

Commission believes the regulations, as proposed, provide the necessary flexibility for making licensing decisions consistent with the amount and level of detail of information appropriate to each licensing stage. However, we agree with DOE that the proposed requirement at Section 63.24(a) speaks to the content of the initial application, as well as to all subsequent updates, and, therefore, it has been included at the end of Section 63.21(a).

The information provided at each stage should be sufficient for NRC staff to make the requisite findings for the licensing action being contemplated, whether, for example, it be issuance of a construction authorization or a license to receive and possess waste.

The Yucca Mountain Review Plan has been revised, as appropriate, to clarify the step-wise approach to licensing a geologic repository for high-level waste at Yucca Mountain and the information required for each licensing step.

### 9.3 Organization of the Yucca Mountain Review Plan

*Issue 1:* Should the Yucca Mountain Review Plan be reorganized to better support both preparation of an application and a licensing review?

*Comment.* Commenters noted that having a license application correspond to the structure of the Yucca Mountain Review Plan is important for NRC staff's review. Similarly, since the DOE will have to prepare and maintain a safety analysis report throughout the lifetime of a repository, a structure that most efficiently presents the required information is also important. The commenters suggested that a Yucca Mountain Review Plan more similar in structure to a reactor license application would facilitate license preparation by DOE, review of the application by NRC, and maintenance of the safety evaluation report over the lifetime of the facility. The commenters also suggested that restructuring of some areas of the Yucca Mountain Review Plan, such as the performance confirmation section, would enhance the transparency and traceability to DOE's supporting technical information. Specific recommendations to achieve this restructuring were provided for the preclosure safety; postclosure safety; and general information sections of the plan. The commenters also suggested that NRC state in the Yucca Mountain Review Plan that DOE may use a format different from that presented in the Yucca Mountain Review Plan.

With respect to the preclosure safety section of the Yucca Mountain Review Plan, one commenter suggested that a logical format would be to present design information followed by the

preclosure safety analysis. This format would allow design information relevant to each structure, system, and component to be presented in its own subsection, rather than being split into separate areas as in the Yucca Mountain Review Plan. The commenter noted that as low as is reasonably achievable requirements are typically addressed as a design requirement for normal operations rather than as a consequence of hazards. Therefore, the commenter recommended that the as low as is reasonably achievable requirements be addressed in a new subsection of the Yucca Mountain Review Plan that provides a comprehensive review of the radiation protection program proposed for the facility. This new section would cover the as low as is reasonably achievable design aspects as well as the commitment to these principles during operations.

With respect to the postclosure safety section of the draft Yucca Mountain Review Plan, commenters noted that the draft Yucca Mountain Review Plan structure differs from that used previously by DOE and could make it difficult to present a cohesive story regarding total system performance while demonstrating compliance with the five acceptance criteria for each model abstraction. The commenter recommended that the Yucca Mountain Review Plan be rewritten to generally state that the five review methods (and corresponding acceptance criteria) are to be applied to the model abstractions as DOE determines. The commenter notes that, in previous documents, DOE communicated its postclosure safety approach in terms of the movement of water from the surface through the mountain to the accessible environment, which is different from the structure currently presented in the Yucca Mountain Review Plan.

Commenters identified locations in the draft Yucca Mountain Review Plan relevant to their concerns.

*Response.* The Yucca Mountain Review Plan should provide a structure for the license application as a means to promote efficiency in both preparation of an application by DOE and the license application review by NRC staff. Long-term maintenance of the safety analysis report might also be enhanced. The structure of the Yucca Mountain Review Plan was intended to provide this structure and to inform the prospective applicant as to the preferred organizational structure of the license application.

Organization of the application along the lines of a power reactor application may not be appropriate for a potential repository for high-level waste. Among

the considerations that defined the structure of the Yucca Mountain Review Plan are: (i) The requirements for the content of a license application at 10 CFR 63.21; (ii) the need to focus a licensing review on compliance with risk-informed, performance-based performance objectives being implemented in 10 CFR part 63; and (iii) the specification, in 10 CFR part 63, of techniques to be used to demonstrate compliance both during operations and after permanent closure.

Because regulatory guidance cannot impose regulatory requirements, DOE is not required to use the format presented in the Yucca Mountain Review Plan, however, a different format could prolong the duration of the NRC licensing review.

As for the suggestion that the preclosure safety section (Section 4.1 of the draft Yucca Mountain Review Plan) first present design information followed by the preclosure safety analysis, the approach currently in the plan is consistent with the steps required for a preclosure safety analysis. These techniques are based on hazard and consequence analysis methodologies that are widely accepted for complex facilities. The purpose of the preclosure safety analysis is to determine whether the preclosure performance objectives will be met. Consequently, the review steps in the Yucca Mountain Review Plan logically lead from hazard identification through consequence analyses to assessment of compliance with performance objectives. Related to this approach is the need to use risk information to focus the NRC staff review. The preclosure safety analysis will be used by DOE to identify those structures, systems, and components important to safety. Since these structures, systems, and components have not yet been identified, the Yucca Mountain Review Plan is not structured around the design of the repository.

As low as is reasonably achievable requirements are typically addressed as a design requirement for normal operations rather than as a consequence of hazards. However, for a preclosure safety analysis for a repository meeting these requirements can appropriately be linked to the radiological risks of a repository. Since these risks will be evaluated as part of the preclosure safety analysis process, NRC staff prefers to evaluate them as part of its review of DOE's preclosure safety analysis.

Comments on the postclosure safety section of the Yucca Mountain Review Plan may have misinterpreted the review approach. NRC staff is aware that