

the current DOE Total System Performance Assessment uses nine process level models (similar to NRC's model abstractions) that are based on the flow of water through a repository to the location of the reasonably maximally exposed individual. In light of the key role performance assessment will play in demonstrating and determining compliance, NRC staff has been developing an independent performance assessment capability for a Yucca Mountain repository and discussed the published results with DOE at numerous public meetings. The NRC total system performance assessment incorporates 14 model abstractions that represent its independent conceptual model of a Yucca Mountain site. The Yucca Mountain Review Plan describes how NRC staff will determine compliance, and its independently developed total system performance assessment code will be an important tool in assessing whether DOE has satisfied regulatory requirements. Therefore, the Yucca Mountain Review Plan facilitates the use of this tool in the license application review. DOE's compliance demonstration method may use similar, or different, conceptual models. NRC staff review, based on its 14 model abstractions, is described in detail in the Yucca Mountain Review Plan. This detail is useful because NRC staff has learned a great deal about the features, events, and processes of the Yucca Mountain site, and this knowledge is reflected in the technical information specific to each of the 14 model abstractions.

Although specific details of the postclosure portion of the Yucca Mountain Review Plan have been revised to address this comment, the general structure has not been changed. The Yucca Mountain Review Plan was revised, as appropriate, to clarify the matters raised in these comments.

Issue 2: Should quality assurance requirements be specifically addressed in each section of the Yucca Mountain Review Plan?

Comment. One commenter stated that quality assurance requirements should be identified and specified in the review methods and acceptance criteria for each section of the Yucca Mountain Review Plan. The commenter argued that Section 3.2, "Proposed Schedules for Construction, Receipt, and Emplacement of Waste," Review Method 1, and Acceptance Criterion 1, of the draft Yucca Mountain Review Plan, should explicitly mention quality assurance compliance, since state-of-the-art quality assurance begins with preliminary scheduling and includes

impacts on schedules, work interdependence, and work flow, particularly during construction. The commenter also suggested four specific changes to this section of the Yucca Mountain Review Plan that would incorporate quality assurance requirements.

Response. The quality assurance requirements in 10 CFR part 63 apply to aspects of repository construction, operation, or closure that are important to safety or to waste isolation. While quality assurance is an integral part of almost all aspects of a licensing review for a high-level waste repository, the Yucca Mountain Review Plan includes a single section on quality assurance, which will be applied to each of the other review activities.

To clarify the importance of quality assurance, the Yucca Mountain Review Plan integrates quality assurance into the entire licensing review by using the review methods and acceptance criteria in the "Quality Assurance Program" section of the Yucca Mountain Review Plan and applying them to reviews conducted for other Yucca Mountain Review Plan sections.

No changes to the Yucca Mountain Review Plan were made as a result of this comment.

Issue 3: Should the distinction between a licensing review and inspection activities be specifically addressed in each section of the Yucca Mountain Review Plan?

Comment. One commenter stated that the distinction between licensing review and inspection activities should be highlighted in each section of the Yucca Mountain Review Plan.

Another commenter suggested that NRC staff conduct a comprehensive review of the plan to ensure that the level of detail being specified is appropriate for a licensing review, rather than an inspection review. The commenter also suggested that Figure 1.1 in the plan be clarified for this purpose and that the "Introduction" to the Yucca Mountain Review Plan be revised to more explicitly outline this principle.

Response. It is not necessary to draw a distinction between licensing review and inspection in each section of the Yucca Mountain Review Plan in that it would substantially lengthen the review plan without adding significant benefit or clarity to the licensing review. This approach would also be inconsistent with other agency review plans.

As part of NRC's inspection program for a high-level waste repository at Yucca Mountain, NRC staff would prepare an Inspection Manual inspection procedures and would train

additional inspectors. Inspection would thus be addressed separately.

No changes have been made to the Yucca Mountain Review Plan as a result of this comment.

Issue 4: Is the Yucca Mountain Review Plan excessively redundant and difficult to understand?

Comment. One commenter stated that although the Yucca Mountain Review Plan meets the purpose for which it was written and explains the bases for activities and roles of various entities, it is repetitive particularly with respect to "Areas of Review," "Review Methods," "Acceptance Criteria," "Evaluation Findings," and "References." The commenter noted that such headings, along with common verbiage, is repeated for topics, which are separately discussed for both preclosure and postclosure safety reviews. Although the commenter indicated that this approach may support the uniformity of the NRC review, it makes the document quite long. The commenter suggested that a table could be used as an abbreviated form of what currently appears as narrative under the headings (e.g., "Acceptance Criteria," "Evaluation Findings," etc.) for each of the topics involved and for each major section of the review plan.

Response. The Yucca Mountain Review Plan is lengthy and somewhat redundant. The structure and format of the review plan, however, is intended to guide NRC staff reviewers from various disciplines to perform an efficient and complete review in discrete areas and provide the relevant information in each section. The structure of the Yucca Mountain Review Plan is also consistent with other NRC review plans.

No changes were made to the Yucca Mountain Review Plan in response to this comment.

Issue 5: Should the Yucca Mountain Review Plan include an example of how a review would be completed and the results documented?

Comment. One commenter noted that the Yucca Mountain Review Plan sections dealing with postclosure issues reflect the risk perspectives of 10 CFR part 63 appropriately, but cautioned that implementation of the Yucca Mountain Review Plan will determine whether a risk perspective is followed. The commenter noted that the review plan identifies the need to maintain flexibility in review guidelines at the expense of specificity and acceptance criteria contain guidance to NRC staff for evaluating such aspects as: (1) Whether sufficient data are available to adequately define relevant parameters and conceptual models; (2) whether models use parameter values, assumed