

February 7, 2006

MEMORANDUM TO: Luis A. Reyes
Executive Director for Operations

FROM: Stephen D. Dingbaum/**RA**/
Assistant Inspector General for Audits

SUBJECT: STATUS OF RECOMMENDATIONS: AUDIT OF NRC'S
REGULATORY OVERSIGHT OF SPECIAL NUCLEAR
MATERIALS (OIG-03-A-15)

REFERENCE: EXECUTIVE DIRECTOR FOR OPERATIONS'
MEMORANDA DATED JUNE 9, 2005, AND
NOVEMBER 30, 2005

Attached is the Office of the Inspector General's analysis and status of recommendations as discussed in the agency's response dated November 30, 2005. Based on this response, Recommendations 2, 5, 6, and 7 are closed. Recommendations 1, 3, 4, and 8 remain resolved. Please provide an updated status of all recommendations by July 1, 2006.

If you have any questions or concerns, please call me at 415-5915.

Attachment: Status of Recommendations

cc: W. Dean, OEDO
M. Malloy, OEDO
P. Tressler, OEDO

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Status of Recommendations

Recommendation 1: Conduct periodic inspections to verify that material licensees comply with MC&A requirements, including, but not limited to, visual inspections of licensees' SNM inventories and validation of report information.

Agency Response
Dated Nov. 30, 2005: As previously discussed in the June 2005 update, the staff developed SECY-05-0078, "Staff Recommendations for Regulatory Improvements to the Nuclear Materials Management and Safeguards System [NMMSS] Database." The Commission approved the staff recommendations in a staff requirements memorandum (SRM) dated June 30, 2005, and directed the staff to begin the development of the proposed NMMSS rule changes. The staff expects the proposed rule to be completed by December 2006, and a final rule by December 2007.

A memorandum from John Pelchat to Robert Caldwell entitled, "Results of Inspections Conducted in Accordance with Temporary Instruction 2800/035," dated November 2, 2005, can be found in ADAMS at ML052990563. The memorandum discusses the purpose, methodology, results, and outcomes of staff inspections conducted during Fiscal Year 2005 to verify small quantity inventories of source material and SNM at licensed facilities. Insights gained from the results of this activity are being folded into the NMMSS proposed rule.

On August 5, 2005, the staff finalized a Commission Paper (SECY-05-0143) which contained the results of the MC&A Program Review, and recommended that the Commission approve the staff's proposed enhancements to MC&A regulations, inspections, and licensing. In response to the associated staff requirements memorandum dated November 18, 2005, the staff has begun the development of an MC&A rulemaking plan. The rulemaking plan will include insights gained from the MC&A inspections currently being conducted at power reactors.

The status of the MC&A inspections at power reactors is updated in the monthly memoranda to the Commission entitled, "Status of the Agency's Significant Security Activities." The monthly memoranda also contain updated information on the Nuclear Materials Management and Safeguards System database, the MC&A Program Review, and MC&A inspections of fuel fabrication facilities.

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OIG Analysis:

NRC continues to make progress towards closing this recommendation. In November 2004, OIG identified the following three conditions that need to be met in order to close this recommendation.

Condition 1 – the agency needs to complete documentation of the basis for risk-informing the MC&A program (and apply it to the program)

On August 5, 2005, the agency issued SECY-05-0143, *Proposed Changes to the Material Control and Accounting Program* which contained proposed changes to the MC&A Regulations, MC&A Inspection Program, and MC&A Licensing Process. Additionally, in this paper staff proposed developing a comprehensive risk-informed basis for MC&A oversight of all types of materials licensees to serve as the basis for determining inspection resources and frequencies.

In November 2005, a Staff Requirements Memo (SRM) related to SECY-05-0143 was issued. Through the SRM, the Commission approved the staff's proposed improvements to the MC&A program, including development of a rulemaking plan. Per specific Commission direction, the rulemaking plan is to describe the agency's proposed approach to developing risk-informed methods applicable to MC&A. OIG acknowledges that the agency's actions meet OIG's intent. However, Condition 1 cannot be satisfied until the agency completes documentation of the basis for risk-informing the MC&A program and applies it to the program.

Condition 2 – the agency takes action on [Oak Ridge National Laboratory's] ORNL's recommendations.

