

**COMPLIANCE DETERMINATION STRATEGY  
RRT 9.0 - LAND OWNERSHIP AND CONTROL**

**1.0 APPLICABLE REGULATORY REQUIREMENTS**

10 CFR 60.21(c)(8)  
10 CFR 60.121(a,b,c)

**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 (LA)-related because, as specified in the LA content requirements of 10 CFR 60.21(c) and 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 LA. Therefore, the staff will conduct an Acceptance Review of the LA for this regulatory requirement topic.

**Safety Review (Type 3) Rationale**

This regulatory requirement topic is related to radiological safety and waste isolation. 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 E, G, H, and I). Control of access, both within and outside of the controlled area (10 CFR 60.2), will have a direct bearing on achievement of isolation. Therefore, the staff will conduct a Safety Review of the LA to determine compliance with the applicable regulatory requirements.

No independent analysis of data other than that presented in the LA is required to demonstrate compliance with this requirement, thus a review type higher than Type 3 is not appropriate.

**2.0 REVIEW STRATEGY**

**2.1 Acceptance Review**

To determine whether this section of the DOE LA is acceptable for docketing, the staff will determine whether the information submitted is consistent with that identified in the corresponding section of the Regulatory Guide "Format and Content for the License Application for the High-Level Waste Repository" (FCRG).

Before the receipt of the LA, the staff will have conducted preclicensing reviews of DOE program, including technical reviews and quality assurance reviews and audits. The staff will have documented its concerns, resulting from these preclicensing application reviews, as open items. Some of these open items, referred to as objections to LA submittal, may be critical to the staff's LA review, because lack of

acceptable DOE resolution would prevent NRC from conducting a meaningful review. Therefore, as part of its Acceptance Review for docketing, the staff will evaluate how significant any unresolved objection to LA submittal is, to the effective conduct of licensing activities, using the criteria given in Section 3.1 of this review plan.

## **2.2 Compliance Review**

### **2.2.1 Safety Review**

The purpose of this section of the LA is to identify the interests in property that have been, or will be obtained by DOE, that are necessary to conduct geologic repository operations (including waste isolation). The information in this section of the LA shall be cross referenced to data submitted under other Sections of the LA, specifically Sections 3.2.2.6 [Potentially Adverse Conditions (PAC): Human Activity and Groundwater], 3.2.1.12 (PAC: Evidence of Subsurface Mining), 3.2.1.13 (PAC: Evidence of Drilling), and 7.10 (Site Markers). The reviewer will focus on the specific aspects of the LA discussed below, and the Acceptance Criteria are identified in Section 3.0 of this review plan.

In conducting the Safety Review, the reviewer will determine the correctness of the legal description and its conformance to other accepted methods of land description. The review should analyze for completeness the necessary Bureau of Land Management (BLM) Master Title Plats (MTPs) for all sections contained within the controlled area to assure they identify existing (or proposed) title control and existing encumbrances. The reviewer should identify any encumbrances listed in the application and whether a clear description of how each will be addressed is included in the application. In addition, maps displaying relevant features within and outside the controlled area should be reviewed for appropriate notations and an analysis performed of data referenced in the application to ensure all controls proposed will be adequate. The reviewer shall identify the limits of the geologic repository operations area (GROA) and its relationship to the limits of the controlled area on MTPs, maps and diagrams, in order to aid the review of relevant and necessary controls to achieve isolation. If controls for the GROA are proposed by DOE to be different from those for the remainder of the controlled area, the extent of difference and the adequacy of the rationale shall be evaluated.

The review of controls proposed outside the controlled area should analyze the identification of limits of such area and the adequacy of the extent to which DOE proposes exercising jurisdiction. The reviewer should determine that existing rights and interests are adequately described, including a complete description of how they will be addressed.

