

Regulatory Guide Number: 5.3, Revision 0

Title: Statistical Terminology and Notation for Special Nuclear Materials Control and Accountability

Office/Division/Branch: NMSS/FCSE/MC&A

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SUBJECT: Basis for Withdrawal

(1) What regulation(s) did the Regulatory Guide support?

Regulatory Guide (RG) 5.3 was published in February 1973 to provide guidance on material control and accounting (MC&A) requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 70.51(b)(1), "Records requirements." In 2002, the NRC revised 10 CFR Part 74, "Material Control and Accounting of Special Nuclear Material," and this requirement was transferred to 10 CFR Part 74.19(b), "Record keeping."

(2) What was the purpose of the Regulatory Guide?

RG 5.3 provided guidance on acceptable terminology and notation concerning statistical analyses of accountability data for special nuclear material (SNM) control purposes that the licensee could use for written MC&A procedures necessary to enable them to account for SNM under their possession.

(3) How was the Regulatory Guide used?

RG 5.3 was initially published in February 1973, and endorsed the American National Standards Institute (ANSI) Standard N15.5-1972, "Statistical Terminology and Notation for Nuclear Materials Management," published in 1973. However, it is not known if any licensee used this particular RG or the ANSI standard it endorsed.

(4) Why is the Regulatory Guide no longer needed?

The statistical terminology and notation used in ANSI N15.5-1972 is common statistical terminology found in any elementary statistics textbook. A specific regulatory guide on common statistical terminology and notation is not needed. In addition, ANSI N15.5-1972 has been withdrawn by ANSI in coordination with the Institute of Nuclear Materials Management. Only one of the terms "limits of error," referenced in ANSI N15.5-1972 had a definition specific to MC&A applications. This term is no longer defined in the NRC's MC&A regulations, and is no longer used by the NRC except in transaction reports submitted to the national database.

(5) What guidance is available once the Regulatory Guide is withdrawn?

Any statistical terms that require explanation or clarification are now included in the Definitions section of 10 CFR Part 74. Also, regulatory guidance related to MC&A definitions is included in NUREG-1065, "Acceptable Standard Format and Content for the Fundamental Nuclear Material Control (FNMC) Plan Required for Low-Enriched Uranium Facilities," 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.” Additional general statistical information is provided in NUREG/CR-4604, “Statistical Methods for Nuclear Materials Management.”

(6) Is the Regulatory Guide referenced in other documents and what are the “ripple effects” on these documents if it is withdrawn?

RG 5.3 is referenced in the following RGs:

- RG 5.18, “Limit of Error Concepts and Principles of Calculation in Nuclear Materials Control,”
- RG 5.28, “Evaluation of Shipper-Receiver Differences in the Transfer of Special Nuclear Materials,” and
- RG 5.33, “Statistical Evaluation of Material Unaccounted For.”

There are no ripple effects of withdrawing this RG. The staff is planning to withdraw RG 5.18 since the term “limit of error” as described in RG 5.18 is no longer used.

The guidance in RG 5.28 is being incorporated into a new RG, titled as draft regulatory guide (DG)-5051, “Shipping, Receiving, and Internal Transfer of Special Nuclear Material,” and will no longer reference RG 5.3. RG 5.28 will be withdrawn concurrently with publication of DG-5051. This RG is anticipated to be withdrawn by the 3rd quarter 2017.

The guidance in RG 5.33 is being incorporated into a new RG, titled as DG-5056, “Material Control and Accounting Physical Inventories and Material Balances at Fuel Cycle Facilities,” and will no longer reference RG 5.3. RG 5.33 will be withdrawn concurrently with publication of DG-5056. This RG is anticipated to be withdrawn by the 3rd quarter 2017.

In addition, the NRC staff has performed a search in the Agencywide Documents Access and Management System (ADAMS), and has noted that no additional documents are referencing RG 5.3.

What is the basis for believing that no guidance similar to that in the Regulatory Guide will ever be needed?

Currently guidance on any statistical terms specific to MC&A that require explanation or clarification are found in the definitions section of 10 CFR Part 74. Also, regulatory guidance related to MC&A definitions is included in NUREG-1065, and NUREG/CR-5734. Additional general statistical information is provided in NUREG/CR-4604.

(7) Will generic guidance still be needed?

Yes. Statistical MC&A definitions currently used by licensees are included in 10 CFR Part 74. In addition, NUREG-1065 and NUREG/CR-5734 provide additional regulatory guidance. In addition, general statistical information can also be found in NUREG/CR-4604.

(8) What is the rationale for withdrawing this Regulatory Guide instead of revising it?

No specific guidance document on common statistical terminology is needed. RG 5.3 contained the endorsement of a withdrawn ANSI standard, N15.5-1972. Currently, any statistical terms specific to MC&A that require explanation or clarification are now found in the Definitions section

of 10 CFR Part 74. Also, regulatory guidance related to MC&A definitions is included in NUREG-1065, and NUREG/CR-5734. Additional general statistical information is provided in NUREG/CR-4604.

(10) Do other agencies rely upon the Regulatory Guide, e.g., the Agreement States, National Aeronautical and Space Administration, Department of Energy?

The staff is unaware of any other agency that uses or relies on the guidance in RG 5.3.