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Mr. Robert Bills
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Dear Bob:

This letter contains comments on the draft Repository Seals Program Position Paper (Oct. 14, 1994) (the "draft").

It is not possible to state concerns with any specificity in response to the draft, because the draft does not disclose the Project's position concerning the critical issues. Beyond stating general concerns as to the prospect of failure of repository seals, it is not possible for stakeholders to participate effectively in the SPM process unless the Project first sets forth its plans and proposals to achieve compliance and thus provides something to respond to.

Further, I anticipate that when a definitive position is ultimately stated, analysis will require technical expertise beyond that possessed by this office or any other agency of state government. DOE has discussed such assistance with this office but has not provided any funds.

Comments on the draft, which must be regarded as incomplete for the reasons stated, are as follows:

1. There is reference to a "design requirements document." (draft at 2). Please provide a copy of this document or a citation to a publicly available source.

2. Section 3 outlines the design concept but contains neither data as to design objectives nor data that demonstrate that the objectives can be attained.

3. The assumption is made that salt in the middle column will consolidate to host rock density in 100 years. (draft at 10). What data support this assumption?

4. There is reference (at 10) to two forthcoming Sandia reports: one on the seal design and one on the materials selection and performance expectations. Without such reports it is not possible to express stakeholder concerns. When will they be issued? Please provide copies as soon as possible.

5. Statements are made as to the creep closure of salt creating a seal around the middle and lower short-term components (at 11). No data are provided in support; thus, the statements cannot be accepted. At present the PA does not model the performance of shaft seals. (see Performance Assessment Review Team's Independent Review of WIPP Performance Assessment Activities, Feb. 1994, at 6-23). Incorporation of models which reproduce water flow from overlying aquifers, the DRZ around the shafts and drifts, the reconsolidation of the DRZ salt, and Salado brine inflow in addition to the permeability and compaction of seal materials is necessary to identify the appropriate seal design parameters and to determine whether they can be met.

6. The draft states that the middle and lower salt columns are expected to consolidate to the permeability of host rock salt within 100 years (at 11). No data are provided, and the statements cannot be accepted. One pertinent work (Van Sambeck et al., 1993) in fact declares uncertainty as to the critical requirement as to the length of reconsolidated salt above the shaft station (at 96), notes unresolved concerns about the use of bentonite (at 72), crushed salt (at 76), compressed-salt blocks (id.), concrete (at 77), and quarried-salt blocks (at 85), and concludes that "a fully defensible recommendation of any of the presented alternatives cannot be made." (at 97).

7. The draft acknowledges that "key questions remain" about seal performance (at 12). Such situation obviously creates stakeholder concern.

8. The draft notes that certain aspects of the 1992 PA are not defensible (omission of post-Culebra strata, lack of a model of the full repository, permeability values). These are other sources of stakeholder concern. We would not agree with permeability values in excess of those shown in Table 4.1, as used for SPM calculations, without additional data support. The draft noes the lack of laboratory and large-scale field tests (at 1).

9. For clarity, the draft should indicate exactly how the modeled elements relate to the elements of the seal design. The relations at present are unclear.

10. Why is a permeability of 10^{-13} m^2 used for the upper shaft seal in current PA calculations, yet the value used in SPM is sampled between 10^{-12} m^2 and 10^{-14} m^2? (Table 4.1; draft at 19)

11. Again, why do PA calculations use lower shaft seal permeability values which are much lower than the values used for SPM purposes? (Table 4.1; draft at 20)

12. Why are permeability values for the upper shaft, backfill/experimental region, and panel seals different in PA calculations than in SPM analysis? (Table 4.1; draft at 21)

13. Please provide the data supporting the current assumption as to initial brine saturation, which assertedly authorizes use of the range of 0.0004 to 0.052 (draft at 21).

14. There is reference to "guidance received from WIPP PA" which is "documented in QA files" (draft at 22). Please provide these materials.

15. The statement (at 25) which assumes that human intrusion will not occur until 1000 years after disposal is gratuitous, since such assumption is indefensible.

16. Section 5 extensively lists "internal" and "external" issues which need to be examined further. The Project will have to determine its position on these issues before a final white paper on seals can be presented. When such position becomes clear, it may raise further concerns on the part of stakeholders.

Thank you for your consideration of these views.

Best regards,

Lindsay

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