

REGULATORY ANALYSIS

DRAFT REGULATORY GUIDE DG-5057 SPECIAL NUCLEAR MATERIAL CONTROL AND ACCOUNTING SYSTEMS FOR NON-FUEL CYCLE FACILITIES

(Proposed Revision 3 of Regulatory Guide 5.29, dated June 2013)

1. Statement of the Problem

The staff is considering revising this guidance to address new issues identified following the terrorist attacks of September 11, 2001, and to support the requirements of the proposed 10 CFR Part 74 rule that was published for comment in November 2013. The previous revision (Revision 2 of Regulatory Guide 5.29) endorses the American National Standards Institute (ANSI) standard N15.8-2009, "Methods of Nuclear Material Control – Material Control Systems – Special Nuclear Material Control and Accounting Systems for Nuclear Power Plants," as being an acceptable approach to meet relevant material control and accounting (MC&A) requirements in Subpart B of 10 CFR Part 74 at nuclear power plants. Revision 3 of Regulatory Guide (RG) 5.29, which supersedes Revision 2, expands the scope of the guidance to cover all non-fuel cycle facilities.

In the November 2005 non-public Staff Requirements Memorandum (SRM) for SECY-05-0143, titled "Proposed Changes to the Material Control and Accounting Program," the Commission directed the staff to develop a rulemaking plan to address several issues related to safeguards programs that should be designed to better ensure protection against the diversion or theft of material that could be used to fabricate an improvised nuclear device. The staff was also directed to provide for timely development of regulatory guidance for any new regulatory requirements and to provide for the maintenance and revision of existing regulatory guidance.

The staff published for public comment proposed revisions to 10 CFR Part 74 on November 8, 2013 (78 FR 67225). This rulemaking addresses safeguards issues arising from the terrorist attacks of September 11, 2001. In the 2009 SRM authorizing this rulemaking (see SRM on SECY-08-0059, "Rulemaking Plan: Part 74 - Material Control and Accounting of Special Nuclear Material," dated February 5, 2009), the Commission directed the NRC staff to revise certain existing guidance documents to reflect any new and revised Part 74 requirements.

2. Objective

The objective of this regulatory action is to update NRC guidance and provide applicants and licensees with a method to demonstrate compliance with the MC&A requirements applicable to special nuclear material (SNM) at all non-fuel cycle facilities that are subject to the 10 CFR Part 74 requirements contained in its Subparts A and B.

Revising this regulatory guide provides guidance to applicants and licensees in establishing and maintaining an effective MC&A program that:

- ensures general MC&A performance objectives are met,
- verifies physical inventories and material balances of licensed material,
- detects the loss of such material after it occurs, and

- provides the capability to promptly locate and confirm the existence of any specific item or group of items upon demand, thus protecting against unauthorized and unrecorded removal of items, or of material from items, and enabling the timely location of any lost or misplaced items.

Revision 3 of RG 5.29 supersedes Revision 2, and continues to endorse ANSI N15.8-2009 as an acceptable approach to meet relevant MC&A requirements in Subpart B of 10 CFR Part 74 at nuclear power plants. Revising this guide to endorse a consensus standard is consistent with the NRC policy of evaluating the latest versions of national consensus standards to determine their suitability for endorsement by regulatory guides. This approach also will comply with the NRC's Management Directive (MD-6.5), "NRC Participation in the Development and Use of Consensus Standards" (ML100600460). This is in accordance with Public Law 104-113, "National Technology Transfer and Advancement Act of 1995."

3. Alternative Approaches

The NRC staff considered the following alternative approaches:

1. Do not revise Regulatory Guide 5.29.
2. Withdraw Regulatory Guide 5.29.
3. Revise Regulatory Guide 5.29 to reflect the current regulations.

Alternative 1: Do not revise Regulatory Guide 5.29

Under this alternative, the NRC would not revise the guidance, and the current guidance would be retained. This alternative would maintain RG 5.29 as finalized in 2013, which is simply an endorsement of ANSI N15.8-2009 and is applicable only to nuclear power reactors. This alternative is considered the "no-action" alternative and provides a baseline condition from which any other alternatives will be assessed.

The "no-action" alternative would not provide the guidance needed to address the proposed new regulations in Part 74. Non-fuel cycle facilities, other than nuclear power reactors, would have no guidance on implementing and maintaining an MC&A program as required by the new general performance objectives in Subpart A of 10 CFR Part 74. Power reactor licensees would also not have guidance on meeting the new performance objectives. In addition, they would not have the most up-to-date guidance on establishing and maintaining an item control system, which is a new requirement, intended to strengthen the controls for SNM. Power reactor licensees would continue to establish and maintain their MC&A programs based on ANSI N15.8-2009.

The major drawback to this alternative is that licensees, applicants, and NRC staff would not have a common guidance document regarding what constitutes an adequate MC&A program. Non-fuel cycle facilities, other than power reactors, would have no guidance at all. The cost to those facilities could be significant if the lack of guidance leads to ineffective MC&A programs that do not adequately control and account for their SNM.

The only benefit of not revising RG 5.29 is the reduction of administrative costs associated with revision of a regulatory guide.

Alternative 2: Withdraw Regulatory Guide 5.29

Under this alternative the NRC would withdraw this RG and would thereby remove endorsement of ANSI N15.8-2009. This action could impede NRC staff, NRC licensees, and license applicants from having access to the latest MC&A practices for all non-fuel cycle facilities, not just nuclear power plants.

The impacts of withdrawal of the RG from active status would have greater negative consequences than Alternative 1. Withdrawal could create the impression that establishing and maintaining an effective MC&A program has been reduced in importance. If that impression were to be acted on by licensees, safeguards risks could increase because the current MC&A systems might not be of sufficient quality to enable adequate protection against loss, theft, diversion, or misuse of SNM. In addition, withdrawal would degrade the means for the NRC to maintain effective and efficient oversight necessary to ensure licensees and applicants have adequate MC&A programs.

The withdrawal alternative provides no added value with the only benefit being the reduction of administrative costs associated with revision of a regulatory guide.

Alternative 3: Revise Regulatory Guide 5.29

Under this alternative, the NRC would revise RG 5.29. This revision would incorporate the latest information in the regulations and MC&A practices for all non-fuel cycle facilities, not just nuclear power plants. By doing so, the NRC would ensure that the guidance available in this area is current and accurately reflects the staff's position. The value to NRC staff, NRC licensees, and its applicants would be the benefits associated with enhanced efficiency and effectiveness in using a common guidance document as the technical basis for license applications and other interactions between the NRC, licensees, and applicants. The revised guidance would also provide the basis for a strengthened MC&A program better able to prevent loss, theft, or diversion, or misuse of SNM.

The impact to the NRC would be the costs associated with preparing and issuing the RG revision. The impact to the public would be the voluntary costs associated with reviewing and providing comments to the NRC during the public comment period.

4. Conclusion

The long-term substantive benefit of enhanced regulatory efficiency and effectiveness by using a common guidance document as the technical basis for license applications, inspections, and other interactions between the NRC, licensees, and applicants would greatly outweigh the administrative costs of revising the RG. Those enhancements would provide additional value compared to Alternative 1 with limited impacts. The staff rejects Alternative 2 because it would provide no value while potentially resulting in great impacts.

Based on this regulatory analysis, the NRC staff concludes that a revision of RG 5.29 is warranted. The staff concludes that a revision to this guidance would enhance facility MC&A programs and enable them to meet the new performance objectives and requirements as delineated in the applicable sections of 10 CFR Part 74, "Material Control and Accounting of Special Nuclear Material."