



[7590-01-P]

NUCLEAR REGULATORY COMMISSION

[NRC-2017-0059]

Limit of Error Concepts and Principles of Calculation in Nuclear Materials Control

AGENCY: Nuclear Regulatory Commission.

ACTION: Regulatory guide: withdrawal.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is withdrawing Regulatory Guide (RG) 5.18, “Limit of Error Concepts and Principles of Calculation in Nuclear Materials Control.” This RG is being withdrawn because the term “limit of error” is no longer used in the material control and accounting (MC&A) requirements in NRC’s regulations, and therefore the RG 5.18 guidance is no longer needed. The MC&A requirements now include the term “standard error” in place of the term “limit of error.” The “standard error” term is used in evaluating the significance of an inventory difference (ID). The NRC has issued guidance separately for the term “standard error.”

DATES: The effective date of the withdrawal of RG 5.18 is **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Please refer to Docket ID **NRC-2017-0059** when contacting the NRC about the availability of information regarding this document. You may obtain publically-available information related to this document, using the following methods:

- **Federal Rulemaking Web site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2017-0059**. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individuals listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly-available documents online in the ADAMS Public Document collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "ADAMS Public Documents" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to pdr.resource@nrc.gov. The ADAMS accession number for each document referenced (if it is available in ADAMS) is provided the first time that it is mentioned in this document. The basis for the withdrawal of this guide is in ADAMS under Accession No. ML16244A672.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

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Harriet.Karagiannis@nrc.gov. Both are staff members of the U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

SUPPLEMENTARY INFORMATION:

The NRC staff issued RG 5.18 in January 1974 to provide guidance on meeting the material control and accounting (MC&A) requirements in part 70 of title 10 the *Code of Federal Regulations* (10 CFR), “Domestic Licensing of Special Nuclear Material.” Part 70 then contained MC&A requirements, including those in 10 CFR 70.51, “Material Balance, Inventory, and Records Requirements” that were established in 1973. Specifically, 10 CFR 70.51(a)(5) defined the term “Limit of error,” and 10 CFR 70.51(e) required licensees to calculate statistical limits of error for any material unaccounted for as part of their MC&A procedures. Part 70 regulations no longer contain any MC&A requirements, and licensees are no longer required to calculate statistical limits of error for any material unaccounted for. In 1985, 10 CFR part 74, “Material Control and Accounting of Special Nuclear Material,” was established, and in 2002, the 10 CFR 70.51 requirements were transferred to 10 CFR part 74 which now includes the current MC&A requirements. As part of the 2002 MC&A revisions, the term “limit of error” was replaced by the term “standard error,” and licensees are now required to calculate the “inventory difference” (as defined in 10 CFR 74.4) rather than determining the amounts of material that are “unaccounted for.” The “standard error” is used in evaluating the significance of an inventory difference (ID).

Guidance for calculating the “standard error” of the ID is found in NUREG-1065, “Acceptable Standard Format and Content for the Fundamental Nuclear Material Control (FNMC) Plan Required for Low-Enriched Uranium Facilities” (ADAMS Accession No. ML031340288), NUREG-1280, “Standard Format and Content Acceptance Criteria for the Material Control and Accounting (MC&A) Reform Amendment” (ADAMS Accession No.

ML13253A308), and NUREG/CR-5734, "Recommendations to the NRC on Acceptable Standard Format and Content for the Fundamental Nuclear Material Control (FNMC) Plan Required for Low-Enriched Uranium Enrichment Facilities" (ADAMS Accession No. ML15120A354).

In addition, RG 5.18 endorsed the American National Standards Institute Standard N15.16-1974, "Limit of Error Concepts and Principles of Calculation in Nuclear Materials Control," to provide guidance on the "limit of error" concept. However, this standard has been withdrawn from active status with no replacement.

The NRC is withdrawing RG 5.18 because it is no longer needed. Withdrawal of an RG means that the guide no longer provides useful information or has been superseded by other guidance, technological innovations, congressional actions, or other events. The withdrawal of RG 5.18 does not alter any prior or existing NRC licensing approval or the acceptability of licensee commitments to RG 5.18. Although RG 5.18 is withdrawn, current licensees may continue to use it, and withdrawal does not affect any existing licenses or agreements. However, 5.18 should not be used in future requests or applications for NRC licensing actions.

Dated at Rockville, Maryland, this 21st day of February, 2017.

For the Nuclear Regulatory Commission.

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