



RULEMAKING ISSUE

(Affirmation)

October 15, 2018

SECY-18-0104

FOR: The Commissioners

FROM: Margaret M. Doane
Executive Director for Operations

SUBJECT: DRAFT FINAL RULE: AMENDMENTS TO MATERIAL CONTROL AND ACCOUNTING REGULATIONS (RIN 3150-AI61; NRC-2009-0096)

PURPOSE:

The purpose of this paper is to request Commission approval to publish a final rule in the *Federal Register* (FR) to amend Part 74 of Title 10 of the *Code of Federal Regulations* (10 CFR), "Material Control and Accounting of Special Nuclear Material." The staff is prepared to publish implementing guidance concurrently with the final rule.

SUMMARY:

The final rule would amend the 10 CFR Part 74 material control and accounting (MC&A) regulations applicable to special nuclear material (SNM) and some source material. This rulemaking would revise and consolidate MC&A requirements in 10 CFR Part 74 in order to update, clarify, and strengthen existing requirements, consistent with Commission direction in SRM-SECY-08-0059. Specific areas where the MC&A regulations are strengthened include applying general performance objectives (GPOs) to all licensees authorized to possess more than 350 grams of SNM, requiring the use of item control systems at more types of facilities, formalizing use of tamper-safing procedures, and clarifying the use of material balance areas (MBAs), item control areas (ICAs), and material custodians. While many of the revisions are not subject to backfitting requirements, four have been identified by the staff as backfits that are

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necessary for adequate protection. Plain language revisions would also be made to 10 CFR Part 74. References to due dates and reporting frequencies would be made more uniform by expressing such times in terms of calendar days. Section 74.4, "Definitions," would be amended by adding, removing, and modifying certain terms. Associated guidance documents would be revised to reflect these changes. In addition, conforming changes would be made to 10 CFR Parts 40, 60, 63, 70, 72 and 150.

BACKGROUND:

The U.S. Nuclear Regulatory Commission (NRC) ensures that its licensees control and account for SNM through the MC&A provisions that are currently in several sections of 10 CFR Parts 72 and 74. In SECY-08-0059, "Rulemaking Plan: Part 74 - Material Control and Accounting of Special Nuclear Material," dated April 25, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML080580307), the staff provided six regulatory options for Commission consideration related to consolidating and strengthening the NRC's MC&A program. In the staff requirements memorandum (SRM) associated with SECY-08-0059, dated February 5, 2009 (ADAMS Accession No. ML090360473), the Commission directed the staff to proceed with Option 4 — a limited rulemaking that would revise and consolidate current MC&A requirements into 10 CFR Part 74 in order to update, clarify, and strengthen them. Additionally, under the approved option, the staff would revise existing guidance documents and issue a new guidance document for Category II licensees.

The staff developed preliminary proposed rule language, and, on May 16, 2011, requested public comments in the *Federal Register* (76 FR 28193). The NRC received 13 comment letters. Following consideration of the comments received, the staff submitted a proposed rule to the Commission in SECY-11-0175, "Proposed Rule: Amendments to Material Control and Accounting Regulations (RIN 3150-AI61)," dated December 15, 2011 (ADAMS Accession No. ML113400219). In SRM-SECY-11-0175, dated April 12, 2012, the Commission approved publication of the *Federal Register* notice (FRN) for the proposed rule, with specific changes (ADAMS Accession No. ML121030104). On October 18, 2012, the staff provided the revised FRN to the Commission prior to publication.

On November 6, 2012, at the request of a Commissioner, the Office of the Secretary of the Commission converted the rule package, including the proposed changes to the FRN, into COMSECY-12-0026, "Revisions to Proposed Rule: Amendments to Material Control and Accounting Regulations" (ADAMS Accession No. ML12311A439), so that it could be voted on by the Commission. In SRM-COMSECY-12-0026, dated May 10, 2013, the Commission disapproved issuance of the proposed rule and instead directed staff to either conduct a backfit analysis on the proposed "two-person" provision¹, or, if staff believed significantly more time would be needed to address this issue, remove the provision from the rulemaking package and consider the issue in a future rulemaking effort. The staff removed the provision, and on November 8, 2013, the revised proposed rule was published for a 100-day comment period in the *Federal Register* (78 FR 67225). On December 30, 2013, the comment period was extended for an additional 20 days (78 FR 79328). The staff held two public meetings during the comment period to discuss the proposed changes.

