

**Monthly Status Report  
Activities Related to the Yucca Mountain Licensing Action  
Report for February 2014**

**Background**

On August 13, 2013, a panel of the U.S. Court of Appeals for the District of Columbia Circuit issued its decision in the case *In re Aiken County* directing the U.S. Nuclear Regulatory Commission (NRC) to “promptly continue with the legally mandated licensing process” for the U.S. Department of Energy’s (DOE’s) application to construct a geologic repository for high-level waste at Yucca Mountain, NV. The NRC promptly began taking steps to comply with the court’s direction following the issuance of the decision. On November 18, 2013, the Commission approved a Memorandum and Order, which set a course of action for the Yucca Mountain licensing process that is consistent with the Appeals Court decision and with the resources available. The Commission also issued a related Staff Requirements Memorandum (SRM) on November 18, 2013.

**Accomplishments and Ongoing Work**

The NRC Office of Nuclear Material Safety and Safeguards established three branches focused on the development of the Safety Evaluation Report (SER). Staff were selected for their knowledge of Yucca Mountain and expertise in key technical and scientific disciplines, including geology, hydrology, volcanology, seismology, and reliability and risk analysis, as well as chemical, structural, thermal, nuclear, materials, and geotechnical engineering. As of the end of February, all but one of the 40 staff positions have been filled. In addition, the licensing review is supported by the Center for Nuclear Waste Regulatory Analyses. Almost all of the staff assigned have previous experience on the Yucca Mountain review, ranging from several years to multiple decades. Staff has also issued a guidance document for use in the current review activities. This document is publicly available in the NRC’s Agencywide Documents Access and Management System (ADAMS) at Accession No. ML14057A618.

Staff has developed a tool to track progress toward completion of the SER. This tool, entitled the “Status of Safety Evaluation Report Chapters and Volume Tasks,” (attached) identifies target dates for milestones in the development and completion of individual chapters as well as for publication of each SER volume. As shown in the attachment, staff has resumed work on nearly 75% of the 43 chapters of the SER and has made significant progress on several chapters, including completion of two.

Agency attorneys provided support to the staff and the Commission on program planning-related activities and participated in ongoing Federal court litigation related to Yucca Mountain. Agency attorneys advised staff on issues related to SER development and continued reviewing draft chapters of the SER.

In its Memorandum and Order dated November 18, 2013, the Commission requested that the DOE complete the Environmental Impact Statement (EIS) supplement. In a February 28, 2014, letter, the DOE informed the NRC that it will not complete the EIS supplement, but that it will provide an updated version of its previously issued technical report on the topics to be addressed in the supplement. The NRC is evaluating the impact of the DOE decision.

Enclosure

On February 21, 2014, the U.S. Court of Appeals for the District of Columbia Circuit issued a decision granting the NRC's motion to dismiss a petition for review that sought reversal of Chairman Macfarlane's decision not to recuse herself from adjudicatory proceedings related to the Yucca Mountain licensing process.

The agency effort to load the Licensing Support Network (LSN) documents into a nonpublic library in ADAMS is progressing efficiently and ahead of schedule. As of the end of February, the NRC has loaded approximately 3,660,000 LSN documents into ADAMS and has completed the indexing of the loaded document collection. Progress is also being made on related project tasks, including work on search templates, role and access rights, records declarations, and search and retrieval performance.

### **Schedule and Cost for Remaining Activities**

Completion of the SER is scheduled to take approximately 12 months, ending in January 2015. To date, no unforeseen technical or process issues have arisen that would change the schedule.

The effort to load the LSN document collection into a nonpublic ADAMS library, along with related project tasks, is now expected to be completed ahead of schedule in mid-April 2014, barring any unforeseen technical or process issues. Further, consistent with the January 24, 2014, Staff Requirements Memorandum (SRM) issued by the Commission, staff is collecting additional data on three months of actual expenditures on completing and issuing the SER and EIS. If actual costs are consistent with initial estimates, the January 24, 2014, SRM directs that an appropriate portion of the \$2.2 million in recently deobligated Nuclear Waste Fund (NWF) funds should be allocated to activities necessary to make the LSN documents publicly available. Staff anticipates having sufficient data to inform the Commission in April 2014.