The reviewer will assess the adequacy of the identification of all encumbrances currently located on the lands to be included in the controlled area and those existing outside the controlled area. A specific review of the potential impact of any encumbrance on the GROA's ability to achieve isolation shall be conducted. In addition, an assessment of the plan for extinguishing or compensating for existing rights or interests shall be made. The reviewer will identify the applicant's presentation of both interests in land and interest in the mineral estate as well as established rights of use or servitude to the lands of the controlled area and surrounding lands. Because the regulations specify "encumbrances, if significant" and "appropriate controls," it will be necessary for the reviewer to evaluate the presentation of not only the existence of rights, but also the extent to which they may impact operations and isolation in order to evaluate the appropriateness of DOE proposed actions. This evaluation will be coordinated with the

assessments of compliance with those sections of the LA relating to evidence of mining and drilling for natural resources (e.g., Sections 3.2.1.12, 3.2.1.13, and 3.2.2.6).

The reviewer will analyze the presentation of water rights determined to be necessary for operations and required to prevent adverse impact on isolation for adequacy and support of conclusions. The review of needed permits and transfers shall focus on those identified as well as those not already obtained and a determination that appropriate schedules have been included. The review of water rights should identify discussion of both the time period of operations and the period after permanent closure. All needed permits and transfers shall be clearly identified and if not already obtained, a schedule included. The evaluation of information on water rights and water use in this section shall be cross referenced with information submitted under Section 3.2.2.6 of the LA.

Finally, the review of the description of access-restricting controls should determine the presence of site markers (or monuments) which would be used to identify the location of and control access to, those areas necessary to conduct geologic repository operations. The review of this section of the LA will not require a detailed description of the conceptual design for such markers; it should cross reference the information already presented in Section 7.10 of the LA. The final design details will be found in any subsequent application to decommission and permanently close the geologic repository.

**RATIONALE FOR REVIEW STRATEGY**

Not Applicable.

**Contributing Analysts**

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**APPLICABLE REGULATORY REQUIREMENTS FOR EACH TYPE OF REVIEW**

Type 1

10 CFR 60.21(c)(8)  
10 CFR 60.121(a,b,c)

Type 3

10 CFR 60.21(c)(8)  
10 CFR 60.121(a,b,c)

**6.0 REFERENCES**

**References for Review Strategies**

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 of the FCRG in effect.]

**COMPLIANCE DETERMINATION METHOD FOR REVIEW PLAN NO. 9.0  
LAND OWNERSHIP AND CONTROL AND WATER RIGHTS**

**3.0 REVIEW PROCEDURES AND ACCEPTANCE CRITERIA**

**3.1 Acceptance Review**

In conducting the Acceptance Review for docketing, the staff will compare the information in the License Application (LA) concerning land ownership and control and water rights with the corresponding section of the FCRG and with the staff's resolution status of objections to LA submittal in the Open Item Tracking System (OITS) and determine if this information meets the following criteria.

- (1) The information presented in the LA is clear, is completely documented consistent with the level of detail presented in the corresponding section of the FCRG, and the references have been provided.
- (2) The U.S. Department of Energy (DOE) has either resolved, at the staff level, the NRC objections to LA submittal that apply to this regulatory requirement topic, or provided all information requested in Section 1.6 of the FCRG for unresolved objections, namely, the DOE has:
  - Identified all unresolved objections
  - Explained the differences between NRC and DOE positions which precluded resolution of each objection
  - Described pertinent attempts to achieve resolution
  - Explained why resolution has not been achieved
  - Described the effects of the different positions on demonstrating compliance with 10 CFR Part 60

In addition, unresolved objections, individually or in combination with others, will not prevent the reviewer from conducting a meaningful Compliance Review or the Commission from making a decision regarding construction authorization within the 3-year statutory period.

**3.2 Compliance Reviews**

The compliance determinations undertaken by NRC staff will consider whether the Acceptance Criteria specified for each of the following Compliance Reviews have been met. The results of the compliance determinations shall be documented in the staff's Safety Evaluation Report (SER) to provide the basis for the actual Evaluation Findings.

**3.2.1 Safety Review of 10 CFR 60.121(a) and 10 CFR 60.21(c)(8)**

The staff will review the legal description and the documentation of DOE jurisdiction and control over the geologic repository operations area (GROA) and the controlled area to determine if the following acceptance criteria have been met.

