

PR 72, 74 and 150
(76FR28193)



NUCLEAR ENERGY INSTITUTE

DOCKETED
USNRC

June 30, 2011 (11:37 am)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

9

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June 30, 2011

Ms. Annette L. Vietti-Cook
Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
ATTN: Rulemakings and Adjudications Staff

Subject: Industry Comments on Preliminary Rule Language, "Amendments to Material Control and Accounting Regulations (MC&A)," Docket ID NRC-2009-0096

Project Number: 689

Dear Ms. Vietti-Cook:

On behalf of the nuclear industry, the Nuclear Energy Institute (NEI)¹ appreciates the opportunity to provide comments on Preliminary Rule Language, "Amendments to Material Control and Accounting Regulations," which was published in the Federal Register on May 16, 2011 (76 FR 28193). We appreciate the U.S. Nuclear Regulatory Commission (NRC) providing an early opportunity for input on this rulemaking. While we recognize that NRC is in the preliminary rule phase, no supporting information (e.g. regulatory basis) was published and no public meeting was held to solicit stakeholder input on a rule that potentially fundamentally changes 10 CFR Part 74. Recent experience with preliminary rule language published for 10 CFR Part 61, where the technical basis was provided along with the preliminary rule language and a public meeting was conducted, serves as an efficient model for more informed stakeholder participation.

In the absence of a clear safety or security concern, the timing and schedule for this rulemaking should be reconsidered. Specifically, the related 10 CFR Part 73 fuel cycle security rulemaking is underway and will include a re-categorization of Special Nuclear Material (SNM) which will modify industry's implementation of the Part 74 rulemaking, and will necessitate further revisions to it. Harmonizing the schedules for the 10 CFR Part 73 and 74 rulemakings appears to be the most efficient and effective use of NRC and industry resources. At a minimum, NRC should evaluate harmonizing the schedules for the SNM re-categorization and the Part 74 rulemaking. If NRC decides to proceed with this rulemaking on its current schedule, industry would expect to have the opportunity to review the regulatory basis, regulatory analysis, backfit analysis (as this rule will impact licensees under Parts 50, 70, and 76), and draft guidance when the

¹NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, nuclear material licensees, and other organizations and individuals involved in the nuclear energy industry.

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Ms. Annette L. Vietti-Cook

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proposed rule is issued for public comment. Final versions of these documents should also coincide with the effective date of the final rule. We also encourage NRC to conduct public meetings during the comment period for the proposed rule.

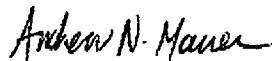
NEI supports NRC's efforts to consolidate the SNM MC&A regulations that apply to operating reactors, new reactors, and Independent Spent Fuel Storage Installations into Part 74. This consolidation should improve the regulatory framework and reduce the regulatory burden without a reduction in the ability to accurately control and account for SNM.

NEI also supports NRC's efforts to develop and implement a risk-informed categorization scheme that considers additional factors in determining material attractiveness than currently exist in today's regulations, such as chemical and physical forms. The NRC's gap analysis in SECY-09-0082 identifies risk informing Parts 73 and 74 as a high priority gap that needs to be addressed and resolved, recognizing that the current quantity-based categorization scheme in the existing regulations may pose an undue regulatory burden.

Several of the proposed changes will have a significant impact on licensee programs without an articulated benefit. While many of the changes primarily impact the fuel cycle facilities, the rule also places unnecessary regulatory burden on all licensees that possess SNM, including power reactors and non power reactors. The attachment provides comments on the preliminary rule language.

Thank you for the opportunity to comment on the preliminary rule language. If you have any questions concerning these comments, please contact me or Janet Schlueter at 202-739-8098; jrs@nei.org.

