

NB Power comments on Discussion Paper DIS-24-03, Proposal to amend REGDOC 2.13.1, Safeguards and Nuclear Material Accountancy

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| 0. | Overview | <p>Industry appreciates the opportunity to comment on this discussion paper, DIS-24-03. Our commentary focuses on improving the clarity of the proposed changes for the regulatory amendments and associated regulatory documents. We have also taken the opportunity to make recommendations on additional amendments and suggest further revisions and refinements.</p> <p>Following a collective review by industry personnel knowledgeable in the possession of nuclear material, carrying out specified types of nuclear fuel-cycle related research and development work, or carrying out specified types of nuclear-related manufacturing activities; licensees have identified several areas requiring clarification as well as several areas of concern. The feedback is broken into <i>Major</i> or requests for <i>Clarification</i> comments. Of note, below we highlight one theme, which is of particular importance and supported by the comments identified as Major.</p> <ul style="list-style-type: none"> Safeguard expansion – there is a concern as additional information describing the Safeguard Agreement and the Additional Protocol requirements is incorporated within the regulatory documents; including summarizing the requirements, elaborating upon them, and/or providing guidance then additional requirements will be inadvertently introduced. The NSCA Regulations and CNSC regulatory documents must remain aligned with the Safeguard Agreement and Additional Protocol to prevent the introduction of burdensome requirements and activities that are not permitted by the Safeguard Agreement or Additional Protocol. <p>Lastly, there are several topics related to the proposed amendments, this discussion paper as well as DIS-24-02 that would benefit from an Industry/CNSC staff workshop prior to proceeding with the draft regulatory documents. We recommend and are willing to participate in such a workshop.</p> | | | |
| 1. | Section 2.2 | <p><i>“Would it be useful to add examples of what items containing nuclear material and what nuclear-related activities are subject to safeguards?”</i></p> <p>Yes. It would be useful to provide examples of what is as well as notable items and/or activities that are not subject to safeguards. Note that CNSC provided clarification to uranium mines and mills that uranium ore and uranium ore within a mining or milling process circuit are exempt from safeguard reports. This example should be included.</p> | <p>Recommend providing examples and adding: <i>Safeguards reporting is not required for:</i> <i>uranium or thorium naturally occurring in soil, rock or ore in its raw form or within a mine/mill process circuit;</i></p> | MAJOR | Excluding uranium ore within a mining or milling process circuit from Safeguard reports reduces regulatory uncertainty for licensees and aligns with the Articles of The Safeguard Agreement and Additional Protocol. |
| 2. | Section 2.2 | <p><i>“Would it be useful to add examples of what items containing nuclear material and what nuclear-related activities are subject to safeguards?”</i></p> <p>Yes</p> | <p>Recommend providing examples, perhaps in an appendix if the list is exhaustive.</p> | Clarification | |
| 3. | Section 2.3 | <p><i>“Would it be useful to add a table to describe what the reporting and access requirements are for the different categories of licensees and non-licensees?”</i></p> <p>Yes. Note: The NSCA Regulations and CNSC REGDOCs should ensure they remain aligned with the Safeguard Agreement and Additional Protocol to prevent introducing burdensome requirements and activities that are not permitted by the Safeguard Agreement or Additional Protocol.</p> | <p>Recommend providing a table.</p> | Clarification | |
| 4. | Section 2.4 | <p><i>“Which elements of the safeguard program should be described further?”</i></p> <p><i>“Would it be useful to describe how the safeguards program interfaces with other CNSC programs?”</i></p> | <p>Recommend including a strong, robust description of a Safeguards Program and its interfaces with other CNSC programs, with a particular focus on Cyber Security, Information Protection, and Physical Security should be included in this section.</p> | MAJOR | The absence of a strong and robust description of what Safeguards is (or isn't), has led to ambiguity and misinterpretation of the Safeguards Program, particularly from other programs. |

