

November 25, 2014

MEMORANDUM TO: Chairman Macfarlane
Commissioner Svinicki
Commissioner Ostendorff
Commissioner Baran
Commissioner Burns

FROM: Mark A. Satorius */RA by Roy Zimmerman for/*
Executive Director for Operations

SUBJECT: TASKING TO DEVELOP MATERIAL CATEGORIZATION FOR
POTENTIAL REPROCESSING FACILITIES

Staff Requirements Memorandum (SRM)-SECY-09-0123, "Material Categorization and Future Fuel Cycle Facility Security-Related Rulemaking," issued July 8, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML101890711), approved the staff's request to pursue a material attractiveness categorization approach for regulating special nuclear material (SNM). The staff is currently pursuing a rulemaking to establish requirements for the protection of SNM utilizing this approach. The draft Regulatory Basis supporting this rulemaking was published in the *Federal Register* on June 18, 2014 (79 FR 34641).

SRM-SECY-09-0123 also directed the staff, as a low-priority effort, to provide a detailed analysis and recommendation for the use of a material categorization approach for potential reprocessing facilities, mixed oxide (MOX) fuel for the purpose of transportation, and for applications that use large quantities of americium and/or neptunium (work item tracking system (WITS) 201000189). For the reasons set forth below, staff is requesting that the Commission approve the cancelation of this low-priority tasking, WITS 201000189.

These low-priority requirements have been partially addressed by the analysis completed to support the rulemaking establishing requirements for the protection of SNM. As noted above, the technical approach for this rulemaking establishes security requirements based, in part, on the material attractiveness and the amount of SNM, including enriched uranium, plutonium or a combination of the two. Consequently, the analysis included MOX fuel; the security of MOX fuel in-transit will also be addressed in the rulemaking. Additionally, the analysis supporting the SNM security rulemaking also included highly-enriched uranium. Accordingly, the technical assessment for americium and neptunium has also been completed as a result of the similarities of these elements to highly-enriched uranium. However, the detailed analysis for using material attractiveness to categorize the security requirements for potential reprocessing facilities has not been performed due to the low-priority tasking and small likelihood of reprocessing technology as a viable option in the foreseeable future.

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In June 2007, the Commission directed the staff to conduct a regulatory gap analysis and to identify changes in the regulatory requirements necessary to license a potential reprocessing facility (SRM-SECY-07-0081, "Regulatory Options for Licensing Facilities Associated with the Global Nuclear Energy Partnership," ADAMS Accession No. ML071800084). The staff has been implementing the Commission's direction in parallel with the ongoing SNM security rulemaking described above.

The staff's gap analysis identified 23 gaps in existing regulations (ADAMS Accession Nos. ML091520280 and ML091520365). The staff has taken the following steps to disposition the identified gaps. In November 2011, the staff developed a draft regulatory basis document for reprocessing (ADAMS Accession No. ML113202350). In July 2013, the staff recommended a new regulation (10 CFR Part 7x) and the finalization of the regulatory basis for licensing a reprocessing facility (SECY-13-0093, "Reprocessing Regulatory Framework – Status and Next Steps," ADAMS Accession No. ML13178A243). In SRM-SECY-13-0093, "Reprocessing Regulatory Framework – Status and Next Steps" (ADAMS Accession No. ML13308A403), the Commission approved the staff's recommendation to develop 10 CFR Part 7x for reprocessing, but directed the staff to limit the scope of its efforts, "for the time being," to resolving only one high-priority gap (Gap 5 on safety and risk assessment methodologies). The staff effort to resolve Gap 5 is under way and is anticipated to last several years. According to the SRM, the staff should provide a notation vote paper to the Commission presenting the results of this limited scope effort, upon its completion, as well as recommendations regarding next steps.

The staff notes that Gap 8, entitled "Risk-Informing 10 CFR Part 73 and 10 CFR Part 74," identified the potential for undue regulatory burden in operating a reprocessing facility posed by the quantity-based categorization scheme in existing regulations. The analysis used to identify Gap 8 served as the basis for the staff's recommendation in SECY-09-0123, "Material Categorization and Future Fuel Cycle Facility Security-Related Rulemaking" (ADAMS Accession No. ML092230634) to adopt a material categorization approach to protecting SNM rather than the existing quantity-based approach. As described above, SRM-SECY-09-0123 tasked the staff to address the Part 73 issues through rulemaking, which is currently ongoing, and provided guidance regarding reprocessing facilities.

Based on the guidance provided in SRM-SECY-13-0093 to limit the scope of the reprocessing regulatory framework, the staff believes that the development of a Commission Paper as a separate effort and the continued tracking of WITS201000189 is an unnecessary use of resources until a decision is made on the possible reprocessing rulemaking effort. Accordingly, the staff recommends the discontinuation of activities under WITS 201000189 to develop a detailed analysis and to provide recommendations for the use of a material categorization approach for potential reprocessing facilities and for applications that use or separate large quantities of americium and/or neptunium.

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Based on the guidance provided in SRM-SECY-10-0093 to limit the scope of the reprocessing regulatory framework, the staff believes that the development of a Commission Paper as a separate effort and the continued tracking of WITS201000189 is an unnecessary use of resources until a decision is made on the possible reprocessing rulemaking effort. Accordingly, the staff recommends the discontinuation of activities under WITS 201000189 to develop a detailed analysis and to provide recommendations for the use of a material categorization approach for potential reprocessing facilities and for applications that use or separate large quantities of americium and/or neptunium.

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ADAMS Accession No.: ML14245A361 201000189

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