U.S. Department of Energy
Office of Civilian Radioactive Waste Management

DOE/RW-0573, Update No. 1
Docket No. 63–001

November 2008

Yucca Mountain Repository License Application

Safety Analysis Report

Chapter 3: Research and Development Program to Resolve Safety Questions

This publication was produced by the U.S. Department of Energy
Office of Civilian Radioactive Waste Management.

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3. RESEARCH AND DEVELOPMENT PROGRAM TO RESOLVE SAFETY QUESTIONS

This section provides information that addresses specific regulatory Acceptance Criteria 1, 2, 3, and 4 in Section 2.3.3 of NUREG-1804. The information presented in this section also addresses 10 CFR 63.21(c)(16). The following table lists the information provided in this section, the corresponding regulatory requirement, and the applicable acceptance criteria from NUREG-1804.

SAR Section	Information Category	10 CFR Part 63 Reference	NUREG-1804 Reference
3.1	Identification of Safety Questions	10 CFR 63.21(c)(16)	Section 2.3.3: Acceptance Criterion 1
3.2	Requirements for Identified Research and Development Programs	10 CFR 63.21(c)(16)	Section 2.3.3: Acceptance Criterion 2 Acceptance Criterion 3 Acceptance Criterion 4

3.1 IDENTIFICATION OF SAFETY QUESTIONS

[NUREG-1804, Section 2.3.3: AC 1]

The U.S. Department of Energy, pursuant to 10 CFR 63.21(c)(16), has not identified any safety questions with respect to (1) structures, systems, and components of the repository important to safety or (2) engineered or natural barriers important to waste isolation that require research and development to resolve.

3.2 REQUIREMENTS FOR IDENTIFIED RESEARCH AND DEVELOPMENT PROGRAMS

[NUREG-1804, Section 2.3.3: AC 2, AC 3, AC 4]

Safety questions related to structures, systems, and components important to safety or related to natural and engineered barriers important to waste isolation may be identified by the U.S. Nuclear Regulatory Commission during the license review or by the U.S. Department of Energy during its own evaluations. Should such safety questions be identified, the U.S. Department of Energy will implement a research and development program to resolve them. Results of such studies, including periodic progress updates, will be provided to the U.S. Nuclear Regulatory Commission. The research and development will meet the requirements of 10 CFR 63.21(c)(16) by providing the following information:

- Identification and description of safety questions.
- Identification and description of the research and development programs that will be conducted to resolve safety questions.

- A schedule for completion of the activities as related to the projected startup date of repository operations. Resolution of such questions will be provided in subsequent revisions to the Safety Analysis Report.

- The design alternatives or operational restrictions available if the results of the program activities do not demonstrate an acceptable resolution of the safety questions.

Such research and development programs would be separate and distinct from the Performance Confirmation Program described in Chapter 4. For each safety question identified, a separate research and development plan would be developed that would include a description of the specific technical information to be obtained to resolve the issue, how the information will be obtained, the scope of the testing and evaluation proposed, and the schedule for completion of such activities. The activities of the research and development program to resolve safety questions will be performed under appropriate procedural controls, consistent with the Quality Assurance Program.

Resolved questions will be included in any request for an amendment to the license, as appropriate.