



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUN 10 1992

Thomas Rowland, Director
West Valley Project Office
U.S. Department of Energy
P.O. Box 191
West Valley, NY 14171

Dear Mr. Rowland:

The Nuclear Regulatory Commission has reviewed the Waste Form Interim Qualification Report on West Valley Demonstration Project Stabilized Sludge Wash Cement Waste and the Process Control Plan for Cement Solidification of Sludge Wash Liquid, WVNS-PCP-002. These documents address the solidification of sludge wash solution containing 20±1 weight percent total dissolved solids (TDS). We received drafts of them at the Operational Readiness Review summary meeting on April 16, 1992. Our comments were discussed with West Valley Project Office (WVPO) and West Valley Nuclear Services (WVNS) staff at a meeting at NRC on May 6, 1992.

Although several issues remain to be resolved, NRC staff has concluded that the data contained in the Interim Qualification Report provides reasonable assurance that the cement solidification system will produce waste forms that meet the waste form stability requirements of 10 CFR 61.56 and the provisions of the NRC's Technical Position on Waste Form Revision 1, January 1991. Although the data is not complete, our ongoing examination of the waste form qualification documents thus far has not revealed any major issues that would prevent WVNS from commencing the sludge wash cement solidification using the proposed 20±1% TDS recipe. It appears that the earlier problem with failures of the 33% specimens under immersion has been adequately addressed by this reduction in TDS from 33% to 20%.

One issue that remains to be resolved is the completion of several tests proposed by WVNS to be performed on waste form qualification specimens produced from the first set of waste drums of actual sludge wash. We understand that this qualification testing will be performed in addition to that which has already been performed on surrogate waste forms. The chemical analyses of sludge wash compared to the composition of the surrogate waste indicate that the surrogate is sufficiently similar to the sludge wash to provide reasonable assurance that the sludge wash waste forms will behave in a manner similar to the surrogate waste forms. However, this additional testing is expected to provide more conclusive evidence that the waste forms will perform as required.

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Another issue is that of the preparation and testing of long-term surveillance specimens of the sludge wash waste forms. Although the Technical Position on Waste Form Revision 1 does not specifically recommend surveillance testing for this waste type, we suggest that a surveillance program similar to that performed for the supernatant be planned for the sludge wash as well. This surveillance program should include 14-day immersion testing as described in Section VII of Appendix A to the Technical Position. This is particularly important in view of the early problems with immersion testing of sludge wash specimens.

We have received Revision 1 of the Interim Report and the Process Control Plan (PCP), that have been revised according to our discussions on May 6. Based on a preliminary review, we have concluded that the revisions appear to address our comments of May 6. NRC will perform a detailed review of the revised documents, and will inform you if we note any issues that we believe may affect the sludge wash waste form.

Since this 20% solids program is of an interim nature, NRC does not plan to prepare a Technical Evaluation Report (TER) for this interim program. A TER will be prepared after the final 24-27% solids qualification report has been reviewed.

At the April 16 Operational Readiness Review meeting we were also given a set of test plans and procedures for qualification of another cement recipe, one that uses a higher solids concentration (24-27%) mixed with Type I cement. NRC is being asked to review these test plans; however, West Valley intends to begin testing without waiting for the conclusions of the NRC review. We understand that this testing is expected to be completed in September 1992, and that the WVPO plans to request NRC evaluation of this second recipe in November 1992.

We understand also that West Valley is developing a third cement recipe, using 25-35% solids mixed with Type V cement. Testing of this recipe is expected to lag 1-2 months behind testing of the 24-27% and Type I cement mixture. NRC will be asked to review this recipe after the testing is completed.

We also understand that if the second or third recipes are successful, West Valley plans to change to one or the other of them later in the sludge wash campaign.

As stated above, NRC intends to respond to West Valley submittals in a timely manner; however, a minimum of two months, after NRC receives the test results and report, will usually be needed to complete the NRC review and provide our evaluation. This period is necessary to coordinate our review efforts with our contractors and to obtain concurrences on the results of our review within NRC.

Mr. Thomas Rowland

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With respect to the completed supernatant solidification program, West Valley had previously proposed a long-term (5-year) confirmatory testing program to be performed on the solidified supernatant waste forms. West Valley had committed to providing this data to NRC; however, NRC has not received the recorded results of this long-term testing. At a meeting in Buffalo in November 1991, Mr. Ron Palmer of WVNS had indicated that the testing had been performed, and the results so far were satisfactory in that the compressive strength values had been increasing over time. NRC requests that the results of this long-term program be provided to the NRC.

If you have any questions, please contact me or Mary Adams at 301-504-2505.

Sincerely,



Paul H. Lohaus, Chief
Low-Level Waste Management Branch
Division of Low-Level Waste Management
and Decommissioning
Office of Nuclear Material Safety
and Safeguards

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If you have any questions, please contact Gary Comfort at 301-504-2667 or Mary Adams on 301-504-2505.

Sincerely,

Paul H. Lohaus, Chief
Division of Low-Level Waste Management
and Decommissioning
Office of Nuclear Material Safety
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SUBJECT ABSTRACT: WEST VALLEY SLUGE WASH, 20% TDS IN TYPE I
CEMENT REVIEW
*SEE PREVIOUS CONCURRENCE

OFC :LLWB* :LLWB :LLWB

NAME: MAdams :JKane :PLOhaus

DATE: 4/22/92 : :

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Mr. Thomas Rowland

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