

**U.S. Nuclear Regulatory Commission Monthly Status Report  
Activities Related to the Yucca Mountain Licensing Action  
Report for May 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. The Commission provides further direction to the staff as needed.

**Accomplishments and Ongoing Work**

The NRC staff in the Office of Nuclear Material Safety and Safeguards, with the support of the Center for Nuclear Waste Regulatory Analyses, continues to make significant progress toward completing the four remaining volumes of the safety evaluation report (SER). Attached is the task tracking tool, “Status of Safety Evaluation Report (SER) Chapters and Volume Tasks,” which documents work completed through May 31, 2014. The majority of chapter milestones have been completed on time or ahead of due dates; any chapter that does not meet the projected schedule receives further management attention. Completion of the SER remains the staff’s highest priority for this project and on track for completion by January 2015.

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

**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 affect the completion date. SER activities are proceeding within the September 2013 budget estimate of \$8.3 million.

After DOE informed the NRC that it would not complete an environmental impact statement (EIS) supplement that the staff has determined is needed for the review of DOE’s application under the National Environmental Policy Act, the Commission necessarily revised its earlier direction to adopt DOE’s supplement. The Commission has directed the staff to plan to develop and issue an EIS supplement. The work on the EIS supplement will not begin until at least the fall of 2014 when work on the SER is substantively complete and appropriate personnel are available to support the EIS supplement effort. At that time, staff will submit to the Commission its assessment of remaining Nuclear Waste Fund (NWF) funds and its proposed plan to complete the EIS supplement. The Commission will then provide direction on the allocation of funding to this task based on the staff’s updated assessment. The previous cost estimate of \$625,000 for an adoption determination of a DOE-developed EIS supplement would be revised to account for an NRC-developed EIS supplement as part of the fall 2014 reassessment.

The Licensing Support Network (LSN) document collection is fully available to internal users in a nonpublic portion of the NRC's Agencywide Documents Access and Management System (ADAMS). This project was completed in April 2014 at an estimated cost of \$350,000. Furthermore, the Commission has directed that, pending available funding, the LSN document collection should be loaded into a publicly accessible library in ADAMS when work on the SER is substantively complete and available funding from the NWF can be reassessed. This activity would not begin until at least the fall of 2014.

The staff's February 2014 estimate that related activities, such as the work performed by NRC attorneys on Federal court litigation following the issuance of the mandamus order, monthly reporting, and other support efforts, will require approximately \$750,000 over the course of the project has not changed.<sup>1</sup>

The total cost estimate projected as of May 31, 2014, is approximately \$10 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 May, the NRC expended \$1,030,625 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 \$4,199,897. The August 13, 2013, balance of \$13,549,315 of unexpended NWF funding, less the \$4,199,897, results in a remaining unexpended balance of \$9,349,418. Total unobligated NWF funds remaining as of May 31, 2014, are \$7,370,314. The following table provides further details regarding the NRC's expenditure of NWF funds since August 13, 2013.

<b>Yucca Mountain Licensing Activities</b>	<b>Cost Estimate</b>	<b>May Expenditures</b>	<b>Cumulative Expenditures</b>
Completion of the safety evaluation report	\$8,310,000	\$870,541	\$3,264,134
Loading of Licensing Support Network documents into a nonpublic ADAMS library	\$350,000	\$81,824	\$272,240
Development of the environmental impact statement supplement*	\$625,000	\$169	\$47,427
Program planning and support		\$18,244	\$257,967
Response to the August 30, 2013, Commission Order		\$0	\$137,518
Federal court litigation**		\$59,847	\$146,134
Support/Advice in NRC proceedings		\$0	\$35,535
Subtotal, other support costs chargeable to NWF funds	\$750,000	\$78,091	\$577,154
Adjustments to close out contracts funded by previous NWF appropriations		\$0	\$38,942
<b>Total</b>	<b>\$10,035,000</b>	<b>\$1,030,625</b>	<b>\$4,199,897</b>

