

ranges, probability distributions, and bounding assumptions that are technically defensible; and (3) whether the technical bases for the parameter values are consistent with data from the Yucca Mountain region. The commenter argued that the critical issue will be how items such as data sufficiency and model adequacy are determined and suggested adding an appendix to the Yucca Mountain Review Plan, which provides an abbreviated illustration of a review of a specific issue. This might be achieved using one of the integrated subissues, with specific reference to the precensing agreements between NRC staff and DOE staff as to how questions about sufficiency and adequacy would be addressed in the review process. The commenter noted that such an example might be very useful. In providing such an example, NRC staff could clarify what might lead to a conclusion that the license application was inadequate.

Response. An example of a review and the documentation of the results would be helpful to users of the Yucca Mountain Review Plan. One has been incorporated in Appendix A.

Issue 6: Will the Yucca Mountain Review Plan be revised in the future?

Comment. One commenter acknowledged that the Yucca Mountain Review Plan is a living document and agreed that physical protection is a potential area of change. The commenter questioned whether, considering the expected length of time between initial emplacement of waste and repository closure, it is reasonable to anticipate and accommodate change.

Response. Because the document is intended to address several steps in licensing of a high-level waste repository, the Yucca Mountain Review Plan will be revised in the future, if appropriate.

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

9.4 Content of Yucca Mountain Review Plan Glossary

Issue: Should the Yucca Mountain Review Plan glossary include terms that are not defined in the text?

Comment. One commenter identified approximately forty terms that are used in the Yucca Mountain Review Plan text, but are not defined. The commenter suggested that these terms be added to the glossary.

Response. The glossary should define the terms used in the Yucca Mountain Review Plan. The glossary, however, provides general definitions and is not intended to be exhaustive as to all technical terms that may be used by a reviewer of a license application.

In response to this comment, the glossary has been revised to add terms that would be useful to a general reader.

9.5 Use of a Risk-Informed, Performance-Based Yucca Mountain Review Plan

Issue 1: Is the Yucca Mountain Review Plan sufficiently risk-informed, and performance-based?

Comment. One commenter noted the NRC commitment to conduct a risk-informed, performance-based licensing review for a potential high-level waste repository at Yucca Mountain. However, the commenter stated that the application of risk-informed, performance-based principles in the Yucca Mountain Review Plan was uneven. The commenter cited examples from the "Introduction" (now Appendix A) to the Yucca Mountain Review Plan that indicated risk-informed, performance-based principles were applied only where there was some reason to do so. The commenter argued that application of such principles should be a fundamental part of all NRC review activities. The commenter cited several specific examples from the Introduction to make the point that risk-informed, performance-based principles were unevenly applied in the Yucca Mountain Review Plan.

In addition, the commenter defined three items needed to consistently apply risk-informed, performance-based principles in the Yucca Mountain Review Plan: (i) Recognition that DOE has the latitude to make risk-informed, performance-based judgments as to what should be included in a license application and that NRC will determine whether it agrees with these judgments; (ii) revision of sections of the Yucca Mountain Review Plan that contain an excessive level of detail, particularly those sections dealing with repository design and Commission assumptions about the relative importance of specific features, events, and processes; and (iii) recognition that risk-informed, performance-based principles are especially important in a step-wise licensing process.

In support of these arguments, that commenter stated that consistent application of risk-informed, performance-based licensing principles would allow flexibility and would encourage the learning and development that would occur over a repository lifetime, thereby improving the protection of health and safety.

Finally, the commenter identified specific locations in the draft Yucca Mountain Review Plan that are inconsistent with risk-informed, performance-based principles; contain

an excessive level of detail or prescription; or preclude necessary licensee flexibility. These locations are summarized here.

(1) Section 3, "Review Plan for General Information," is, in general, overly detailed and prescriptive.

(2) Section 3 does not adequately recognize that, at the construction authorization stage, information in some areas may not be as highly developed as in others.

(3) Section 4.2.1.3, "Model Abstraction," could be significantly streamlined. Rather than redundantly repeating the five generic Acceptance Criteria and related guidance, this material could be stated once and then applied to each of the 14 model abstractions. (This comment was made by another commenter on the review plan as well). The commenter stated that making this change would require a rewrite of the entire section, resulting in approximately 10 pages, rather than 109 pages, which could be applied with improved consistency and flexibility.

(4) Section 4.4, "Performance Confirmation Program," is inconsistent with the risk-informed, performance-based nature of 10 CFR Part 63, would be impractical to implement, and contradicts what has been learned about total system performance assessment and subsystem performance requirements by placing detailed stipulations on the specific scientific and technical measures that must be taken to meet the already stated expectations of the "Performance Confirmation Program." (Responses to comments received on Section 4.4 of the draft Yucca Mountain Review Plan are consolidated in Section 7 of this comment response document).

(5) Section 4.5.1, "Quality Assurance," is too restrictive, inconsistent with other NRC criteria for Quality Assurance Program Descriptions, and will necessitate continual implementation of the Quality Assurance Program Description change process. (Responses to comments received on Section 4.5.1 of the draft Yucca Mountain Review Plan are consolidated in Section 8 of this comment response document.)

One commenter suggested that "risk-informed," and "performance-based" be specifically defined in the Yucca Mountain Review Plan.

Response. Changes have been made throughout the Yucca Mountain Review Plan to address these and other comments. For example, the review plan explains that DOE may make risk-informed, performance-based judgments as to what should be included in a license application, and NRC has to