

**U.S. Nuclear Regulatory Commission Monthly Status Report
Activities Related to the Yucca Mountain Licensing Action
Report for December 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 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 December 31, 2014. On October 16, 2014, the NRC staff published SER Volume 3, and on December 18, 2014, the staff published SER Volume 4. Both documents are available on the NRC’s website, at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1949/>. The NRC also distributed the documents to the participants in the adjudicatory proceeding and other interested stakeholders. The staff has completed the majority of the milestones for the chapters in Volumes 2 and 5; management and staff are actively working to ensure completion of the SER by January 2015. Completion of the SER remains the staff’s highest priority for this project.

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, the 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." On October 3, 2014, the DOE submitted its 2014 update of this report to NRC staff. The document is available through the NRC's website, at <http://pbadupws.nrc.gov/docs/ML1430/ML14303A393.pdf>.

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, subject to its decision on the staff's December paper providing a reassessment of available funding. 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 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. The Commission has also directed, subject to its decision on the staff's December paper providing a reassessment of available funding, that the LSN document collection 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.

The total cost estimate for the work described above as of December 31, 2014, is projected to be approximately \$10 million.

Nuclear Waste Fund Expenditures

During the month of December, the NRC expended \$368,172 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 \$8,820,228. The August 13, 2013, balance of \$13,549,315 of unexpended NWF funding, less the \$8,820,228, results in a remaining unexpended balance of \$4,729,087. Total unobligated NWF funds remaining as of December 31, 2014, are \$3,927,183. The following table provides further details regarding the NRC's expenditure of NWF funds since August 13, 2013.

Yucca Mountain Licensing Activities	Cost Estimate	December Expenditures	Cumulative Expenditures
Completion of the safety evaluation report	\$8,310,000	\$351,577	\$7,740,955
Loading of Licensing Support Network documents into a nonpublic ADAMS library*	\$350,000	(\$11,031)	\$277,670
Development of the EIS supplement**	\$625,000	\$0	\$47,427
Program planning and support		\$27,055	\$387,686
Response to the August 30, 2013, Commission order		\$0	\$137,518
Federal court litigation***		\$571	\$154,495
Support and advice in NRC proceedings		\$0	\$35,535
Subtotal, other support costs chargeable to NWF funds	\$750,000	\$27,626	\$715,234
Adjustments to close out contracts funded by previous NWF appropriations		\$0	\$38,942
Total	\$10,035,000	\$368,172	\$8,820,228

* During December, the fund classifications for several contract expenditures made in previous months were adjusted to reflect the proper funding source. The net result was an \$11,031 reduction to expenditures charged to NWF funds.

