

COMPLIANCE DETERMINATION STRATEGY
RRT 7.1 PLANS FOR THE CONDUCT OF NORMAL ACTIVITIES

APPLICABLE REGULATORY REQUIREMENTS:

10 CFR 60.21(c)(15)(iv)
10 CFR 60.21(c)(15)(v)
10 CFR 60.21(c)(15)(vi)
10 CFR 60.21(c)(15)(vii)
10 CFR 60.31(a)(1)(ii)
10 CFR 60.31(a)(6)

TYPES OF REVIEW:

Acceptance Review (Type 1)
Safety Review (Type 3)

RATIONALE FOR TYPES OF REVIEW:

Acceptance Review (Type 1) Rationale:

This regulatory requirement topic is considered to be license application-related because, as specified in the license application content requirements of 10 CFR 60.21(c) and Section 7.1 of 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.

Safety Review (Type 3) Rationale:

This regulatory requirement topic is considered to be related to radiological safety during the pre-closure period. It is a requirement for which compliance is necessary to make a safety determination for construction authorization, as defined in 10 CFR 60.31(a) (i.e., regulatory requirements in Subparts B, E, G, H, and I). It focuses on DOE's detailed plans for the conduct of normal repository operations. This would include plans for the following activities: start-up, receipt, handling, emplacement, inspection, testing, maintenance, permanent closure, and waste retrievability. Understanding DOE's proposed plans for repository operations is intended to lead to a determination as to whether the high-level radioactive waste will be received, handled, and stored in a manner that will assure public health and safety. (Review of DOE's plans for any waste retrieval operations that may be necessary are addressed in Review Plan 4.5.2.) Therefore, the staff will conduct a Safety Review of the license application to determine compliance with the applicable regulatory requirements.

There appears to be no lack of certitude as to the methodology needed to determine or demonstrate compliance with the applicable regulatory requirements. Methodologies for preparing plans for normal geologic repository operations are considered to be available because of the past and current experience

in similar nuclear facility operations. Therefore, the type of review for this topic will be a (Type 3) Safety Review.

REVIEW STRATEGY:

Acceptance Review:

In conducting the Acceptance Review of the U.S. Department of Energy's (DOE's) plans for normal geologic repository operations, the reviewer should determine if the information present in the license application for demonstrating compliance with the applicable regulatory requirements is complete in technical breadth and depth as identified in regulatory guide "Format and Content for the License Application for the High-Level Waste Repository (FCRG)." The reviewer should determine whether all appropriate information for the staff to review the applicable regulatory requirements is presented in a manner that would support a determination of whether there is reasonable assurance that the geologic repository can be operated in a manner that assures public health and safety.

The descriptions provided in other chapters/sections of the license application, as appropriate, will support the Safety Review of the information contained in Section 7.1 of the license application. These other sections of the license application are listed in Table 7.1-1. Thus, the review of the information contained in Section 7.1 will be performed in parallel with the review of the information contained in other sections of the license application, as appropriate. Therefore, during the Acceptance Review of Section 7.1, the reviewer should determine whether all appropriate descriptive information necessary for the staff to conduct a Safety Review of the plans for normal Geologic Repository Operations Area (GROA) activities has been provided, and whether the information is both internally consistent, and consistent from section-to-section.

The reviewer should determine whether 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 whether controversial information and appropriate alternative plans and schedules have been acceptably described and considered.

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

Safety Review:

This regulatory requirement topic is limited to consideration of DOE's plans for the conduct of normal geologic repository operations during the pre-closure period. It focuses on those activities (waste receipt, waste emplacement, GROA maintenance and inspection, testing, etc.) that can be expected to take place on a routine basis (daily, weekly, annually). It is not concerned with other activities that would be conducted during the pre-closure period such as performance confirmation, emergency planning, and

others. Moreover, this regulatory requirement topic is not concerned with any plans for waste retrieval operations that might be necessary during the pre-closure period, other than those normal activities such as, maintenance, surveillance, and periodic testing of all structures, systems, and components of the GROA that are important to safety as well as those important to waste retrievability. The review of these other pre-closure subjects will be addressed in those sections of the license application listed in Table 7.1-1. However, as noted above, the descriptions provided in other sections of the license application, as appropriate, will support the Safety Review of the information contained in Section 7.1 of the license application. These other sections of the license application, listed in Table 7.1-1, should be consulted during the Safety Review.

In conducting the Safety Review, the reviewer should determine if the information presented in the license application and its references provides an acceptable demonstration of compliance with the applicable regulatory requirements. At a minimum, the reviewer should assess the adequacy of data and information presented in the license application to support DOE's demonstration. The specific aspects of the license application on which a reviewer will focus are discussed below, and the Acceptance Criteria are identified in Section 3.0 of this review plan.

