

# RULEMAKING ISSUE NOTATION VOTE

December 15, 2011

SECY-11-0175

FOR: The Commissioners

FROM: R. W. Borchardt  
Executive Director for Operations

SUBJECT: PROPOSED RULE: AMENDMENTS TO MATERIAL CONTROL  
AND ACCOUNTING REGULATIONS (RIN 3150-AI61)

## PURPOSE:

To request Commission approval to publish a proposed rule, in the *Federal Register*, that would amend Title 10 of the *Code of Federal Regulations* (10 CFR) to revise and consolidate within 10 CFR Part 74 requirements for material control and accounting (MC&A) of special nuclear material (SNM). The proposed changes would primarily affect 10 CFR Part 70 licensees. These changes are intended to update, clarify and strengthen the MC&A requirements. Minor conforming changes would be made to 10 CFR Parts 40, 70, 72 and 150. This paper does not address any new commitments. The proposed changes would be applicable to licensees authorized to possess quantities of SNM greater than 350 grams. Licensees authorized to possess SNM in quantities limited to 350 grams or less, whether licensed by the U.S. Nuclear Regulatory Commission (NRC) or by an Agreement State, would not be affected by this rulemaking.

## BACKGROUND:

In 1985, the NRC created 10 CFR Part 74 to separate the MC&A requirements in 10 CFR Part 70 from safety requirements for licensees authorized to possess SNM under 10 CFR Part 70. Since that time, most of the MC&A requirements have been moved to 10 CFR Part 74.

In 2003, the Office of the Inspector General (OIG) conducted an audit to determine whether the NRC adequately ensures that its licensees control and account for SNM. In its report

CONTACTS: Thomas Young, FSME/DILR  
301-415-5795

Tom Pham, NMSS/FCSS  
301-492-3125

(OIG-03-A-15), OIG recommended that the NRC document the basis used for risk informing its oversight of MC&A activities.

In SECY-05-0143 (NRC's Agencywide Documents Access and Management System (ADAMS) Accession No. ML050870212), dated August 5, 2005, the staff proposed a number of changes to the MC&A program. These changes were based, in part, on: (1) the above referenced OIG recommendation; (2) an evaluation of NRC's MC&A regulatory program by Oak Ridge National Laboratory; and (3) staff considerations regarding the need to provide MC&A regulations for new types of licensees and facilities (e.g., a mixed oxide fuel fabrication facility). In the Staff Requirements Memorandum (SRM) for SECY-05-0143 (ADAMS Accession No. ML053220618), the Commission directed staff to develop a rulemaking plan, including: (1) a broad overview of how MC&A is integrated with other regulatory activities; (2) identification of areas requiring policy decisions by the Commission; and (3) a definition of the relationship between MC&A and physical security.

SECY-08-0059 (ADAMS Accession No. ML080580307), dated April 25, 2008, described the rulemaking plan, which included six options for Commission consideration. The SRM for SECY-08-0059 (ADAMS Accession No. ML090360473) directed the staff to proceed with Option 4, which was limited to revising and consolidating current MC&A requirements in 10 CFR Part 74, and revising existing guidance documents and issuing one new guidance document.

#### DISCUSSION:

The proposed changes to 10 CFR Part 74 are within the scope of Option 4 described in SECY-08-0059, and the reasons for making these changes are discussed in the *Federal Register* notice for the proposed rule (Enclosure 1).

The proposed changes are summarized below. The majority of the changes would affect MC&A provisions in 10 CFR Part 74, with conforming changes in 10 CFR Parts 40, 70, 72 and 150. The proposed changes would be consistent with the NRC's strategic goal and strategic outcome for security, and would enhance the requirements for MC&A commensurate with risk. In this regard, in terms of the amounts of SNM necessary to form a critical mass, the activities of licensees who are only authorized to possess 350 grams or less of SNM carry less risk compared to the activities of licensees authorized to possess more than 350 grams of SNM. Licensees who are only authorized to possess 350 grams or less of SNM are thus not being made subject to these enhanced MC&A requirements. However, all SNM licensees remain subject to the existing reporting requirements of 10 CFR 74.11, 74.13, and 74.15 (or to the parallel Agreement State reporting provisions contained in 10 CFR 150.16 and 150.17), thereby ensuring that on a nationwide basis an adequate level of nuclear safety and security over SNM will be maintained.

