

Regulatory Guide Number: 5.13, Revision 0

Title: Conduct of Nuclear Material Physical Inventories

Office/Division/Branch: NMSS/FCSE/MCAB

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SUBJECT: Basis for Withdrawal

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

Regulatory Guide (RG) 5.13 was published in November 1973 to provide guidance on meeting the material control and accounting (MC&A) requirements in Title 10 of the *Code of Federal Regulations* (10 CFR), specifically Sections 70.51(e) and (f) related to the conduct of nuclear material physical inventories. These Sections have been deleted from the CFR. The requirements related to physical inventories are now found in 10 CFR 74.31(c)(5), 10 CFR 74.33(c)(4), 10 CFR 74.43(c), and 10 CFR 74.59(f).

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

RG 5.13 provided guidance to licensees on concepts, principles, and methods acceptable to the NRC staff for conducting physical inventories. Conducting a measured physical inventory is one of the means of detecting diversion, theft, loss, or misstatements of the amount of special nuclear material (SNM) possessed by a licensee.

(3) How was the Regulatory Guide used?

RG 5.13 was used to assist licensees in establishing procedures for conducting nuclear material physical inventories.

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

A new regulatory guide has been developed that combines and updates the guidance found in RG 5.13 and RG 5.33, "Statistical Evaluation of Material Unaccounted For." This new guide has been designated RG 5.88 and titled "Physical Inventories and Material Balances at Fuel Cycle Facilities."

(5) What guidance is available once the Regulatory Guide is withdrawn?

The guidance in RG 5.13 has been updated and incorporated into the new guide designated RG 5.88. Additional guidance on conducting physical inventories can be found in NUREG-1065, "Acceptable Standard Format and Content for the Fundamental Nuclear Material Control (FNMC) Plan Required for Low-Enriched Uranium Facilities," 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," and NUREG-1280, "Standard Format and

Content Acceptance Criteria for the Material Control and Accounting (MC&A) Reform Amendment.”

(6) Is the Regulatory Guide referenced in other documents and what are the “ripple effects” on these documents if it is withdrawn?

RG 5.13 is referenced in inspection procedure (IP) 85211, “Physical Inventory,” dated 01/17/86. However, the procedure is for inspection of Category II fuel cycle facilities, and there are currently no operating Category II fuel cycle facilities, so the IP is not used. If IP 85211 is used for future Category II facility MC&A inspections, the IP will be revised, and the reference to RG 5.13 will be revised as well.

RG 5.13 is referenced in inspection manual chapter (IMC) 1247, Appendix C5, “Fuel Facility Material Control & Accounting Inspector Technical Proficiency Training and Qualification Journal.” At the next scheduled revision for IMC 1247, Appendix C5, the reference to RG 5.13 will be replaced with a reference to RG 5.88.

RG 5.13 is referenced in two other regulatory guides, RG 5.25, “Design Considerations for Minimizing Residual Holdup of Special Nuclear in Equipment for Wet Process Operations,” and RG 5.42, “Design Considerations for Minimizing Residual Holdup of Special Nuclear in Equipment for Dry Process Operations.” The guidance in RG 5.13 was incorporated in RG 5.88. The guidance in RG 5.42 will be reviewed at the next review cycle.

RG 5.13 is referenced in the following NUREGs:

- NUREG/CR-0829, “A Measurement Control Program for Nuclear Material Accounting,”
- NUREG/CR-1283, “Accounting Systems for Special Nuclear Material Control,” and
- NUREG/CR-1284, “Methods of Determining and Controlling Bias in Nuclear Material Accounting Measurements.”

NUREG/CR-0829 was issued in 1980 to describe the most important elements of a program by which a licensee can monitor and control measurement quality. The NUREG is not a guide for physical inventories and refers to RG 5.13 only once in one paragraph of the NUREG. There is no ripple effect since RG 5.13 is only referenced briefly and the NUREG will most likely not be revised in the future.

NUREG/CR-1283 was published in 1980 with the purpose of examining double-entry financial accounting systems and comparing them with nuclear material accounting systems. RG 5.13 is not referenced in the body of the NUREG and is only listed in the bibliography. There are no ripple effects since NUREG/CR-1283 is a historical report that will not be updated.

NUREG/CR-1284 was published in 1980 to provide guidance on sources of measurement bias and approaches to monitoring and controlling the sources of bias. The NUREG is not a guide for physical inventories and refers to RG 5.13 only once in one paragraph of the NUREG. There is no ripple effect since RG 5.13 is only referenced briefly and the NUREG will most likely not be revised in the future.

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

RG 5.13 is being withdrawn because it is outdated and refers to requirements in 10 CFR part 70 that have been moved to 10 CFR part 74. Similar guidance will still be needed for the physical inventory requirements in 10 CFR part 74. The guidance in RG 5.13 has been updated and incorporated into a new regulatory guide designated RG 5.88. RG 5.88, along with NUREG-1065, NUREG/CR-5734, and NUREG-1280 provide the necessary guidance for licensees and NRC staff on conducting nuclear material physical inventories.

(8) Will generic guidance still be needed?

Guidance will still be needed for the physical inventory requirements in 10 CFR part 74. The guidance in RG 5.13 has been updated and incorporated into a new regulatory guide designated RG 5.88. RG 5.88, along with NUREG-1065, NUREG/CR-5734, and NUREG-1280 provide the necessary guidance for licensees and NRC staff on conducting physical inventories.

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

RG 5.13 is being withdrawn because it is outdated and refers to requirements in 10 CFR part 70 that have been moved to 10 CFR part 74. Similar guidance will still be needed for the physical inventory requirements in 10 CFR part 74. The guidance in RG 5.13 has been updated and incorporated into a new regulatory guide designated RG 5.88.

(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 not aware of any other agency that uses or relies on the guidance in RG 5.13.