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**POLICY ISSUE**

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(Notation Vote)

October 19, 2016

SECY-16-0122

FOR: The Commissioners

FROM: Victor M. McCree  
Executive Director for Operations

SUBJECT: STATUS OF YUCCA MOUNTAIN REPOSITORY PROGRAM  
ACTIVITIES

PURPOSE:

The purpose of this paper is to provide the Commission with the staff's current estimate of the funds available to the U.S. Nuclear Regulatory Commission (NRC) from the Nuclear Waste Fund (NWF) and to seek Commission direction on potential additional expenditures of funds from the NWF appropriations in wrapping up the NRC staff activities related to the proposed high-level waste repository at Yucca Mountain, NV.

BACKGROUND:

The NRC staff is approaching completion of the activities directed by the Commission in SECY-13-0138A/SECY-13-0138, "U.S. Department of Energy (High-Level Waste Repository): State of Nevada Petition for Clarification of November 18, 2013 Restart Order," and "Staff Requirements—COMSECY-14-0041—Yucca Mountain Project Activities." The staff has completed the safety evaluation report (SER) and the supplement to the U.S. Department of Energy's (DOE's) environmental impact statement.<sup>1</sup> The staff has also completed its "lessons learned" report on the SER.<sup>2</sup>

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<sup>1</sup> NUREG-1949, "Safety Evaluation Report Related to Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada," five volumes.  
NUREG-2184, "Supplement to the U.S. Department of Energy's Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nevada," issued May 2016.

<sup>2</sup> The staff's lessons learned report is in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML16174A044.

The remaining task directed by the Commission, which is being managed by the Office of the Secretary (SECY) and the Atomic Safety Licensing Board Panel (ASLBP), is making the Licensing Support Network (LSN) document collections publicly available in an ADAMS library, with enhanced search capabilities. The LSN Library became publicly available in ADAMS on August 19, 2016, and SECY and ASLBP are currently in the process of addressing several document discrepancies identified in the LSN collection in order to complete the LSN Library in ADAMS.<sup>3</sup> SECY and ASLBP anticipate that this will be completed by the end of the current calendar year.

Beginning in October 2013, the staff has provided monthly reports to the Commission on its activities and the NRC's expenditures of funds from prior-year NWF appropriations. As of August 13, 2013, the date of the decision by the U.S. Court of Appeals for the District of Columbia Circuit that directed the NRC to continue with the licensing process, the NRC's balance of unexpended NWF funds was approximately \$13.55 million. Cumulative expenditures of NWF funds since that time for the Commission-directed work and other related NRC actions are currently approximately \$12.10 million. The staff anticipates additional costs for the remaining Commission-directed work of approximately \$180,000, including staff time and trailing contract charges and fees. This estimate leaves an unexpended balance of approximately \$1.27 million in the agency's NWF account. Enclosure 1 gives the detailed accounting of this estimate.

#### DISCUSSION:

In estimating costs for the review activities since 2013, the staff was careful to ensure that expenditures did not exceed the amount of remaining prior-year NWF appropriations. Because the major activities have been completed at or under budget, the staff now has a more firm estimate of the NRC's remaining balance of the NWF funds. Considering the projected remaining amount, the staff has identified some additional activities that could be performed using some of the remaining funds, should the Commission so direct. These potential activities fall into the categories of rulemakings and knowledge management.