The NRC received 27 comment letters from members of the nuclear industry, Agreement State organizations, and private citizens. The comments encompassed a variety of viewpoints, and

¹ This provision would have required that at least two authorized and qualified persons would be present whenever an information collection and reporting task covered by the rule is performed.

the comment summaries and responses are included in Section IV, "Public Comment Analysis," of the draft FRN for this final rule (Enclosure 1). Detailed responses to the comments are provided in a separate comment and response document (ADAMS Accession No. ML18061A050).

On March 5, 2015, the staff held a public meeting to share preliminary information about modifications to the proposed rule language, as well as the staff's estimates of the resources necessary for initial implementation and annual operations for the proposed requirements. On August 28, 2018, the staff held a public meeting with licensee and industry representatives to confirm that it would be possible to implement the final rule within 6 months after the publication of the rule. The meeting participants raised concerns about potential challenges to implementing the modified item control system and the modified exemptions within 6 months. After consideration of the impacts discussed in the meeting, the staff concluded that more than 6 months would be needed by certain licensees to implement the changes. A small number of licensees are required under 10 CFR Part 74 to have an NRC-approved MC&A plan. These licensees expressed that they may require a longer implementation period because they may choose to prepare revisions to their MC&A plans that would be submitted to the NRC for review and approval prior to implementation of the final rule. For this reason, the staff concludes that an implementation period of 24 months is reasonable to accommodate potential procedural actions by the licensees.

The staff briefed the Committee to Review Generic Requirements (CRGR) on August 16, 2018. The CRGR found the staff's treatment of the backfitting aspects of the rulemaking to be in accordance with the applicable backfitting regulations and guidance. On August 30, 2018, the CRGR provided a memorandum to the Office of the Executive Director for Operations documenting its review and endorsement of the draft final rule (ADAMS Accession No. ML18233A519).

DISCUSSION:

The staff developed a final rule that will, if adopted, make amendments to 10 CFR Part 40, "Domestic Licensing of Source Material," Part 60, "Disposal of High-Level Radioactive Wastes in Geologic Repositories," Part 63, "Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada," Part 70, "Domestic Licensing of Special Nuclear Material," Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste," Part 74, and Part 150, "Exemptions and Continued Regulatory Authority in Agreement States and in Offshore Waters under Section 274." The revisions to 10 CFR Parts 40, 60, 63, 70, and 72 are conforming changes that derive from the consolidation of the 10 CFR Part 72 MC&A requirements into the 10 CFR Part 74 MC&A requirements. The revisions to 10 CFR Part 150 clarify reporting requirements for Agreement State licensees, as stated in the proposed rule.

The revisions to 10 CFR Part 74 include administrative and plain-language changes, and modifications that would affect four general areas: (1) GPOs; (2) item control systems; (3) tamper-safing procedures; and (4) MBAs, ICAs, and material custodians. The final rule would include revisions made to the proposed rule in response to public comments, as discussed in greater detail in Section IV of the draft FRN as well as in a separate document that captures the comments and staff responses in detail (ADAMS Accession No. ML18061A050). In addition, revisions were made to six draft guidance documents to reflect and explain the revised MC&A requirements in 10 CFR Part 74.

General Performance Objectives

The existing GPO requirements for MC&A programs are set forth for Category III, II, or I licensees (i.e., licensees subject to Subparts C, D, or E of 10 CFR Part 74, respectively). The final rule would consolidate the common aspects of these GPOs into 10 CFR 74, Subpart A. The final rule would also add a new GPO in Subpart A for licensees to control access to MC&A information. The GPOs in Subpart A would be applicable to all NRC licensees who are authorized to possess or use more than 350 grams of SNM, including nuclear reactors, independent spent fuel storage installations and monitored retrievable storage installations (referred to in the draft final rule collectively as storage installations), and other non-fuel cycle facilities, as well as the facilities subject to Subparts C, D, or E. Those GPO requirements specific to Category III, II, or I licensees would be retained in the appropriate subparts of 10 CFR Part 74.

A majority of the public comments did not favor the consolidation of GPOs because commenters were concerned that the rule revisions would require significant changes to current licensee programs or procedures for existing facilities. Although the staff agrees that minor changes to procedures may be needed, the staff does not expect the consolidated GPOs to significantly affect existing MC&A programs. In response to the public comments, the staff clarified the intent of the GPO revisions in the draft FRN for the final rule, in the backfit evaluation, and in the comment and response document. As explained in these documents, the GPOs represent fundamental principles that are embodied in the MC&A programs in use by current licensees. Such principles are generally reflected (as defined in existing 10 CFR 74.4), which would enable the licensee to maintain current knowledge of each item.

