

**NOTATION VOTE**

**RESPONSE SHEET**

**TO:** Annette Vietti-Cook, Secretary

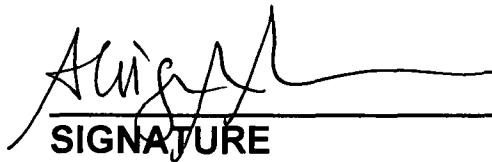
**FROM:** Chairman Macfarlane

**SUBJECT:** COMSECY-12-0026 – REVISIONS TO PROPOSED  
RULE: AMENDMENTS TO MATERIAL CONTROL AND  
ACCOUNTING REGULATIONS (RIN 3150-AI61)

Approved \_\_\_\_\_ Disapproved XX \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

**COMMENTS:** Below \_\_\_\_\_ Attached XX \_\_\_\_\_ None \_\_\_\_\_

  
Annette Vietti-Cook  
**SIGNATURE**  
3/28/13  
**DATE**

Entered on “STARS” Yes \_\_\_\_\_ No \_\_\_\_\_

Comments accompanying Chairman Macfarlane's vote on  
COMSECY-12-0026 – REVISIONS TO PROPOSED RULE: AMENDMENTS TO  
MATERIAL CONTROL AND ACCOUNTING REGULATIONS (RIN 3150-AI61)

The “two-person rule” is useful at Category I, II and III facilities, primarily to reduce the potential for malevolent acts by an insider. However, I am disapproving publishing the *Federal Register* Notice because the staff did not adequately address the backfit issue.

The subject proposed rule recommends a number of measures that will enhance licensees’ material control and accounting programs. Included in these recommended upgrades is implementation of a two-person rule at Category I, II and III facilities, for conduct of certain activities involving access to special nuclear material.

I commend the staff for requesting stakeholder comments in the *Federal Register* Notice on the pros and cons of and potential alternatives to the two-person rule. This outreach is an integral part of our rulemaking process that assists the Commission in arriving at a risk-informed decision. However, another important aspect of the rulemaking process is consideration of the backfit rule, in this case, Title 10 Code of Federal Regulations (10 CFR) 70.76. In the Staff Requirements Memorandum to SECY-11-0175, Proposed Rule: Amendments to Material Control and Accounting Regulations (RIN 3150-AI61), the Commission directed the NRC staff to take the backfit rule into account:

*The staff should either include a more thorough discussion of how the requirements in this proposed rule satisfy one or more of the backfit exception provisions of 70.76(a)(4) or the staff should provide a backfit analysis if the proposed rule is determined not to qualify for an exception.*

The staff has stated that the proposed requirements in the *Federal Register* Notice are not backfits, and are thus not subject to the backfit rule because (1) there is no backfit provision in 10 CFR Part 74, and (2) material control and accounting provisions incorporated by past rulemakings imposed “information collection and reporting” requirements, which are not defined as backfitting in 10 CFR 70.76(a)(1).

Regarding (1), the backfit rule applies to “each applicant or licensee that is or plans to be authorized to possess greater than a critical mass of special nuclear material, and engaged in enriched uranium processing, fabrication of uranium fuel or fuel assemblies, uranium enrichment, enriched uranium hexafluoride conversion, plutonium processing, fabrication of mixed-oxide fuel or fuel assemblies, scrap recovery of special nuclear material, or any other activity that the Commission determines could significantly affect public health and safety.” (10 CFR 70.60) The scope of facilities required to implement measures in 10 CFR Part 74 is covered by the above scope in 10 CFR 70.76.

Regarding (2), while past material control and accounting rulemakings may have imposed “information collection and reporting requirements” not subject to a backfit analysis, the current proposed revisions to the material control and accounting requirements involve more than “information collection and reporting.” To the extent the staff asserts that because a backfit analysis was not required for prior changes to the MC&A requirements, such an analysis is not required for future changes, the staff’s position conflicts with the Commission’s statement of considerations for the backfit rule in 10 CFR 70.76.<sup>1</sup> However, the Commission also stated that “future changes to the requirements in [10 C.F.R.] subpart H<sup>2</sup> or NRC requirements that apply to facilities covered by subpart H will be subject to the backfit requirements in § 70.76 established by this rule.”

As the staff points out, the two-person rule certainly provides the benefit of enhancing material accounting accuracy by providing a “double-check” during inventories. However, the two-person rule primarily addresses the “C” (control) in MC&A, by decreasing the probability of an individual being able to steal or divert special nuclear material. In this way, it fits in the definition of backfitting in 10 CFR 70.76, constituting “the modification of... the procedures or organization required to operate a facility; any of which may result from a new or amended provision in the Commission rules...”

Finally, I note that the Department of Energy, which has for decades implemented a two-person rule at its facilities housing special nuclear material, defines the two-person rule as “two authorized persons physically located where they have an unobstructed view of each other and/or item(s) and can positively detect unauthorized actions or access to nuclear materials.” Albeit more restrictive than the requirement that the NRC staff is proposing, this definition leaves no doubt that the primary purpose of the two-person rule is protection against the insider threat.

In consideration of the above, I join Commissioners Ostendorff and Magwood in disapproving publication of the *Federal Register* Notice, pending either staff’s conduct of a backfit analysis on the two-person rule or an explanation of how the proposed requirements satisfy one or more of the backfit exception provisions of 70.76(a)(4). I also agree with Commissioner Ostendorff that changes should be made in the eventual *Federal Register* Notice to reflect the fact that implementation of the two-person rule does not, in fact, simply consist of information collection and reporting.

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<sup>1</sup> There, the Commission stated that “the backfit rule does not apply to this final rule; therefore, a backfit analysis is not required for this final rule because these amendments do not involve any provisions that would impose backfits as defined in 10 CFR Chapter I.” 65 Fed. Reg. 56224 (Sep. 18, 2000).

<sup>2</sup> Additional Requirements for Certain Licensees Authorized to Possess a Critical Mass of Special Nuclear Material

**RESPONSE SHEET**

**TO:** Annette Vietti-Cook, Secretary  
**FROM:** COMMISSIONER SVINICKI  
**SUBJECT:** COMSECY-12-0026 – REVISIONS TO PROPOSED  
RULE: AMENDMENTS TO MATERIAL CONTROL AND  
ACCOUNTING REGULATIONS (RIN 3150-AI61)

Approved \_\_\_\_\_ Disapproved XX Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

**COMMENTS:** Below XX Attached \_\_\_\_\_ None \_\_\_\_\_

I disapprove publication of the draft final rule. I join Commissioner Ostendorff in continuing to question whether the two-person rule and certain, other proposed requirements (those that would align the regulations for lower-risk facilities with higher-risk Category I fuel facilities) are justified given the lack of an analysis of their security benefit. Consistent with the direction arising from the Commission's decision in SECY-11-0175, the staff should, nonetheless, conduct a backfit analysis on the proposed two-person rule provision. I would also support Commissioner Magwood's proposal that the staff remove the two-person rule provision from this rulemaking package and consider the issue in a future rulemaking effort, as an alternative approach.

While I do not approve publication of the *Federal Register* notice at this time, I offer the attached edits for incorporation in potential future versions of this notice. I also join Chairman Macfarlane in endorsing Commissioner Ostendorff's proposal that changes be made in any eventual *Federal Register* notice, establishing that implementation of the two-person rule does not, in fact, consist merely of information collection and reporting.

