

**NUCLEAR REGULATORY COMMISSION**

**[Docket No. 63-001-HLW; NRC-2015-0051]**

**Geologic Repository for the Disposal of Spent Nuclear Fuel  
and High-Level Radioactive Waste**

**Department of Energy; Yucca Mountain, Nye County, Nevada**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Supplement to environmental impact statement; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) has issued the final “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, Nye County, Nevada,” NUREG-2184. This supplements the U.S. Department of Energy’s (DOE) 2002 Environmental Impact Statement (EIS) and its 2008 Supplemental EIS for the proposed repository at Yucca Mountain in accordance with the findings and scope outlined in the NRC staff’s 2008 Adoption Determination Report (ADR) for DOE’s EISs. The scope of this supplement is limited to the potential environmental impacts from the proposed repository on groundwater and from surface discharges of groundwater.

**DATES:** [INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]

**ADDRESSES:** Please refer to Docket ID NRC-2015-0051 when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available

information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2015-0051**. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: [Carol.Gallagher@nrc.gov](mailto:Carol.Gallagher@nrc.gov). For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov). For the convenience of the reader, the ADAMS accession numbers are provided in a table in the "Availability of Documents" section of this document.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

**FOR FURTHER INFORMATION CONTACT:** Christine Pineda, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; telephone: 301-415-6789.

**SUPPLEMENTARY INFORMATION:**

**I. Discussion.**

This supplement evaluates the potential environmental impacts on groundwater and impacts associated with the discharge of any contaminated groundwater to the ground surface due to potential releases from a geologic repository for spent nuclear fuel and high-level radioactive waste at Yucca Mountain, Nye County, Nevada. This supplements DOE's 2002 "Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada" and its 2008 "Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada," in accordance with the findings and scope outlined in the NRC staff's 2008 "Adoption Determination Report for the U.S. Department of Energy's Environmental Impact Statements for the Proposed Geologic Repository at Yucca Mountain." The ADR provided the NRC staff's conclusion as to whether it is practicable for the NRC to adopt DOE's EISs under the Nuclear Waste Policy Act of 1982, as amended. The NRC's decision on adoption of the EISs will occur after completion of the adjudication under part 2, subpart J of title 10 of the *Code of Federal Regulations*.

The scope of this supplement is limited to those areas identified for supplementation in the ADR, specifically, the potential environmental impacts from the proposed repository on groundwater and from surface discharges of groundwater. In the ADR, the NRC staff found that the analysis in DOE's EISs does not provide adequate discussion of the radiological and nonradiological contaminants that may enter the groundwater over time and how these contaminants would behave in the aquifer and surrounding environments. This supplement provides the information the NRC staff identified in its ADR as necessary. The supplement describes the affected environment with respect to the groundwater flow path for potential contaminant releases from the repository that could be transported beyond the postclosure regulatory compliance location through the alluvial aquifer in Fortymile Wash and the Amargosa

Desert, and to the Furnace Creek and Middle Basin areas of Death Valley. The analysis in this supplement considers both radiological and nonradiological contaminants.

Using groundwater modeling, the NRC staff finds that contaminants from the repository would be captured by groundwater withdrawal along the flow path, such as the current pumping in the Amargosa Farms area, or would continue to Death Valley if there is no or reduced pumping. Therefore, this supplement provides a description of the flow path from the postclosure regulatory compliance location to Death Valley, the locations of current groundwater withdrawal, and locations of potential natural discharge along the groundwater flow path. The supplement evaluates the potential radiological and nonradiological environmental impacts to groundwater and at surface discharge locations over a 1-million-year period following repository closure. The analysis considers the potential impacts on the aquifer environment, soils, ecology, public health, and the potential for disproportionate impacts on minority and low-income populations. In addition, this supplement assesses the potential for cumulative impacts that may be associated with other past, present, or reasonably foreseeable future actions. The NRC staff finds that all of the impacts on the resources evaluated in this supplement would be SMALL.

The draft supplement notice of availability and public meetings was published in the *Federal Register* on August 21, 2015 (80 FR 50875). A notice of extension to the public comment period was published on September 18, 2015 (80 FR 56501).

## **II. Availability of Documents.**

The documents identified in the following table are available to interested persons through ADAMS.

Document	ADAMS Accession No.
NRC Staff's "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, Nye County, Nevada," NUREG-2184	ML16125A032
NRC Staff's Adoption Determination Report	ML082420342
NRC <i>Federal Register</i> notice of intent to prepare a supplement to a final supplemental environmental impact statement	ML15058A595
NRC <i>Federal Register</i> notice of availability of the draft supplement for public comment	ML15223B192
NRC <i>Federal Register</i> notice of extension of the public comment period for the draft supplement	ML15254A399
DOE "Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada"	ML081750191
DOE "Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada"	ML032690321

Dated at Rockville, Maryland, this 4th day of May 2016.

For the Nuclear Regulatory Commission.

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James Rubenstone, Acting Director  
Yucca Mountain Directorate  
Office of Nuclear Material Safety and Safeguards