

September 11, 2015

MEMORANDUM TO: Chairman Burns  
Commissioner Svinicki  
Commissioner Ostendorff  
Commissioner Baran

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

SUBJECT: PROPOSED RULEMAKING ON SECURITY REQUIREMENTS FOR  
FACILITIES STORING SPENT NUCLEAR FUEL AND HIGH-LEVEL  
RADIOACTIVE WASTE

This memorandum responds to Staff Requirements Memorandum (SRM)-SECY-10-0114, "Recommendation to Extend the Proposed Rulemaking on Security Requirements for Facilities Storing Spent Nuclear Fuel and High-Level Radioactive Waste" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML103210025). The U.S. Nuclear Regulatory Commission (NRC) staff is providing its technical approach and updated recommendation on the timeline for a proposed rule to develop security requirements for facilities providing interim storage of spent nuclear fuel (SNF) and high-level radioactive waste (HLW). As a result of stakeholder feedback and developments in the nuclear industry since the issuance of SRM-SECY-10-0114 and an earlier SRM-SECY-07-0148, "Independent Spent Fuel Storage Installation Security Requirements for Radiological Sabotage" (ADAMS Accession No. ML073530119), the staff is recommending that the Commission delay commencing this security rulemaking for up to 5 years.

In SRM-SECY-07-0148, the Commission approved the staff's recommendation to apply a radiological dose-based regulatory approach to all independent spent fuel storage installations (ISFSI) using release-fraction values specified by the NRC. Specifically, this dose-based approach would require licensees to demonstrate that the security at ISFSIs or monitored retrievable storage installations could effectively protect against releases, if any, resulting from specific security events bounded by the design basis threat for radiological sabotage, such that the estimated dose at the site boundary would not exceed 0.05 Sievert (5 rem). In addition, the Commission directed the staff to develop new, risk-informed performance-based security requirements applicable to all ISFSIs to enhance existing security requirements, and to develop ISFSI-specific regulatory guidance supporting the implementation of the new regulations.

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As a result of stakeholder comments on the “Draft Technical Basis for Rulemaking Revising Security Requirements for Facilities Storing SNF and HLW, Notice of Availability and Solicitation of Public Comments” (74 *Federal Register* (FR) 66589) (ADAMS Accession No. ML093280743) issued on December 9, 2009, the staff requested additional time to further evaluate those comments. After obtaining Commission approval, the staff engaged stakeholders to resolve concerns surrounding the dose-based approach. This was a relatively lengthy process since the staff needed to identify and provide security clearances to stakeholders with a need-to-know so that these stakeholders could participate in multiple classified meetings to review and discuss additional information used to support the technical basis of the subject rulemaking.

Based on the feedback from stakeholders, the staff conducted an additional review of the existing analyses and data, and determined that additional testing was necessary to complete the technical basis. Consequently, the staff conducted proof-of-concept testing to determine if certain postulated security scenarios were credible. Stakeholders with clearances were invited to observe the testing. Furthermore, the staff recorded the testing and held classified meetings with cleared stakeholders to present and discuss the testing and results. The proof-of-concept testing both confirmed the credibility of some scenarios and eliminated others from further consideration. The staff shared the results of this testing with the Commission in 2014. The staff is currently performing MELCOR analysis using the testing data to further analyze release scenarios. This work is projected to be completed by December 2015.

Following completion of the additional stakeholder engagements and the proof-of-concept testing, several key developments in the nuclear power industry led the staff to reexamine the timing of this proposed rulemaking. After more than a decade without any power reactors permanently shutting down, operators of five power reactor units permanently ceased operations between 2013 and 2014. Case-by-case licensing exemption requests and stakeholder input as these reactors transitioned from operating status to decommissioned status prompted the Commission to issue SRM-SECY-14-066, “Request by Dominion Energy Kewaunee, Inc. for Exemptions from Certain Emergency Planning Requirements,” dated August 7, 2014 (ADAMS Accession No. ML14219A366). In this SRM, the Commission directed the staff to complete a focused rulemaking that provides a set of transparent and effective regulations governing this transition process. The Commission further directed the staff to complete this decommissioning rulemaking without impacting staff’s ongoing regulatory activities associated with the reactors undergoing decommissioning. The staff’s evaluation of resources and expertise necessary to support both rulemakings revealed additional interface issues warranting further consideration. As an example, the question arose whether the dose-based regulatory approach for ISFSIs should be implemented while reactors are still in operation, at the beginning of the transition process, or towards the end of the transition process to minimize any operational impacts while providing high assurance of public health and safety.