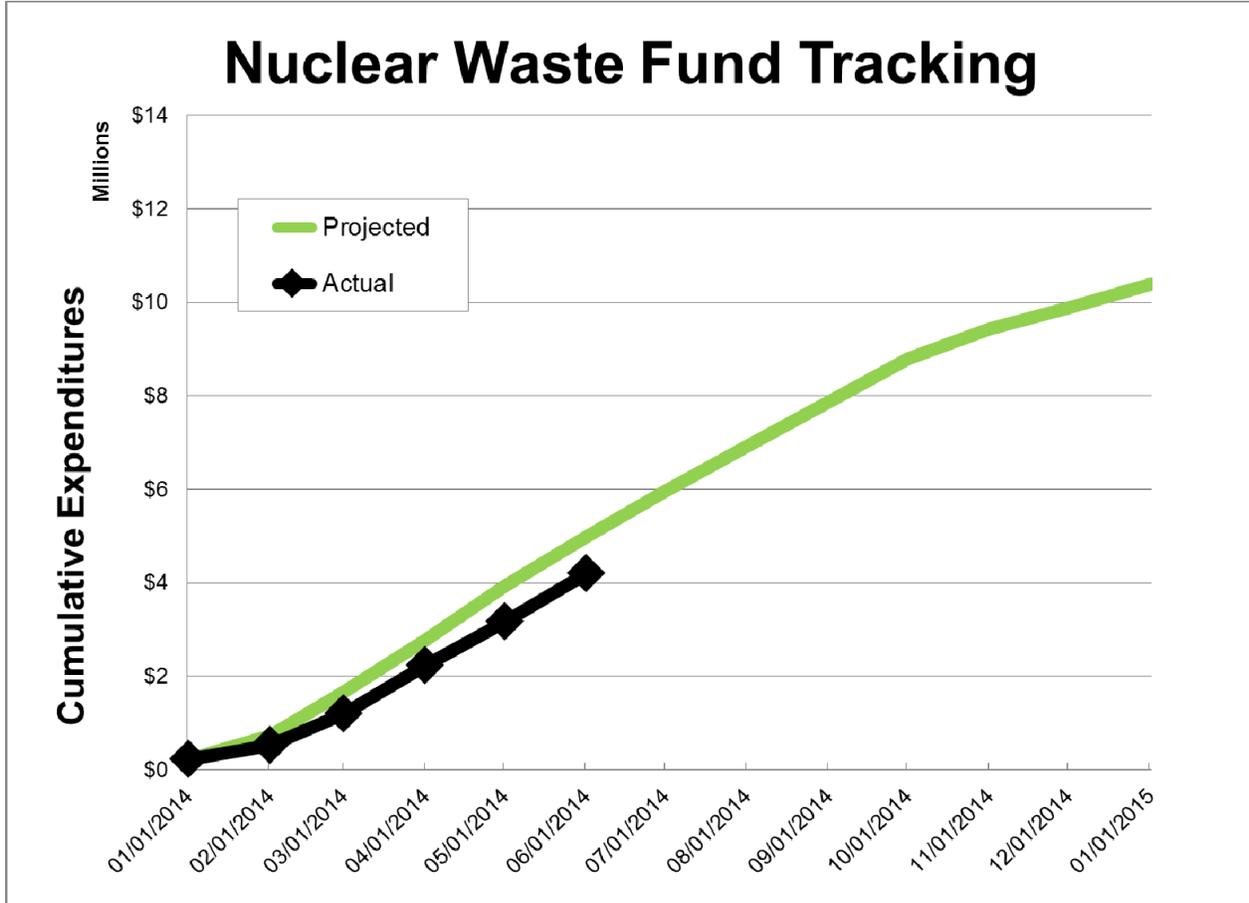
\* The estimate of \$625,000 for an adoption determination of a DOE-developed EIS supplement would be revised to account for an NRC-developed EIS supplement as part of the fall 2014 reassessment of remaining NWF funds consistent with Commission direction.

\*\* Includes a \$59,000 expenditure in May for the agency's agreement to settle the Equal Access to Justice Act claim of one of the *Aiken County* petitioners. The agency has sought the views of the Comptroller General as to whether this payment is properly paid with NWF funds.

The unexpended NWF fund balance of \$9,349,418 includes \$254,348 of previously appropriated NWF funds that remain unexpended but obligated on contracts with the Center for Nuclear Waste Regulatory Analyses.

The 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 May 31, 2014, as given in Table 1.

Figure 1. Nuclear Waste Fund Tracking



### Stakeholder Communications and Interactions

On May 6, the staff led a session at the Nuclear Energy Institute's Used Fuel Management Conference in St. Petersburg, FL, to present the status of the NRC's review of DOE's application for a high-level waste repository at Yucca Mountain.

On May 14, the staff presented the same status update to attendees of the Nuclear Materials Management and Safeguards System Users Annual Training meeting in Denver, CO.

Also on May 14, the staff provided a brief overview of Yucca Mountain licensing action activities as part of a presentation on the interface between storage and transportation at the annual meeting of the National Transportation Stakeholders Forum in Bloomington, MN.

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

Volume 2 - Volume 5

Milestone Achieved as of May 31, 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 MILESTONES								[CHAPTER COMPLETE]

## 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								05/13/2014
Chapter 10 - Decontamination & Demolition								09/10/2014
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

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CHAPTER MILESTONES								CHAPTER COMPLETE!

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

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Volume 2 - Volume 5

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								CHAPTER COMPLETE!
<b>Volume 4: Review of Administrative and Programmatic Requirements</b>								
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								
Chapter 4 - Records, Reports, Tests, and Inspections								
Chapter 5 - DOE Organization Structure - Construction								
Chapter 6 - Key Positions								
Chapter 7 - Qualifications and Training								05/30/2014
Chapter 8 - Plans for Startup Activities and Testing								
Chapter 9 - Plans for Conduct of Normal Activities								
Chapter 10 - Emergency Planning								
Chapter 11 - Controls to Restrict Access and Regulate Land Use								05/13/2014
Chapter 12 - Uses of Geologic Repository Operations Area for Other Purposes								
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

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Volume 2 - Volume 5

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<b>CHAPTER COMPLETE!</b>								

## Volume 5: License Specifications

Chapter 1 - License Specifications								08/24/2014
Abstract								08/27/2014
Executive Summary								08/27/2014
Introduction								08/27/2014

VOLUME MILESTONES	Camera-Ready Combined File to Branch Chief	Branch Chief Concurrence	SFAS Deputy Director Concurrence	SFAS Director Concurrence	OGC NLO	MMS Office Director Concurrence and Authorization of 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

## Abbreviations and Acronyms:

- NLO** No Legal Objection
- NMSS** Office of Nuclear Material Safety and Safeguards
- OGC** Office of the General Counsel
- SFAS** Division of Spent Fuel Alternative Strategies
- SER** Safety Evaluation Report. This document consists of 5 volumes. Volume 1: General Information (NUREG-1949) was published in August 2010. The remaining volumes are scheduled for completion as noted in the chart above.