

Regulatory Guide Periodic Review

Regulatory Guide Number: **5.23**

Revision: **1**

Title: **In Situ Assay of Plutonium Residual Holdup (February 1984)**

Office/Division/Branch: **NMSS/FCSE/MCAB**

Technical Lead: **David Ditto**

Recommended Staff Action: **Reviewed with issues identified for future consideration**

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

This RG was issued in February 1984 to describe the application of selected techniques for accurately measuring plutonium residual holdup remaining in process equipment for determining the physical inventory of material. Also, in conjunction with the processing of special nuclear material (SNM), the guide identified how plutonium hold up should be evaluated for inventory with the use of in situ assay methods and practices, as required by 10 CFR 70, "Domestic Licensing of Special Nuclear Material."

However, in 2002 the NRC revised 10 CFR Part 74, "Material Control and Accounting of Special Nuclear Material." In this rulemaking, the requirements in 10 CFR Part 70 describing the procedures for the use of in situ assay for the measurement of plutonium residual holdup in process equipment to establish minimum standards were transferred to 10 CFR Part 74. As a result, RG 5.23 is not cross-referencing to the correct regulatory citations.

2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?

Current licensees routinely account for plutonium residual holdup of applicable process systems and incorporate many gamma ray assay techniques used in this RG to meet the regulatory requirements in 10 CFR Part 74. Therefore, this RG remains applicable to Category I, "High Enriched Uranium" fuel cycle facilities, and Category III, "Low Enriched Uranium" fuel cycle facilities, currently licensed by the NRC.

There would be minimal impact on current internal or external stakeholders if this RG is not updated. However, new applicants should be aware of the administrative change in numbering of the CFR.

3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contractor resources?

An estimate of the effort needed to correct the identified issues is between 0.10 full-time equivalent (FTE) and 0.20 FTE.

4. Based on the answers to the questions above, what is the staff action for this guide (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?

Reviewed with issues identified for future consideration.

5. Provide a conceptual plan and timeframe to address the issues identified during the review.

As discussed in Management Directive 6.6, "Regulatory Guides," the NRC staff reviews RGs approximately every 5 years to ensure that these continue to provide useful guidance. The staff will consider the regulatory citation issues and any other technical information that may need to be updated during the next periodic review of the guide.

NOTE: This review was conducted in July 2016, and reflects the staff's plans as of that date. These plans are tentative and subject to change.