

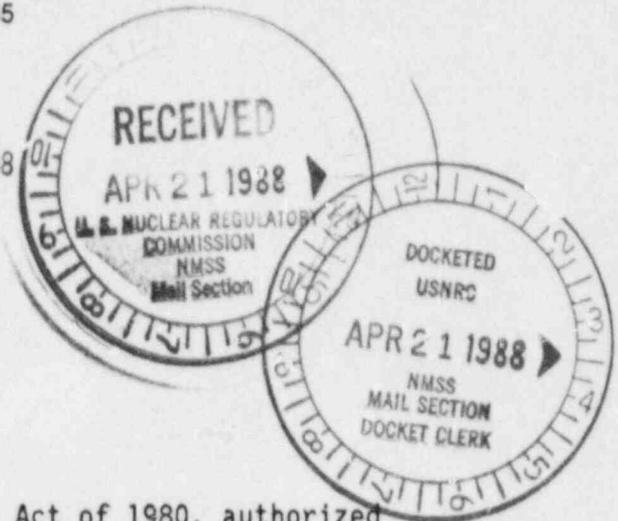
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Department of Energy  
Washington, DC 20585

APR 5 1988



Honorable Robert A. Roe  
Chairman, Committee on Science,  
Space and Technology  
House of Representatives  
Washington, D.C. 20515

Dear Mr. Chairman:

Public Law 96-368, the West Valley Demonstration Act of 1980, authorized the Department of Energy to carry out a high-level liquid nuclear waste management demonstration project at the Western New York Nuclear Service Center near West Valley, New York. The primary purpose of this project is to demonstrate solidification and preparation of high-level radioactive waste for disposal in a federal repository. The following report, prepared in response to a requirement in House Report 97-177, summarizes the status, progress, and expenditures of the West Valley Demonstration Project for the quarter ending December 31, 1987.

During the October - December quarter, the first of four 50-foot mobilization pumps was installed into spare waste tank 8D-1 in support of the process for treating the high-level waste. The design and testing of the solidification facility continued in support of a 1992 start for radioactive operations. Drop testing of the West Valley glass canisters was completed at the Pacific Northwest Laboratories, and all tests of the canisters have proven to be successful. The emphasis on the Radwaste Treatment System startup continued with the processing of 130,000 gallons of simulated supernate through the Supernate Treatment System.

The dismantling and decontamination of seven vessels from the former Extraction Chemical Room, using the new Contact Size Reduction Facility, worked off part of the backlog of contaminated items now being stored.

A total rebaselining of the Project was completed by the operating contractor. The estimate is under evaluation by the Department.

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additional information  
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Should you have any additional questions or require additional information concerning this report, please contact B. Kingsley on 586-2764.

Sincerely,

Original signed by

Delbert F. Bunch  
Principal Deputy Assistant Secretary  
for Nuclear Energy

Enclosure

cc:  
Honorable Manuel Lujan, Jr.  
Ranking Minority Member

bcc:  
J. P. Hamric, ID  
T. DeBoer, NYSERDA  
~~T. Clark, NRC~~  
W. Bixby, WVPO

ACCOMPLISHMENTS  
WEST VALLEY DEMONSTRATION PROJECT  
FOR THE QUARTER ENDING DECEMBER 31, 1987

In the preceding quarter, the eleventh test run of the nonradioactive vitrification system was completed. Checking and testing were completed for the supernate treatment system. A batch of simulated supernate was processed in the Liquid Waste Treatment System. The project received Environmental Protection Agency (EPA) approval for several new atmospheric discharge points. Construction of the low-level solidified waste storage cell was completed. Decontamination of the main ventilation duct significantly reduced the dose rate to employees working in that area. The annual project Open House attracted over 2,000 people and was favorably reviewed by several local radio and television stations.

During the October - December quarter, the first 50-foot Zeolite mobilization pump was installed into the spare waste tank 8D-1. This pump, the first of four to be installed, will be used to distribute the cesium-loaded Zeolite in the bottom of the tank during the radioactive operation of the supernate treatment system and to transfer the Zeolite from tank 8D-1 just prior to vitrification.