In September 2013, NRC staff estimated the cost of completing the remaining SER volumes to be approximately \$8.3 million and estimated that \$700,000 is needed to complete the loading of LSN documents into a nonpublic ADAMS library. These figures remain valid. The staff's estimate had also included \$625,000 for review and an adoption determination of an EIS supplement issued by the DOE; however, this cost will need to be reevaluated in light of the recent DOE decision that it will no longer complete the EIS. In addition, staff estimates that related activities such as the cost of work performed by NRC attorneys on Federal court litigation following the issuance of the mandamus order, stakeholder outreach, and other support efforts will require approximately \$750,000 over the course of the project<sup>1</sup>. Therefore, the projected cumulative expenditures are approximately \$10.4 million.

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<sup>1</sup>This total does not include any potential agency liabilities from external litigation.

## Nuclear Waste Fund Expenditures

During the month of February, the NRC expended \$638,702 of NWF funds on its actions in direct response to the Court's decision. Cumulative expenditures since the August 13, 2013, U.S. Court of Appeals decision are \$1,191,020. The August 13, 2013, balance of \$13,549,315 of unexpended NWF funding, less the \$1,191,020, results in a remaining unexpended balance of \$12,358,295. Total unobligated NWF funds remaining as of February 28, 2014, are \$10,133,768. The following table provides further details regarding NRC's expenditure of NWF funds since August 13, 2013.

**Table 1**

<b>Status of NRC NWF Funds Since the August 13, 2013, Court Decision</b>			
<b>Yucca Mountain Licensing Activities</b>	<b>Cost Estimate</b>	<b>February Expenditures</b>	<b>Cumulative Expenditures</b>
Completion of the Safety Evaluation Report	\$8,310,000	\$461,213	\$682,828
Loading of Licensing Support Network Documents into non-public ADAMS	\$700,000	\$105,323	\$119,879
Adoption of the Environmental Impact Statement Supplement <sup>1</sup>	\$625,000	\$0	\$186
Program Planning and Support <sup>2</sup>	\$750,000	\$65,730	127,974
Response to the August 30, 2013, Commission Order <sup>2</sup>		\$0	\$137,518
Federal Court Litigation <sup>2</sup>		\$187	\$52,692
Support/Advice in NRC Proceedings <sup>2</sup>		\$6,249	\$34,392
Adjustments to contracts funded by previous NWF appropriations			\$35,551
<b>Total</b>	<b>\$10,385,000</b>	<b>\$638,702</b>	<b>\$1,191,020</b>

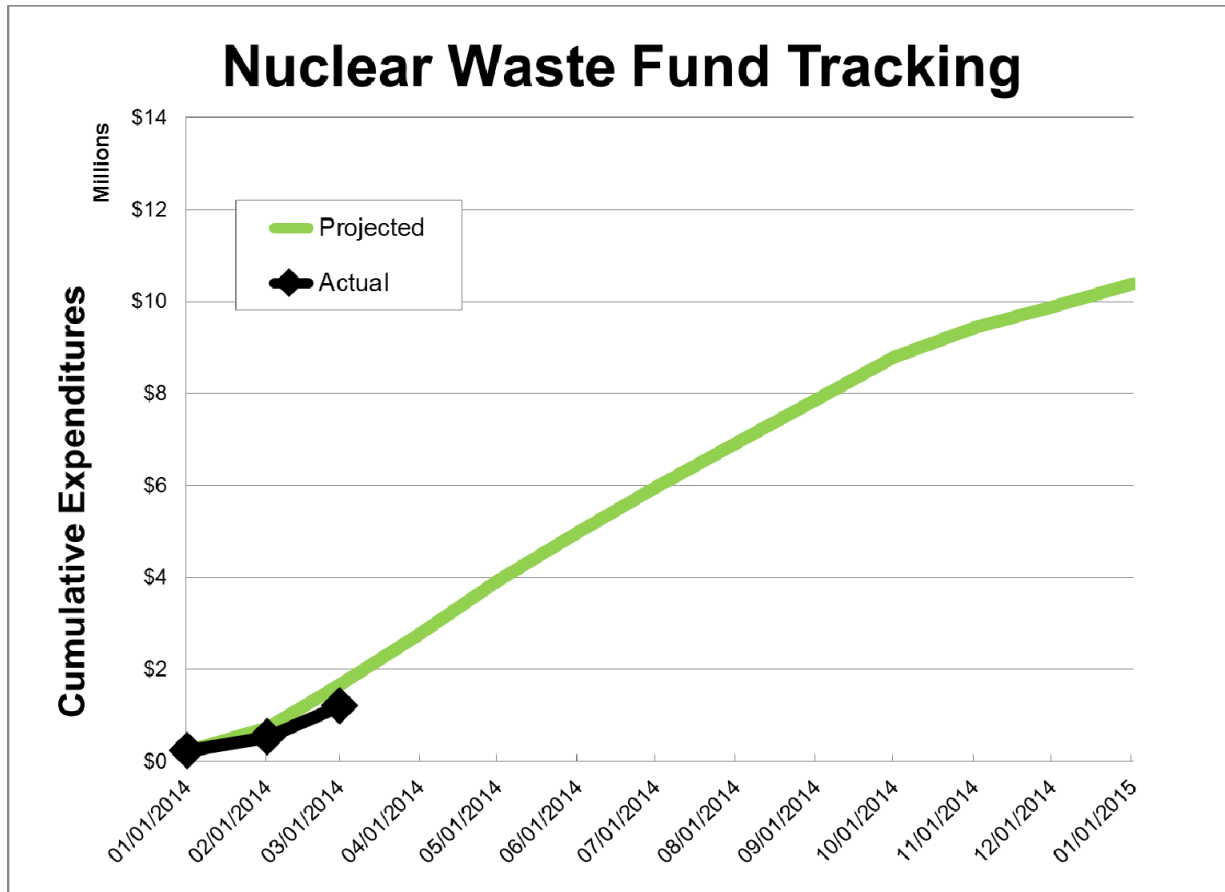
<sup>1</sup>Estimate will be reevaluated in light of the February 28, 2014, letter from DOE

