

April 21, 2005

MEMORANDUM TO: Scott W. Moore, Chief  
Rulemaking and Guidance Branch  
Division of Industrial and Medical Nuclear Safety  
Office of Nuclear Materials Safety  
and Safeguards

FROM Joseph W. Shea, Project Director **/RA/**  
Nuclear Security Policy Project Directorate  
Division of Nuclear Security  
Office of Nuclear Security and Incident Response

SUBJECT: REQUEST FOR REVISIONS TO INSPECTION MANUAL  
CHAPTER 2800

This memorandum is to request revising Inspection Manual Chapter (IMC) 2800, "Materials Inspection Program," to reflect the lessons learned from the rebaselining of the Nuclear Materials Management and Safeguards System (NMMSS). These revisions would include modifications of the Inspection Procedures (IP) used to inspect licensees authorized to possess certain quantities of special nuclear materials tracked by NMMSS.

BACKGROUND:

The U.S. Government has committed to a national accounting and control system for nuclear materials through treaties with nuclear trading partners and the International Atomic Energy Agency (IAEA). NMMSS is the U.S. national database used for U.S. Nuclear Regulatory Commission (NRC) licensees, Agreement State licensees, and the U.S. Department of Energy (DOE) contractors to report inventory changes of special nuclear material (SNM) and source material that is required to be tracked pursuant to international treaty requirements. Today about 700 NRC and Agreement State licensees maintain active NMMSS accounts.

In response to a DOE Office of Inspector General (OIG) report partially based on an audit of NMMSS, staff provided a list of recommendations to the Commission in SECY-02-0093. As a result, the Commission issued Staff Requirement Memorandum 02-0093 directing staff to undertake corrective actions. That resulted in Bulletin 2003-04: "Rebaselining of Data in the Nuclear Materials Management and Safeguards System" (October 8, 2003). The Bulletin requested all licensees holding NMMSS accounts report their inventories of NMMSS-tracked materials. The rebaselining of the NMMSS database was successfully completed in early 2005.

Additionally, in May 2003, the NRC OIG issued a report entitled, "Audit of NRC's Regulatory Oversight of Special Nuclear Materials," (OIG-03-A-15) based on a wide-ranging review of MC&A oversight activities at the NRC, including apparent inaccurate data in NMMSS. The OIG report specifically called out a potential weakness that exists associated with monitoring the inventories of smaller licensees.

On October 1, 2004, the staff issued Temporary Instruction 2800-035, "Verification of Licensee Responses to NRC Bulletin 2003-04 Regarding Inventories of Source and Special Nuclear Materials Tracked in the Nuclear Materials Management and Safeguards System." The purpose of the TI was to verify the accuracy of information that a representative sample of licensees provided pursuant to Bulletin 2003-04. To date, about half the 110 requested TI inspections have been completed. Initial TI inspection results indicate that licensees have properly documented and reported the SNM in their possession to the NMMSS database.

#### DISCUSSION:

NRC licensees authorized to possess 350 grams or more of special nuclear material are required to submit annual material balance reports documenting the quantities of special nuclear material that the licensee has received, produced, possessed, transferred, consumed, disposed of, or lost. NMMSS then reconciles these periodic reports to identify and account for any unreported material differences. Most of these licensees are also subject to other specific material control and accounting requirements and inspections.

Agreement State and NRC licensees authorized to possess less than 350 grams of SNM are only required to submit reports to NMMSS if they ship or receive a reportable quantity of SNM. There is no requirement for these licensees to report and reconcile their inventories annually. During the TI inspections, it has been noted that many of these licensees have had static inventories of SNM for a long period of time. As a result, these licensees had not, prior to the Bulletin, submitted a report to NMMSS in many years, and in many instances, decades.

During the rebaselining and the current TI inspections, a significant factor apparently contributing to NMMSS data quality problems was the infrequent reporting by licensees authorized to possess less than 350 grams of SNM. In many cases, licensees did not make required reports of receipts or transfers because the loss of corporate knowledge that these reporting requirements exist. Additionally, verification of licensee information submitted to NMMSS was not part of the routine materials inspection program.

To ensure the ongoing quality of the database, the staff is examining the following actions:

1. Possible rulemaking to require an annual report of SNM inventories, to NMMSS, by all licensees;
2. Possible modification of the inspection program to verify that all small quantity licensees (possessing <350 grams SNM), with active NMMSS accounts, make the required reports to NMMSS.

#### RECOMMENDED ACTIONS

To assure that licensees' physical holdings of SNM are properly documented in NMMSS, it is recommended that NMSS incorporate the following components of the TI into IMC 2800 and its supporting inspection procedures:

- While preparing for an inspection, the inspector will determine if the licensee is authorized to possess sufficient quantities (typically a gram or more) of SNM to require reporting to NMMSS.

- For those licensees possessing sufficient quantities, the inspector, prior to the inspection, will contact the NMMSS contractor and obtain a NMMSS inspection information package that includes (1) the material balance report most recently submitted by the licensee; (2) a summary prepared by NMMSS detailing any reported receipts, transfers, or losses of SNM made subsequently to the most recent material balance report; and, (3) a summary of the licensee's administrative information on record in the NMMSS.
- While reviewing licensee inventory records of licensed materials as already required in IMC 2800, the inspector will compare inventory data related to the possession of SNM to the data the licensee has reported to NMMSS. In addition, the inspector will compare transactions reported on the NMMSS-provided summary to those records maintained by the licensee in accordance with 10 CFR 20.
- While making direct observations of the facilities in which the licensee stores or handles licensed materials as already required in IMC 2800, the inspector will, at a minimum, verify the presence of a representative sample of the SNM the licensee reports possession of to the NMMSS.
- The inspector will provide the licensee with the summary of administrative information on record in the NMMSS. If necessary, the inspector will advise the licensee of the available options for contacting the NMMSS operator to provide any required updates.

The reviews of inventory records and the direct observation of material in storage are already key components of the inspections carried out in accordance with IMC 2800. Regional inspectors are already implementing the TI and the previously mentioned manual chapter and related inspection procedures. Therefore, it is expected that the addition of these new elements to the routine inspection program would have a minimal impact on the program's implementation. Additional staff time required to implement these revisions, during a routine inspection for a licensee that possess SNM, is estimated to be an hour or less. Typical times for the TI effort have been approximately fifteen minutes for preparation, fifteen to thirty minutes for onsite inspection effort, and fifteen minutes for inspection documentation.

NSIR recognizes that the suggested revisions to the inspection manual chapter and its associated inspection procedures have not been previously planned for by NMSS and that the incorporation of these revisions may impact NMSS resources. To help mitigate this impact, NSIR will provide assistance drafting the suggested revisions.

During discussions with your staff on this matter, the following schedule of milestones for completing the inspection manual and procedure revisions was established:

Date (2005)	Milestone
Early - Mid May	NSIR develops & submits draft revised IMC and IP's to IMNS
Late May	IMNS reviews drafts and submits to Regions for comment (3 weeks)
Late June - Early July	Regional comments on draft IMC and IP's due
Early - Mid July	NSIR reviews comments and revises (in coordination with IMNS)
Early August	NSIR submits revised IMC & IP's to IMNS for placement on website

We appreciate the opportunity to meet and discuss this recommendation with your staff. If you should have any additional questions, please contact Mr. Robert Caldwell at 415-1243.

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