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Acceptable Standard Format and Content for the Fundamental Nuclear Material Control Plan Required for Special Nuclear Material of Moderate Strategic Significance

Comment On: NRC-2021-0170-0001

Acceptable Standard Format and Content for the Fundamental Nuclear Material Control Plan Required for Special Nuclear Material of Moderate Strategic Significance

Document: NRC-2021-0170-DRAFT-0003

Comment on FR Doc # 2021-20631

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General Comment

Comments on Draft NUREG-2159, "Acceptable Standard Format and Content for the Fundamental Nuclear Material Control Plan Required for Special Nuclear Material of Moderate Strategic Significance" [Docket ID NRC-2021-0170]

Attachments

12-01-21 NRC_Comments on Draft NUREG-2159 letter with comments

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U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
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Subject: Comments on Draft NUREG-2159, "Acceptable Standard Format and Content for the Fundamental Nuclear Material Control Plan Required for Special Nuclear Material of Moderate Strategic Significance"
[Docket ID NRC-2021-0170]

Project Number: 689

Dear Program Management, Announcements and Editing Staff:

On behalf of the Nuclear Energy Institute's (NEI)¹ members, we appreciate the opportunity to provide comments on the NRC's draft NUREG-2159, "Acceptable Standard Format and Content for the Fundamental Nuclear Material Control Plan Required for Special Nuclear Material of Moderate Strategic Significance". This document supports the MC&A guidance needs of the industry as it seeks to deploy reactors and fuel cycle facilities that will process and utilize Category II material. The attachment provides specific comments.

Please contact me if you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink that reads "Nima Ashkeboussi". The signature is enclosed in a thin black rectangular border.

Nima Ashkeboussi

Attachment

- c: James Rubenstone, Office of Nuclear Materials Safety and Safeguards, NRC
- Tom Pham, Office of Nuclear Materials Safety and Safeguards, NRC

¹ The Nuclear Energy Institute (NEI) is responsible for establishing unified policy on behalf of its members relating to matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect and engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations involved in the nuclear energy industry.

Attachment: Industry Comments to Draft NUREG-2159

	Section	Comment	Recommendation/Action
1.	Section 2, Item 4; 6 Pg 6, lines 8-18	<p>The proposed guidance far exceeds the requirements found in Subpart D 74.41 (c) as well as the similar requirements found in Subpart E for SSNM and is not a credible concern.</p> <p>74.43(b) (1) A management structure shall be established, documented, and maintained that assures:</p> <ul style="list-style-type: none"> (i) Clear overall responsibility for material control and accounting (MC&A) functions. (ii) Independence from production and manufacturing responsibilities; and (iii) Separation of key responsibilities. <p>This provides sufficient independence of activities.</p> <p>For most licensees, such a position would require access to SGI and as such the individual would be granted access to SGI in accordance with 73.22(b) which includes a background check to determine the individual is trustworthy and reliable, and for some licensees such a position would require either an L or Q clearance.</p>	<p>Remove the noted text entirely.</p> <p>Replace with a paragraph stating: “Where the organizational structure is such that a position having responsibility within the 10 CFR Part 74 MC&A program also has responsibility within the 10 CFR Part 73, “Physical Protection of Plants and Materials,” system, the plan will address roles and responsibilities to ensure the MC&A program is not subject to compromise by the actions of a single insider filling the position. A safeguards manager could be an example of such a position.”</p>
2.	Section 3.3	<p>Section 3.3 "MC&A Organization" states:</p> <p>“An organizational chart and position-by-position description of the entire MC&A organization should be provided. A licensee should designate an individual as the overall manager of the MC&A program, and the MC&A plan must demonstrate the assurance of independence of action and objectivity of decision for the MC&A</p>	<p>Replace this wording with similar guidance used in NUREG-1520, Section 2.4.2(8)(3) to read:</p> <p>“In the organizational hierarchy, the MC&A organization(s) is independent of the</p>

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		<p>manager. Two options for meeting the organizational independence are: (1) report directly to the plant or site manager, or (2) report to an individual who reports to the plant or site manager through a management chain with no production responsibilities.”</p> <p>Providing only two options to meet organizational independence appears to unnecessarily restrict organization structures and independent reporting options. This could be particularly problematic as advanced reactors look to limit the number of onsite personnel.</p>	<p>operations organization(s), allowing it to provide objective MC&A audit, review, or control activities. "Independent" means that neither organization reports to the other in an administrative sense. (However, both may report to a common manager.) Lines of responsibility and authority are clearly drawn.”</p>
3.	Section 3.5	<p>Section 3.5 states one of the roles to be an “overall MC&A program management (note that this individual should have no major responsibilities not related to MC&A).”</p> <p>Given the reduction in size and scope of SNM on site for potential proposed advanced reactor applicants, as well as unique fuel fabrication considerations, there should be an allowance for MC&A management to have other duties not specifically related to MC&A.</p>	<p>Revise the first bullet to read:</p> <p>“overall MC&A program management (note that overall MC&A program management should be vested to a single individual at an organizational level sufficient to assure independence of action and objectiveness of decisions).”</p>
4.	Section 5.1.3; Pg 20, lines 36-39	<p>This Section states that:</p> <p>“All contractor or offsite laboratory assessment findings and recommendations should be documented and submitted to both the measurement control program manager and the overall MC&A manager within 30 days of completion of the review.”</p> <p>This is an arbitrary time frame not specified in the regulations.</p>	<p>Reword to remove the 30 days and state “Findings and recommendations are to be addressed consistent with the licensees QA and Corrective Action Program.”</p>
5.	Section 5.2; Pg 21, lines 6-7	<p>This Section states that:</p> <p>“The FNMC plan should describe the replicate sampling program, which must include 6 the following, as appropriate”</p>	<p>Reword sentence to state “FNMC should address the following applicable attributes:...”</p>