  
\_\_\_\_\_  
SIGNATURE

04/P/13  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes \_\_\_\_\_ No \_\_\_\_\_

ADAMS. The NRC does not routinely edit comment submissions to remove identifying or contact information. If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying or contact information that they do not want to be publicly disclosed in their comment submission. Your request should state that the NRC does not routinely edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment submissions into ADAMS.

## **II. Introduction and Summary of Proposed Revisions to MC&A Regulations.**

The NRC plans to amend Title 10 of the *Code of Federal Regulations* (10 CFR) to consolidate the MC&A provisions in 10 CFR part 74. Conforming changes would be made to 10 CFR parts 40, 70, 72 and 150. The changes are intended to update, clarify, and strengthen MC&A requirements.

The existing 10 CFR part 74 regulations contain subparts A through F, and the MC&A requirements are organized in a graded fashion with subpart E containing the most rigorous set of MC&A requirements. General MC&A reporting and recordkeeping requirements in subpart B apply to all materials licensees authorized to possess SNM under 10 CFR part 70, ~~and such requirements also apply to reactor~~ licensees under 10 CFR parts 50 or 52, and -ISFSI licensees under 10 CFR part 72. Licensees authorized to possess SNM of "low strategic significance" (defined in 10 CFR 74.4) are subject to the more rigorous MC&A requirements in subpart C. Such licensees operate what are known as Category III facilities, which include licensed uranium enrichment facilities and the three fuel fabrication facilities supplying fresh fuel assemblies (containing low enriched uranium) to commercial power reactors. Licensees authorized to possess SNM of "moderate strategic significance" (defined in 10 CFR 74.4) are

subject to the MC&A requirements in subpart D, and are authorized to operate Category II facilities (no such facilities ~~now-currently~~ operate). The most rigorous MC&A requirements are in subpart E, and apply to licensees authorized to possess a "formula quantity" (defined in 10 CFR 74.4) of strategic special nuclear material (SSNM). Such 10 CFR part 70 licensees operate what are known as Category I facilities. Only two such facilities now operate, and they fabricate fuel (containing high enriched uranium) for use by the U.S. Navy and in research and test reactors. One potential Category I facility may operate in the future as a mixed oxide fuel fabrication facility.

Table 1 shows the location of the proposed MC&A requirements within 10 CFR part 74 and the types of facilities ~~which that~~ are licensed to possess SNM. A list of specific questions about the proposed requirements is provided in Section III of this document.

**Table 1. Location of Proposed MC&A Requirements for Certain Types of Facilities**

New Requirement	Location in proposed 10 CFR part 74 by type of facility				
	Subparts A and B		Subpart C	Subpart D	Subpart E
	Part 70 license authorizing > 350 grams	Part 50 or 52 Reactor Facility	Part 70 Fuel Cycle Facility		
			Category III	Category II	Category I
General performance objectives	74.3		modified the existing requirements in 74.31(a) and 74.33(a) to refer to 74.3; retained the unique performance objectives in 74.33(a) for an enrichment facility	modified the existing requirement in 74.41(a) to refer to 74.3	modified the existing requirement in 74.51(a) to refer to 74.3 and retain unique performance objectives 74.51(a)
Item control system	no requirement	74.19(d)	modified the existing requirements in 74.31(c)(6) and 74.33(c)(6) to remove some exemptions	modified the existing requirement in 74.43(b)(5) to remove some exemptions	no modification would be needed for existing 74.55, Item Monitoring
Tamper-safing of containers or vaults	no requirement		74.31(c)(9) 74.33(c)(9)	clarified the existing requirement in 74.43(c)(3)	clarified the existing requirement in 74.59(f)(2)(i)

<b>Two-person rule for certain operations</b>	no requirement	74.31(c)(10) 74.33(c)(10)	74.43(c)(9)	clarified the existing requirement and added 74.59(h)(6)
<b>MBA/ICA and custodians</b>	no requirement	74.31(c)(11) 74.33(c)(11)	74.43(c)(10)	74.59(h)(5)

In 2008, the NRC developed an MC&A rulemaking plan (SECY-08-0059, Rulemaking Plan: Part 74 - Material Control and Accounting of Special Nuclear Material, ADAMS Accession No. ML080580307) and submitted it to the Commission for its consideration. In accordance with the Commission's approval of the rulemaking plan's Option 4 in the Staff Requirements Memorandum (SRM) for SECY-08-0059 (ADAMS Accession No. ML090360473), various changes would be made to 10 CFR part 74. The considerations on which this rulemaking action are based, and the proposed substantive changes to the MC&A requirements, may be summarized as follows:

#### **General Performance Objectives**

The existing GPO requirements are set forth for each type of facility in 10 CFR 74.31(a), 74.33(a), 74.41(a), and 74.51(a). Building on these existing GPOs, the NRC proposes to list five common GPOs in a new 10 CFR 74.3, and these requirements that would apply to all licensees authorized to possess more than 350 grams of SNM – a set of licensees that includes power reactors and ISFSIs. The 10 CFR 74.3 GPOs would largely replace the existing GPOs for Category I, II, and III facilities. Some GPOs that are unique to the Category III enrichment facilities, and to the Category I fuel fabrication facilities, would remain in revised 10 CFR 74.33(a) and 74.51(a), respectively. The NRC does not expect that Category I, II, and III licensees would need to alter their MC&A programs in response to the 10 CFR 74.3 GPOs, because these GPOs are similar to the existing GPOs.

there have been no reports of lost SNM items from these licensees, the NRC's view is that imposing item control requirements on them is not necessary.

In a new 10 CFR 74.19(d), the NRC is proposing to expand the requirement to establish an item control system to include reactor facilities licensed under 10 CFR part 50 or 52, and ISFSIs licensed under 10 CFR part 72. This requirement is consistent with guidance developed for the reactor industry by the reactor industry-American National Standards Institute (ANSI) in ANSI N15.8 ("Methods of Nuclear Material Control—Material Control Systems—Special Nuclear Material Control and Accounting Systems for Nuclear Power Plants"), dated February 18, 2009. The NRC has published for comment (77 FR 28407; May 14, 2012) a draft version of Regulatory Guide (RG) 5.29, "Nuclear Material Control Systems for Nuclear Power Plants," which proposes to endorse use of the ANSI N15.8 guidance. Requiring item control systems at reactors and ISFSIs would ensure that SNM is adequately accounted for at these sites.

Licensed Category III fuel fabrication and uranium enrichment facilities are already subject to item control requirements under 10 CFR 74.31(c)(6) and 74.33(c)(6), respectively. Similarly, licensees of Category II facilities are subject to item control requirements under 10 CFR 74.43(b)(6). These requirements are being modified, in part, by removing the exemption provisions for items existing for less than 14 days. These exemptions date from when most facilities did not have, as part of their MC&A programs, automated tracking systems and computer-based accounting systems to help track SNM items. Today, licensees have the ability to track items immediately upon creation instead of waiting for hand-written ledgers to be updated. Removing these exemptions will require tracking of items that could contain large quantities of SNM but were are not now subject to a facility's item control system.