- The legal documentation of ownership includes sufficient indexes of ownership and control as to satisfy a purchaser-of-record including, but not limited to, recorded title search showing any and all interests in land, and Bureau of Land Management's (BLM) Master Title Plan which indicates all recorded interests and claims.
- If a statutory withdrawal has been enacted, the LA includes a copy of the legislation, and the legal descriptions of the land area contained in the statute and the description in the application agree. Since the land area of the proposed repository site would be totally in Federal ownership, the statute will constitute complete ownership documentation, subject to subordinate interests.
- If a statutory withdrawal has not been enacted, the DOE has taken all steps within its control to establish effective and permanent jurisdiction and control, and legislative or other transfer activities underway will be completed prior to the completion of NRC review and decision on the application.
- The size and boundaries of the GROA and the controlled area and accessible environment are appropriately tied to specific design or natural features and consistent with the technical justification. The review of the technical justification for the GROA design contained in Chapter 4 of the LA is to be performed in that chapter and only incorporated and referenced in this review plan as indicated in Section 4.2 below.
- The means, such as title search and BLM records search, utilized to identify any existing or future encumbrances or other surface or subsurface interests of record in the land area of the GROA are adequate and complete.
- For the land area of the GROA, the DOE has identified any and all interests which include rights arising under the general mining laws, easements for right-of-way, and all other rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise, if any exist.

**3.2.2 Safety Review of 10 CFR 60.121(b) and 10 CFR 60.21(c)(8)**

The staff will review the appropriateness of the jurisdiction and control either established or proposed to be established by the DOE outside the controlled area to determine if the following acceptance criteria have been met.

- The legal documentation of ownership and/or control includes sufficient indexes of ownership and control of the area outside the controlled area as to satisfy a purchaser-of-record including, but not limited to, recorded title search showing any and all interests in land, and the BLM Master Title Plan which indicates all recorded interests and claims.
- If a statutory withdrawal has not been enacted, the DOE has taken all steps within its control to establish effective and permanent jurisdiction and control, and legislative or other transfer activities underway will be completed prior to the completion of NRC review and decision on the application.
- The size and boundaries of the area outside the controlled area are appropriately tied to specific design or natural features and consistent with the technical justification in order to assure the

repository's ability to achieve isolation and prevent or reduce the risk of human activity which may adversely impact isolation. The review of the technical justification for the GROA design contained in Chapter 4 of the LA is to be performed in that chapter and only incorporated and referenced in this review plan as indicated in Section 4.2 below. The review of the technical justification for the natural features and their relationship to the extent of the size and boundaries outside the controlled area for which ownership and control of interests need to be established will be performed in Chapters 3 and 6 and incorporated and referenced in this review plan as indicated in Section 4.2 below.

- The demonstration identifies existing or proposed permissible rights or encumbrances which exist and may be continued, or which may be established outside the controlled area and assesses the nature of activities which may permissibly occur under the rights.
- The means, such as title search and BLM records search, utilized to identify any existing or future encumbrances or other surface or subsurface interests of record in the land area outside the controlled area are adequate and complete to ensure no competing interests remain, or that adverse human intrusion would not be facilitated.
- The assessment shall apply to surface and subsurface rights and, in accordance with the requirement of 10 CFR 60.121(c)(2), shall apply to water rights as well as land use and mineral rights.

**3.2.3 Safety Review of 10 CFR 60.121(c)**

The staff will review the documentation of water rights obtained by the applicant in support of accomplishing operations and other purposes of the GROA and for purposes of isolation of wastes after closure to determine if the following acceptance criteria have been met.

- The description regarding water rights shall address both the potential water needs of the GROA as described in Section 4.1 of the LA and the potential adverse impacts on isolation which may result from water usage on the lands within the controlled area as well as those identified outside the controlled area as described in Section 3.1.2.3 of the LA.
- The analysis shall include existing and projected water uses authorized under existing law and justification for the quantity projections from Chapter 4 of the LA, as well as potential consequences of estimated water usage both within and outside the controlled area.