The preliminary proposed rule language was published in the *Federal Register* on May 16, 2011 (76 FR 28193), and thirteen comment letters were received and considered.

The organization of 10 CFR Part 74 into subparts A-F would remain unchanged. Fuel fabrication facilities supplying fuel to commercial power reactors, and uranium enrichment facilities (both of which are often referred to as Category III facilities) would remain subject to

Subpart C, “Special Nuclear Material of Low Strategic Significance.” Fuel fabrication facilities supplying fuel to the Navy reactors, and to research and test reactors (such fabrication facilities are often referred to as Category I facilities) would remain subject to Subpart E, “Formula Quantities of Strategic Special Nuclear Material.”

Under this rulemaking, the scope of 10 CFR Part 74 would be expanded to include independent spent fuel storage installations (ISFSIs). The proposed MC&A reporting requirements for an ISFSI licensee under 10 CFR Part 72 would be essentially unchanged, except that the requirements would be located in 10 CFR Part 74.

This rulemaking would add defined terms to 10 CFR Part 74. Some of the proposed definitions (*accounting, custodian, material control and accounting*) are already commonly used by licensees in their MC&A programs. Other proposed definitions (*material balance area, item control area, and two-person rule*) would clarify and strengthen the MC&A requirements.

A reference to a category I quantity of SNM would be added to the definition of *formula quantity*, to make it consistent with the existing definitions in 10 CFR Parts 70 and 73. Similarly, references to a category II quantity of SNM and a category III quantity of SNM would be added to the definitions of *special nuclear material of moderate strategic significance* and *special nuclear material of low strategic significance*, respectively, to match the existing definitions of these terms in 10 CFR Parts 70 and 73.

The defined term, *effective kilograms of special nuclear material* (and references to it in several provisions) would be removed from 10 CFR Part 74. Quantities of SNM would instead be expressed in gram units to simplify the accounting requirements in 10 CFR Part 74 and provide consistency with the existing 10 CFR Part 74 SNM definitions referenced above (*formula quantity, special nuclear material of moderate strategic significance, and special nuclear material of low strategic significance*), all of which specify quantities in gram units. This proposed removal would also correct an inconsistency within the current 10 CFR 74.19 provisions. Existing 10 CFR 74.19(b) refers to a quantity of SNM “exceeding one effective kilogram” in specifying the set of licensees that must establish written MC&A procedures. Existing 10 CFR 74.19(c) refers to a quantity of SNM “greater than 350 grams” in specifying the set of licensees that must conduct physical inventories. Removing *effective kilograms of special nuclear material* from 10 CFR Part 74 would also eliminate confusion caused by a conflict between the regulatory thresholds for the SNM categories (Category I, Category II, and Category III) and an effective kilogram of SNM. *Effective kilograms of special nuclear material* would remain as a defined term in 10 CFR Parts 40, 70, 75, 76, and 110, to ensure the continued effective implementation of the U.S./International Atomic Energy Agency Safeguards Agreement.

This rulemaking would add a new Appendix A to 10 CFR Part 74. The appendix, “Categories of Special Nuclear Material,” would include a table showing the quantities for each category, the corresponding subpart in 10 CFR Part 74 for each category, and formulae to calculate the quantity of material for Category I, II, or III facilities. The table would be based on the materials and quantities that are currently in Appendix M to 10 CFR Part 110, “Categorization of Nuclear Material.”

The existing general performance objectives (GPOs) in 10 CFR 74.31(a) and 74.33(a) (applicable to licensees of Category III facilities), 74.41(a) (applicable to licensees of Category II facilities), and 74.51(a) (applicable to licensees of Category I facilities) would be revised by consolidating their common provisions into a new 10 CFR 74.3. In addition to being applicable to Category III, II, and I facilities, the 10 CFR 74.3 GPOs would be applicable to reactor licensees and to two additional NRC materials licensees who are authorized to hold more than 350 grams of SNM, but which are not Category III, II, or I facilities. The GPOs describe informational activities to deter, detect, or aid in responding to any loss, theft, diversion or misuse of SNM. The GPO requirements in 10 CFR 74.33(a) that are specific to Category III enrichment facilities, and the GPO requirements in 10 CFR 74.51(a) that are specific to Category I facilities would be retained in those revised sections.

