COMPLIANCE DETERMINATION STRATEGY
7.7 SCHEDULES FOR OPERATIONS

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)(1-6)

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 7.7 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.

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 and schedules for the construction and conduct of normal repository operations. Understanding DOE's proposed plans and schedules for repository construction and operations is intended to lead to a determination of whether the High-Level Radioactive Waste (HLW) will be received, handled, and stored in a manner that will assure public health and safety. This would include plans and schedules for: inspection, testing, maintenance, receipt, handling, transfer, storage, and emplacement of HLW. Review of DOE's plans and schedules for waste retrievability 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 scheduling construction and normal geologic repository operations are considered to be available because of the past and current experience in similar nuclear facilities. 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 DOE's plans and schedules for the construction and operation of the geologic repository, 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 the FCRG. The reviewer should determine if 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 constructed and operated in a manner that assures public health and safety.

The reviewer should determine if 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 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:

In conducting the Safety Review, the reviewer should determine if the information presented in the license application and its references is 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. In general, the reviewer will assess the adequacy of DOE plans and schedules for construction and operation of the geologic repository operations area (GROA) facilities to permit safe handling (acquisition, transfer, storage, disposal, etc.) of all radioactive materials during operations. The reviewer will assess the adequacy of DOE's descriptions of how the plans and schedules for geologic repository construction and operations will maintain and follow radioactive material control procedures that are sufficient to enable DOE to safely handle all the HLW on site. 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. Specifically, the scope of this review includes:

(1) detailed schedules for construction and operations and integration of the various operational components;
(2) scheduling consistency of the phases of the repository, which include design, construction, start-up, operations, decontamination or dismantlement, retrieval if necessary, and use of the GROA for purposes other than disposal of radioactive waste;
(3) scheduling of discharges of radioactive materials until permanent closure from all anticipated operations and activities to assure releases are within limits, considering pathway analyses;
(4) any relationship of scheduling to meet the performance objectives;

(5) any models or computer programs required for scheduling activities within the geologic repository;
(6) details specified in Sections 7.7 of the FCRG.

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 scheduling for construction and 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, the schedules for geologic repository construction and operation. The reviewer should focus on additional data which can refine knowledge of the facility design, construction, and operations related to scheduling. The reviewer should perform, as necessary, any reviews needed to confirm the adequacy of the methodologies proposed to assure that DOE's plans and schedules will assure public health and safety. Also, the reviewer shall have available specific documents (design drawings, reports, planning documents, and procedures) bearing on this topic, that were commissioned 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 and schedules for geologic repository construction and 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 the broad overall schedules discussed in Section 1.3 of the license application (see "Schedules"). Therefore, the review of the adequacy of DOE's plans and schedules for geologic repository construction and operation in Section 7.7 will not be determined until assessments are made 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.

For example, the reviewer may need to consider, at a minimum, information and analyses evaluated under the following portions of the license application:

License Application Section	Title
1.3	Schedules
4.6	Plans for Retrieval and Alternate Storage of Waste
7.1	Plans for Conduct of Normal Activities
7.2	Description of the Radiation Protection Program
7.3	Organizational Structure, Management, and Administrative Controls
7.4	Procedure Development
7.6	Training Programs
7.8	Identification of Operating Controls and Limits
11.0	Emergency Planning

RATIONALE FOR REVIEW STRATEGY:

None.

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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)(1-6)

Type 3:
10 CFR 60.31(a)(1-6)

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.]