Sincerely,



Andrew N. Mauer

Attachment

c: Mr. John D. Kinneman, NMSS/FCSS, NRC
Ms. Josephine M. Piccone, FSME/DILR, NRC
Mr. Thomas N. Pham, NMSS/FCSS/SPTSD, NRC
Mr. Thomas F. Young, FSME/DILR/RB-A, NRC

**Comments on Preliminary Rule Language, "Amendments to
Material Control and Accounting Regulations"**

- The two person rule appears to apply to all facilities that possess SNM without a technical basis and justification. Based on preliminary facility input, this is an onerous and costly requirement for facilities that do not currently have a two person rule and is in conflict with Material Control and Accounting (MC&A) programs for those facilities that already have such a requirement. Specifically, NRC finds acceptable today the two person rule implementation for facilities with strategic SNM (SSNM), where computers serve in lieu of a second person. This section is also written too broadly (appears to apply to all tasks covered by the rule, such as data entry) and if retained, should only apply to access to SNM. NRC has previously considered the fuel cycle facility fleet diversity in the context of MC&A and decided not to apply the two person rule for SNM of less strategic importance (i.e. specifically documented in Regulatory Guide 5.80). Industry would expect that the regulatory analysis to support the proposed rule would reflect the significant costs involved to reflect and store the second person's MC&A input. Additionally, maintenance of line of sight could be very difficult for licensees to implement, depending upon the arrangement of the space that the activity is being performed in. Finally, if NRC decides to proceed with this concept, NRC should consider that the two person rule be satisfied through the use of one authorized and one qualified person and provide further guidance in this area.
- Throughout the rule, NRC is adopting overly prescriptive inventory requirements by changing the frequency from months to days. Existing licensee practices to inventory during certain months of the year are effective and NRC endorsed current practices in a letter dated March 13, 2007, from Daniel Dorman to Douglas Walters of NEI, "Frequency of the Physical Inventory of Special Nuclear Material Required by 10 CFR 74.19(c)." The preliminary rule language does not afford any operational flexibility and does not take into account special circumstances (including leap years) and represents a shortening of the time allotted to complete the inventory. For reactors, the inventory normally takes more than five days to complete, and sometimes the inventory could take up to a month to complete, depending on the location of some SNM. Thus, in order to ensure that the 370-day cycle is met; the licensee may have to short cycle the calendar date of the performance of the physical inventory. This would mean that the physical inventory would move up on the calendar date. The preliminary rule language can cause duress with the licensee in that the physical inventory could end up moving to a date that is during a high work period (e.g., a scheduled outage) and could cause the inventory to have to be performed at a frequency less than a year. NRC should either retain the current inventory requirements or add 31 days to the dates in the rule.
- The definition of item control system unnecessarily includes "all" items and, as such, significantly broadens the rule. It is unclear what regulatory problem is being addressed, and reflects a fundamental change in MC&A which will encompass a large number of process samples, including short lived samples and items that do not exist for more than 14 days.

Laboratory samples and other short-lived items should be exempt from this requirement or the current provisions under 74.31(c)(6) and 74.43(b)(6) should be retained. The term "all" items in the rule would appear to add new requirements to track equipment. Further, the relationship between the item control system and accounting system should be clarified. Any new requirements for MC&A beyond SNM need a clear technical basis and justification.

- The rule unnecessarily requires the custodian to maintain the accounting system. Maintenance of the accounting system can be appropriately achieved by other qualified licensee staff and this requirement is overly prescriptive. Additionally, some amplification or clarification of the meaning of 'maintains the accounting system' is warranted to ensure a common understanding of the scope of this phrase during implementation. For example, utilities with more than one site may have custodians at each site and there may also be a corporate custodian. There may be split responsibilities for the inventory and the maintenance of the accounting system, but still involvement of both in the accounting. There could also be a split in responsibilities from persons monitoring the movement of material and the person maintaining the accounting system. The definition as currently written seems narrow and is a change to the way the term is currently and commonly applied. Finally, please provide clarification on the intent of the phrase "material balance area" in the application of the definition of "custodian" for reactors licensees.
- The value added by changing the fundamental nuclear material control (FNMC) plan to an MC&A program is unclear. While this change may emphasize the accounting aspects of the program, the FNMC plan currently contains all accounting features and additional areas such as measurements and measurement control programs. Further, the FNMC is embedded throughout licensing documents. NRC will need to articulate the rationale for the changes and modify applicable licensing guidance. There will also be a significant effect on licensee procedures and commercial contracts, in the absence of an obvious safety or security benefit.
- The definition of Material Control and Accounting (MC&A) includes the phrase 'controls and accounts for equipment capable of producing enriched uranium.' Some amplification or clarification of the meaning of this phrase is warranted to ensure a common understanding of the scope during implementation.
- The definition of a Material Balance Area (MBA) needs clarification as to whether the MBA is a contiguous geographical location within the Material Access Area (MAA) or whether it is still basically an area of custodial responsibility within the geographical location of the MAA.
- The definition of physical inventory in Part 74.4 or the discussion of physical inventory in 74.19 should be expanded to include the use of piece count and tamper-safing devices at power reactors.