Under proposed revisions to 10 CFR 74.19(c), the reactor licensees and the two additional NRC materials licensees (who would be made subject to the GPO requirements as discussed above), would also be made subject to item control requirements, to better ensure that these licensees maintain current knowledge of each held item. Consistent with the graded approach that has long been used for MC&A requirements, these proposed item control provisions would be less rigorous than the existing item control requirements that the Category III, II, and I facilities must meet.

This rulemaking would revise the item control requirements in subparts C and D to remove some currently exempted items. Specifically, the exemption for items existing 14 days or less in Category III and II facilities would be removed. Licensees now have the ability to track such items within their MC&A systems. The exemption for items below the stated detection level for Category III facilities would be removed, as would a similar exemption applicable to Category II facilities, for the same reasons.

A two-person rule would be added to strengthen the MC&A requirements by making the unauthorized diversion of material less likely. The two-person rule would also better ensure that correct procedures are used, that covered actions are completed correctly by qualified and authorized personnel, and that information about the actions is accurately documented. The rule would apply to licensees who are subject to the 10 CFR Part 74, subpart C, D, or E requirements for tamper-safing, performing physical inventories, transferring SNM, or handling SNM that is not under an active control measure or monitoring or surveillance condition. The staff is aware that existing licensees have expressed concerns about the potential impact of the two-person rule. These concerns would be explored in public comments on the proposed rule, which may include public meetings during and after the comment period.

The existing references in 10 CFR Part 74 to a fundamental nuclear material control (FNMC) plan would be replaced with references to an MC&A plan. The staff's view is that FNMC is an outdated term and does not include "accounting." Licensees would not be required to change the names of their existing plans.

The exemption for an irradiated fuel reprocessing plant would be removed from 10 CFR Part 74, subpart E (existing 10 CFR 74.51(a)). The licensee of any future such facility would likely possess quantities of strategic SNM that need to be subject to the highest level of MC&A safeguards and security requirements, to ensure that this material is adequately protected.

Consistent with Option 4, if the NRC conducts a rulemaking for irradiated fuel reprocessing, MC&A requirements would be reviewed at that time to determine if any additional changes were necessary.

Many of the references to due dates and reporting frequencies would be changed to calendar days, to make 10 CFR Part 74 more uniform in this regard. Using calendar days avoids the existing uncertainty over whether weekends and holidays are counted in determining whether or not a licensee has taken timely action. Plain language changes would be made to clarify the requirements for shipper-receiver difference comparisons for all SNM receipts, by consistently referring to the standard error of the inventory difference. The requirements for material status reports would be re-organized for clarity.

#### SUPPORTING DOCUMENTS:

Enclosure 2, the Draft Regulatory Analysis, shows that the proposed rule would result in a total one-time cost to NRC licensees of approximately \$646,000 followed by total annual costs of approximately \$1.1 million. The analysis estimates the total present value of these costs at \$8.1 million (using a 7-percent discount rate) and at \$9.7 million (using a 3-percent discount rate) over the 10-year analysis period. The rule would result in a one-time cost to the NRC of approximately \$259,000, followed by no annual costs.

Enclosure 3, the Draft Environmental Assessment, includes the finding that this rule, if adopted, would not have any significant environmental impacts, and therefore this rulemaking does not warrant the preparation of an environmental impact statement. As the proposed amendments primarily pertain to information collection and reporting requirements, adopting them would have no significant impact on the quality of the human environment.

The following guidance documents would be revised and updated on a coordinated schedule that parallels this proposed rulemaking. Draft versions of these documents would be released for public comment with the proposed rule. Final versions of these documents would be released to the public with the final rule. A new guidance document for Category II facilities will be included with the guidance documents below:

- NUREG-1280, "Standard Format and Content Acceptance Criteria for the Material Control and Accounting (MC&A) Reform Amendment,"
- NUREG-1065, "Acceptable Standard Format and Content for the Fundamental Nuclear Material Control (FNMC) Plan Required for Low-Enriched Uranium Facilities,"
- NUREG/CR-5734, "Recommendations to the NRC on Acceptable Standard Format and Content for the Fundamental Nuclear Material Control (FNMC) Plan Required for Low-Enriched Uranium Enrichment Facilities,"
- NUREG/BR-0096, "Instructions and Guidance for Completing Physical Inventory Summary Report."

