

**U.S. Nuclear Regulatory Commission Monthly Status Report
Activities Related to the Yucca Mountain Licensing Action
Report for September 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 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 September 30, 2014. The NRC technical staff has completed the individual chapters of SER Volume 3, and this volume is scheduled to be issued by November 6, 2014. The NRC staff has completed the majority of the milestones for the chapters in volumes 2, 4 and 5; management provides additional oversight and support for any chapter that does not meet the projected schedule. Management and staff are actively working to resolve delays in those chapters that have not met their due dates. As a result, the final volume end dates have not changed. Completion of the SER remains the staff’s highest priority for this project and is on track for completion by January 2015.

Agency attorneys provided support to the staff and the Commission on project activities, 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.

The schedule for completion of an environmental impact statement (EIS) supplement is being considered. On February 28, 2014, DOE informed the NRC that it would not complete an EIS supplement that the staff has determined is needed for the review of DOE’s application under the National Environmental Policy Act, but rather would provide an update to a 2009 technical report that would inform an EIS supplement. On April 7, 2014, NRC staff met with DOE staff in a public meeting to discuss DOE’s revision of this report, titled, *Analysis of Postclosure*

Groundwater Impacts for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada. The NRC is awaiting receipt of the update to the 2009 technical report. Staff sent a letter to DOE on August 21, 2014, requesting an estimated date for the NRC to receive this report.

After DOE informed the NRC that it would not complete an EIS supplement, 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, pending a reassessment of available funding in the fall of 2014. The previous cost estimate of \$625,000 for an adoption determination of a DOE-developed EIS supplement will 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 library of the NRC's Agencywide Documents Access and Management System (ADAMS). This project was completed in April 2014 at a cost of approximately \$286,000. The Commission has also directed that, pending a reassessment of available funding in the fall of 2014, the LSN document collection should be loaded into a publicly accessible library in ADAMS.

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.¹

The total cost estimate for the work described above as of September 30, 2014, is projected to be approximately \$10 million.

¹ This total does not include any potential agency liabilities from external litigation.

Nuclear Waste Fund Expenditures

During the month of September, the NRC expended \$624,189 of Nuclear Waste Fund (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 \$7,358,371. The August 13, 2013, balance of \$13,549,315 of unexpended NWF funding, less the \$7,358,371, results in a remaining unexpended balance of \$6,190,944. Total unobligated NWF funds remaining as of September 30, 2014, are \$4,813,166. The following table provides further details regarding the NRC's expenditure of NWF funds since August 13, 2013.

Yucca Mountain Licensing Activities	Cost Estimate	September Expenditures	Cumulative Expenditures
Completion of the safety evaluation report	\$8,310,000	\$599,451	\$6,334,134
Loading of Licensing Support Network documents into a nonpublic ADAMS library	\$350,000	\$0	\$285,592
Development of the environmental impact statement supplement*	\$625,000	\$0	\$47,427
Program planning and support		\$21,539	\$327,968
Response to the August 30, 2013, Commission Order		\$0	\$137,518
Federal court litigation**		\$3,199	\$151,255
Support/Advice in NRC proceedings		\$0	\$35,535
Subtotal, other support costs chargeable to NWF funds	\$750,000	\$24,738	\$652,276
Adjustments to close out contracts funded by previous NWF appropriations		\$0	\$38,942
Total	\$10,035,000	\$624,189	\$7,358,371

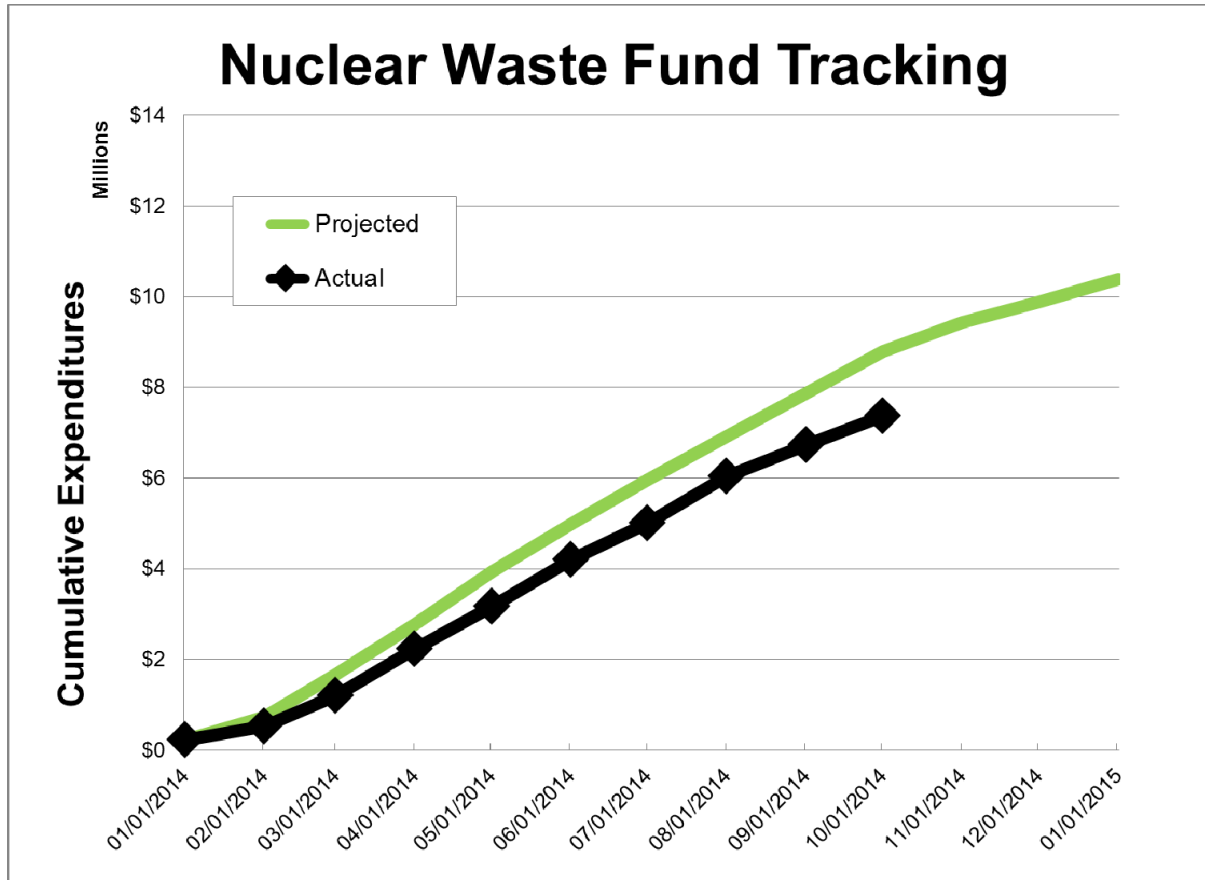
* The estimate of \$625,000 for an adoption determination of a DOE-developed EIS supplement would be revised to account for an NRC-developed EIS supplement as part of the fall 2014 reassessment of remaining NWF funds consistent with Commission direction.