OIG reviewed the agency's, *Summary and Assessment of ORNL Recommendations*, and is satisfied that the agency has addressed each of ORNL's recommendations through this document and by reference to said recommendations in the attachment to SECY-05-0143.

OIG also notes that the subject paper made clear

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statements regarding staff's agreement or disagreement with each of the ORNL recommendations. As a result, NRC agreed with ORNL's recommendation to comply with OIG Recommendations 1-4 and 8. Conversely, the agency also supported ORNL's recommendation to not support OIG Recommendations 5-7. Nonetheless, the agency's effort in addressing ORNL's recommendations satisfies this condition.

Condition 3 – OIG determines that any planned changes to the MC&A inspection program fully address OIG concerns.

OIG has reviewed a number of the staff's proposed changes to the MC&A inspection program (as identified in SECY-05-0143) including reinstatement of routine inspections at commercial nuclear power reactors, clarification of regulatory reporting requirements, and enhancements of current MC&A inspection programs for other type facilities. As a result of our review, OIG has determined that the proposed changes meet the intent of this recommendation, thereby satisfying this condition.

In summary, staff proposed actions meet the intent of this recommendation and OIG will continue to follow the agency's progress regarding these planned activities. However, this recommendation cannot be closed until the proposed actions are completed and applied to the MC&A program.

Status:

Resolved.

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<u>Recommendation 2</u>	Report to the Commission annually on the effectiveness of NRC's inspection program for ensuring that licensees satisfactorily carry out their MC&A responsibilities.
Agency Response Dated Nov. 30, 2005:	<p>In the June 2005 response, NRC discussed how it determines the effectiveness of its inspection program. The inspection program is designed to ensure that licensees adequately account for and control their SNM and that they maintain the effectiveness of their programs. Assurance that the objective that SNM is being adequately accounted for and controlled is provided by the following:</p> <ul style="list-style-type: none">• The absence of anomalies such as a substantiated loss of SNM or unexplained inventory difference;• The absence of any substantial breakdown of the MC&A system that 1) significantly weakens the protection against loss, theft, or diversion; or 2) diminishes timeliness of response by the licensee to indications that loss, theft, or diversion may have occurred. <p>Measures are in place to ensure program effectiveness in this regard. Regulations in 10 CFR 74.11 require the licensee to report loss, theft, or diversion of SNM. In addition, NRC Management Directive 8.1 requires reporting of abnormal occurrences by the NRC staff to the Commission for possible inclusion in the required report to Congress, including the following:</p> <ul style="list-style-type: none">• Theft, diversion, or loss of licensed material;• A substantiated case of actual or attempted theft or diversion of licensed material;• Any substantiated loss of SNM or any substantiated inventory discrepancy that is judged to be significant relative to normally expected performance, and that is judged to be caused by theft or diversion or by substantial breakdown of the accountability system;• Any substantial breakdown of MC&A systems that significantly weakened the protection against theft or diversion.

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The Office of Nuclear Security and Incident Response assesses the adequacy of the MC&A program implementation. Program effectiveness can be evaluated based on whether or not loss, theft, or diversion occurred; whether indications of loss were responded to in a timely manner; and whether there was a significant breakdown of a licensee's MC&A Program. Based on the significance of the event or inspection finding, the NRC may initiate special inspections to ensure the issue has been understood and addressed by the licensee.

As part of NSIR's Annual Program Review, any significant MC&A inspection program issues, events or findings would be provided to the Commission. In addition, areas of interest with respect to MC&A inspections at fuel fabrication facilities and power reactors are addressed in the monthly memoranda to the Commission entitled, "Status of the Agency's Significant Security Activities."

The Pelchat memorandum (found at ML052990563) discussed in Recommendation 1 above discusses the effectiveness of the staff's inspections under Temporary Instruction 2800/035.

OIG Analysis:

OIG procured and reviewed a number of NSIR's monthly status reports to the Commission ("Status of the Agency's Significant Security Activities") and the Pelchat memorandum, both referenced above. The Pelchat memo, which is an internal NSIR document, does not support the intent of this recommendation to "report" to the Commission. However, NSIR's activity status reports to the Commission do address MC&A inspection issues meeting the intent of this recommendation. As a result, this recommendation is Closed.