Item Control and Exemptions

The final rule would require that all Category III and II licensees establish, document, implement, and maintain an item control system as part of their MC&A program capabilities. This revision would clarify the existing requirements for item control at Category III and II facilities, and would provide a uniform approach to item control for all such licensees. In addition, the final rule would modify the item control exemptions and the detection thresholds for unauthorized removal of SNM, using a graded approach for Category III and Category II licensees. The existing more-stringent requirements for item monitoring at Category I facilities would remain unchanged in the final rule.

The final rule also would add a similar item control requirement to Subpart B of 10 CFR Part 74 that would apply to nuclear reactors licensed under 10 CFR Part 50 or 52 and storage installations licensed under 10 CFR Part 72.

The public comments about the proposed addition of an item control system requirement to Subpart B for nuclear reactors and storage installations expressed concern that this new requirement would affect facility operations and necessitate new procedures and inventory systems with what the commenters viewed as no associated improvements to safety or security of the facilities. The staff agrees that additional licensee efforts would be needed to implement and conduct annual operations for the item control systems. As discussed in the backfit evaluation (Enclosure 3), to meet the currently applicable recordkeeping and reporting requirements, affected licensees need to maintain accurate information on the locations and quantities of material in their possession. This revision would formalize the use of that information as an item control system, but would not require significant or different additional effort to control and account for material, as discussed in the regulatory analysis (Enclosure 2).

Indeed, if a licensee did not have accurate, specific information on the quantities and locations of material in its possession (i.e., an item control system or something similar), it would be difficult for a licensee to demonstrate compliance with current recordkeeping and reporting requirements, and therefore the NRC would have concerns with that licensee's MC&A program presently. Therefore, the item control system requirement in 10 CFR 74.19(d) is necessary to ensure that these licensees continue to maintain adequate protection to the health and safety of the public and is in accord with the common defense and security. The existing regulations in 10 CFR 74, Subpart B, require that these licensees maintain records of their SNM and submit an annual inventory report to the NRC. While many licensees are tracking their SNM using an NRC-endorsed American National Standards Institute (ANSI) standard², this is a voluntary standard that is used on a facility-specific basis; it has not been formally adopted industrywide. Furthermore, this standard does not address storage installations, nor does it provide guidance for the full scope of item controls necessary for adequate protection that would be required by the final rule.

As discussed in Enclosure 3, the Commission noted in SRM-SECY-99-063 (ADAMS Accession No. ML003752062) that "voluntary industry initiatives will not be used in lieu of regulatory action where a question of adequate protection of public health and safety exists." While the NRC will not rely on current licensee practices in lieu of requirements where there is a question of adequate protection, these rule revisions will result in lesser licensee impacts than if they reflected a marked change from current agency positions or current licensee practices. As discussed in the regulatory analysis (Enclosure 2), the staff expects that the new requirement would result in small changes to existing procedures and practices at affected facilities.

Other public comments on the proposed rule regarding item control systems concerned the item control exemptions and the threshold for detection of unauthorized removal of SNM, specifically for Category III licensees. The commenters stated that the proposed provisions that limited the item control exemptions and required the detection of unauthorized removal of "any quantity of SNM from items" were unduly restrictive and would significantly affect operations and MC&A programs. In response to comments about item control exemptions, the final rule would retain the existing exemptions for solutions containing less than 5 grams per liter of SNM and for items of waste destined for burial or incineration. The final rule also would include additional exemptions from item control for small quantities of SNM in laboratory samples and standards, and for items existing less than 3 calendar days that contain less than certain quantities of SNM.

In response to public comments about the proposed threshold levels for detection of unauthorized removal of SNM from items, the final rule would apply the existing threshold level for Category III enrichment facilities to all licensees subject to Subpart C. The final rule would also retain the existing threshold level for licensees subject to Subpart D. In the final rule, all licensees subject to Subpart C would be required to detect unauthorized removals of individual items or 500 grams or more of uranium-235 from one or more items. Licensees subject to Subpart D would be required to detect unauthorized removal of individual items or 200 grams or more of plutonium or uranium-233, or 300 grams or more of uranium-235, from one or more items.

² ANSI N15.8 2009, "Methods of Nuclear Material Control—Material Control Systems—Special Nuclear Material Control and Accounting Systems for Nuclear Power Plants;" endorsed by NRC in Regulatory Guide 5.29, "Special Nuclear Material Control and Accounting System for Non-Fuel Cycle Facilities."

Tamper-safing Procedures

Tamper-safing is a common practice in industry, and is defined in the existing 10 CFR 74.4 as “the use of devices on containers or vaults in a manner and at a time that ensures a clear indication of any violation of the integrity of previously made measurements of special nuclear material within the container or vault.” Category II and I licensees under Subparts D and E, respectively, are currently required to establish and maintain tamper-safing procedures, if tamper-safing is to be used. The final rule would now require Category III licensees under Subpart C to establish and maintain tamper-safing procedures, if tamper-safing is to be used, and would also require that the procedures “include control of access to, and distribution of, unused seals and records.”