The 10 CFR 74.31(c)(6) and 74.33(c)(6) requirements would further be modified by removing the exemptions for individual items containing less than 500 grams of uranium-235, which may contain up to a cumulative total of 50 kilograms of uranium-235. Similarly, for a

Category II facility, the exemption (in 10 CFR 74.43(b)(6)) for individual items containing less than 200 grams of plutonium or uranium-233; or 300 grams or more of uranium-235 up to a cumulative total of one formula kilogram of strategic SNM; or 17 kilograms of uranium-235 contained in uranium enriched to 10 percent or more but less than 20 percent in the uranium-235 isotope, would be removed. By not allowing large quantities of SNM to be exempt from a Category II or Category III facility's item control system, a more complete and comprehensive inventory would be achieved. Further, since all licensees are required by existing 10 CFR 74.11 to report the loss of 1 gram or more of SNM, removing these item control exemptions increases the internal consistency of the MC&A requirements.

Category I facilities are subject to the item monitoring requirements in 10 CFR 74.55, which are not being changed in this rulemaking. Consistent with the present graded approach, these subpart E item monitoring requirements are part of the more stringent MC&A program that applies to Category I facilities. Item monitoring differs significantly from item control. As compared to the item control requirements applicable to Category II and III facilities, the item monitoring requirements in 10 CFR 74.55 are more stringent and rigorous with respect to the scope of item test frequencies, statistical sampling plans, and detection limits. The NRC has found no problems with the item monitoring programs used by Category I licensees, and therefore no changes to 10 CFR 74.55 are proposed.

#### **Tamper-Safing**

The NRC proposes to strengthen the existing MC&A requirements related to tamper-safing containers and vaults ~~which~~that contain SNM. The term *tamper-safing* would be defined 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 SNM within the container or vault.

Category I and II facilities are required to follow these MC&A tamper-safing requirements by existing 10 CFR 74.59(f)(2)(i) and 10 CFR 74.43(c)(3), respectively. By adding 10 CFR 74.31(c)(9) and 74.33(c)(9), the NRC proposes to make tamper-safing requirements applicable to licensed Category III fuel fabrication and uranium enrichment facilities as well. Such licensees would be required to develop tamper-safing procedures and use tamper-safing devices on containers or vaults holding SNM. These procedures must "include control of access to, and distribution of, unused seals and records." The quoted language is part of existing 10 CFR 74.43(c)(3), and would be added to existing 10 CFR 74.59(f)(2)(i) so that the tamper-safing requirements in subparts C, D, and E of 10 CFR part 74 would be similarly worded. As the intent of the tamper-safing requirement remains the same, the changes in wording are not expected to affect the MC&A programs at Category I and II facilities.

The proposed 10 CFR 74.31(c)(9) and 74.33(c)(9) would incorporate as requirements common practices and procedures already used at Category III facilities, and would supplement and strengthen their existing SNM item control and inventory programs that help to protect against the unauthorized and unrecorded removal of SNM. All Category III facilities routinely tamper-safe containers of SNM so this regulatory change is not expected to be a burden for the affected licensees.

The use of tamper-safing procedures would not be required at other types of NRC-licensed facilities, since SNM at such facilities is generally not in forms where tamper-safing seals can be applied. At reactors, for example, fuel assemblies are not amenable to tamper-safing because the fuel assemblies are not stored in containers where unauthorized opening of a container could be detected with a tamper-safing device. Containers for spent fuel at ISFSIs are welded shut and are sufficiently difficult to open that tamper-safing is not required. At facilities where only sealed sources are used (e.g., at industrial, academic, and research facilities authorized to possess 350 grams or less of SNM), tamper-safing is not required

because the manner in which the sealed sources are manufactured and sealed adequately prevents removal of the SNM.

#### **Two-Person Rule**

To strengthen the MC&A requirements, the NRC proposes to add a definition of a two-person rule to 10 CFR 74.4. The definition would be referenced in similarly-worded provisions added as 10 CFR 74.59(h)(6) (applicable to Category I facilities); 10 CFR 74.43(c)(9) (applicable to Category II facilities); 10 CFR 74.31(c)(10) (applicable to Category III fuel fabrication facilities); and 10 CFR 74.33(c)(10) (applicable to Category III uranium enrichment facilities). The term *two-person rule* would be defined as a requirement that at least two authorized and qualified persons would be present whenever an information collection and reporting task covered by the rule is performed. Under the proposed definition, an authorized person would be a worker who has been authorized by the licensee to perform the task. A qualified person would be a worker who has sufficient knowledge to determine if the proper procedure has been followed, meets any formal qualification requirements established by the licensee for performing the task, and is capable of attesting that the information collection and reporting task has been performed accurately. Such workers must be able to verify both that the task was completed in accordance with the proper procedures, and that the information collected and recorded during the task is accurate.

The proposed two-person rule minimizes the chance that an individual would intentionally or unintentionally record inaccurate or incorrect information concerning the locations and quantities of SNM, or would inaccurately-incorrectly identify SNM containers and their tamper-safing seals. The primary objective of this requirement is to ensure the accuracy of MC&A records. The two-person rule would have additional security-related benefits, such as reducing the likelihood that a single individual would be able to carry out unauthorized diversions of SNM, and would increase the likelihood that deviation from safety

remove SNM without being detected, as the SNM is generally in the form of fuel rods and fuel assemblies that are very large and heavy and require access to and use of large equipment to handle and move. Licensed facilities authorized to possess 350 grams of SNM or less – e.g., industrial, academic, and research facilities – do not use storage vaults or other types of areas (such as material balance areas and item control areas) where the two-person rule is typically applied. Most SNM at these facilities is in the form of sealed sources and generally there is no need to tamper-safe sealed sources for the reasons previously discussed. As these facilities generally possess few items containing SNM, the likelihood of errors occurring during a physical inventory is low.

#### **Material Balance Areas, Item Control Areas, and Custodians**

As previously discussed, the NRC proposes to add a definition of an ICA to 10 CFR

74.4. Similarly, the NRC proposes to add a definition of an MBA to 10 CFR 74.4. The term *material balance area* would be defined as a designated contiguous area in which the control of SNM is such that the quantity of material being moved into, out of, and within the MBA is an assigned value based on measurements of both the element content and the isotopic content, if known.

The proposed rule adds requirements that all Category I, II, and III licensees must designate ICAs and MBAs at their facilities, and identify custodians who would be responsible for monitoring these areas. The proposed requirements are set forth in 10 CFR 74.59(h)(5), 74.43(c)(10), 74.31(c)(11), and 74.33(c)(11). These required areas form the basis for nuclear material accounting and control of all SNM within a Category I, II, or III facility's boundaries, and these new requirements are expected to enhance the capability of licensees to detect the unauthorized removal of SNM. In general, smaller accounting areas make control of SNM easier, and reduce the size of the area in which detected losses of SNM can be attributed.