OIG notes that the Commission denied a July 2005 request to reduce the frequency of the status reports from monthly to quarterly. The Commission's desire to continue the frequency of the status reports, despite the EDO's statement that many of the activities discussed are approaching a "steady state," acknowledges the continued importance of having a clear picture of the state of the agency's activities. Given that the staff has recently begun development of a rulemaking plan regarding MC&A issues, OIG encourages frequent dialogue with the Commission to ensure that management is kept informed of significant developments throughout the process.

Status:

Closed.

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Recommendation 3: Document the basis of the approach used to risk inform NRC's oversight of MC&A activities for all types of materials licensees.

Agency Response

Dated Nov. 30, 2005:

On August 5, 2005, the staff issued a Commission Paper (SECY-05-0143) providing the results of the MC&A Program Review and recommending that the Commission approve the proposed enhancements to regulations, inspections, and licensing. The staff is developing a rulemaking plan that includes reconsidering NRC's material categorization based on the risks associated with the types of materials that are regulated.

The methodology used for selecting the licensees for the NMMSS inspections conducted during Fiscal Year 2005 to verify licensees inventories of source and special nuclear material is discussed in the Pelchat memorandum found at ML052990563.

OIG Analysis:

As stated in response to Recommendation 1, the Commission has directed the staff to capture the approach to developing risk-informed methods applicable to MC&A in its rulemaking plan. This action reflects continued progress towards completing this recommendation with regards to activities related to MC&A but not the program itself. The recommendation will be closed when the agency completes documentation of the basis for risk-informing the MC&A-related activities.

Status:

Resolved.

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- Recommendation 4: Revise NRC regulations to require licensees authorized to possess SNM, and not currently required to do so, to conduct annual inventories and submit an annual Material Status Report or Physical Inventory Summary Report to NRC.
- Agency Response
Dated Nov. 30, 2005: As previously discussed in the June 2005 update, the staff submitted a Commission paper titled "Staff Recommendations for Regulatory Improvements to the Nuclear Materials Management and Safeguards System Database" (SECY-05-0078). The Commission approved the staff recommendations in an SRM dated June 30, 2005, and directed the staff to begin development of proposed rule changes. Included in the approved recommendations was the staff proposal to require annual reporting by licensees possessing SNM of one gram or more of contained Uranium-235, Uranium-233, or Plutonium. The staff recommendations are also addressed in the Pelchat memorandum found at ML052990563.
- OIG Analysis: The proposed changes to licensee reporting presented in SECY-05-0078, along with other proposed changes to the MC&A program requirements in SECY-05-0143, meet the intent of this recommendation. OIG will close the recommendation once the proposed rule has been finalized.

Status: **Resolved.**

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Recommendation 5: Establish an independent NRC system of accounting for SNM possessed by NRC and Agreement State licensees and ensure that beginning balances are accurate based on NRC's physical verification of a statistical sample of the location and amounts of SNM held by the licensees or a review of a statistical sample of a licensee's records or some combination thereof.

Recommendation 6: Subsequent to the completion of Recommendation 5, withdraw the approximate \$1.5 million annual reimbursement to DOE for NMMSS and redirect those resources to support of the NRC licensee database.

Recommendation 7: Subsequent to the completion of Recommendation 5, dissolve the current *DOE-NRC Programmatic Agreement for Development and Operation of Nuclear Materials Management and Safeguards System (NMMSS)* and institute a new agreement regarding NRC's providing DOE with the information necessary to satisfy international reporting obligations.

Agency Response
Dated Nov. 30, 2005: Recommendations 5, 6, and 7 are combined because they are all related to the NMMSS database and associated contract, and because the outcome of Recommendation 5 impacts both Recommendations 6 and 7.

The OIG response to NRC dated March 18, 2004, included the following areas to be addressed for these recommendations:

OIG Condition 1: Provide a plan describing how NRC intends to validate the inventory information reported to NMMSS.