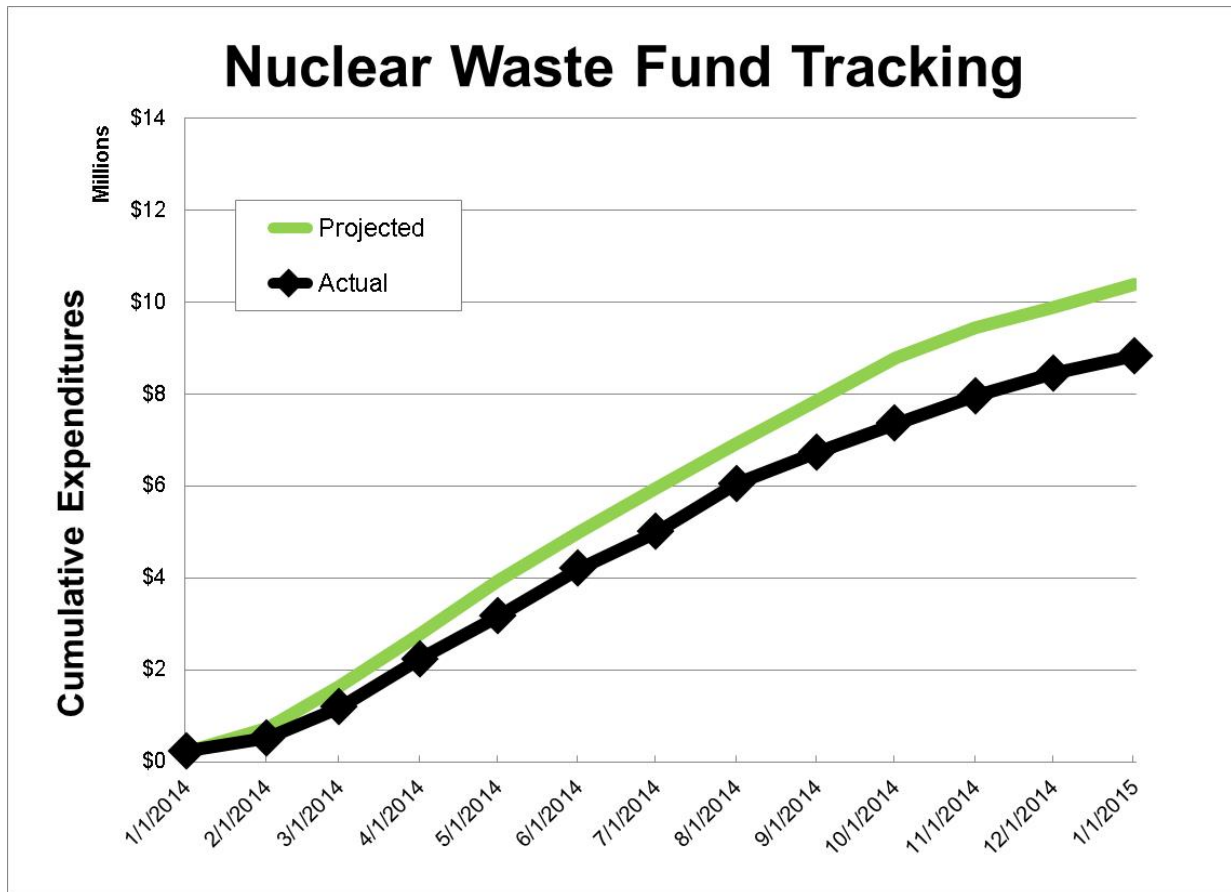
** The estimate of \$625,000 for an adoption determination of a DOE-developed EIS supplement is being revised to account for an NRC-developed EIS supplement as part of the December 2014 reassessment of remaining NWF funds consistent with Commission direction.

*** 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. On October 23, 2014, the Court of Appeals for the District of Columbia Circuit denied the motion from other parties requesting reimbursement for attorneys' fees.

The unexpended NWF fund balance of \$4,729,087 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 December 31, 2014, as given in Table 1.

Figure 1. Nuclear Waste Fund Tracking



Stakeholder Communications and Interactions

On December 17, 2014, the NRC issued a media advisory concerning the publication of SER Volume 4 and e-mailed this advisory to the participants in the adjudicatory proceeding and other interested stakeholders. On December 18, the NRC issued a press release about the publication of SER Volume 4 and e-mailed the document to the participants and other stakeholders.

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

Volume 2 - Volume 5

Milestone Achieved as of December 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 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								
Chapter 4 - ID Event Sequences								
Chapter 5 - Consequences								
Chapter 6 - ID Structures, Systems, & Components Important to Safety								
Chapter 7 - Design of Structures, Systems, & Components								
Chapter 8 - ALARA								
Chapter 9 - Retrieval								
Chapter 10 - Decontamination & Demolition								
Abstract								9/10/2014
Executive Summary								
Introduction								
Glossary								
Conclusions								9/24/2014
Appendices - Not Applicable								

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

Volume 2 - Volume 5

Milestone Achieved as of December 31, 2014

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CHAPTER MILESTONES

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

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CHAPTER COMPLETE!								

Volume 4: Review of Administrative and Programmatic Requirements								
Chapter 1 - Research & Development Program to Resolve Safety Questions								
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								
Introduction								
Glossary								
Conclusions								
Appendices - Not Applicable								

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

Volume 2 - Volume 5

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Volume 5: License Specifications								
Chapter 2.5.10 - License Specifications								09/24/2014
Abstract								
Executive Summary - Not Applicable								
Introduction								

VOLUME MILESTONES								
Volume 2								
Volume 3								
Volume 4								
Volume 5								
	Camera-Ready Combined File to Branch Chief	Branch Chief Concurrence	YMD Deputy Director Concurrence	YMD Director Concurrence	OGC NLO	NMSS Office Director Concurrence and Authorization of NUREG Publication	Final SER Volume Published	

Note: Italicized volume milestone dates have been rebaselined to reflect current status.

Abbreviations and Acronyms:

- NLO No Legal Objection
- NMSS Office of Nuclear Material Safety and Safeguards
- OGC Office of the General Counsel
- YMD Yucca Mountain Directorate
- SER Safety Evaluation Report
- Not Applicable A section of the originally planned report is not needed. Information intended for this section is captured elsewhere in the report.