**3.3 Rationale For Review Procedures and Acceptance Criteria**

**3.3.1 Rationale for Safety Review of 10 CFR 60.121 and 10 CFR 60.21(c)(8)**

The description of the ownership interest established by DOE, the encumbrances existing and extinguished, and the land use controls instituted and/or planned must support the findings which must be made as to the nature and adequacy of land ownership and control within the controlled area and of additional controls outside of the controlled area. The technical criteria as to the size and boundaries of the GROA and the area outside the controlled area to which jurisdiction is required are derived from analysis described in other sections of Chapter 3 and 4 of the LA. They shall be reviewed under other review plans and the results applied here to establish the area over which the DOE must exercise

ownership and control in order to achieve isolation. The acronym GROA is used throughout this review plan to refer to the geologic repository operations area and the controlled area consistent with the language of 10 CFR 60.121(a)(1). The description of the water rights obtained by the applicant must be adequate to support the findings as to water resources needed to accomplishing operations and other purposes at the GROA and for water rights needed to prevent adverse impacts on isolation. The finding with regard to control under a physical protection plan shall be made in Chapter 1. Since the Yucca Mountain site is located on Federal public lands which, while portions may have been withdrawn for specific purposes, have not been out of Federal ownership since acquired by treaty, the title search needed to support this section will be simpler than for lands which have numerous holders-of-record. However, a search is required to identify and quantify any and all interests which may have been established. Staff judgment and expertise will be relied upon to determine if adequate documentation of ownership and control has been presented.

**4.0 IMPLEMENTATION**

**4.1 Review Responsibilities**

The review responsibilities for this review plan are as follows:

Lead:	OGC
Support:	WM/HLUR & WM/ENGB

**4.2 Interfaces**

**4.2.1 Input Information**

Input from activities associated with other review plans as the following table indicates will provide specific information for use in this review plan.

<b>Input Information</b>	<b>Review Plan Nos.</b>
Technical characteristics to aid size and boundary of the GROA, controlled area and surrounding area	3.1—Description of Individual Systems and Characteristics of the Site
Size and boundary of the GROA, controlled area and surrounding area	4.1—Description of the GROA
Extent of area that could be adversely impacted by human intrusion or adverse water usage	6.1—Assessment of Compliance with the Requirement for Cumulative Releases of Radioactive Materials

**4.2.2 Output Information**

Output from activities associated with this review plan will provide specific information for use in other review plans as the following table indicates.

Output Information	Review Plan Nos.
Locations of boundaries	7.10—Site Markers

**5.0 EXAMPLE EVALUATION FINDINGS**

The staff should consider the Example Evaluation Findings presented below together with the Acceptance Criteria set forth in Section 3.0 when making the actual Evaluation Findings resulting from the Acceptance Review for docketing and the Compliance Reviews. The actual Evaluation Findings resulting from the Compliance Reviews, and the supporting basis for these findings, should be documented by the staff in the SER.

**5.1 Finding for Acceptance Review**

The NRC staff finds that the information presented by the DOE on land ownership and control and water rights is acceptable (not acceptable) for docketing and a Compliance Review.

**5.2 Findings for Compliance Reviews**

**5.2.1 Finding for 10 CFR 60.121 and 10 CFR 60.21(c)(8)**

The NRC staff finds that the applicant has (has not) demonstrated that the GROA, the controlled area, and the area outside the controlled area deemed essential to protecting human health and safety, are under DOE jurisdiction and control either by means of a permanent statutory withdrawal or other appropriate means. This jurisdiction and control applies to surface and subsurface estates and shall be exercised in order to prevent adverse human intrusion that could significantly reduce the GROA's ability to achieve isolation.

The staff finds that the lands are (are not) held free and clear of all encumbrances, if deemed significant. If encumbrances exist or are proposed to be permitted, the DOE has (has not) demonstrated that the permitted use or right will have no adverse effect on the GROA's ability to achieve waste isolation.

The staff further finds that the DOE has (has not) obtained the water rights needed to accomplish the purpose of the GROA, whether on lands within the controlled area or outside the controlled area.

**6.0 REFERENCES**

Nuclear Regulatory Commission, "Format and Content for the License Application of 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 of the FCRG in effect.]