November 2005 Status: As discussed in the June 2005 update, for facilities that are licensed to possess more than 350 grams of SNM, the current regulations require that such licensees report inventory and material balance information to NMMSS. This reporting activity and reconciliation of NMMSS book values is a continuing normal part of NMMSS operations. For licensees that possess less than or equal to 350 grams of SNM, Temporary Instruction (TI) 2800/035 was issued on July 29, 2004, to validate a representative selection of inventories. These TI activities were completed on September 30, 2005, and determined that NMMSS operations accurately processed, retained, and reported licensee information

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submitted in response to NRC Bulletin 2003-04, "Rebaselining of Data in the Nuclear Materials Management and Safeguards System." However, the inspections identified that some licensees, who possess less than 350 grams of SNM and are not routinely reporting inventory information, have difficulty reporting the requested information correctly. To enhance NRC oversight of inventories at small licensee sites, the staff revised NRC Manual Chapter 2800 and associated Inspection Procedures 87125, 87126, and 87134. These revisions require that NMMSS book balances be compared to actual inventories possessed by small licensees during routine Regional Office inspections.

Also, the Commission approved the staff recommendations in SRM-05-0078 "Staff Recommendations for Regulatory Improvements to the Nuclear Materials Management and Safeguards System Database" and directed the staff to develop the proposed rule changes. Included among those recommendations is a rule change that would require smaller quantity licensee sites to report SNM inventories at least annually. Additional information is provided in the Pelchat memorandum found at ML052990563.

OIG Condition 2: Provide insights into what "potential underlying causes" are being addressed.

November 2005 Status: NRC Manual Chapter 2800 and associated Inspection Procedures 87125, 87126, and 87134 have now been revised. These revisions require that NMMSS book balances be compared to actual inventories possessed during routine inspections at small licensee sites. These continued inspection efforts and proposed rule changes should increase and maintain licensee awareness of NMMSS operations and associated reporting requirements. Additional information is contained in the Pelchat memorandum found at ML052990563.

OIG Condition 3: Provide a description of actions to be taken towards the licensees who do not respond to the rebaselining effort, and an evaluation of the cause for the poor response rate.

OIG Condition 4: Provide evidence that licensees who do not respond to Bulletin 2003-04 are included in the sample population for the TI follow-up inspections.

November 2005 Status: As discussed in the June 2005

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update, TI 2800/035 is a related rebaseline inspection activity that involves an on-site validation of the submitted licensee information with actual materials found on-site. During Fiscal Year 2005, NRC inspection staff validated the inventories reported by approximately half of the "small" NRC or Agreement State licensees that possess SNM, including licensees who did not initially respond to Bulletin 2003-04. The Commission accepted the staff proposal in SECY-05-0078 that these "small" licensees are required to submit such information at least annually to NMMSS, and that the validation of submitted information become a part of the inspection routine for small licensees. Additional information is contained in the Pelchat memorandum found at ML052990563.

OIG Condition 5: Provide a description of how NRC will measure improvement regarding the effectiveness and efficiency of NMMSS operations.

November 2005 Status: As discussed in the June 2005 update, NRC will participate in the establishment and review of the yearly performance measures that DOE places on the NMMSS contractor to obtain information that could be used to determine measures related to effectiveness and efficiency improvement. The results of these performance measures are used as a basis for evaluating the contractor's performance and for determining the yearly fee award to the NMMSS contractor.

Additionally, the staff monitors and corrects contractor performance by the following methods:

Review of weekly highlight reports developed by contractor staff. These reports include 30/60/90 day forecasts regarding significant activities.

Review of weekly status reports provided by the contractor developing the NMMSS upgrade.

Evaluation of monthly letter status reports. Staff conclusions, concerning this report, are provided to Office management and the DOE project manager.

In concert with these scheduled activities, staff participates in meetings with DOE management and contractor staff on an almost monthly basis. At these meetings, a variety of topics regarding system operation and contractor performance are

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discussed and evaluated. Additionally, informal contacts between NSIR staff and the contractor staff concerning technical reporting issues and problem resolution occur almost daily. This provides the NSIR with routine insight into the effectiveness and efficiency of the NMMSS operations.

OIG Condition 6: Provide evidence of NMMSS operations improvement, or a summary of the outcomes from the internal measures and documentation of its assessment of whether the staff needs to change its course of action, including establishing an independent NRC system of accounting.

