

CALICO HILLS LETTER

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Mr. Ralph Stein, Associate Director
for Systems Integration and Regulations
Office of Civilian Radioactive Waste Management
U. S. Department of Energy, RW 30
Washington, D.C. 20545

JAN 05 1990

Dear Mr. Stein:

On September 21, 1989 NRC, DOE, and the State of Nevada participated in a conference call to discuss the DOE's plans for conducting a risk-benefit analysis of alternative methods for adequately characterizing the Calico Hills unit. DOE laid out a step-by-step approach that, based upon regulatory considerations related to public health and safety and waste isolation (need to obtain data versus potential compromise of the site's ability to isolate waste) and programmatic (cost, schedule) considerations, would ultimately lead to selection of the method by which the Calico Hills unit is to be characterized. I recognize that this discussion was preliminary in nature and did not constitute a request by DOE for an NRC review of its plan, which is still undergoing development. However, the NRC staff which participated in the teleconference considered that a few staff observations might be useful to DOE at this stage in its planning effort.

The plan as verbally expressed over the telephone appeared to be a highly sophisticated and complex probabilistic decision analysis. It was unclear whether relatively straightforward technical analyses of the data needs in the Calico Hills unit and of the various approaches to obtaining those data would play a central role in the overall plan. There is a potential danger that the intricate mechanisms of the decision analysis might overshadow the need for a strong technical and regulatory underpinning for the decision.

Another staff observation is the manner in which regulatory and programmatic risks and benefits appear to be mixed together in the analysis. It would be inadvisable to introduce the possibility, however slight, that an approach that might not be acceptable from a waste isolation perspective could be selected because of its overall highly favorable rating when cost and schedule are factored into the analysis. One way of ensuring that such a possibility does not exist is to complete an analysis of the risks and benefits of different approaches based on waste isolation considerations (how well the information needs are satisfied versus the risks to the site's ability to isolate waste) and then to do a cost and schedule analysis of those approaches determined to be acceptable.

The staff's final observation is the apparent heavy reliance of the decision methodology on expert judgment. Instead of preferable approaches such as gathering data in the field or laboratory, or of executing physical, engineering, and/or performance analyses, for incorporation in the decision methodology, it appeared that DOE might choose to rely on expert opinion as the main information that gets processed. The NRC staff has several comments in the Site Characterization Analysis of DOE's Site Characterization Plan for the Yucca Mountain site expressing concerns about the possibly inappropriate use of expert judgement, and these comments could be useful to DOE as it develops its decision methodology.

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At the November 7, 1989 NRC-DOE meeting on future interactions, NRC and DOE agreed to have a technical exchange in June 1990 encompassing the topic of characterization of the Calico Hills unit as well as other aspects of unsaturated zone testing. We look forward to that opportunity for fuller discussion of approaches to characterizing the Calico Hills unit.

If you have any questions concerning this letter, please contact King Stablein (FTS 492-0446) of my staff.

Sincerely,

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John J. Linehan, Director
Repository Licensing and Quality
Assurance Project Directorate
Division of High-Level Waste Management

- cc: R. Loux, State of Nevada
- C. Gertz, DOE/NV
- S. Bradhurst, Nye County
- M. Baughman, Lincoln County
- D. Bechtel, Clark County
- K. Turner, GAO

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