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		Sentence is a recommendation, with an embedded requirement (“must”), then a caveat (“as applicable”) is applied.	
6.	Section 6.2; Pg 37, lines 28-31	<p>This Section states that:</p> <p>“Licensees should also commit to having at least two individuals independently verify the accuracy of the ID and SEID calculations for each total plant material balance.”</p> <p>Normal technical review by one other qualified individual is the nuclear industry normal practice. To invoke two additional verifications for such a highly specialized function is an extreme burden on the licensee with no clear regulatory basis or safety benefit. Also, the SEID does not directly affect the accounting records; it is calculated to determine if you are in control.</p>	<p>Reword to state “licensees should commit to independently verify the accuracy of the ID and SEID calculations for each total plant material balance.”</p> <p>Also, although provided elsewhere, the formula for SEID should be provided in this section.</p>
7.	Section 6.3; Pg 38, lines 29-30	<p>This Section states that:</p> <p>“...the NRC acceptance criteria do not normally call for applying bias corrections to either the accounting records or as an adjustment to ID unless the effect of a single significant bias or the net sum of all significant biases is unusually large.”</p> <p>Provide basis as to what is meant by “unusually large.” NRC acceptance criteria does not normally call for applying bias corrections to either the accounting records or as an adjustment.</p>	<p>Reword or remove “unusually large” or state the following: “The bias correction is only applied if it is significant with 95% confidence and exceeds the rounding error.”</p>
8.	Section 6.3; Pg 38, line 44	<p>This Section states that:</p> <p>“the bias is greater than 0.01 percent relative”</p> <p>Provide basis as this appears to be a new criterion being introduced.</p>	<p>Reword: “if such bias is statistically significant at the 95 percent confidence level, and exceeds the rounding error of the affected items. The bias correction is intended to correct the ID. It’s impact on the SEID should also be propagated, resulting in</p>

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			an adjustment to the SEID.”
9.	Section 6.4, 4 th Bullet; Page 39, line 36	This Section cites “10 CFR 74.43 (c)(8)(iii)” Correct citation may be (i) versus (iii)	Confirm and correct as needed.
10	Section 7.5; Pg 44, lines 13-14	This Section states that: “...physical inventories are performed so as to confirm that a loss or diversion of a significant quantity of SNM has not occurred: dynamic (i.e., in-process) materials, which is performed on a frequency not to exceed 3 calendar months...” There is no direct regulatory basis for the 3 months stated.	Suggest rewording to remove the 3 months and state “...at a frequency that takes onto account the potential for loss or diversion from the operation”
11	Section 7.6, Pg 47, lines 28-38	This section provides warning ID levels. It is unclear what the regulatory/technical basis is for these suggested warning ID levels. Also, if keeping the 10kg should be changed to 9 kg	Provide basis for suggested warning ID levels and address 10 kg vs 9 kg value or remove.
12	Section 7.7; Pg 49, lines 48-50	This section states that: “The FNMC plan should establish a threshold of three times SEID for evaluating an ID will result in a 90-percent (or better) probability of detecting a discrepancy equal to or greater than 0.4 percent of the active inventory for the inventory period in question. This is unnecessary and basis for 0.4% is unclear.	Remove the text
13	Section 8.2; Pg 51, lines 29-39	This section provides examples of items that may be exempt from item control program coverage. This list should expand to include samples.	Also include the guidance from the previous draft regarding the exemption for laboratory samples and reference standards maintained in the laboratory material management system and

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			containing uranium enriched to less than 20 percent in the uranium-235 isotope.
14	Section 9.5	<p>Section 9.5, "Resolution of Significant Shipper-Receiver Differences - Commitments and Acceptance Criteria" states:</p> <p>"Each shipping container is inspected within 3 working days after receipt for loss or damage to the container or TIDs to determine whether SNM could have been removed. If the integrity of a container is questionable, the presence of all items that were that were packaged in the shipping container will be confirmed within 24 hours of discovering the questionable integrity."</p> <p>10 CFR 74.43(b)(7) contains neither a 3 working day nor 24 hour requirement. The 24 hour requirement appears to be overly restrictive and depending on the type of package and the number of items in the package in some cases may not be achievable.</p>	Recommend that this section be reworded to be more consistent with 74.15(a) which requires updated information to be generated within 10 days.
15	Section 14.1	<p>Section 14.1 prescribes that the FNMC plan should identify records, forms, procedures, etc., that show compliance with 10 CFR Part 74. It further includes a complete list of items that are required to be included in the FNMC plan. While this list may be applicable to many applicants, depending upon the structure, plan, applicant goal, etc., it is not clear that the list should be a necessity for all.</p>	Revise the language to read, "Such records may include, but are not limited to, the following:".
16	Section 16, Pg 91, lines 6-7	<p>The References Section lists NUREG/BR0096 with a date of October 1992. The ADAMS version has January 1992.</p>	Update in all locations to correct date.
17	Section 16, Pg 91	<p>The references for NUREG/BR-0006 and NUREG/BR-0007 do not list dates</p>	Update with the appropriate dates.