

## NUCLEAR REGULATORY COMMISSION

### Yucca Mountain Review Plan, NUREG-1804, Revision 2, Final Report

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Notice of availability and public comments and responses.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is announcing the availability of "Yucca Mountain Review Plan, NUREG-1804, Revision 2, Final Report," public comments on that document and NRC response to comments. The "Yucca Mountain Review Plan" provides guidance to NRC staff for evaluating a potential license application to receive and possess high-level radioactive waste at a geologic repository constructed or operated at Yucca Mountain, Nevada.

**ADDRESSES:** Copies of any documents related to this action may be examined at the NRC Public Document Room, One White Flint North, Public File Area O1-F21, 11555 Rockville Pike, Rockville, Maryland. Documents are also available electronically at NRC's Public Electronic Reading Room on the Internet at <http://www.nrc.gov/reading-rm.html>. From this site, the public can gain entry into NRC's Agencywide Documents Access and Management System, which provides text and image files of NRC's public documents. For more information, contact NRC's Public Document Room Reference staff by telephone at (800) 397-4209; (301) 415-4737; or e-mail: [pdrc@nrc.gov](mailto:pdrc@nrc.gov).

The document is also available at NRC's Web site at: <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1804/>. A hard copy may also be purchased from one of these two sources: (1) The Superintendent of Documents, U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20402-9328, Internet: <http://bookstore.gpo.gov>. Telephone: 202-512-1800, Fax: 202-512-2250; or (2) The National Technical Information Service, Springfield, VA 22161-0002, Internet: <http://www.ntis.gov>. Telephone: 1-800-553-6847 or 703-605-6000. A copy of the "Yucca Mountain Review Plan, NUREG-1804, Revision 2, Final Report" is also available for inspection, and copying for a fee, in NRC's Public Document Room, One White Flint North, Public File Area O1-F21, 11555 Rockville Pike, Rockville, Maryland.

**FOR FURTHER INFORMATION CONTACT:** Jeffrey A. Ciocco, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Mail

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**SUPPLEMENTARY INFORMATION:** In preparing "Yucca Mountain Review Plan, NUREG-1804, Revision 2, Final Report," the U.S. Nuclear Regulatory Commission (NRC) staff carefully reviewed and considered more than 900 discrete comments received during the public comment period in about 35 individual letters and extracted from the transcripts of three public meetings. To facilitate the analysis, NRC staff grouped all written and oral comments on the Yucca Mountain Review Plan into the following 11 major topic areas:

- (1) Introduction;
- (2) Acceptance Review;
- (3) General Information;
- (4) Preclosure Period;
- (5) Postclosure Period;
- (6) Research and Development Program to Resolve Safety Issues;
- (7) Performance Confirmation;
- (8) Administrative and Programmatic Areas;
- (9) Structure of the Yucca Mountain Review Plan;
- (10) Selected Topics; and
- (11) Other Comments.

Throughout this response to public comments, references to Yucca Mountain Review Plan sections use the section numbering that was in Revision 2, "Draft Report for Comment," published in March 2002. As a result of changes to address public comments, Chapter 1 of the draft Yucca Mountain Review Plan is now Appendix A in Revision 2, "Final Report," and Chapter 2 is now Appendix B. Consequently, Chapter 1 is the "Review Plan for General Information," and the "Review Plan for Safety Analysis Report" is now Chapter 2. The numbering of sections throughout the plan has been modified accordingly. For example, Section 3.2.1 in the "Draft Report for Comment" is now Section 1.2.1 in the "Final Report," and Section 4.2.1.3.7 in the "Draft Report for Comment" is Section 2.2.1.3.7 in the "Final Report."

#### 1 Introduction

##### 1.1 The U.S. Nuclear Regulatory Commission Staff Licensing Review

*Issue 1:* Will NRC staff conduct a thorough licensing review?

*Comment.* A number of commenters expressed concern about the statement in the Yucca Mountain Review Plan "Introduction" that NRC staff would conduct limited in-depth, detailed analyses and would not seek scientific precision. Commenters disagreed with the statement, in the Yucca Mountain Review Plan "Introduction," that a

licensing review is not intended to be a detailed evaluation of all aspects of facility operations.

Another commenter stated the Yucca Mountain Review Plan appeared to be a menu of options rather than a plan for a thorough regulatory review using a risk-informed, performance-based decision process to review the Yucca Mountain license application.

Commenters stated that the Yucca Mountain Review Plan is subjective in nature and appears to be the same, or more lenient than, the process used for power reactors. Other commenters noted the lack of a performance history to support establishing defense-in-depth measures and safety margins, and suggested that any assumptions must be adequately supported and justified.

A commenter stated the risk-informed basis of the review plan and the lack of definitive criteria allows the U.S. Department of Energy (DOE) to determine the level of importance of almost all aspects of the repository program and allows DOE to determine the level of NRC review effort. A commenter also stated that the licensing review process must not only identify discrepancies but must also document them.

*Response.* NRC implements a licensing process in which a license applicant has the responsibility to demonstrate that nuclear material can be safely received and possessed, and a nuclear facility can be safely operated, in accordance with regulations. NRC staff licensing review determines whether this demonstration of compliance with regulations is adequate. The regulatory standard for a high-level waste repository at Yucca Mountain is "reasonable assurance" for preclosure matters, and "reasonable expectation" for postclosure matters. NRC regulations require a license applicant to provide information that is supported by a sound scientific and technical basis.

While NRC staff reviews the entire license application, the amount of information required to demonstrate that regulatory requirements are met may vary depending on the importance of the information. Specifically, for a risk-informed, performance-based regulatory program, NRC staff focuses on those areas that have been shown to have the greatest importance to public health and safety. Areas requiring detailed, NRC staff independent analyses are determined by NRC staff and reviewed to the level necessary to confirm analyses in order to make a reasonable assurance or reasonable expectation determination.