AGREEMENT STATE COMPATIBILITY ISSUES:

The proposed rule amends sections of the regulations that are currently classified as Compatibility Category "NRC," under the 1997 "Policy Statement on Adequacy and Compatibility of Agreement States Programs." The NRC program elements in this category are those that relate directly to areas of regulation reserved to the NRC by the Atomic Energy Act of 1954, as amended, or provisions of 10 CFR, and cannot be relinquished to the Agreement States. There are thus no compatibility issues.

RESOURCES:

The resources for this rulemaking are in the Fuel Facilities Business Line. To complete and implement the rulemaking, 3.0 full-time equivalents (FTE) would be required.

In Fiscal Year (FY) 2012, 1.7 FTE have been proposed in the NRC's budget being considered by Congress and would be required for this activity as follows: Office of Federal and State Materials and Environmental Management Programs (FSME) (1.0), Office of Nuclear Material Safety and Safeguards (NMSS) (0.3), Office of New Reactors (0.1), Office of Administration (ADM) (0.1), Office of the General Counsel (OGC) (0.1), and Office of Information Services (OIS) (0.1).

In FY 2013, 1.3 FTE are estimated for this activity as follows: FSME (0.5), NMSS (0.5), ADM (0.1), OGC (0.1), and OIS (0.1). These resources have been included in the agency's proposed FY 2013 budget.

RECOMMENDATIONS:

That the Commission:

1. Approve for publication, in the *Federal Register*, the proposed amendments to 10 CFR Parts 40, 70, 72, 74, and 150 (Enclosure 1).
2. Note:
  - a. The proposed amendments will be published in the *Federal Register*, allowing 75 days for public comment.
  - b. The Chief Counsel for Advocacy of the Small Business Administration will be informed of the certification and the reasons for it, as required by the Regulatory Flexibility Act, 5 U.S.C. 605(b).
  - c. A Draft Regulatory Analysis has been prepared for this rulemaking (Enclosure 2).
  - d. A Draft Environmental Assessment has been prepared for this rulemaking (Enclosure 3).
  - e. Appropriate congressional committees will be informed of this action.

- f. A press release will be issued by the Office of Public Affairs when the proposed rulemaking is filed with the Office of the Federal Register.

Office of Management and Budget (OMB) Paperwork Reduction Act review is required. A clearance package will be forwarded to OMB no later than the date the proposed rule is submitted to the Office of the Federal Register for publication.

COORDINATION:

The OGC has no legal objection to the proposed rulemaking. The Office of the Chief Financial Officer has reviewed this Commission Paper for resource implications and has no objections. The rule suggests changes in information collection requirements that must be submitted to OMB no later than the date the proposed rule is forwarded to the *Federal Register* for publication.

***/RA by Michael F. Weber for/***

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Executive Director  
for Operations

Enclosures:

1. *Federal Register* notice
2. Draft Regulatory Analysis
3. Draft Environmental Assessment

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| OFC         | RBA/DILR  | RBA/DILR  | FCSS                        | SFST         | DILR                        |
|-------------|-----------|-----------|-----------------------------|--------------|-----------------------------|
| <b>NAME</b> | TYoung    | JDanna    | JKinneman                   | VOrdaz       | KMcConnell/<br>DJackson for |
| <b>DATE</b> | 12/7/11   | 12/8/11   | 11/23/11                    | 11/28/11     | 12/8/11                     |
| <b>OFC</b>  | ADM       | OIS       | CFO                         | OE           | OIP                         |
| <b>NAME</b> | CBladey   | RNichols  | JDyer                       | RZimmerman   | MDoane                      |
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| <b>OFC</b>  | D:NRO     | D:NRR     | D:NSIR                      | OGC          | D:NMSS                      |
| <b>NAME</b> | MJohnson  | ELeeds    | JWiggins                    | MYoung (NLO) | CHaney                      |
| <b>DATE</b> | 11/28/11  | 11/28/11  | 11/28/11                    | 12/05/11     | 11/29/11                    |
| <b>OFC</b>  | FSME      | D:FSME    | EDO                         |              |                             |
| <b>NAME</b> | PTressler | MSatorius | RWBorchardt<br>(MWeber for) |              |                             |
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