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| | | Note: CSA N290.7:21 Cyber security for nuclear facilities has referenced and defined Safeguard, which does not appear to align with the Safeguard's interpretation in REGDOC-2.13.1. There appears to be an assumption that the nuclear material and accounting program is controlling nuclear material for security purposes. It should be clear that the requirements for Safeguards are not performing a security function. (See IAEA Nuclear Security Series No 25-G). | Industry also recommends having a workshop on this important topic. | | |
| 5. | Section 2.4 | The Safeguards Program section is adequate as written. Additional guidance may have the unintended consequence of adding more requirements. | Confirm no new requirements will be added to any new guidance. | Clarification | |
| 6. | Section 2.5 | <i>"Which aspects of reporting should be further elaborated?"</i> | Recommend further elaboration on: The reportability regarding damage to safeguards seals when dual seals are applied, and/or continuity of knowledge is maintained. Including information regarding whether a seal has degraded due to ageing management activities. | Clarification | |
| 7. | Section 2.5 | <i>"Which specific instances of operating safeguards equipment should be included as examples?"</i> | Recommend including the following examples: <ul style="list-style-type: none"> Connecting and disconnecting equipment. Assisting IAEA mounting, assembling, or other activities with IAEA equipment under the guidance of IAEA inspectors/technicians. <p>This section could also include information on the implications of human performance issues/events when licensees are performing activities on behalf of, in lieu of, or at the request of IAEA and/or CNSC. For example:</p> <ul style="list-style-type: none"> Is operator error resulting in equipment damage reportable? If reference scans or operation of IAEA equipment are to be completed by operators, which circumstances can this be forced on the operations staff? | MAJOR | Depending on the activities being described and added to this section, it could imply a greater resource drain of operations to support IAEA safeguard activities. As such, it is uncertain the total impacts, but depending on future activities, this could be significant. |
| 8. | Section 2.5 | The addition of <i>"CNSC will specify that in some instances, providing the services required for the operation of such equipment may include the licensee's operation of the IAEA's safeguards equipment in accordance with the procedures provided by the CNSC and/or the IAEA. "Operation" of IAEA equipment may include plugging and unplugging IAEA equipment, ..."</i> exposes facility personnel to the potential for REGDOC-3.1.1 reportable events for scheduling errors or other inadvertent work management events. | Recommend removing the requirement for licensees to operate safeguard equipment. | MAJOR | This exposes facility personnel to the potential for REGDOC-3.1.1 reportable events for scheduling errors or other inadvertent work management events. |
| 9. | Section 2.5 | <i>"Which specific instances of operating safeguards equipment should be included as examples?"</i> | Recommend including the following example: | Clarification | |

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| | | | Any non-routine operation of IAEA safeguards equipment for testing or return to service as a result of equipment malfunction. The non-routine operation and testing will be completed at the request of the IAEA. | | |
| 10. | Section 2.5 | <p><i>“What aspects of reporting should be further elaborated?”</i></p> <p>Overall industry absolutely supports the intent to provide additional clarity with respect to reporting requirements. The industry needs additional clarity with respect to what constitutes <i>“an interruption to the operation of safeguards equipment”</i>—specifically, the period for which an electrical power interruption would be reportable.</p> <p><i>For example, power interruptions may be very short duration (seconds, or less). Given the IAEA safeguards equipment is equipped with battery backup, such minimal power interruption should not be considered reportable.</i></p> <p>Furthermore, it should be noted that the REGDOC-3.1-series of regulatory documents is intended for reporting requirements. Industry can at times be challenged in ensuring that all regulatory requirements are met in cases where similar requirements are captured in multiple regulatory documents. As such, it would be prudent for the CNSC to capture reporting requirements in an appropriate reporting-specific REGDOC.</p> <p>It is important to ensure clarity and consistency across all licensees.</p> | <p>Request further clarity on reporting requirements for interruption to the operation of safeguards equipment.</p> <p>Also, we request one or more of the REGDOC-3.1.# documents be revised to capture additional clarification or elaboration of these reporting requirements.</p> | MAJOR | Ambiguity may prevent the appropriate information from being reported to the CSNC; hindering Canada’s ability to meet obligations to the IAEA. It may also result in licensees inadvertently failing to comply with a condition of a licence. |
| 11. | Section 2.7 | <p>It is unclear what is meant by <i>“... This will include clarification on the IAEA’s discretion on how it chooses to perform its measurement of nuclear material ...”</i></p> <p>IAEA inspections are conducted in accordance with the Additional Protocol. The CNSC REGDOC should not provide clarification on IAEA discretion.</p> | This REGDOC should only outline what the Additional Protocol permits. | MAJOR | The NSCA Regulations and CNSC REGDOCs should ensure they remain aligned with the Safeguard Agreement and Additional Protocol to prevent introducing burdensome requirements and activities that are not permitted by the Safeguard Agreement or Additional Protocol. |
| 12. | Section 2.8 | <p><i>“The text on how and when the CNSC expects to participate in IAEA design information verifications (DIVs) will be revised.”</i></p> <p>REGDOC-2.13.1, Section 6.2 currently states <i>“... the CNSC will seek to participate in all IAEA DIVs in Canada, where possible.”</i></p> | Clarify if this position will be changing. | Clarification | |
| 13. | Section 2.9 | As it relates to the complementary access elements being moved from the guidance section to the requirements section; upcoming SMR developments may have an increase in remote locations that will contain nuclear materials and the individuals who are responsible for nuclear material accountancy of these facilities may not be local to the facilities, depending on reactor technology, size, etc. | Recommend defining requirements for remote facilities that may or may not have personnel on-site for complimentary access in 24 hours. | Clarification | |
| 14. | Section 2.10 | The Nuclear Material Accountancy section is adequate as written. Additional guidance may have the unintended consequence of adding more requirements. | Recommend no changes. | Clarification | |

