

COMPLIANCE DETERMINATION STRATEGY

RRT 4.1.3 DESCRIPTION OF THE GROA STRUCTURES, SYSTEMS, AND COMPONENTS: UNDERGROUND FACILITY

APPLICABLE REGULATORY REQUIREMENTS:

10 CFR 60.21(c)(1)(i)
10 CFR 60.21(c)(1)(ii)(D)
10 CFR 60.21(c)(1)(ii)(E)
10 CFR 60.21(c)(1)(ii)(F)
10 CFR 60.21(c)(2)
10 CFR 60.21(c)(3)
10 CFR 60.21(c)(6)
10 CFR 60.21(c)(11)
10 CFR 60.21(c)(14)

TYPES OF REVIEW:

Acceptance Review (Type 1)

RATIONALE FOR TYPES OF REVIEW:

Acceptance Review (Type 1) Rationale:

This regulatory requirement topic is license application-related because, as specified in the license application content requirements of 10 CFR 60.21 and Section 4.1.3 of the regulatory guide "Format and Content for the License Application for the High-Level Waste Repository (FCRG)", it must be addressed by the U.S. Department of Energy (DOE) in its license application. Therefore, the staff will conduct an Acceptance Review of the license application for this regulatory requirement topic.

REVIEW STRATEGY:

Acceptance Review:

In conducting the Acceptance Review of the description of the geologic repository operations area (GROA) underground facility, the reviewer should determine if the information presented in the license application for demonstrating compliance with the applicable regulatory requirements is complete in technical breadth and depth as identified in the FCRG. The descriptions provided in Section 4.1.3 of the license application will form the basis for the Safety Review of the information contained in Section 4.4 (Assessment of Compliance with the Design Criteria for the GROA Underground Facility) of the license application. Thus, the review of the information contained in Section 4.1.3 will be performed in parallel with the review of the information contained in Section 4.4. Therefore, during the Acceptance Review of Section 4.1.3, the reviewer should determine that all appropriate information necessary for the staff to conduct a Safety Review of the GROA underground facility design in Section 4.4 has been provided.

The reviewer should determine that the information in the license application is presented in such a manner that the assumptions, data, and logic leading to a demonstration of compliance with the applicable

regulatory requirements are clear and do not require the reviewer to conduct extensive independent analyses or literature searches. The reviewer should also determine that controversial information and appropriate alternative interpretations and models have been acceptably described and considered.

Finally, the reviewer should determine if the U.S. Department of Energy (DOE) has either resolved all the NRC staff objections that apply to the applicable regulatory requirements or provided all the information requested in Section 1.6.2 of the FCRG, for unresolved objections. With respect to the information in Section 4.1.3, the reviewer should evaluate the effects of any unresolved objections, both individually and in combinations with others, on: (1) the ability of the reviewer to conduct a meaningful and timely review; and (2) the ability of the Commission to make a decision regarding construction authorization within the statutory three-year period.

In reviewing the descriptions of GROA underground facility, the reviewer should ascertain that for the underground facility, DOE has provided, at a minimum, acceptable descriptions of:

- (1) the location and general layout of the underground facility relative to the GROA and the general character of proposed activities for the underground facility;
- (2) the subsurface site conditions expected to be encountered in constructing the underground facility;
- (3) the identification of major structures, systems, and components important to radiological safety, retrievability, containment, and waste isolation for the underground facility;
- (4) the design criteria, design bases, materials of construction, and codes and standards to be used in design and construction;
- (5) the performance requirements of the structures, systems, and components described in Item (3) above, including margins of safety under design basis events;
- (6) variables, conditions, or items that are probable subjects of license specifications;
- (7) those structures, systems, and components which require research and development to confirm the adequacy of design, and a schedules indicating when the unsolved questions would be resolved;
- (8) the schedules for inspections, testing, and maintenance;
- (9) the sealing and drainage for the underground facility, including any plans for backfilling; and
- (10) the details specified in Sections 4.1.3.1 through 4.1.3.10 of the FCRG for the underground systems.

If it is determined that the information in Section 4.1.3 of the license application is inadequate to support the Safety Review of Section 4.4, then additional information to be requested from the DOE should be identified as a part of the review.

RATIONALE FOR REVIEW STRATEGY:

None

Contributing Analysts:

NRC Staff: Shiann-Jang Chern, Mysore S. Nataraja

CNWRA Staff: Mikko P. Ahola, Simon Hsiung

Date of Analyses: February 22, 1993

APPLICABLE REGULATORY REQUIREMENTS FOR REVIEW TYPES:

Type 1:

- 10 CFR 60.21(c)(1)(i)
- 10 CFR 60.21(c)(1)(ii)(D)
- 10 CFR 60.21(c)(1)(ii)(E)
- 10 CFR 60.21(c)(1)(ii)(F)
- 10 CFR 60.21(c)(2)
- 10 CFR 60.21(c)(3)
- 10 CFR 60.21(c)(6)
- 10 CFR 60.21(c)(11)
- 10 CFR 60.21(c)(14)

REFERENCES:

None