	(h)(5) Custodians	
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*E. What are the changes to the general performance objectives?*

The existing 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 I, II, and III facilities, the 10 CFR 74.3 GPOs would be applicable to reactor licensees and two NRC materials licensees that are authorized to hold more than 350 grams of SNM, but which are not Category I, II, or III facilities. The proposed 10 CFR 74.3 GPOs describe activities to deter, detect, or aid in responding to any loss, theft, diversion or misuse of SNM. The existing GPO provisions in 10 CFR 74.31, 74.33, 74.41, and 74.51 would be revised to refer to 10 CFR 74.3, but GPOs that are unique to uranium enrichment facilities and Category I fuel fabrication facilities would be retained in 10 CFR 74.33 and 74.51.

*F. Are sealed sources included in the general performance objectives for Category II and III facilities?*

Yes. The current exclusion for sealed sources in the 10 CFR 74.31 and 74.41 GPO provisions would be relocated to Appendix A (Note 1) to clarify that the sealed sources would not be considered for determining whether a facility is a Category III facility or a Category II facility, respectively. The change would be consistent with the current requirements, which were intended to exclude sealed sources from the material quantity calculations used to determine whether a facility is a Category III facility subject to subpart C requirements, or a Category II facility subject to the subpart D requirements of 10 CFR part 74. However, sealed sources would be within the scope of the proposed 10 CFR 74.3 GPOs. Sealed sources would

continue to be subject to a licensee's MC&A program.

*G. Why would newly defined terms be added to 10 CFR 74.4?*

Certain terms are commonly used by licensees in their internal procedures implementing their MC&A systems, plans and programs, including *accounting, custodian, material control and accounting*. Defining these terms in the NRC's regulations would clarify the requirements and improve understanding of the regulations. Other newly defined terms (*material balance area, item control area, and two-person rule*) and their related requirements are deemed necessary to strengthen the MC&A requirements at facilities holding significant amounts of SNM, thereby making diversion or misuse of SNM at such facilities less likely.

*H. Why would the term "effective kilograms of special nuclear material" be removed from 10 CFR part 74?*

Doing so would allow quantities of SNM specified in 10 CFR part 74 to be expressed in gram units, which would simplify the accounting requirements and provide consistency with the existing definitions of *formula quantity, special nuclear material of low strategic significance, and special nuclear material of moderate strategic significance*, which specify quantities in gram units. The reference to one effective kilogram in the 10 CFR 74.19(b) written MC&A procedures provision would be replaced with a reference to a quantity of SNM greater than 350 grams. This 350-gram amount is referenced in existing 10 CFR 74.19(c) regarding the physical inventory provisions stated there. References to one effective kilogram in the GPO provisions of 10 CFR 74.31, 74.33, and 74.41 would be revised to reference gram units of material. The new Appendix A would also use gram units. The effective kilogram term would remain in 10 CFR parts 40, 70, 75, 76, and 110, to ensure the continued effective implementation of the U.S./IAEA Safeguards Agreement.

health and safety and common defense and security.

#### XV. Backfitting and Issue Finality

The NRC has determined that the NRC's backfitting and issue finality regulations in 10 CFR 50.109, 70.76, 72.62, 76.76, and in 10 CFR part 52, do not apply to this proposed rule because this amendment would not involve any provisions that are subject to these backfitting and issue finality provisions. The proposed rule addresses MC&A programs, which consist of administrative procedures and operations to track and control SNM and related information to deter and detect any loss, theft, diversion, or unauthorized production of nuclear material. The NRC regards MC&A requirements as constituting information collection and reporting requirements. The NRC has long taken the position that information collection and reporting requirements are not subject to the NRC's backfitting and issue finality regulations, as reflected in past MC&A rulemakings published in the *Federal Register* (e.g., 56 FR 55991; October 31, 1991, 67 FR 78130; December 23, 2002, and 73 FR 32453; June 9, 2008). The remainder of this section discusses the NRC's bases for determining that MC&A activities are information collection and reporting requirements.

There are several bases for the NRC's determination that MC&A activities required by 10 CFR part 74 are information collection and reporting requirements. First, several of the existing general provisions in 10 CFR part 74, subpart A, indicate that 10 CFR part 74 includes information collection and reporting requirements. For example, 10 CFR 74.1, *Purpose*, states that the requirements in 10 CFR part 74 address "the *control and accounting* of special nuclear material at fixed sites and for *documenting* the transfer of special nuclear material," and include general "*reporting requirements*" (*emphases added*). This focus on information collection and reporting requirements is further emphasized by the current language of paragraph (a) of 10

**Comment [a1]:** Revise this section in accordance with STAFF REQUIREMENTS – SECY-11-0175 – PROPOSED RULE: AMENDMENTS TO MATERIAL CONTROL AND ACCOUNTING REGULATIONS (RIN 3150-AI61), paragraph 5

that would be added to 10 CFR 74.4 to read as follows: *Accounting* means a system which that documents the quantities of SNM held on current inventory by the licensee, and includes tracking of receipts, shipments, and measured discards, and transfers of SNM. Material accounting constitutes the principles, processes and procedures for collecting and maintaining accurate information and records on the nature and quantities of SNMs within the licensee's control. By *accurate* information and records, the NRC means that the information has been collected and maintained in a manner which that minimizes the possibility of human error or deliberate acts of malfeasance affecting the accuracy and quality of the information.

The concept of material *control* is reflected in the proposed definitions that would be added to 10 CFR 74.4 and that read as follows. *Item control area* means a designated administrative area within the controlled access area, in which SNM is maintained in such a way that, at any time, a count of the items and the related material quantities can be obtained using the accounting system. Control of items moving into, out of, and within an ICA is by the identity of an item and its assigned material quantity. *Item control system* means a system tracking the creation, identity, element and isotopic content, location, and disposition of all items, which enables the licensee to maintain current knowledge of each item.

Material control constitutes the administrative processes and procedures that a holder of SNM employs to control the location and accounting of items containing SNM, by applying appropriate material accounting principles, processes and procedures. These processes and procedures for controlling the quantities, location, storage, transportation and use of items containing SNM support the accuracy of the material accounting information each time it is collected, and ensure that the information remains accurate throughout the period of time that the items are in the possession of the licensee. This concept of control is reflected in the proposed definition that would be added to 10 CFR 74.4: *Material control and accounting* means a program to control and account for certain types of nuclear material used at a licensed

facility, including SNM and source material, and which controls and accounts for unauthorized use of equipment capable of producing enriched uranium. The purpose of an MC&A program is to deter and detect any loss, theft, diversion, misuse, or unauthorized production of nuclear material.

Material accounting and material control, properly integrated, ensure that accurate information (*i.e.*, information ~~which~~that is not inaccurate due to human error or deliberate acts of malfeasance) is developed and maintained on items of SNM in the licensee's possession. By doing so, the NRC's regulatory objective (of ensuring that SNM is not lost, stolen, diverted, or misused through human error or because of deliberate acts of malfeasance) is achieved.

The performance requirements for the MC&A program, set forth in proposed 10 CFR 74.3, *General Performance Requirements*, demonstrate that such a program represents a system of information collection and reporting requirements directed at achieving the NRC's regulatory objective of ensuring that SNM is not lost, stolen, diverted, or misused. Proposed 10 CFR 74.3 would require licensees to implement an MC&A program to achieve five general performance objectives. The nature of the five objectives (shown in Table 3) includes maintaining accurate, current, and reliable information to confirm quantities and locations of SNM. The information would enable a licensee to detect, respond and resolve any anomaly concerning SNM being held by the licensee and would enable the licensee to make a rapid determination of the actual situation. A licensee would be able to provide reliable information to aid in the investigation and recovery of SNM. A licensee would be expected to control access to MC&A information and prevent unauthorized use of the information by adversaries.

