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Mr. Dwight E. Shelor, Associate Director
for Systems and Compliance
Office of Civilian Radioactive Waste Management
U. S. Department of Energy
1000 Independence Avenue, SW
Washington, D. C. 20585

Dear Mr. Shelor:

SUBJECT: NRC STAFF VISIT TO VITREOUS STATE LABORATORY OF CATHOLIC UNIVERSITY
OF AMERICA

On December 9, 1992, staff from the Nuclear Regulatory Commission Division of High-Level Waste Management met with representatives from the U.S. Department of Energy (DOE), State of Nevada, and the Vitreous State Laboratory (VSL) of the Catholic University of America for an overview of VSL research on different kinds of glasses for use in radioactive waste disposal. The overview included discussions on simulated glasses representative of the waste in DOE facilities at West Valley, New York and Savannah River, South Carolina. After presenting an overview of current issues in waste glass, the VSL staff conducted a laboratory tour at their vitrification and glass characterization facilities. Enclosed is a list of attendees who participated in the site visit.

During the site visit, staff from the NRC made several observations concerning vitrification processes at VSL. The staff expressed interest in the effects which glass fracturing can have on glass performance, and the degree to which fracturing can be minimized or controlled (e.g., slower cooling of the hot melt). VSL staff indicated that they have had dynamic leach tests in continuous progress for 11 years on Savannah River-type glass, and seven years on West Valley-type glass; however, DOE has terminated funding for these tests, and VSL is under no obligation to maintain the tests in progress. These tests are the longest of their type in progress, and the staff is concerned that this data base may be lost. Additionally, the staff concluded that research at VSL indicated that some glasses can exhibit long-term periodic oscillations (e.g., soda-lime glasses) or excursions (e.g., simulated waste glass) in leach rate behavior. If repository glasses exhibit this kind of behavior, it would have to be accounted for in the source term models developed for repository and repository subsystem performance assessments.

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Mr. Dwight. E. Shelor

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If you have any questions on this subject, please contact Mr. Robert Carlson of my staff. Mr. Carlson can be reached at (301) 504-2435.

Sincerely,

JS

Joseph J. Holonich, Director
Repository Licensing and Quality Assurance
Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure: As stated

- cc: R. Loux, State of Nevada
- T. J. Hickey, Nevada Legislative Committee
- C. Gertz, DOE/NV
- S. Bradhurst, Nye County, NV
- M. Baughman, Lincoln County, NV
- D. Bechtel, Clark County, NV
- D. Weigel, GAO
- P. Niedzielski-Eichner, Nye County, NV
- B. Mettam, Inyo County, CA
- V. Poe, Mineral County, NV
- F. Sperry, White Pine County, NV
- R. Williams, Lander County, NV
- L. Fiorenzi, Eureka County, NV
- L. Vaughan II, Esmeralda County, NV
- C. Schank, Churchill County, NV
- E. Holstein, Nye County, NV

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Mr. Dwight. E. Shelor

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If you have any questions on this subject, please contact Mr. Richard Weller of my staff. Mr. Weller can be reached at (301) 504-3458.

Sincerely,

Joseph J. Holonich, Director
Repository Licensing and Quality Assurance
Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards

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NAME	RWeller		RJohnson		RWeller		RBallard		JHolonich
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ATTENDEES - VSL SITE VISIT

December 9, 1992

<u>Name</u>	<u>Description</u>	<u>Phone #</u>
Corinne Macaluso	DOE HQ/RW-331	(202) 586-2837
Paul M. Krishna	M&O/TRW	(202) 488-2303
Rick Weller	NRC/HLWM	(301) 504-3458
Kien Chang	NRC/HLWM	(301) 504-2525
Tae Ahn	NRC/HLWM	(301) 504-2531
Dave Dancer	NRC/HLWM	(301) 504-2049
Maury Mogenstein	GMI/STATE NV	(702) 294-3064
Pedro Macedo	VSL/CUA	(202) 319-5327
Walter Sullivan	NASA/BSRC/702	(301) 286-5169
Aaron Barkatt	CUA	(202) 319-5522

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