducteurs si vous le jugez utile: "Solutions de rechange" au lieu de "Solutions possibles"</p>	La CCSN croit que la suggestion est acceptable puisque le document guide d'Environnement Canada utilise le terme « solution de rechange » dans le titre de son document. Il est souhaitable que la communauté fédérale utilise les mêmes termes. Merci pour la suggestion.
22	3.2	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	<p>Section 3.2, first bullet—</p> <p>Add “mine” before “waste disposal”. Replace “alternatives” with “options”.</p>	Text has been revised as suggested.
23	3.2	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	<p>Section 3.2, second bullet—</p> <p>Replace “alternative” with “option”.</p>	<p>The second bullet was modified as follows:</p> <ul style="list-style-type: none"> screening of options to reduce the number and to provide assurance that any of the remaining could prove to be the preferred option

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24	3.2	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	Section 3.2, third paragraph— In order to make it more clear what the relationship is between the environmental assessment process and licensing, we recommend the inclusion of the following text: “...CNSC staff as part of <u>an environmental assessment and can be verified through the resulting</u> licensing application.”	Agreed, text has been revised as suggested (with minor editorial revisions).
25	3.2	Jesica Moreno-Colacci	Environmental Protection Operations Division – Ontario; Environment Canada	Government	Page 4, Section 3.2 - Assessment of Alternatives: It is indicated that CNSC staff should be provided with proper documentation on the assessment of mine waste disposal alternatives. We recommend that the involvement of all regulatory agencies (i.e. EC, DFO, NRCAN) to be actively involved in the regulation of the facility, should be engaged in this stage of the process in order to ensure that all regulatory requirements are satisfied by the final waste management plan to be followed by the facility.	Text has been revised. In Section 3.2, third paragraph, the following sentence has been added: “The CNSC, as the responsible authority, consults with other federal and provincial agencies (e.g., EC, DFO, Natural Resources Canada, and provincial jurisdictions, when and as required) to ensure that all regulatory requirements are satisfied by the final waste management plan.”
26	4	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	Section 4, first sentence— Replace “projects” with “facilities”, as adaptive management occurs with facilities that are constructed.	No change to text. CNSC staff disagree with the proposed change as adaptive management is also intended to apply to projects such as tailings and mineralized waste rock cover systems, mineralized waste rock liners, etc.

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27	4	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	Section 4, first paragraph, last sentence— Add “mine” before “waste management facilities”	We assume the reviewers meant the last sentence of the second paragraph. The word “mine” was added before “mine waste facilities” in the second paragraph of Section 4.
28	4	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	Section 4, third paragraph, first sentence— Add “mine waste” before “management plan...”	Agreed, text was revised as suggested.
29	4	Jesica Moreno-Colacci	Environmental Protection Operations Division – Ontario; Environment Canada	Government	<i>Page 5, Section 4 - Performance Management:</i> <ul style="list-style-type: none"> Examples of performance indicators are listed in a series of bullets. <ul style="list-style-type: none"> The last bullet should mention surface water as an additional example. Biological indicators such as sublethal or acute toxicity testing for relevant species of fish, benthic invertebrates and algae should also be monitored for performance evaluation of the waste management plan. 	Text was revised as follows: The third bullet was modified to state: <ul style="list-style-type: none"> concentrations of contaminants in specific environmental media (for example, groundwater and surface water quality as compared to anticipated quality) Two bullets that relate to biological performance indicators were added: <ul style="list-style-type: none"> sublethal or acute toxicity testing for relevant species of fish, benthic invertebrates and algae biological indicators such as benthic community indexes, fish usage (i.e., contaminant levels in fish tissue) and fish health indicators

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30	4	Jesica Moreno-Colacci	Environmental Protection Operations Division – Ontario; Environment Canada	Government	<p>Page 5, Section 4 - Performance Management:</p> <ul style="list-style-type: none"> It is indicated that "<i>if performance indicators vary significantly from the expectations, then the management plan may need to be modified to achieve the desired performance.</i>" There should be detailed guidance for the establishment of trigger criteria that would result in the implementation of contingency measures and adaptive management for the protection of the environment. If this guidance is already in existence, it should be mentioned in this part of the RD. 	<p>References to MEND (2009) were added to Section 4 (first paragraph, first sentence and last sentence) and to the references.</p> <p>MEND 2009 (Chapter 4) indicates that performance indicators are the drainage chemistry predictions made at the project planning or environmental assessment (EA) stage. These performance indicators are usually set at the EA stage and can be the environmental quality guidelines derived by provincial and federal authorities or other benchmarks provided by Suter (1996). In addition, MEND (2009) also suggests that drainage predictions are verified through the entire lifecycle of the waste management facility to ensure that drainage chemistry predictions are met and to ensure early warning of potential problems, allowing proactive corrective actions and implementation of contingency plans (MEND 2009 Chapter 4).</p>
31	Glossary	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	<p>Definition of “Long Term”—</p> <p>Add “mineralized” before “waste rock and tailings”</p>	Text has been revised as suggested.
32	Glossary	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	<p>New definition proposed—</p> <p>Mineralized waste rock Material that is excavated from a mine and which has chemical and/or radiological characteristics which necessitate its management to protect human health or the environment.</p>	<p>The term has been added to the glossary but the definition has been modified as follows:</p> <p>mineralized waste rock Rock which has the potential to release hazardous and/or nuclear substances that could have a significant adverse effect on human health or be deleterious to the environment. Mineralized waste rock may be further segregated based on radiological content, contaminants of concern (e.g., nickel, arsenic), and acid generating potential. Mineralized waste rock is often referred as to special waste rock.</p>

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33	Glossary	R. Liam Mooney (Cameco) Tammy Van Lambalgen (AREVA)	Environmental Affairs and Regulatory Relations, Cameco Corporation Regulatory Affairs and General Counsel, AREVA Resources Canada Inc.	Industry	New definition proposed— Mine waste Mineralized waste rock and/or tailings	The term has been added to the glossary but the definition has been modified as follows: mine waste Includes tailings and mineralized waste rock but does not include overburden and clean rock.
34	References	Peggy Hallward	Mining and Processing Division, Environment Canada	Government	1.. EC, Guidance for Mining Proponents: Federal Process for Designating Metal Mines Tailings Impoundment Areas and Undertaking an Assessment of Alternatives for Mine Waste Disposal -- <u>should be replaced with "Guidelines for the Assessment of Alternatives for Mine Waste Disposal" -- Ottawa, Canada, 2011</u>	Agree; the reference has been revised as suggested.

Summary: 34 comments from 4 reviewers.
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