#### *Potential Rulemaking Activities—Physical Security, Material Control and Accounting, and Fitness for Duty*

Before the receipt of DOE's license application in 2008, the staff had identified rulemaking activities that would be necessary to ensure that effective security and material control and accounting (MC&A) measures were in place for the geological repository operations area (GROA). These activities include changes to sections of Title 10 of the *Code of Federal Regulations* (10 CFR) Parts 60, 63, 73, and 74 and were the subject of a proposed rule in 2007.<sup>4</sup> As described in the proposed rule, the security and MC&A rulemaking is needed because the existing rules were "developed under a different threat environment, and the threat environment has changed, as have the plans for surface operations at a GROA."<sup>5</sup> In addition, the staff had also identified a need to update the fitness-for-duty requirements in

<sup>3</sup> SECY-16-0091, "Making Licensing Support Network Documents Publicly Available," dated July 29, 2016 (ADAMS Accession No. ML16210A436). The document discrepancies are discussed in Sections 1, 2a, and 2d. Once these discrepancies are reconciled and any trailing contract costs associated with system design and construction are reimbursed, no additional NWF monies will likely be needed for the LSN Library project. The recurring costs of operating and maintaining the LSN Library in public ADAMS, including software licenses, will come from the agency's regular non-NWF appropriations.

<sup>4</sup> See Volume 72, page 72,522, of the *Federal Register* (72 FR 72522; December 20, 2007).

<sup>5</sup> See 72 FR 72524, December 20, 2007.

10 CFR Part 26, "Fitness for Duty Programs," that apply to GROA personnel. The NRC has not issued a proposed rule for the fitness-for-duty updates. Work on both of these rulemaking activities was deferred as review of the Yucca Mountain license application became a higher staff priority, and that work has not resumed.

These long-deferred rulemaking activities were carried on the NRC's list of intended rulemakings for many years. As part of a recent evaluation of the discontinuation of certain rulemaking activities, the NRC staff proposed that these be discontinued because of a lack of funding.<sup>6</sup> However, the Commission chose not to discontinue the subject rulemaking activities but instead to defer them "until such time as funding for geologic disposal activities is restored."<sup>7</sup>

The NRC's prior appropriations from the NWF could be used to advance these rulemakings, as they are directly related to the licensing process for a repository at Yucca Mountain. However, at this time, the staff does not recommend moving forward with these rulemakings, for the following reasons:

- The process for even a limited rulemaking can be protracted. Given that almost 10 years has passed since the notice of the proposed rule for GROA security and MC&A, the staff expects that the proposed rule would need to be revised and noticed for public comment (the previous comment period closed in May 2008). Potential revisions to the fitness-for-duty rule were never proposed and therefore, additional time and resources would be required to develop any revisions. In addition, the staff has not prepared detailed cost or schedule estimates for these rulemakings. Relatively limited-scale rulemakings of this type typically require several full-time equivalents of staff time and more than 1 year to complete, in addition to any technical analyses that may be necessary. The staff sees little value in restarting rulemaking activities at this time as it is not clear that they can be completed with the remaining NWF resources.
- Some, but not all, aspects of the physical security requirements for a GROA are expected to be similar to those for an independent spent fuel storage installation (ISFSI). In 2011, the staff began a rulemaking to revise the ISFSI security requirements to update and improve the consistency and clarity of the requirements for both types of ISFSI licensees (general and specific). However, the rulemaking is currently deferred for 5 years until the staff completes a technical review to determine whether rulemaking is warranted.<sup>8</sup> Some of the analysis that has been performed in support of the ISFSI security rulemaking could be applicable to a GROA, but the GROA rulemaking would require further analysis to encompass the greater range of proposed GROA operations (e.g., handling and repackaging of some spent nuclear fuel). Given the additional complexity of the GROA requirements, it may be more efficient to complete any ISFSI security rulemaking and use that experience to inform the GROA rulemaking. In addition, delaying the rulemakings until there is more certainty in the licensing actions for the Yucca Mountain repository would allow consideration of potential additional revisions to be consistent with an up-to-date understanding of the expected GROA operations and the threat environment.

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<sup>6</sup> SECY-16-0021, "Discontinuation of Rulemaking Activities," dated February 29, 2016, pp. 5–6 (ADAMS Accession No. ML15336A324).

<sup>7</sup> SRM-SECY-16-0021, dated May 19, 2016 (ADAMS Accession No. ML16141A044).

