

## **Regulatory Guide Periodic Review**

Regulatory Guide Number: **5.11, Revision 1**

Title: **Nondestructive Assay of Special Nuclear Material Contained in Scrap and Waste (April 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 April 1984 to describe acceptable procedures for the use of nondestructive assay (NDA) in the measurement of scrap and waste components to establish and maintain a system of control and accountability to ensure that the standard error of inventory difference (SEID) ascertained as a result of a measured material balance met established minimum standards, as required by 10 CFR 70.51, "Domestic Licensing of Special Nuclear Material."

However, in 2002 the NRC revised 10 CFR Part 74, "Material Control and Accounting of Special Nuclear Material," and the requirements in 10 CFR Part 70.51 for NDA of special nuclear material (SNM) contained in scrap and waste, were transferred to 10 CFR Part 74. Specifically, the NRC revised 10 CFR Part 74.31, "Nuclear material control and accounting for special nuclear material of low strategic significance," 10 CFR Part 74.45, "Measurements and measurement control," and 10 CFR Part 74.59, "Quality assurance and accounting requirements." As a result, RG 5.11 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?**

This RG is applicable to Category I, "High Enriched Uranium" fuel cycle facilities, and Category III, "Low Enriched Uranium," fuel cycle facilities currently licensed by the NRC. Licensees are required to meet material control and accounting (MC&A) measurement systems performance objectives to a level of effectiveness sufficient to establish values for bias corrections, determine uncertainties on calibration factors, and estimate of random error standard deviations.

Although the citation to the NRC regulations has changed in RG 5.11, the NRC licensees are still using this RG routinely to account for calibration and control of applicable MC&A measurement systems, and also use the NDA techniques in this RG to comply with the requirements in 10 CFR Part 74.

As no technical issues were identified, there is no impact to internal or external stakeholders resulting from the revision of the regulations. 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. No contractor support is anticipated.

**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 (MD) 6.6, "Regulatory Guides," the NRC staff reviews RGs approximately every 5 years to ensure that these guides 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 June 2016, and reflects the staff's plans as of that date. These plans are tentative and subject to change.**