November 2005 Status: In early 2005, the Department of Energy initiated a review of the NMMSS reporting activities performed by DOE sites and NRC licensee sites possessing DOE-owned materials. DOE's objective was to undertake a review of DOE's NMMSS reporting requirements in pursuit of the objectives of eliminating, to the maximum practical degree, existing NMMSS reporting differences between DOE and NRC and establishing a more unified set of NMMSS reporting instructions. The DOE review has resulted in several changes to certain DOE reporting requirements that now brings them into alignment with NRC's NMMSS reporting requirements. Furthermore, DOE has identified several additional requirements that, when implemented, could lead to further changes in NMMSS facility reporting to better unify NRC and DOE NMMSS reporting requirements. DOE has indicated that it wishes to finalize this effort and implement all appropriate changes by April 2008.

In a letter dated May 20, 2005, Glen Podonsky, Director of the Office of Security and Safety Performance Assurance at DOE, informed the NRC that DOE had decided to extend the current NMMSS contractor period of performance to September 30, 2008. In the letter, DOE also confirmed their intention to initiate an open procurement action to award a new contract prior to the conclusion of the contract extension. In a July 11, 2005, reply to DOE, NRC agreed with this extension on the basis that it provided the best way to maintain the national database while upgrades and a standardization of reporting requirements is taking place.

OIG Analysis:

OIG recognizes the agency's continued disagreement in implementing Recommendation 5 (to establish a system of accounting for SNM independent of DOE and NMMSS). In that regard, OIG previously provided a list of conditions to be

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met in order to close these recommendations. Below is an overall analysis of the status of the agency's progress towards satisfying the conditions.

OIG has now reviewed all of the documentation cited by the staff including:

- the plan for validating inventory information
- revisions to Manual Chapter 2800 and its associated inspection procedures
- SECY-05-0078 and its related SRM
- The Pelchat memorandum

Actions described in the above documents represent a concerted effort by the agency to satisfy these conditions. In addition, the proposed changes to MC&A requirements, including additional reporting requirements and increased physical verification at licensee facilities, reflect significant progress in the agency's recognizing the importance of ensuring our licensees are accurately accounting for SNM balances.

OIG also recognizes the staff's increased involvement with DOE in monitoring and evaluating the NMMSS contractor's performance to ensure accurate information in the national database. Notwithstanding the increased efforts by staff to improve NMMSS oversight, OIG remains concerned that NRC's needs are not adequately met in the current relationship with DOE despite the substantial annual funding. This sentiment was echoed by ORNL in its review of MC&A as follows: "The staff notes that DOE has historically driven the system to meet its needs, rather than fully considering NRC's needs, as well." Despite the increased oversight efforts, the agency has still not provided for any measurable bases (i.e., established performance measures), nor a summary of the **outcomes** [emphasis added] from the internal measures provided.

In conclusion, although not completely satisfying all of the conditions prescribed by OIG, the agency has made significant progress towards addressing OIG's concerns. However, OIG also recognizes the impasse which exists regarding Recommendations 5, 6, and 7, namely the agency's continued disagreement to implement an independent accounting system. Therefore, OIG will close these recommendations with the following:

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OIG notes that the agency's refusal to proceed with the establishment of an independent system of accounting for SNM indicates that the agency assumes the risks associated with remaining in the arrangement with DOE and its NMMSS contractor (i.e., the completeness and accuracy of information in NMMSS).

Status: **Closed.**

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<u>Recommendation 8</u>	For any funding from NRC to DOE directed toward meeting the international reporting obligations, follow all policies and procedures for placement and monitoring of work with DOE as outlined in Management Directive and Handbook 11.7.
Agency Response Dated Nov. 30, 2005:	During previous status reports, NRC provided OIG with a significant amount of information reflecting DOE's compliance with NRC contractual requirements. NRC continues to receive monthly reports that reflect DOE's compliance with its contractual requirements.
OIG Analysis:	NRC's June 2005 status update stated that the "NRC has nearly completed a compilation of additional recent information reflecting DOE's compliance with NRC contractual requirements. This information will be provided to OIG separately during June 2005 to assist OIG in closing out this recommendation." However, OIG has not received the referenced supporting documentation. Therefore, this recommendation remains resolved until the documentation is provided for OIG's review and analysis.
Status:	Resolved.