

May 7, 2013

MEMORANDUM TO: Chairman Macfarlane  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff

FROM: Michael R. Johnson */RA/*  
Deputy Executive Director for Reactors  
and Preparedness Programs  
Office of the Executive Director for Operations

SUBJECT: UPDATED SCHEDULE AND PLANS FOR JAPAN  
LESSONS-LEARNED TIER 3 ISSUE ON EXPEDITED  
TRANSFER OF SPENT FUEL

#### Purpose

The purpose of this paper is to provide the Commission with the U.S. Nuclear Regulatory Commission (NRC) staff's updated plans for evaluating whether the agency needs to take regulatory action to require licensees to expedite transfer of spent fuel from spent fuel pools to dry cask storage. Specifically, the staff has aligned ongoing research activities related to the spent fuel pool scoping study (SFPSS) with the previously established Japan Lessons-Learned Tier 3 program plan while considering the schedule to support the agency's ongoing waste confidence efforts. The staff believes this integration will improve the public's ability to understand the relationships between these activities and related policy issues.

#### Background

In SECY-12-0095, "Tier 3 Program Plans and 6-Month Status Update in Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Subsequent Tsunami," dated July 13, 2012, the staff provided a five-step plan to evaluate whether the NRC needs to take regulatory action to require expedited transfer of spent fuel from spent fuel pools into dry cask storage (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12165A092). After submitting the Tier 3 program plan, the staff received direction in several staff requirements memoranda (SRM). In SRM M120607C, "Staff Requirements – Meeting With the Advisory Committee on Reactor Safeguards, 9:30 A.M., Thursday, June 7, 2012, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance)," dated July 16, 2012, the Commission provided the staff with

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direction on several topics (e.g., human reliability analysis and comparative assessment of spent fuel pool studies) that the SFPSS would address (ADAMS Accession No. ML121980043). In SRM M120807B, "Staff Requirements – Briefing on the Status of Lessons Learned from the Fukushima Dai-ichi Accident, 9:00 A.M., Tuesday, August 7, 2012, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance)," dated August 24, 2012, the Commission directed the staff to address international practices related to spent fuel management as part of the Tier 3 program plan for expedited transfer of spent fuel (ADAMS Accession No. ML122400033).

### Discussion

After submitting SECY-12-0095 to the Commission, the staff more fully addressed the policy and technical issues associated with the storage of spent fuel, as directed by the Commission. The staff also refined the Tier 3 program plan from the original five-step plan into a more efficient, three-phased approach. This approach provides the Commission with timely information and more comprehensive results for any potential policy recommendations.

In revising the schedule and program plan for this Tier 3 issue, the staff has considered the agency's activities on the waste confidence generic environmental impact statement (GEIS) and rulemaking. The staff is establishing the schedules for the SFPSS and the Tier 3 analysis such that the availability of documents and interactions with stakeholders are coordinated with the waste confidence GEIS in order to improve the public's understanding of the relationship between these activities.

In Phase 1 of the Tier 3 program plan to evaluate expedited transfer of spent fuel, the staff will as part of the NRC's normal decision-making process, perform a regulatory analysis, using the current policies and guidance. As part of the regulatory analysis, the staff will determine whether a substantial increase in public health and safety can be achieved by transferring spent fuel from spent fuel pools to dry casks in order to achieve low-density loading in spent fuel pools. The SFPSS will provide some of the information that will be used in the regulatory analysis to be conducted in Phase 1. Within Phase 1, the staff will also address the Commission direction to conduct a comparison of international practices for spent fuel transfer from spent fuel pools to dry cask storage. At the conclusion of Phase 1, the staff will provide the Commission with the analysis of whether a substantial increase in public health and safety can be achieved by moving to a low-density spent fuel pool loading.

In accordance with the updated program plan, the staff will now provide Phase 1 results in a Commission paper in September 2013. This will help put the results of SFPSS in the context of a regulatory analysis and inform interested stakeholders of the relationship between the SFPSS and the Tier 3 Phase 1 analysis. Consistent with the original Tier 3 program plan, the staff still plans to engage external stakeholders and the Advisory Committee on Reactor Safeguards (ACRS) on the results of the Phase 1 analysis.

These interactions will begin in June 2013 when the public will be provided an opportunity to review and comment on the draft SFPSS. The NRC staff will help provide the Commission with the draft SFPSS prior to its issuance for public comment. Preliminary information from the development of the Commission paper on the Phase 1 portion of the Tier 3 program plan will be released along with the draft SFPSS so the public can understand how the technical information in the SFPSS is used as

part of the NRC's regulatory processes. Other public interactions related to the SFPSS and the development of the Commission paper on expedited transfer of spent fuel include ACRS meetings and a public meeting planned for August 2013.

To ensure the SFPSS and Phase 1 analysis are available to stakeholders interested in the waste confidence draft GEIS, the staff plans to complete the Commission paper related to the expedited transfer of spent fuel shortly before or during the public comment period for the waste confidence GEIS. The relationship between the waste confidence GEIS, the SFPSS, and Phase 1 analysis will be discussed, as appropriate, during public interactions.

As stated previously, the staff will inform the Commission of the Phase 1 results, and if necessary, seek Commission direction about the need to proceed with Phase 2. Phase 2 of the program plan includes a detailed analysis of the costs and benefits of expedited transfer of spent fuel to dry cask storage. If pursued, the staff will complete the Phase 2 analysis with a Commission paper published by July 31, 2015.

If the results of the Phase 2 cost/benefit analysis justify further evaluation of this issue, the staff will continue with Phase 3 of the program plan. Phase 3 would address factors such as ongoing criticality research, lessons learned from the implementation of mitigating strategies (from Order EA-12-049, "Issuance of Order to Modify Licenses in Regard to Requirements for Mitigation Strategies for Beyond Design-Bases External Events"), and, as appropriate, possible other changes to the overall regulatory framework. If pursued, the staff will complete the Phase 3 analysis and associated Commission paper by July 31, 2017.

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