The NRC notes that nothing in the current provisions of part 74, or in the proposed amendments to part 74, precludes affected licensees from possessing or using SNM. Such substantive health and safety or common defense and security requirements are set forth in other parts of 10 CFR parts 20, 70, 71, 72, 73, 75, 76, 95, and 110. A review of the substantive

The additions and revisions read as follows:

**§ 74.4 Definitions.**

\* \* \* \*

*Accounting* means a system which that documents the quantities of special nuclear material (SNM) held on current inventory by the licensee, and includes tracking of receipts, shipments, and measured discards, and transfers of SNM.

\* \* \* \*

*Custodian* means an individual authorized and qualified by the licensee who is responsible for controlling the movement of all SNM into, out of, and within a material balance area.

\* \* \* \*

*Formula quantity* means strategic special nuclear material (SSNM) in any combination in a quantity of 5,000 grams or more computed by the formula, grams = (grams contained U-235) + 2.5 (grams U-233 + grams plutonium). This class of material is also referred to as a Category I quantity of material as shown in Appendix A to this part.

\* \* \* \*

*Item control area (ICA)* means a designated administrative area within the controlled access area, in which SNM is maintained in such a way that, at any time, a count of the items and the related material quantities can be obtained using the accounting system. Control of items moving into, out of, and within an ICA is by the identity of an item and its assigned material quantity.

*Item control system* means a system tracking the creation, identity, element and isotopic content, location, and disposition of all items, which enables the licensee to maintain current

independent spent fuel storage installations licensed under part 72 of this chapter, and operations involving waste disposal are not subject to the requirements of subpart C of this part.

(b) *Implementation.* Each applicant for a license, and each licensee that, upon application for modification of its license, would become newly subject to paragraph (a) of this section shall submit for approval an MC&A plan describing how the performance objectives of § 74.3 and the requirements of paragraph (c) of this section will be met. The MC&A plan shall be implemented when a license is issued or modified to authorize the activities being addressed in paragraph (a) of this section, or by the date specified in a license condition.

(c) *Program capabilities.* To achieve the § 74.3 performance objectives, the MC&A plan must include the capabilities described in paragraphs (c)(1) through (11) of this section, and require the licensee to:

(1) Establish, document, and maintain a management structure which assures clear overall responsibility for material control and accounting functions, independence from production responsibilities, separation of key responsibilities, and adequate review and use of critical material control and accounting procedures;

(2) Establish and maintain a measurement system, which assures that all quantities in the material accounting records are based on measured values;

(3) Follow a measurement control program, which assures that measurement bias is estimated and significant biases are eliminated from inventory difference values of record;

(4) In each inventory period, control total material control and accounting measurement uncertainty so that twice its standard error of the inventory difference (SEID) is less than the greater of 9,000 grams of U-235 or 0.25 percent of the active inventory, and assure that any measurement performed under contract is controlled so that the licensee can satisfy this requirement;

(5) Unless otherwise required to satisfy part 75 of this chapter, perform a physical

inventory at least every 12 months and, within 60 calendar days after the start of the inventory, reconcile and adjust the book inventory to the results of the physical inventory, and resolve, or report an inability to resolve, any inventory difference ~~which-that~~ is rejected by a statistical test ~~which-that~~ has a 90 percent power of detecting a discrepancy of a quantity of uranium-235 established by the NRC on a site-specific basis;

(6) Establish, document, implement, and maintain an item control system as defined in § 74.4. Store and handle or subsequently measure items in a manner such that unauthorized removals of individual items or any quantity of SNM from items will be detected. Exempted from this requirement are items in solution with a concentration of less than 5 grams of uranium-235 per liter and items of waste destined for burial or incineration;

(7) Conduct and document shipper-receiver difference comparisons for all SNM receipts on a total shipment basis, and on an individual batch basis when required by part 75 of this chapter, and ensure that any shipper-receiver difference that is statistically significant and exceeds twice the estimated standard deviation of the difference estimator and 500 grams of uranium-235 is investigated and resolved;

(8) Independently assess the effectiveness of the MC&A program at least every 24 months, and document management's action on prior assessment recommendations.

(9) Maintain and follow procedures for tamper-safing (as defined in § 74.4) of containers or vaults (as defined in § 74.4) containing SNM, which include control of access to, and distribution of, unused seals and records;

(10) Use the two-person rule (as defined in § 74.4) for tamper-safing, performing physical inventories, for transferring SNM, and for any handling of SNM that is not under an active control measure, monitoring, or surveillance condition; and

(11) Designate material balance areas and item control areas and assign custodial

(i) Measurement bias is estimated and minimized through the measurement control program, and any significant biases are eliminated from inventory difference values of record;

(ii) All MC&A measurement systems are controlled so that twice the standard error of the inventory difference (SEID), based on all measurement error contributions, is less than the greater of 5,000 grams of U-235 or 0.25 percent of the U-235 of the active inventory for each total plant material balance; and

(iii) Any measurements performed under contract are controlled so that the licensee can satisfy the requirements of paragraphs (c)(3)(i) and (ii) of this section;

(4) A physical inventory program that provides for:

(i) Performing, unless otherwise required to satisfy part 75 of this chapter, a dynamic (nonshutdown) physical inventory of in-process (e.g., in the enrichment equipment) uranium and U-235 at least every 65 calendar days, and performing a static physical inventory of all other uranium and total U-235 contained in natural, depleted, and enriched uranium located outside of the enrichment processing equipment at least every 370 calendar days, with static physical inventories being conducted in conjunction with a dynamic physical inventory of in-process

uranium and U-235 so as to provide a total plant material balance at least every 370 calendar days; and

(ii) Reconciling and adjusting the book inventory to the results of the static physical inventory and resolving, or reporting an inability to resolve, any inventory difference that is rejected by a statistical test which that has a 90 percent power of detecting a discrepancy of a quantity of U-235, established by the NRC on a site-specific basis, within 60 calendar days after the start of each static physical inventory;

(5) A detection program, independent of production, which provides high assurance of detecting and resolving:

(i) Development of procedures for tamper-safing of containers or vaults containing SSNM not in process that include adequate controls to assure the validity of assigned SSNM values and ~~which~~that include control of access to, and distribution of, unused seals and records;

\* \* \* \* \*

(h) \* \* \*

(2) \* \* \*

(ii) Any scrap measured with a standard deviation greater than 5 percent of the measured amount is recovered so that the results are segregated by inventory period and recovered within 185 calendar days of the end of the inventory period in which the scrap was generated except where it can be demonstrated that the scrap measurement uncertainty will not cause noncompliance with § 74.59(e)(5).

\* \* \* \* \*

(5) Designate material balance areas and item control areas and assign custodial responsibility for each of these areas in a manner that ensures that such responsibility can be effectively executed for all SSNM possessed under license.

(6) Use the two-person rule (as defined in § 74.4) for tamper-safing (as defined in § 74.4), performing physical inventories, for transferring SNM, and for any handling of SNM that is not under an active control measure, monitoring, or surveillance condition.