Several commenters expressed concern that the proposed tamper-safing changes would affect their current practices and would require more extensive use of tamper-safing. In particular, some commenters stated that a phrase, “...of containers and vaults (as defined in Section 74.4),” in the proposed rule in sections 10 CFR 74.31(c)(9), 74.33(c)(9), 74.43(c)(3), and 74.59(f)(2)(i) was overly specific and would require expansion of their current use of tamper-safing. In response to these comments, the final rule would remove the specific reference to “containers and vaults” in these four sections. The requirements in the final rule would not prescribe the extent of tamper-safing, only that a licensee establish and maintain their procedures for tamper-safing, if tamper-safing is to be used. Licensees would not necessarily need to revise existing tamper-safing programs, and the staff expects that any effects on licensees from these revisions would be minimal.

Material Balance Areas, Item Control Areas, and Material Custodians

The final rule would add requirements that licensees under Subparts C, D, and E designate one or more MBAs, or a combination of one or more MBAs and one or more ICAs, at their facilities. The final rule also would require that licensees assign material custodians who are responsible for monitoring these areas. The MBAs and ICAs form the basis for control and accounting of all SNM within a facility’s boundaries, and are expected to enhance the capability of licensees to detect the unauthorized removal of SNM. As discussed in the backfit evaluation (Enclosure 3), while these specific provisions have been identified as backfits, existing Category III, II, and I licensees are generally undertaking activities presently that are consistent with these final rule provisions. The staff does not have current concerns because, in addition to existing underlying requirements, licensees are currently meeting these revised (or similar) approaches for material control and accounting requirements, as discussed below. These final rule provisions would ensure that licensees maintain current knowledge of the SNM in their possession. Thus, while these rule revisions are necessary for adequate protection, they derive directly from existing requirements, and reflect current licensee practices. As noted above and consistent with Commission direction, voluntary industry initiatives will not be used in lieu of regulatory action where a question of adequate protection of public health and safety exists. As discussed in the regulatory analysis (Enclosure 2), the staff expects that these new requirements would result in only small, if any, changes to existing procedures and practices, and the staff has accounted for these changes in the regulatory analysis.

Commenters expressed some concerns that the changes would require reconfiguring current facilities into multiple MBAs and ICAs, and maintaining contiguous areas. In response to these comments, the staff revised the draft final rule by removing the term “contiguous” and by specifying that licensees may designate one or more MBAs or a combination of one or more

MBAs and one or more ICAs. These revisions would provide flexibility for a licensee to designate such areas for their facility.

Additional Considerations

The guidance documents associated with this rulemaking have been revised and updated. A list of these guidance documents is provided in the draft FRN for the final rule (Enclosure 1). Final versions of the documents will be issued when the final rule is published in the FR. These guidance documents contain information for each type of facility operated under Subparts C, D, and E of 10 CFR Part 74. In addition, the staff revised and updated the guidance document for non-fuel cycle facilities that are not subject to Subparts C, D, or E of 10 CFR Part 74.

The regulatory analysis (Enclosure 2) for this final rule estimates that the rule would result in a total one-time cost to NRC licensees of approximately \$3.6 million, followed by total annual costs of approximately \$348,000. The analysis estimates the total present value of these costs over the 25-year analysis period to be between \$9.6 million and \$7.6 million (at the 3-percent and 7-percent discount rate, respectively). The rule would result in an average one-time cost per licensee of approximately \$28,000, followed by an average annual cost per licensee of approximately \$2,700. There are no expected future costs related to NRC activities. The costs incurred by the NRC for the rulemaking activities are considered sunk costs and are not included in the regulatory analysis. This regulatory analysis does not include an estimate of the cost to update the inspection program as inspection programs are reviewed and updated at 3-year to 5-year intervals, and the changes would be incorporated as part of these periodic updates without the need for additional resources.

The backfit evaluation (Enclosure 3) assesses the draft final rule with respect to potential backfitting on protected entities. The proposed rule concluded that the backfitting provisions in 10 CFR 50.109, 10 CFR 70.76, and 10 CFR 72.62, and the issue finality provisions 10 CFR Part 52, would not apply because MC&A provisions include information collection and reporting requirements that are not subject to the NRC's backfitting and issue finality regulations. Numerous public comments disagreed with that conclusion and requested that the NRC conduct a more comprehensive backfitting analysis of the proposed requirements. In response to comments, the staff prepared a backfit evaluation for the final rule that evaluates the provisions in detail with respect to potential backfitting or issue finality considerations.

