

RULEMAKING ISSUE NOTATION VOTE

September 13, 2011

SECY-11-0126

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: PROPOSED RULE: AMENDMENTS TO MATERIAL CONTROL
AND ACCOUNTING REGULATIONS (RIN 3150-A-161)

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) Parts 40, 70, 72, 74, and 150, 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. Minor conforming changes would be made to 10 CFR Parts 40, 70, 72 and 150. These changes are intended to update, clarify and strengthen the MC&A requirements. This paper does not address any new commitments.

BACKGROUND:

In 1985, U.S. Nuclear Regulatory Commission (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 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 (OIG-03-A-15), OIG recommended that the NRC document the basis used for risk informing its oversight of MC&A activities.

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In SECY-05-0143 (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) defining 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 the Commission to consider. The SRM for SECY-08-0059 (ADAMS Accession No. ML090360473) directed the staff to proceed with Option 4, that 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 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. 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*, 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 Part 74 definitions of the various types of SNM, all of which specify quantities in gram units. *Effective kilograms of special nuclear material* would remain as a defined term in 10 CFR Parts 40, 70, 75, 76, and 110, for implementation of the US/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 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) that are applicable to licensees of Category I, II, and III facilities would be revised and expanded to provide a tiered approach which would make GPOs applicable to all SNM licensees. The GPOs describe informational activities to deter, detect, or aid in responding to any loss, theft, diversion or misuse of SNM. The tiered approach is as follows. Subpart A of 10 CFR Part 74 would include the GPOs that all SNM licensees would be required to achieve. Subparts C and E would include GPO requirements that are specific to Category III enrichment facilities and Category I facilities, respectively.

A new item control requirement in Subpart B would require all licensees authorized to hold SNM, regardless of quantity, to maintain current knowledge of each held item. The new requirement is consistent with current requirements to annually complete a physical inventory, and submit material status and nuclear material transaction reports, and would close a regulatory gap in the existing Subpart B MC&A requirements. Currently, 10 CFR Part 74 requires a licensee authorized to possess SNM in a quantity greater than 350 grams to conduct a physical inventory of all SNM in its possession. The proposed change would require a licensee authorized to possess SNM in any quantity to conduct a physical inventory of the material.

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 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 hold 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 licensees of approximately \$660,000 followed by total annual costs of approximately \$1.1 million. The analysis estimates the total present value of these costs at \$8.2 million (using a 7-percent discount rate) and at \$9.8 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 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 Cycle Business Line. To complete and implement the rulemaking, 3.0 full-time equivalent (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: FSME (1.0), NMSS (0.3), NRO (0.1), ADM (0.1), OGC (0.1), and 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 Office of the General Counsel 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/

R. W. Borchardt
Executive Director
for Operations

Enclosures:

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

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OFC	ADM*	OIS*	D:CFO	D:OE*	OIP*
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OFC	D:NRO*	D:NRR*	D:NSIR	OGC*	D:NMSS*
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