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MEMORANDUM FOR: Clayton L. Pittiglio  
Repository Projects Branch  
Division of Waste Management

FROM: R. John Starmer  
Geotechnical Branch  
Division of Waste Management

SUBJECT: COMMENTS ON "PERFORMANCE OF ENGINEERED BARRIERS IN A  
GEOLOGIC REPOSITORY - DRAFT FINAL REPORT - TUFF  
(TASKS 3 AND 4)"

As requested, I have reviewed the subject draft report for technical content. As agreed, my comments were delivered to you in the form of marginal notes. I also made some editorial suggestions on the manuscript.

My general comment is that the presentation is uneven in form and content. In particular, the authors do not seem to have taken full advantage of the information which is available from the NNWSI program. I have made numerous suggestions in my marginal notes but two documents deserve emphasis:

- 1) "Repository Site Data Report for Tuff: Yucca Mountain, Nevada" (NUREG/CR-2937), and
- 2) "Summary Report on the Geochemistry of Yucca Mountain and Environs" (LA-9328-MS).

In addition, the report does not emphasize the poor state of understanding of geochemical processes in the unsaturated zone and the resulting uncertainty in predictions of leaching and transport above the water table (cf. section 7.2.2. or 7.2.3). This probably should be discussed in a couple of paragraphs which cover uncertainty in mechanisms and uncertainty in data (particularly applicability of data obtained under saturated conditions to the unsaturated zone).

Overall however, the report seems to cover the required areas at about the required level of detail. I will be glad to discuss my comments with

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you and would suggest early Friday, December 23, 1983, as a tentative meeting time. Please call to finalize the time and date.

LSI

R. John Starmer  
Geotechnical Branch  
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