26. Add Appendix A to part 74 to read as follows:

**Appendix A to Part 74 -- Categories of Special Nuclear Material.**

Notes:

1. Sealed sources as defined in § 74.4 are excluded from the quantities in the table.

## **RESPONSE SHEET**

**TO:** Annette Vietti-Cook, Secretary

**FROM:** Commissioner Apostolakis

**SUBJECT:** COMSECY-12-0026 – REVISIONS TO PROPOSED  
RULE: AMENDMENTS TO MATERIAL CONTROL AND  
ACCOUNTING REGULATIONS (RIN 3150-AI61)

**Approved** \_\_\_\_\_ **Disapproved**  **Abstain** \_\_\_\_\_

**Not Participating** \_\_\_\_\_

**COMMENTS:** **Below**  **Attached** \_\_\_\_\_ **None** \_\_\_\_\_

I disapprove publication of the final rule subject to the following comments. The staff should conduct a backfit analysis on the proposed two-person rule provision and include the results in the final rule package, as directed in the April 2012 staff requirements memorandum for SECY-11-0175. As suggested by Commissioner Magwood, the staff could remove the two-person rule provision from this rulemaking package and consider the issue in a future rulemaking effort. If the provision is removed, the Federal Register Notice for this rule should include a statement that such a provision will be considered for rulemaking in the future and that interested stakeholders will have the opportunity to comment.



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**SIGNATURE**

4/3/13

---

**DATE**

**Entered on “STARS” Yes  No \_\_\_\_\_**

**RESPONSE SHEET**

**TO:** Annette Vietti-Cook, Secretary

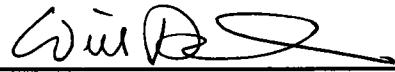
**FROM:** COMMISSIONER MAGWOOD

**SUBJECT:** COMSECY-12-0026 – REVISIONS TO PROPOSED  
RULE: AMENDMENTS TO MATERIAL CONTROL AND  
ACCOUNTING REGULATIONS (RIN 3150-AI61)

Approved \_\_\_\_\_ Disapproved  Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

**COMMENTS:** Below  Attached  None \_\_\_\_\_

  
**SIGNATURE**

20 March 2013  
**DATE**

Entered on “STARS” Yes  No \_\_\_\_\_

**Commissioner Magwood's comments on  
COMSECY-12-0026, "Revisions to Proposed Rule  
Amendments to Materials Control and Accounting Regulations"**

I appreciate the staff's work to respond to the issues identified by the Office of the Inspector General in 2003 and making proposed changes of 10 CFR Part 74 that will clarify and strengthen NRC's materials control and accounting regulations. As I noted in my vote on staff's original proposal, SECY-11-0175, this rulemaking provides an excellent opportunity to consider how risk-informed regulation applies to this area of the agency's work.

As I also highlighted in my previous vote, the agency's consideration of the two-person rule as a part of the revision to 10 CFR 74 could have benefited from a careful, risk-informed analysis that might have provided a clear technical basis for this proposed change. Unfortunately, staff has not yet conducted such an analysis.

As a result, I disapprove the publication of the proposed rule until such time that the staff provides:

- a significantly enhanced analysis that explains how the requirements in this proposed rule satisfy one or more of the backfit exception provisions of 70.76(a)(4), or
- a backfit analysis if the proposed rule is determined not to qualify for an exception with regard to the use of the two-person provision in this proposed rule.

Again, I believe the overall rule provides important improvements and clarity. If the staff believes significantly more time is needed to address this backfit issue, I recommend that the two-person rule provision be removed and the agency proceed with the publication of the proposed rule. Once analysis of the two-person rule is complete, we can then consider it as a separate matter.

  
3/20/13  
William D. Magwood, IV      Date

**RESPONSE SHEET**

**TO:** Annette Vietti-Cook, Secretary

**FROM:** COMMISSIONER OSTENDORFF

**SUBJECT:** COMSECY-12-0026 – REVISIONS TO PROPOSED  
RULE: AMENDMENTS TO MATERIAL CONTROL AND  
ACCOUNTING REGULATIONS (RIN 3150-AI61)

Approved \_\_\_\_\_ Disapproved X Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

**COMMENTS:** Below \_\_\_\_\_ Attached X None \_\_\_\_\_

Commissioner  
**SIGNATURE**

2/13/13  
**DATE**

Entered on “STARS” Yes X No \_\_\_\_\_

**Commissioner Ostendorff's Comments on COMSECY-12-0026, "Revisions to Proposed Rule: Amendments to Material Control and Accounting Regulations"**

I disapprove publishing the proposed revisions to the material control and accounting requirements at this time. While I continue to believe the proposed rule will enhance regulatory clarity by consolidating and better explaining the current requirements, it should not be published until the staff completes a backfit analysis of the proposed two-person rule.

I appreciate the staff's thorough explanation in the revised *Federal Register Notice* (FRN) of why the material control and accounting requirements have historically been considered information collection and are therefore not subject to the backfitting provisions. I agree with this conclusion for the majority of the material control and accounting requirements. However, after having several discussions with NRC and licensee staff and reviewing the implementation guidance for the rule, I believe the two-person rule goes beyond information collection. The FRN, the staff's regulatory analysis, and the draft guidance indicate that, in order to meet this requirement, licensees would need to ensure two individuals were present during activities covered by the rule. Given that implementation of this requirement will necessitate changes to licensee organization and procedures that are not inconsequential, the proposed change appears to meet the definition of backfitting in 10 CFR 70.76(a)(1). In addition, given the expected costs of this requirement as documented in the staff's regulatory analysis, it is clear that this requirement is more than an administrative revision. Since the staff has concluded that none of the exceptions to the backfit rule in 10 CFR 70.76 apply, the staff should complete a backfit analysis to determine whether there is a substantial increase in overall protection of the public health and safety or common defense and security to be derived from implementation of the two-person rule that is cost justified. After completing the backfit analysis, but before the FRN is issued, the staff should provide the draft FRN and regulatory analysis to the Commission for information.

I continue to question whether the two-person rule and other proposed new requirements that would align the regulations for lower-risk facilities with higher-risk Category I fuel facilities are justified given the lack of a quantifiable analysis of the security benefits. However, I believe the staff has done a commendable job of adding language to the FRN to solicit input from our stakeholders on whether the proposed new requirements are necessary based on the risks, and, if so, whether there are less burdensome alternatives that address these risks. Other than the backfit section, I believe the FRN fully articulates the Commission's current position on the proposal and emphasizes the issues that the Commission will need to consider in making a decision about whether to proceed with a final rule. While I do not approve of issuing the proposed revisions at this time, I offer the attached clarifying edits that should be made to the FRN once the backfit analysis is completed.

