

JB/87/11/09

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MEMORANDUM FOR: B. Joe Youngblood, Chief
Operations Branch
Division of High-Level Waste Management, NMSS

FROM: Ronald L. Ballard, Chief
Technical Review Branch
Division of High-Level Waste Management, NMSS

SUBJECT: REVIEW OF SNL DRAFT PROBABILITY REPORT (FIN A-1165)

As requested, the geochemistry chapter in the draft report "Techniques for Determining Probabilities of Events and Processes Affecting the Performance of Geologic Repositories," has been reviewed. In general, as stated on page one of the executive summary of the draft report, the geochemistry chapter should consist of "... a literature review that assembles and discusses existing techniques that can assign or can be helpful in assigning probabilities to events and processes..." and "...a brief description of a technique that could be used immediately for assigning probabilities to events or processes of concern." However, unlike other chapters in the report, the chapter on geochemistry discusses uncertainties in geochemistry data and does not discuss techniques for assigning probabilities to geochemistry events and processes.

The fact that the geochemistry chapter focuses on uncertainty of geochemical data and not the probabilistic treatment of geochemical events and processes is not surprising because geochemistry is a subject of conditions and processes that are continuous (i.e. sorption, solubility, rock/mineral stability), and probabilistic methodology was developed for predicting phenomenon that are discontinuous (i.e. earthquakes). Therefore, it is recommended that this chapter be deleted from the document because the information provided has little to do with determining the probability that geochemical processes and events will occur in a high-level waste repository.

The geochemistry chapter does, however, describe methods of handling uncertainties of geochemical data. Therefore, we may incorporate some of this information in future geochemistry documents that cover uncertainty analysis and error propagation. Enclosed is a markup of the chapter with some editorial comments. If you have any questions about this review, please contact John Bradbury at x74055.

ORIGINAL SIGNED BY

Ronald L. Ballard, Chief
Technical Review Branch
Division of High-Level Waste Management, NMSS

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PDR WMRES EXISANL
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Enclosure:
Markup of Geochemistry Chapter

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DATE:

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