** 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 sought the views of the Comptroller General as to whether this payment is properly paid with NWF funds. Because the issue relates to a pending motion for attorneys' fees filed by the other petitioners in the *Aiken County* litigation, GAO has declined to provide the Commission with its views.

The unexpended NWF fund balance of \$6,190,944 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 September 30, 2014, as given in Table 1.

Figure 1. Nuclear Waste Fund Tracking



Stakeholder Communications and Interactions

On September 30, 2014, the staff gave a presentation at the Decommissioning of Nuclear Reactors and Materials Conference in Miami, Florida, on the status of the NRC's review of DOE's application for a high-level waste repository at Yucca Mountain.

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

Volume 2 - Volume 5

Milestone Achieved as of September 30, 2014

CHAPTER MILESTONES	Staff Develops SER Inputs	Staff Completes SER Inputs	Branch Chief Review	OGC Chapter MLO Review	OGC Chapter Comment Resolution	Staff Verifies References Are Publicly Available	Technical Editor Review	Project Manager Accepts/Rejects Tech Edits [CHAPTER COMPLETE]
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Volume 2: Review of Repository Safety Before Permanent Closure								
Chapter 1 - Site Description								
Chapter 2 - Description of Structures, Systems, & Components and Operations								
Chapter 3 - ID Hazard & Initiating Events								06/10/2014
Chapter 4 - ID Event Sequence								06/10/2014
Chapter 5 - Consequences								
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								
Chapter 9 - Retrieval								
Chapter 10 - Decontamination & Demolition								
Abstract								
Executive Summary								09/10/2014
Introduction								
Glossary								
Conclusions								
Appendices - Not Applicable								09/24/2014

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

Volume 2 - Volume 5

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Volume 3: Review of Repository Safety After Permanent Closure								
Chapter 1 - Multiple Barriers								
Chapter 2 - Scenarios (Features, Events, & Processes)								
Chapter 3 - Probability								
Chapter 4 - Degradation of Engineered Barriers								
Chapter 5 - Mechanical Disruption of Engineered Barriers								
Chapter 6 - Water Chemistry & Barriers								
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								
Chapter 12 - Radionuclides in the Saturated Zone								
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								
Chapter 20 - Expert Elicitation								
Abstract								
Executive Summary								
Introduction								
Glossary								
Conclusions								
Appendices - Not Applicable								

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


Volume 2 - Volume 5

Milestone Achieved as of September 30, 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								09/10/2014
Chapter 2 - Performance Confirmation Program								
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								
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								
Chapter 12 - Uses of Geologic Repository Operations Area for Other Purposes								
Abstract								
Executive Summary								07/11/2014
Introduction								07/11/2014
Glossary								
Conclusions								
Appendices - Not Applicable								09/10/2014

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

Volume 2 - Volume 5

 Milestone Achieved as of September 30, 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 5: License Specifications								09/24/2014
Chapter 1 - License Specifications								
Abstract								
Executive Summary - Not Applicable								
Introduction								

VOLUME MILESTONES	Camera-Ready Combined File to Branch Chief	Branch Chief Concurrence	SFAS Deputy Director Concurrence	SFAS Director Concurrence	OGC NLO	NMSS Office Director of NUREG Publication Concurrence and Authorization	Final SER Volume Published
Volume 2					10/30/2014	11/06/2014	12/04/2014
Volume 3						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.

Not Applicable A section of the originally planned report is not needed. Information intended for this section is captured elsewhere in the report.