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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001
February 11, 1997

MEMORANDUM TO: Robert C. Pierson, Chief
Special Projects Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Materials Safety and Safeguards

THROUGH: Michael Tokar, Chief
Tank Waste Remediation System Section
Special Projects Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Materials Safety and Safeguards

FROM: John G. Spraul
Tank Waste Remediation System Section
Special Projects Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Materials Safety and Safeguards

SUBJECT: OBSERVATION AUDIT OF THE WEST VALLEY DEMONSTRATION PROJECT

During January 27-30, 1997, I performed an observation audit of the U.S. Department of Energy (DOE), Environmental Management, Office of Waste Management, Office of Technical Services (EM-37) compliance audit of the quality assurance (QA) program of the West Valley Demonstration Project (WVDP). This audit was conducted at the WVDP facilities in West Valley, New York. The audit evaluated the adequacy and effectiveness of the WVDP QA program as applied to the WVDP activities related to high-level radioactive waste form production. The audit took place while WVDP personnel were completing the fill of the 69th of some planned 300 canisters with the high-level radioactive waste slurry at the West Valley site. The report of my observation audit is Attachment 1.

The objectives of my trip were: (1) to become familiar with the WVDP processes and procedures for vitrification of high-level radioactive waste and its associated QA program and (2) to gain confidence that the DOE Office of Civilian Radioactive Waste Management (OCRWM), EM-37, WVDP, and their contractor/subcontractor personnel are properly implementing the requirements of their organizations' QA programs in accordance with the OCRWM Quality Assurance Requirements and Description Document (QARD - DOE/RW-0333P) and Title 10 of the Code of Federal Regulations (10 CFR), Part 70 - Subpart 70.22(f), and Part 60 - Subpart G. (Both subparts reference Appendix B of 10 CFR Part 50.)

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CONTACT: Jack Spraul, FCSS/SPB/TWRS
415-6715

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At the pre-audit meeting on January 27, the audit team leader described the purpose of the audit and introduced the audit team members and observers. WVDP personnel then described the WVDP organization and ongoing activities. Handouts from their presentations are Attachments 2-4. A tour of the vitrification facility followed.

During the course of the audit, I observed the tungsten-inert gas closure weld of a canister as well as the movement of a welded canister from the weld station into the decontamination station. I also toured the chemistry laboratory where samples from each melt are tested.

On Tuesday afternoon (January 28), I attended a WVDP briefing concerning the December 1996 incident at Fernald, Ohio, where the melter at Fernald's vitrification pilot plant developed a leak that deposited about a ton of molten glass on the floor. The individual who presented the briefing had recently returned from Fernald where he had been a member of a team investigating the incident. Attachment 5, a copy of the "overhead" used at the briefing, shows the major differences between the melters and their operation at West Valley and at Fernald. The presenter described how, in his opinion, these differences caused the incident at Fernald. He expressed his belief that Fernald's higher operating temperature, higher lead content, and lesser REDOX control were the principal causes of the problem. Based on his experience, he opined that WVDP would not have a similar experience.

My observation of this DOE audit greatly increased my familiarization with the vitrification work that is ongoing at West Valley and planned for Hanford. I plan to observe a similar DOE audit at Savannah River later this year.

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Attachments: (5), as stated

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