



UNITED STATES DEPARTMENT OF COMMERCE  
National Bureau of Standards  
Gaithersburg, Maryland 20899

June 27, 1988

Mr. Charles Peterson  
Technical Review Branch  
Division of High-Level Waste Management  
Office of Nuclear Materials Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Mr. Peterson:

This is our reply to your informal request for general technical assistance, rendered under Task 4 of FIN-A-4171-7, on the following topic: NBS Comments on Preliminary Safety Analysis Report (PSAR), Vitrification System, Revision III; West Valley Demonstration Project SAR Volume III, August 1985.

Our reading of the subject report indicates that questions concerning sampling, composition, and homogeneity, and the related issues of durability and leachability that would be of concern to us are not addressed directly in this report, although they may be touched upon in incidental ways. For example, Tables C.4.1-7, -8, -9 give chemical compositional information on the glass waste form, the radionuclide content, and glass formers, respectively. However, the context of the presentation of this information is related to the short-term safety questions related to processing, not to any long-term safety concern. Therefore, our interpretation is that these presentations do not directly address any of our concerns.

We do question whether the broad range of compositions listed in Table C4.1-7 would be uniformly durable in a repository environment, but this question is not addressed in this type of a report. We would like to see evidence that the broad range of chemical compositions indicated in this table have similar durability and leaching properties.

Note that two of the values given in Table C.6.2-2 on WV-205 Glass Physical Property Data appear to us to be in error. We suspect that the upper linear expansion coefficient should be  $10.76 \times 10^{-6}/C$  and the lower  $9.9 \times 10^{-6}/C$ .

These comments were developed from the views of Dr. E. Plante and a consultant, Mr. B. Adams.

Sincerely,

Charles G. Interrante  
Program Manager  
Corrosion Group  
Metallurgy Division

cc: Neville Pugh, Chief  
Metallurgy Division

David Anderson, Group Leader  
Corrosion Group

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