**NUCLEAR REGULATORY COMMISSION**

**10 CFR Parts 40, 70, 72, 74, and 150**

**[NRC-2009-0096]**

**RIN 3150-AI61**

**Amendments to Material Control and Accounting Regulations**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Proposed rule.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC or the Commission) is proposing to amend its regulations for material control and accounting (MC&A) of special nuclear material (SNM). The NRC's regulations specify requirements for collecting and reporting information about control and accounting of SNM that is held by a licensee. The MC&A regulations ensure that the information about SNM is accurate, authentic, and sufficiently detailed to enable a licensee to maintain current knowledge of its SNM and manage its program for securing and protecting SNM. The MC&A, together with physical protection of facilities and information security requirements, make up the primary elements of the NRC's SNM safeguards program. The MC&A component of the larger safeguards program helps ensure that SNM within a fuel cycle facility is not stolen or otherwise diverted from the facility and promotes the NRC's strategic goal of maintaining adequate protection over the use and management of radioactive materials.

The goal of this rulemaking is to revise and consolidate the MC&A requirements in order to update, clarify and strengthen them. The proposed amendments add new requirements that would apply to NRC licensees who are authorized to possess SNM in a quantity greater than 350 grams. The MC&A requirements for an independent spent fuel storage installation (ISFSI) would be consolidated with MC&A regulations applicable to other types of facilities authorized to possess SNM. General performance objectives (GPOs) would be made applicable to an additional set of NRC licensees who are authorized to possess more than 350 grams of SNM. Some current exemptions in the MC&A regulations would be removed or modified to strengthen the requirements, and defined terms would be added to clarify the regulations. Plain language revisions would also be made. Guidance documents would be updated as necessary to reflect these proposed changes.

The NRC seeks input on several specific aspects of the proposed rule, including the appropriate threshold amount of SNM on which item control requirements should be imposed, and the proposed adoption of a two-person rule to verify the accuracy of MC&A information that licensees must collect and report. With respect to these and other proposed requirements that go beyond consolidation and clarification of existing requirements, the NRC seeks input on the need for the requirements in relation to the proportionate levels of risk represented by the processes and material quantities and forms that are used at different types of licensee facilities. The NRC also seeks input on whether there are less burdensome alternatives to the proposed requirements that would still ensure the ~~information about~~ adequate control and accurate accounting of SNM is accurate.

**DATES:** Submit comments on the rule by [insert 100 days from date of publication in the *Federal Register*]. Submit comments specific to the information collections aspects of this rule

because the manner in which the sealed sources are manufactured and sealed adequately prevents removal of the SNM.

### **Two-Person Rule**

To strengthen the MC&A requirements, the NRC proposes to add a definition of a two-person rule to 10 CFR 74.4. The definition would be referenced in similarly-worded provisions added as 10 CFR 74.59(h)(6) (applicable to Category I facilities); 10 CFR 74.43(c)(9) (applicable to Category II facilities); 10 CFR 74.31(c)(10) (applicable to Category III fuel fabrication facilities); and 10 CFR 74.33(c)(10) (applicable to Category III uranium enrichment facilities). The term *two-person rule* would be defined as a requirement that at least two authorized and qualified persons would be present whenever an information collection and reporting task covered by the rule is performed. Under the proposed definition, an authorized person would be a worker who has been authorized by the licensee to perform the task. A qualified person would be a worker who has sufficient knowledge to determine if the proper procedure has been followed, meets any formal qualification requirements established by the licensee for performing the task, and is capable of attesting that the information collection and reporting task has been performed accurately. Such workers must be able to verify both that the task was completed in accordance with the proper procedures, and that the material has been information collected and recorded during the task is accurately accounted for.

The proposed two-person rule minimizes the chance that an individual would intentionally or unintentionally inaccurately record information concerning the locations and quantities of SNM, or would inaccurately identify SNM containers and their tamper-safing seals. The primary objective of this requirement is to ensure the accuracy of MC&A records. The two-person rule would have additional security-related benefits, such as reducing the likelihood that a single individual would be able to carry out unauthorized diversions of SNM, and would increase the likelihood that deviation from safety and security procedures would be detected.

The proposed provisions would require Category I, II, and III licensees to ensure that two qualified and authorized individuals are present when tamper-safing devices are applied to SNM containers; when physical inventories are performed; when SNM is transferred; and when SNM that is not under an active control measure is handled. It is important to ensure that information concerning tamper-safing of a container is accurate because some tamper-safed containers may not be reopened for months or even years after a seal is applied. Physical inventories are one of the primary means through which the accuracy of MC&A information is verified. Mistakes in performing a physical inventory could result in discrepancies between the MC&A accounting system and actual locations of material not being identified and resolved in a timely manner. Having two qualified individuals perform the physical inventory provides a second check that the results are accurately recorded. Many licensees already deploy two-person teams for physical inventories. Transferring SNM between material balance areas (MBAs) and ICAs is already routinely conducted by two people at all fuel cycle facilities because of the importance of ensuring the accuracy of movements of SNM. The use of a two-person rule for handling of SNM that is not under an active control measure would provide additional assurance that ~~information generated or recorded for the operation being performed is material is accurately accounted for.~~

Licensed Category I facilities now rely on internal procedures that are similar to the proposed two-person rule to meet the existing 10 CFR 74.51(b) requirement that their MC&A systems incorporate checks and balances sufficient to detect falsification of data and reports that could conceal diversion of SNM by 1) a single individual, or 2) collusion between two persons.

The two-person rule would not apply to reactors, ISFISIs, and Part 70-licensees ~~authorized to possess 350 grams of SNM or less that are not Category I, II, or III fuel facilities.~~ At reactors and ISFSIs, it is not likely that an individual can remove SNM without being

detected, as the SNM is generally in the form of fuel rods and fuel assemblies that are very large and heavy and require access to and use of large equipment to handle and move.

Licensed Part 70 facilities authorized to possess 350 grams of SNM or less that are not Category I, II, or III fuel facilities – e.g., industrial, academic, and research facilities – do not use storage vaults or other types of areas (such as material balance areas and item control areas) where the two-person rule is typically applied. Most SNM at these facilities is in the form of sealed sources and generally there is no need to tamper-safe sealed sources for the reasons previously discussed. As these facilities generally possess few items containing SNM, the likelihood of errors occurring during a physical inventory is low.

### **Material Balance Areas, Item Control Areas, and Custodians**

As previously discussed, the NRC proposes to add a definition of an ICA to 10 CFR 74.4. Similarly, the NRC proposes to add a definition of a MBA to 10 CFR 74.4. The term *material balance area* would be defined as a designated contiguous area in which the control of SNM is such that the quantity of material being moved into, out of, and within the MBA is an assigned value based on measurements of both the element content and the isotopic content, if known.

The proposed rule adds requirements that all Category I, II, and III licensees must designate ICAs and MBAs at their facilities, and identify custodians who would be responsible for monitoring these areas. The proposed requirements are set forth in 10 CFR 74.59(h)(5), 74.43(c)(10), 74.31(c)(11), and 74.33(c)(11). These required areas form the basis for nuclear material accounting and control of all SNM within a Category I, II, or III facility's boundaries, and these new requirements are expected to enhance the capability of licensees to detect the unauthorized removal of SNM. In general, smaller accounting areas make control of SNM easier, and reduce the size of the area in which detected losses of SNM can be attributed.

alternatives that should be considered? Should other types of licensees be required to have an item control system? What is the appropriate regulatory threshold for requiring an item control system under 10 CFR part 74? Should there be a threshold for the amount of material that is required to be tracked under an item control system?