<sup>2</sup>Additional support costs chargeable to NWF funds

The unexpended NWF funds balance of \$12,358,295 includes \$257,739 of previously appropriated NWF funds that remain unexpended but obligated on contracts with the Center for Nuclear Waste Regulatory Analyses.

Staff has estimated the expenses necessary to complete the SER and related activities directed by the Commission. Figure 1 on page 4 shows the cumulative projected and actual expenditures. Projected expenditures include cost estimates shown in Table 1. The actual cumulative expenditures reflect costs through February 28, 2014, as given in Table 1.

Figure 1 Nuclear Waste Fund Tracking



### Stakeholder Communications and Interactions

On February 21, 2014, NRC staff held a briefing for staff from the House Energy and Commerce Committee.

The NRC staff is also preparing presentations on its Yucca Mountain review activities for stakeholder groups at various conferences and meetings scheduled to take place in the next few months.

## Status of Safety Evaluation Report (SER) Chapters and Volume Tasks

As of February 28, 2014

CHAPTER MILESTONES	Staff Develops SER Inputs	Staff Completes SER Inputs	Branch Chief Review	OGC Chapter NLO Review	OGC Chapter Comment Resolution	Staff Verifies References are Publicly Available	Technical Editor Review	Project Manager Accepts/Rejects Tech Edits
								<b>[CHAPTER COMPLETE]</b>

Volume 2: Review of Repository Safety Before Permanent Closure								
Chapter 1 - Site Description								07/11/2014
Chapter 2 - Description of Structures, Systems, & Components and Operations								03/27/2014
Chapter 3 - ID Hazard & Initiating Events								06/10/2014
Chapter 4 - ID Event Sequence								06/10/2014
Chapter 5 - Consequences								07/11/2014
Chapter 6 - ID Structures, Systems, & Components Important to Safety								05/27/2014
Chapter 7 - Design of Structures, Systems, & Components								08/08/2014
Chapter 8 - ALARA								09/10/2014
Chapter 9 - Retrieval								05/27/2014
Chapter 10 - Decontamination & Demolition								05/13/2014
Abstract								09/10/2014
Executive Summary								09/10/2014
Introduction								09/10/2014
Glossary								09/10/2014
Conclusions								09/24/2014
Appendices								09/24/2014