<sup>8</sup> SRM-SECY-16-0009, "Staff Requirements—SECY-16-0009—Recommendations Resulting from the Integrated Prioritization and Re-Baselining of Agency Activities," dated April 13, 2016 (ADAMS Accession No. ML16104A158), and SECY-16-0009, dated January 31, 2016, Enclosure 1, p. 1 (ADAMS Accession No. ML16028A212).

For these reasons, the staff recommends continuing to defer these rulemakings to a future date.

*Potential Knowledge Management Activities—Capturing Advances in Technical Understanding*

As part of the NRC's orderly closure of its Yucca Mountain review activities in fiscal year 2011, the staff produced a set of knowledge management reports (Enclosure 2). These reports were primarily authored by staff from the Center for Nuclear Waste Regulatory Analyses (CNWRA), who provided extensive technical support to the NRC during the prelicensing period and the review of the license application. NRC staff also contributed to the reports. The reports covered a number of topics related to the review of the license application, in areas such as preclosure and postclosure safety, performance assessment, the regional and local geologic framework, disruptive events, and barrier performance. All of these reports are publicly available in ADAMS.

The staff proposes additional knowledge management activities to update this collection of reports and capture new insights since the previous reports were completed. The proposed task covers technical areas related to the staff's SER, however, it differs from the SER lessons learned report, which focused on the review process. The emphasis in this task would be on insights gained in selected technical areas since 2011, including new approaches or understanding in the specific fields of preclosure and postclosure safety assessment and climate and hydrologic processes (proposed topics are identified in Enclosure 3). Although these areas are similar to those included in the previous knowledge management effort, the specific proposed topics are distinct from those of the previous reports. The proposed reports would provide detail on the new information and insights that the staff gained in completing the SER. Capturing this information now would position the agency well in the event that the Yucca Mountain repository adjudication is resumed or for potential NRC licensing of another geologic repository for high-level waste.

As in the previous knowledge management effort, CNWRA staff and NRC staff would collaborate on the reports, with the CNWRA serving as principal authors in most cases. All of the reports are intended to be publicly available. The staff estimates that these reports could be completed in approximately 9 months at a cost of \$700,000, including staff time and contractor costs. This estimate is based on staff experience from the previous knowledge management effort during orderly closure of the review in 2011. The staff would closely manage the development of these reports and monitor expenditures so as not to exceed the amount of funds directed. The proposed schedule for the reports anticipates completion during fiscal year 2017.

RECOMMENDATION:

If the Commission directs the staff to continue activities using NWF funds, the staff recommends developing knowledge management reports as described herein, which is estimated to require \$700,000 from NWF funds. The expected remaining balance of the NRC's NWF funds would then be approximately \$570,000. This balance could be used for any unforeseen contingencies. As previously stated, the staff recommends continuing to defer the GROA rulemakings to a future date.

COMMITMENTS:

The staff will inform the Commission of the status of NWF expenditures after completing any additional activities the Commission directs.

COORDINATION:

The Office of the General Counsel has reviewed this package and has no legal objection. The Office of the Chief Financial Officer has reviewed this package and concurs with the financial information. This package has also been coordinated with the Atomic Safety Licensing Board Panel.

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Enclosures:

1. Expenditures and Funds Remaining from  
NRC Nuclear Waste Fund Appropriations
2. Previously Completed Knowledge  
Management Reports from the  
NRC's Yucca Mountain Review  
Activities
3. Proposed New Knowledge Management  
Topics from the NRC's Yucca Mountain  
Review Activities

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## Enclosures:

1. Expenditures and Funds Remaining from NRC Nuclear Waste Fund Appropriations
2. Previously Completed Knowledge Management Reports from the NRC's Yucca Mountain Review Activities
3. Proposed New Knowledge Management Topics from the NRC's Yucca Mountain Review Activities

**ADAMS Accession Number: Package Number: ML16201A110**

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