**Tamper-Safing:**

In 10 CFR 74.31(c)(9) and 74.33(c)(9), the NRC proposes a new requirement for tamper-safing containers and vaults. The NRC also proposes clarifying the existing requirements for tamper-safing in 10 CFR 74.43(c)(3) and 74.59(f)(2)(i) to provide a consistent approach for all Category I, II, and III licensees. Should tamper-safing be required for Category III licensees? Are there alternative measures that should be considered?

**Two-Person Rule:**

In 10 CFR 74.31(c)(10), 74.33(c)(10), and 74.43(c)(9), the NRC proposes a new requirement for use of a two-person rule for specific tasks that involve ~~information collection and reporting~~material control and accounting. The NRC also proposes that a similar two-person rule be added to 10 CFR 74.59(h)(6) (consistent with the existing 10 CFR 74.51(b) requirement to incorporate checks and balances to detect falsification of data and reports) to provide a consistent approach for all Category I, II, and III licensees. Should the two-person rule be required for Category I, II, and III licensees? Are there certain operations or areas that should be exempted from the two-person rule? Are there other ~~information collection and reporting~~ tasks for which the two-person rule should apply? What alternative or less burdensome approaches should the NRC consider?

**Material Balance Areas, Item Control Areas, and Custodians:**

In 10 CFR 74.31(c)(11), 74.33(c)(11), and 74.43(c)(10), the NRC proposes a new requirement to identify specific MBAs and ICAs, and to designate custodians for these areas. The NRC also proposes that the existing requirement for custodians in 10 CFR 74.59(h)(5) be revised to match the new language to provide a consistent approach for all Category I, II, and III licensees. Should use of MBAs and ICAs be required? Should other facilities be required to have MBAs and ICAs? Are there alternatives that should be considered?

**Alternatives resulting in equivalent outcome and less burden:**

Throughout this proposed rule, the NRC is proposing measures that would strengthen MC&A requirements at licensee sites. Are there alternative ways to strengthen existing MC&A requirements that would impose less burden on NRC licensees while still maintaining adequate control and accounting of SNM? What specific alternatives should be considered? For the proposed requirements that go beyond consolidation and clarification, the NRC is seeking input on the need for such requirements in relation to the proportionate levels of risk represented by the processes and material quantities and forms of SNM that are used at different types of licensee facilities.

**IV. Discussion.**

To further describe this proposed rulemaking the following series of questions and answers is set forth.

**A. Whom would this action affect?**

Licensees authorized by the NRC to possess SNM in a quantity greater than 350 grams would be affected by the proposed rule. For example, the proposed 10 CFR 74.3 would require

effective date of 6 months from the date the final rule is published in the *Federal Register* would provide sufficient time to implement the new proposed requirements.

*D. How does NRC use a graded approach for MC&A?*

The NRC currently uses a graded, risk-informed approach for MC&A. Based on the quantity and form of material a licensee possesses, the licensee is subject to specific requirements that increase with the amount of SNM the licensee is authorized to possess.

Table 2 shows the requirements that apply to various types of licensed facilities based on their possession limits and how the NRC proposes to strengthen information collection and reporting requirements through this rulemaking.

**Table 2. NRC's Graded, Risk-Informed Approach to Material Control and Accounting**

Grams of SNM the Licensee is Authorized to Possess	Current MC&A Requirements in 10 CFR part 74	Proposed Changes to Strengthen MC&A Requirements in 10 CFR part 74
1 gram or more of SNM (all licensees, including part 70 licensees authorized to possess 350 grams or less and licensees authorized by an Agreement State)	74.11/150.16 Reporting loss and theft 74.13/150.17 Material status reports for NMMSS 74.15/150.16 Material transaction reports for NMMSS 74.19(a) Recordkeeping 74.19(d) Retention of records	Existing 74.19(d) would be moved to 74.19(e) to accommodate a new item control requirement for reactors and ISFSIs.
>350 grams of SNM (part 70 licensees authorized for industrial, academic, and research types of use)	74.11 Reporting loss and theft 74.13 Material status reports for NMMSS 74.15 Material transaction reports for NMMSS 74.19(a) Recordkeeping 74.19(b) Written procedures 74.19(c) Physical inventory 74.19(d) Retention of records	New GPOs in 74.3.  To replace the term "one effective kilogram," 74.19(b) would apply to licensees possessing greater than 350 grams of SNM.  Existing 74.19(d) would be moved to 74.19(e) to accommodate a new item control requirement for reactors and ISFSIs.
Reactors licensed under part 50 or part 52	74.11 Reporting loss and theft 74.13 Material status reports for	New GPOs in 74.3.

actions are completed correctly by qualified and authorized personnel, and to verify the accuracy of the accurate accounting of information about SNM that is being collected and reported. A licensee subject to subpart C, D, or E would be required to have two qualified and authorized individuals involved for tamper-safing, performing physical inventories, transferring SNM, or handling any SNM that is not under an active control measure, monitoring or surveillance condition. The two-person rule would have additional benefits such as reducing the likelihood that a single individual would be able to carry out any unauthorized diversions of SNM. The two-person rule would increase the likelihood that a deviation from safety and security procedures would be detected at Category I, II, and III facilities.

*M. Why would requirements be added to designate material balance areas, item control areas, and custodians?*

The added MC&A requirements would strengthen and specifically define the terms for MBA, ICA, and custodians. The added requirements would be consistent in requiring licensees under subparts C, D, and E to designate MBAs and ICAs and custodians for these areas. The terms are widely used in the regulated community and 10 CFR part 74 would be clarified by setting forth the specific definition for the terms in 10 CFR 74.4. A licensee would be required to designate MBAs, ICAs, and assign custodial responsibilities for these areas to provide internal controls to deter or detect any diversion or misuse of SNM at the licensee's facility.

*N. Why would calendar days be inserted into 10 CFR part 74?*

To clarify 10 CFR part 74, references to due dates and reporting frequencies would be made more uniform by expressing most timeframes in calendar days. 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. The proposed clarifications are intended to make 10 CFR part 74 more internally consistent with existing 10 CFR 74.33(c)(4), which requires that annual static physical inventories be taken "at least every 370 calendar days."

(contained in uranium enriched to 20 percent or more in the U-235 isotope) or more than 500 grams of uranium-233 or plutonium or in a combined quantity of more than 1,000 grams when computed by the equation, grams=(grams contained U-235)+2 (grams U-233+grams plutonium); or

(ii) 10,000 grams or more of uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U-235 isotope).

(2) This class of material is also referred to as a Category II quantity of material as shown in Appendix A to this part.

\* \* \* \*

*Two-person rule* means a requirement that at least two authorized and qualified persons be present whenever a task covered by the rule is performed. An authorized person under this rule is one who has been given authority by the licensee to perform the task, and a qualified person is one who has sufficient knowledge to determine if the proper procedure is being followed, meets any formal qualification requirements established by the licensee for performing the task, and is capable of attesting to the accuracy of the task being performed. Such persons must be able to verify both that the task was completed in accordance with the proper procedures, and that ~~the information recorded about the task is accurate~~ material is accurately accounted for.

\* \* \* \*

13. In § 74.11, revise paragraph (b) to read as follows:

**§ 74.11 Reports of loss or theft or attempted theft or unauthorized production of special nuclear material.**

\* \* \* \*