Concurrently, the environment for SNF storage and disposal continues to evolve. Aside from ISFSIs, two entities have expressed an interest in building centralized interim spent fuel storage facilities. Specifically, Waste Control Specialists has announced its intent to submit an application for a consolidated interim storage facility (CISF) by April 2016; and Holtec International has requested the staff to open a docket for interactions with the NRC on establishing a CISF. Although the staff remains confident that existing requirements ensure adequate protection, construction and operation of a CISF, if licensed, will require the staff to reexamine potential security scenarios to support the technical basis for the subject rulemaking.

Finally, in SRM-SECY-11-0032, "Consideration of the Cumulative Effects of Regulation in the Rulemaking Process," dated October 11, 2011 (ADAMS Accession No. ML112840466), the Commission directed the staff to seek and consider stakeholder feedback on the cumulative effects of regulation related to a proposed rule. Although the subject security rulemaking is not yet at the proposed rule stage, if the agency moves forward with the dose-based regulatory approach, in addition to requiring licensees to make permanent any temporary measures under the post-9/11 security orders, this rule would require licensees to perform dose calculations to demonstrate compliance with the 0.05 Sievert (5 rem) site boundary requirement discussed above. As recently as July 20, 2015, the Nuclear Energy Institute (NEI) provided comments on the Unified Agenda of Federal Regulatory and Deregulatory Actions (FR Vol. 80, 35170, dated June 18, 2015; Docket ID NRC-2015-0071) questioning the need for the ISFSI security rulemaking. However, staff is aware that not all stakeholders would agree with NEI's perspective.

Consistent with the Commission direction in the recent SRM-SECY-15-0015, "Project Aim 2020 Report and Recommendations," dated June 8, 2015 (ADAMS Accession No. ML15159A234), the staff has reassessed the path forward based on the developments since the 2007 and 2010 SRMs on the subject rulemaking. First and foremost, as stated previously, the existing security requirements for ISFSIs, together with the additional requirements in the post 9/11 security orders, provide continued high assurance of adequate protection of public health and safety regardless of the license type or location. These orders remain in effect even if the agency does not proceed with further rulemaking. Additionally, triennial security inspections for ISFSIs that commenced in 2012 ensure industry compliance with all current requirements. Not pursuing the subject rulemaking would leave in place two different licensing approaches for security of ISFSIs, general and specific. However, given the resources associated with any rulemaking, the technical approach of this rulemaking would greatly benefit from and likely need to be reanalyzed based on progress of the decommissioning rulemaking, completion of the ongoing MELCOR analysis, and further clarity on the development of the domestic spent nuclear fuel management strategy. Moreover, pursuing this rulemaking now would require guidance development to implement the dose-based approach, including development of release fractions for credible and reasonable scenarios and dose assessment methods. These expenditures need to be evaluated in light of competing agency priorities. Based on the benefit and resource impact evaluation described above, the staff's recommendation is to not to pursue this rulemaking at this time.

The staff will re-evaluate the technical approach for ISFSI security in 5 years to determine whether rulemaking is warranted. However, the staff may conduct a technical review sooner, if necessitated by external factors. Such potential factors include: (1) a need is identified to develop a clear interface between the new decommissioning power reactor security requirements and ISFSI security requirements; (2) a change to the threat environment affecting ISFSIs; (3) a need is identified for ISFSI security requirements to support a new national strategy utilizing a CISF, or (4) the staff's Project Aim 2020 rebaselining effort recommends acceleration of the ISFSI security rulemaking. The enclosure provides the new timeline for this proposed rulemaking. Consequently, the staff is requesting to reset the WITS items to the new dates as identified in the enclosure.

The Commissioners

- 4 -

The Office of the General Counsel has reviewed this memorandum and has no legal objection.

SECY, please track.

Enclosure:  
Schedule for the Independent Spent Fuel  
Storage Installation and Monitored  
Retrievable Storage Installation Security  
Rulemaking

cc: SECY  
OGC  
OCA  
OPA  
CFO

The Commissioners

- 4 -

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Enclosure:  
Schedule for the Independent Spent Fuel  
Storage Installation and Monitored  
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cc: SECY  
OGC  
OCA  
OPA  
CFO  
RES  
NRR

**ADAMS Accession No.: ML15230A009 (Package); ML15229A231 (Memo)**

**W201000265**

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