Milestone Achieved

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								CHAPTER COMPLETE

Volume 3: Review of Repository Safety After Permanent Closure								
Chapter 1 - Multiple Barriers								03/13/2014
Chapter 2 - Scenarios (Features, Events, & Processes)								05/13/2014
Chapter 3 - Probability								07/11/2014
Chapter 4 - Degradation of Engineered Barriers								03/27/2014
Chapter 5 - Mechanical Disruption of Engineered Barriers								03/27/2014
Chapter 6 - Water Chemistry & Barriers								08/13/2014
Chapter 7 - Radionuclide Release								05/27/2014
Chapter 8 - Climate & Infiltration								03/13/2014
Chapter 9 - Flow in the Unsaturated Zone								05/13/2014
Chapter 10 - Radionuclides in the Unsaturated Zone								05/27/2014
Chapter 11 - Flow in the Saturated Zone								07/11/2014
Chapter 12 - Radionuclides in the Saturated Zone								07/25/2014
Chapter 13 - Igneous Disruption								03/13/2014
Chapter 14 - Radionuclides in Groundwater								
Chapter 15 - Airborne Transport & Redistribution								05/13/2014
Chapter 16 - Biosphere								05/13/2014
Chapter 17 - Individual Protection								05/13/2014
Chapter 18 - Human Intrusion								06/27/2014
Chapter 19 - Groundwater Protection								
Chapter 20 - Expert Elicitation								
Abstract								07/04/2014
Executive Summary								07/11/2014
Introduction								07/11/2014
Glossary								07/11/2014
Conclusions								08/27/2014
Appendices								08/27/2014

 Milestone Achieved

# Status of Safety Evaluation Report (SER) Chapters and Volume Tasks

As of February 28, 2014

CHAPTER MILESTONES	Staff Develops SER Inputs	Staff Completes SER Inputs	Branch Chief Review	OGC Chapter NLO Review	OGC Chapter Comment Resolution	Staff Verifies References are Publicly Available	Technical Editor Review	Project Manager Accepts/Rejects Tech Edits
								CHAPTER COMPLETE!

Volume 4: Review of Administrative and Programmatic Requirements								
Chapter 1 - Research & Development Program to Resolve Safety Questions								08/27/2014
Chapter 2 - Performance Confirmation Program								09/10/2014
Chapter 3 - Quality Assurance Program								02/27/2014
Chapter 4 - Records, Reports, Tests, and Inspections								04/15/2014
Chapter 5 - DOE Organization Structure - Construction								04/15/2014
Chapter 6 - Key Positions								04/15/2014
Chapter 7 - Qualifications and Training								05/30/2014
Chapter 8 - Plans for Startup Activities and Testing								05/30/2014
Chapter 9 - Plans for Conduct of Normal Activities								05/30/2014
Chapter 10 - Emergency Planning								04/29/2014
Chapter 11 - Controls to Restrict Access and Regulate								05/13/2014
Chapter 12 - Uses of Geologic Repository Operations Area for other Purposes								05/13/2014
Abstract								07/11/2014
Executive Summary								07/11/2014
Introduction								07/11/2014
Glossary								07/11/2014
Conclusions								09/10/2014
Appendices								09/10/2014

Milestone Achieved

# Status of Safety Evaluation Report (SER) Chapters and Volume Tasks As of February 28, 2014

CHAPTER MILESTONES	Staff Develops SER Inputs	Staff Completes SER Inputs	Branch Chief Review	OGC Chapter NLO Review	OGC Chapter Comment Resolution	Staff Verifies References are Publicly Available	Technical Editor Review	Project Manager Accepts/Rejects Tech Edits
[CHAPTER COMPLETE]								

<b>Volume 5: License Specifications</b>								09/24/2014
Chapter 1 - License Specifications								08/27/2014
Abstract								08/27/2014
Executive Summary								08/27/2014
Introduction								08/27/2014

<b>VOLUME MILESTONES</b>	Camera-Ready Combined File to Branch Chief	Branch Chief Concurrence	SFAS Deputy Director Concurrence	SFAS Director Concurrence	OGC NLO	MMS Office Director Concurrence Authorizes NUREG Publication	Final SER Volume Published
Volume 2					10/30/2014	11/06/2014	12/04/2014
Volume 3					10/02/2014	10/09/2014	11/06/2014
Volume 4					10/16/2014	10/23/2014	11/20/2014
Volume 5					10/30/2014	11/06/2014	12/11/2014

 Milestone Achieved