In general, the reviewer will assess the adequacy of DOE's plans for GROA facilities that provide for the safe handling of radioactive materials during all phases of normal repository operations. These routine activities would include but not be limited to the following: (1) start-up and testing; (2) waste receipt; (3) temporary waste storage; (4) waste transfer; (5) waste emplacement; (6) routine GROA maintenance; (7) routine GROA inspection and testing; and (8) permanent closure (including decontamination, dismantling, and decommissioning). In addition to the activities described above, DOE's plan for normal GROA activities should address maintenance, surveillance, and periodic testing of all structures, systems, and components of the GROA that are important to safety as well as those important to waste retrievability.

In reviewing DOE's procedures for normal repository operations, the reviewer should assure that the proper interfaces between GROA operators and the GROA physical facility are in place to permit the conduct of routine activities.

In order to conduct an effective review, the reviewer will rely on staff expertise and independently acquired knowledge, information, and data. For example, the reviewer should have knowledge and experience in planning operations for other types of nuclear facilities. The reviewer should also be able to identify those variables that may significantly influence the final design of the GROA (e.g., the rate of receipt and total inventory in surface storage can impact the source term for a potential release and for worker exposures) and thus normal geologic repository operations. The reviewer should focus on additional data that can refine knowledge of the facility design and operations. The reviewer should perform, as necessary, any reviews needed to confirm the adequacy of the methodologies proposed to ensure that DOE's plans will assure public health and safety. Also, the reviewer should also have available specific documents (design drawings, reports, planning documents, and procedures) bearing on this topic, that were prepared by NRC, DOE, and others. These documents should be available to the reviewers in anticipation of the license application submittal and review.

Finally, it should be noted that the Safety Review of DOE's plans for normal geologic repository operations cannot be wholly separated from the Safety Reviews of other aspects of the geologic

repository, considered in other sections of the license application. For example, the reviewer should confirm a correlation to the presentation of more broad overall schedules discussed in Section 1.3 of the license application (see "Schedules"). Therefore, the acceptability of DOE's plans for geologic repository operations in Section 7.1 will be made in parallel with the assessments made elsewhere that the overall design and plan for receiving, handling, and storing HLW can assure public health and safety. Thus, the information to be reviewed in this review plan may be cross-referenced to information and analyses related to other review plans.

RATIONALE FOR REVIEW STRATEGY:

Not applicable.

Contributing Analysts:

NRC: Banad N. Jagannath, Mysore S. Nataraja, and Michael P. Lee,

CNWRA: Mikko Ahola, Asadul H. Chowdhury, Amitava Ghosh, and John P. Hageman

Date of Analyses: July 19, 1993

APPLICABLE REGULATORY REQUIREMENTS FOR EACH TYPE OF REVIEW:

Type 1:

- 10 CFR 60.21(c)(15)(iv)
- 10 CFR 60.21(c)(15)(v)
- 10 CFR 60.21(c)(15)(vi)
- 10 CFR 60.21(c)(15)(vii)
- 10 CFR 60.31(a)(1)(ii)
- 10 CFR 60.31(a)(6)

Type 3:

- 10 CFR 60.31(a)(1)(ii)
- 10 CFR 60.31(a)(6)

REFERENCES:

U.S. Nuclear Regulatory Commission, "Format and Content For the License Application for the High-Level Waste Repository," Office of Nuclear Regulatory Research [Refer to the "Products List" for the Division of High-Level Waste Management to identify the most current edition in effect.

TABLE 7.1-1. Sections of the License Application that may support the review of the "Plans for the Conduct of Normal Activities" section of the License Application.

<i>License Application Section</i>	<i>Title</i>
Performance Confirmation	
8.1.1	Performance Confirmation Program for the Natural Systems of the Geologic Setting — Geologic System
8.1.2	Performance Confirmation Program for the Natural Systems of the Geological Setting — Hydrologic System
8.1.3	Performance Confirmation Program for the Natural Systems of the Geological Setting — Geochemical System
8.1.4	Performance Confirmation Program for the Natural Systems of the Geological Setting — Climatology and Meteorological Systems
8.2	Performance Confirmation Program for Structures, Systems, and Components of the GROA
8.3	Performance Confirmation of Engineered Barrier Systems
Radiation Protection	
4.2	Assessment of Compliance with Design Criteria for Surface Facilities
4.3	Assessment of Compliance with Design Criteria for Shafts and Ramps
4.4	Assessment of Compliance with Design Criteria for the Underground Facility
4.5.1	Assessment of Integrated GROA Compliance with the Performance Objectives: Protection Against Radiation Exposures and Releases of Radioactive Material to Unrestricted Areas
7.2	Radiation Protection Program
Waste Retrievability	
4.5.2	Assessment of Integrated GROA Compliance with the Performance Objectives: Retrievability of Waste
Other	
1.3	Schedules
2.7	Nuclear Material Control
7.3	Organizational Structure, Management, and Administrative Controls
7.4	Procedure Development
7.6	Personnel Training Programs
7.8	Identification of Operating Controls and Limits
10.0	Quality Assurance
11.0	Emergency Planning