The backfit evaluation identifies those licensees subject to backfitting or issue finality considerations under the provisions of 10 CFR Parts 50, 52, 70, and 72. The evaluation concluded that many of the revisions do not constitute backfitting. The staff identified four specific provisions of the final rule that are considered backfitting. The final rule provisions that constitute backfitting are as follows: (1) a new provision requiring an item control system that is applicable to nuclear reactor facilities licensed under 10 CFR Parts 50 or 52, and to storage installations licensed under 10 CFR Part 72; (2) revised provisions regarding item control of SNM at Category III facilities; (3) new provisions regarding the use of tamper-safing procedures at Category III facilities; and (4) new provisions for designating MBAs, ICAs, and material custodians having responsibility for the SNM possessed under license at Category III and I facilities. While these provisions constitute backfitting, they are necessary to ensure adequate protection of the health and safety of the public and are in accord with the common defense and security. Therefore, these four provisions in the final rule are excepted from the requirement to conduct a backfit analysis. While these rule revisions are necessary for adequate protection, they derive directly from existing requirements and reflect current licensee practices.

Enclosure 3 provides a documented evaluation in accordance with backfitting and issue finality requirements.

The environmental assessment (Enclosure 4) concludes that this final rule, if adopted, will not have a significant impact on the environment. Therefore, an environmental impact statement was not prepared. The amendments pertain to certain MC&A programmatic activities relating to safeguards or security in addition to information collection and reporting requirements, and adopting them has no significant impact on the quality of the human environment.

AGREEMENT STATE COMPATIBILITY ISSUES:

This final rule amends sections of the regulations that are currently classified as Compatibility Category "NRC" under the Commission's Agreement State Program Policy Statement, effective October 6, 2017 (82 FR 48535, October 18, 2017). 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, therefore, neither compatibility issues nor costs applicable to the Agreement States or Agreement State licensees.

COMMITMENTS:

Final guidance will be issued concurrently with the final rule.

RECOMMENDATIONS:

The staff recommends that the Commission:

1. Approve the draft FRN (Enclosure 1) for publication in the *Federal Register*.
2. Certify that this rule, if adopted, will not have significant impact on a substantial number of small entities, to satisfy the requirement of the Regulatory Flexibility Act, 5 U.S.C. 605(b). This certification is included in the draft FRN (Enclosure 1).
3. Note:
 - a. 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).
 - b. A final regulatory analysis has been prepared for this rulemaking (Enclosure 2).
 - c. A final backfit evaluation has been prepared for this rulemaking (Enclosure 3).
 - d. A final environmental assessment and finding of no significant impact has been prepared for this rulemaking (Enclosure 4).
 - e. The staff has determined that this action is not a "major rule," as defined in the Congressional Review Act of 1996 (5 U.S.C. 804(2)) and has confirmed this determination with the Office of Management and Budget. The appropriate congressional and Government Accountability Office contacts will be informed.

- f. The appropriate congressional committees will be informed of this action.
- g. A press release will be considered by the Office of Public Affairs when the final rule is filed with the Office of the Federal Register.
- h. The final rule contains amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501-3521) that must be submitted to the Office of Management and Budget for its review and approval before publication of the final rule in the *Federal Register*.

RESOURCES:

There are sufficient resources included in the FY 2018 Enacted Budget and FY 2019 President's Budget under the Fuel Facilities Business Line to complete this rulemaking. Resources beyond FY 2020 will be addressed through the Planning, Budget, and Performance Management process.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection. The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objections.



Margaret M. Doane
Executive Director
for Operations

Enclosures:

- 1. *Federal Register* notice
- 2. Regulatory Analysis
- 3. Backfit Evaluation
- 4. Environmental Assessment

Commissioners' completed vote sheets/comments should be provided directly to the Office of the Secretary by COB Tuesday, January 15, 2019.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Tuesday, January 8, 2019, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

DISTRIBUTION:

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DRAFT FINAL RULE: AMENDMENTS TO MATERIAL CONTROL AND ACCOUNTING REGULATIONS (RIN 3150-AI61; NRC-2009-0096) DATED _____.

ADAMS Accession No. ML18061A056 / WITS 200900028

Package: ML18032A499, FRN: ML18061A049, Regulatory Analysis: ML18061A055, Backfit Evaluation: ML18061A058, Environmental Assessment: ML18061A048, Comment and Response Document: ML18061A050 *via e-mail

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DATE	07/27/2018	09/06/2018	09/13/2018	10/15/18

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