March 27, 2003

MEMORANDUM TO: Chairman Meserve

FROM: William D. Travers ***/RA/***
Executive Director for Operations

SUBJECT: RESPONSE TO FINDINGS OF THE OFFICE OF THE INSPECTOR GENERAL EVENT INQUIRY REGARDING OVERSIGHT OF SPECIAL NUCLEAR MATERIAL AT MILLSTONE UNIT 1

The purpose of this memorandum is to provide the Commission the staff responses to the findings of the Office of the Inspector General (OIG) Event Inquiry, "NRC's Oversight Over The Control of Special Nuclear Material at Millstone Unit 1," Case No. 01-03S, dated October 31, 2002.

The OIG Event Inquiry reviewed the NRC's regulatory oversight of the material control and accounting (MC&A) program at Millstone Unit 1 from the late 1970s to the present. The OIG Event Inquiry concluded with three findings with regard to MC&A inspection activities during the 1978-1982 time frame at Millstone, and the overall MC&A inspection program at nuclear power plants since 1988. The staff responses to these findings are attached.

In general, the staff agrees that there are opportunities to improve the NRC's MC&A inspection program at nuclear power reactors.

Attachments: 1. Staff Responses to Findings
2. Office of The Inspector General Event Inquiry

cc: Commissioner Dicus
Commissioner Diaz
Commissioner McGaffigan
Commissioner Merrifield
SECY
OGC
OIG
OCA
OPA
CFO

CONTACT: T. Pham, DNS/NSIR
(301) 415-8154

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NAME	RZimmerman	MVirgilio	WKane	WTravers		
DATE	02/06/03	02/06/03	03/25/03	03/25/03		

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STAFF RESPONSES TO FINDINGS

1. Finding

OIG found that the methodology used by the NRC inspector who performed the September 1982 MC&A inspection at Millstone Unit 1 was flawed. The accepted practice when conducting an MC&A inspection was for the NRC inspector to begin the inventory with the audited SNM ending balance from the last MC&A inspection. However, the inspector who conducted the 1982 inspection began with a licensee-provided SNM balance that differed from the audited ending balance from the preceding 1978 MC&A inspection at Millstone Unit 1. Also, the beginning SNM balance used for the 1982 MC&A inspection was inconsistent with the NMMSS database for the same time period.

Staff Response

Neither the applicable NRC Inspection Procedure (IP) (85102, "Material Control and Accounting - Reactors") nor its inspection guidance specifically requires an NRC inspector to follow the practice discussed in this finding. The inspection methodology that was undertaken was in accordance with the existing procedure and guidance. The staff believes that the principal deficiencies associated with this finding are an inadequate MC&A inspection procedure and related guidance. This problem was identified in a memorandum to the Commission dated April 30, 2002, "Lessons Learned About Material Control and Accounting from the Millstone Unit 1 Loss of Two Spent Fuel Rods," and in response, the staff plans to revise IP 85102, to enhance the inspection scope with applicable guidelines and practices described in the Regulatory Guide 5.29, "Nuclear Material Control Systems for Nuclear Power Plants," and the related ANSI Standard N15.8. The revision of IP 85102 will be a part of the MC&A program review for NRC-licensed facilities that the Office of Nuclear Security and Incident Response (NSIR) is initiating this year and is scheduled for completion by September 2004.

2. Finding

OIG also determined that the NRC staff did not take advantage of several opportunities to establish an accurate account of the quantity of enriched uranium element maintained by Millstone Unit 1 between 1978 and 1982. These opportunities included the NRC MC&A inspections in 1978 and 1982 and the 1980 NRC inspection activities conducted in response to an allegation that fuel rods had been illegally shipped to Barnwell, SC. The NRC inspection procedures in effect during the time period included a reference to NRC Regulatory Guide 5.29, which adopted the ANSI standards for control and accounting of SNM. The ANSI standards specify that licensees should separately account for fuel elements that were not part of a fuel assembly. However, OIG found that the NRC inspection reports did not document any NRC actions to verify the presence of individual fuel rods to ensure the licensee's records were accurate.

Staff Response

The staff agrees that a number of NRC MC&A inspection activities between 1978 and 1982 failed to accurately account for the SNM quantities maintained at the licensed facility. The staff also agrees that there were inconsistencies between the NRC Inspection Procedure 85102, Regulatory Guide 5.29, and ANSI Standard N15.8 with regard to the definition of a basic unit for control and accounting, and the special circumstance of individual spent fuel rods separatedfrom the parent assembly. The MC&A inspection procedure and guidelines do not provide a comprehensive and effective tool for inspection activities. The staff's planned action to revise IP 85102, discussed in response to the first finding, will address this finding as well.

3. Finding

OIG found that since 1988, MC&A inspections at nuclear power reactors are no longer performed as part of the baseline or supplemental inspections at nuclear power plants. As a result of the risk-informed regulatory approach adopted by the NRC, MC&A inspections are now categorized as special or infrequently performed inspections and are implemented only for special situations based on plant events or conditions. Consequently, because routine MC&A inspections are no longer performed at nuclear power reactors, there is no systematic verification of licensee inventories of SNM conducted by the NRC.

Staff Response

The staff agrees that MC&A inspection program at nuclear power plants are no longer performed as baseline and supplemental inspections. The staff also agrees that there is no systematic verification of licensee inventories of SNM.

Several staff actions both planned and underway are responsive to this finding. As discussed in the memorandum to the Commission mentioned above in response to the first finding, the staff plans to examine MC&A vulnerabilities as part of its comprehensive review of the Agency's safeguards and security program that is being undertaken in response to the terrorist activities of September 11, 2001. While the MC&A review will benefit from the broader view of the entire safeguards program, as a first step, the staff has developed a Temporary Instruction (TI) 2515, "Spent Fuel Material Control and Accounting at Nuclear Power Plants," to ascertain the breadth and scope of the MC&A issues which were identified at Millstone. The TI is a three-phase approach designed to inspect the current status of MC&A programs for power reactors and provide insights for additional inspection requirements in the future. The TI will be implemented to a certain extent at all sites and, depending on the nature and scope of any problems identified, the staff will consider the need for additional action. Changes to the MC&A program, including the scope and frequency of MC&A inspections at nuclear power plants, will be evaluated as a whole and in the context of the overall safeguards program.