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Department of Nuclear Energy

December 28, 1983

Mr. Everett A. Wick
High Level Waste Licensing Management Branch
Division of Waste Management
Mail Stop 965 SS
U. S. Nuclear Regulatory Commission
Washington, D. C., 20555

WM Project 10, 11, 16
Docket No. 10, 11, 16
Record File
A-3164
A-3167
Distribution
Wick
(Return to WLM 625-SS) WLM

Dear Mr. Wick:

Comments on NRC Response to BNL October Monthly Progress Report

In our October 1983 Monthly Progress Report we demonstrated that waste glass hydration in a steam/air environment, as described by Bates (Science, Vol. 218, 1982, p. 51), was a possible degradation mode for a tuff repository in the unsaturated zone. Comments by SRL staff, which state that only liquid water could contact the glass, were thus shown to be incorrect.

You requested, in your review of the subject Monthly Report, that BNL address the situation in which glass is emplaced in a saturated zone where liquid water would be present. We feel, however, that this is unnecessary since almost all of the prior work by BNL on glass/water interactions in the FIN A-3164 and A-3167 programs addresses this rather comprehensively. In the presence of high temperature liquid water we agree with SRL that surface reactions on the glass are likely to be quite different from those specified by Bates for the steam phase.

Our only intent in describing Bates' work, and the SRL rebuttal of it, was to show that Bates' scenario for glass hydration was valid, and that SRL had misunderstood the specific repository conditions that were being addressed.

Sincerely,

Peter Soo, Associate Division Head
Nuclear Waste Management Division

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PDR WMRES EXIBNL
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