- It is unclear as to whether 72.72(c) and (d) are being retained. It would be helpful if NRC provides a crosswalk with the proposed rule identifying which sections of the rule are being retained, modified, or deleted.
- The existing regulations require tracking of all SNM. For reactors licensed pursuant to 10 CFR 50 or 10 CFR Part 52, there are several detectors (e.g., fission chambers), contaminated equipment, samples, and sources that contain very small amounts of SNM (i.e. typically milligram or microgram levels) that are required to be tracked under the current regulations. With the substantial site security requirements already in place at these reactors, and the tracking and record keeping required by 10 CFR 20 on radiological materials, the tracking of this material per the SNM regulations does not increase the ability to protect against the loss, theft, diversion, or misuse of this material. Therefore, NRC should consider an exemption for tracking SNM less than 1 gram for reactors licensed pursuant to 10 CFR 50 or 10 CFR Part 52 in order to further reduce unnecessary regulatory burden. In addition, such an exemption would support the As Low As Reasonably Achievable (ALARA) principle as the process to inventory irradiated items with very low levels of SNM can result in significant radiation dose. For example, inventorying fission chambers used in incore detector systems is typically accomplished through an at power containment entry. Maintaining records showing the receipt, inventory (including location and unique identity), acquisition, transfer, and disposal for items of SNM containing quantities requiring transaction reports as per §74.15(a) and NUREG/BR-0006 in its possession regardless of its origin or method of acquisition should be sufficient for reactors licensed pursuant to 10 CFR 50 or 10 CFR Part 52.
- Within the context of this rulemaking and the re-categorization of SNM, the NRC should revisit the detection level of Plutonium within the definition of formula quantity. The determination of the strategic significance of SNM should be based on material attractiveness. This would allow a facility to prioritize its resources to the safeguarding of the most likely targets for diversion. Under the current categorization and formula quantity, more resources will be devoted to resolving statistical alarms involving less credible targets for diversion. The risk-informed approach to the formula quantity and categorization of SNM would help ensure that process monitoring alarms are effective indicators of an actual loss, and would facilitate risk-informed, performance based oversight from the NRC. The goal quantity for abrupt loss detection is based on this formula, and has major impacts on the operation of a fuel cycle facility. If the intent of the formula is to allow for the detection of less strategic SNM than is required to produce an Improvised Nuclear Device, then mandating the detection of a small fraction of that quantity will not necessarily result in a better detection capability. For example, the goal quantity for the abrupt loss detection of uranium is 5,000 grams U235, whereas the goal quantity for plutonium based on this formula is 2,000 grams total Pu element, regardless of isotopic distribution. However, plutonium processing is not in itself any less variable than uranium processing, nor is the state of the art for measuring plutonium any more precise than that for measuring uranium. Therefore, it is reasonable to conclude that the goal quantity for plutonium loss detection

will not necessarily result in better loss detection, but will necessarily result in more statistical false alarms. If abrupt loss alarms are not good indicators of an actual loss of material, then performance based oversight becomes burdensome to the regulator and the licensee. Risk-informing the formula quantity from which these goal quantities are derived is vital to the industry. A justification for this formula would aid in fostering an ongoing discussion among all stakeholders regarding this key issue.

Rulemaking Comments

From: MAUER, Andrew [anm@nei.org]
Sent: Thursday, June 30, 2011 12:36 PM
Subject: Industry Comments on Preliminary Rule Language, "Amendments to Material Control and Accounting Regulations (MC&A)"
Attachments: 06-30-11_NRC_Industry Comments on Preliminary Rule Language MC&A Clean.pdf;
06-30-11_NRC_Industry Comments on Preliminary Rule Language MC&A Clean_Attachment.pdf

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^[1] NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, nuclear material licensees, and other organizations and individuals involved in the nuclear energy industry.