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| 15. | Section 2.11 | <i>“The CNSC will define its expectation for the frequency of the calibration of any instruments used to measure nuclear material aligning it with industry standards.”</i> | Would this be Operator equipment or IAEA and CNSC equipment? All radiation equipment would be covered under the Nuclear Substances and Radiation Devices. | Clarification | |
| 16. | Section 2.11 | Currently, it is not captured in REGDOC-2.13.1 that reactor physics calculations can be used to determine the amount of safeguarded material after burn-up or decay. | REGDOC-2.13.1, Section 7 should also include clarification that nuclear material accountancy reports can be generated based on calculations/analysis (e.g., reactor physics calculations, decay/fission product calculations). | Clarification | |
| 17. | Section 2.12 | <i>“The CNSC will specify that all information on the tag must correspond exactly to those listed on the list of inventory items list, not limited to just the items’ unique identifier.”</i> It is unclear what a tag refers to. Much of our nuclear material inventory is ONLY tracked digitally (or through paper) and using in-field unique identifiers. This would not be practical for things like Used Fuel bundles, Modules, Baskets, Trays, etc. - which would have no tags applied. There are many stages in the process where nuclear material is only tracked by a serial number and no <i>“Tag”</i> is applied in the field. Clarification around what those occurrences would look like is needed. | Clarification is needed for this statement. Clarity on how a tag is different from an item’s unique identifier? | MAJOR | There are physical limitations regarding applications of tags (i.e., a fuel bundle cannot have a tag affixed) which could prevent implementation of this requirement. |
| 18. | Section 2.13 | Proposed changes to the Nuclear Material Accountancy Forms may require a software change to properly extract the information from current nuclear material accountancy software. Clarify changes to the Nuclear Material Accountancy Forms and if using older forms will still be acceptable. | Request confirmation that forms generated by current nuclear material accounting software will still be acceptable for submission to the CNSC despite the updated forms being accessible on the CNSC website. | MAJOR | Changes could result in significant costs and time required to update current systems to produce the updated forms. |
| 19. | Section 2.13 | <i>“Which elements of the forms should be updated or clarified based on users’ experience?”</i> REGDOC-2.13.1 supersedes GD-336. GD-336 provides excellent detailed information regarding how to fill out reporting forms. New applicants may still rely on GD-336. | If GD-336 is not updated or is no longer available in the future, then confirm its contents will be captured as part of REGDOC-2.13.1 as a supplemental guide/appendix. | Clarification | |
| 20. | Section 2.14 | <i>“Are there any changes to the General Ledger which would make its generation and submission to the CNSC more efficient?”</i> Having the ability to maintain more than one General Ledger (GL) for an MBA (Material Balance Area) would be beneficial. Particularly, being able to separate GLs between Fuel and Non-Fuel inventories allows operators flexibility for generating these reports. Many automated systems may only include the Fuel portion of the Accountancy, and this would allow Operators to separate automated and manual processes. | Confirm the ability to maintain more than one GL for an MBA. | Clarification | |
| 21. | Section 2.16 | <i>“Are the existing requirements and guidance for the drafting of design information questionnaires clear?”</i> In the current landscape with SMRs and Gen IV technologies in discussion, clarification around the need/ level of detail required for the initial DIQ (design information questionnaire), Pre-Construction DIQ, and Pre-Operational DIQ would be beneficial for operators investigating non-standard technologies. | Recommend adding additional information on DIQ requirements for non-standard technologies. | Clarification | |

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| 22. | Section 2.16 | <p><i>“Are the existing requirements and guidance for the drafting of design information questionnaires clear?”</i></p> <p>For facilities going through LTPS (Licence to prepare site), LTC (Licence to construct), and LTO (Licence to operate) licence applications, could the text be aligned with these licence application milestones? For example: <i>“before the start of construction”</i> could be <i>“before LTC is granted”</i></p> | Recommend aligning text with licence application milestones. | Clarification | |
| 23. | Section 2.18 | CNSC should be conscious when adding guidance on any information from the Additional Protocol to not inadvertently create additional requirements. | Recommend that CNSC Regulations and REGDOCs remain aligned with the Safeguard Agreement and Additional Protocol to prevent introducing burdensome requirements and activities that are not permitted by the Safeguard Agreement or Additional Protocol. | Clarification | |
| 24. | Section 2.18 Appendix B: | <p><i>“Would it be useful to add examples of declarable nuclear fuel cycle-related research and development activities?”</i></p> <p>It would be useful to describe examples pertinent to reactors or at least expand on what is expected from reactors. Does it include outages, future fuelling activities, and isotope production?</p> | Recommend adding examples related to reactors. | Clarification | |
| 25. | Section 2.18 | <p><i>“The CNSC will provide further guidance on what is reportable under Article 2a(i) of the Additional Protocol ...”</i></p> <p>Refine the statement to indicate what is acceptable/not acceptable under Article 2a(i) and not reporting. Future revisions should cite REGDOC 3.1.# documents for reporting criteria.</p> | Recommend including additional information and aligning any report requirements with REGDOC-3.1.# documents. | Clarification | |