The completed supernate treatment system, during an integrated test, ran for 360 consecutive hours without interruption or malfunction of any major system component. Over 130,000 gallons of diluted simulated supernate were processed through the system, which operated essentially at 100 percent productivity rate. The volume of supernate treated by one column load surpassed the original predicted system capacity. The ion exchange material from the column was successfully transferred into tank 8D-1. Also, replacement supernate feed and sluice/lift water pumps were installed and approved for system use. These pumps were replaced due to a previous pump malfunction.

The concentrator feed makeup tank, which will be used to concentrate the glass feed mixture in the vitrification facility, has successfully completed performance testing at the fabricator's shop.

Another nonradioactive melter run was completed as planned. The vitrification system, operating at 100 percent on-line efficiency, converted over 3,300 liters of slurry feed into 1,040 kilograms of glass at a rate of 93 liters/hour.

To confirm that the canister which will contain the West Valley Demonstration Project (WVDP) high level waste glass is able to be safely transported to a federal repository, a series of drop tests were carried out by Pacific Northwest Laboratories. All five canisters, dropped from 7 meters, successfully survived the structural integrity tests and passed the subsequent leak measurement tests.

Project low-level liquid waste is to be solidified in cement. Modifications to the cement solidification system were completed last quarter. Integrated check out testing of the system using simulated supernate identified several areas, both mechanical and chemical, which will require further engineering. At this time, the difficulties appear capable of resolution.

The final decontamination of the Equipment Decontamination Room (EDR) is nearing completion. The vacuuming of the door slot and scarification of the east side floor were completed. In order to reduce the dose rate in

the EDR, further decontamination of the cement is in progress. An air hammer will be used to remove the top 2 inches of concrete from the floor. Also, the concrete cutter, used to cut a doorway in the EDR wall, has been reassembled for training and a series of test cuts.

The Supercompactor, which compresses 55-gallon drums that contain low-level waste, began operations in October. Several mechanical problems were experienced and corrected. Operations schedules were not significantly impacted. To date, 822 drums have been compressed and packaged.

As a result of the agreement with two groups regarding the mode of storage for low-level waste, a low-level waste storage tent has been erected. Storage tents will be used until an Environmental Impact Statement for Phase II is completed. A project interface board has been set up to meet with the local groups to resolve ongoing issues at the site.

The Contact Size Reduction Facility was approved for radioactive operation. Seven tanks from the former Extraction Chemical Room were successfully cut up. Several pieces from these tanks received further decontamination and cleaning using an abrasive wash.

A comprehensive Total Project Cost Estimate (TPCE) was completed during the past quarter. This effort, entailing full integration of scope, schedule, and budget, delineated remaining work and resources needed to complete Phase I of the Project.

The basis for a revised TPCE is now being reviewed by the Department. This new estimate indicates an increase of approximately \$300 million in total cost for the solidification phase of the Project and a 3-year extension in Project schedule. The increase is attributed to a combination of factors: an increase in the estimated cost for the solidification facility which reflects better understanding and experience with the existing full-scale melter; schedule extensions due to reduced funding profiles at the time when facility costs were rising; expanded Project scope reflective of operational experience, new Department of Energy (DOE) orders and new regulatory requirements; and higher than planned costs for the systems completed in FY 1987.

As part of the upgrade of the WVDP Emergency Operations Center, sets of emergency maps identifying site neighbors have been developed and a room has been officially designated for the Emergency Operations Center use only.

For the final quarter of calendar year 1987, West Valley Nuclear Services (WVNS) estimated that 20.064 person-rem of radiation exposure would be incurred in carrying out the work plan. The actual radiation exposure received was 7.728 person-rem (39 percent of estimated). The WVNS As Low As Reasonably Achievable (ALARA) program projected 98.3 person-rem of radiation for calendar year 1987; actual exposure received by WVNS personnel was 71.607 person-rem (73 percent of projected).

Table 1 provides a financial summary of DOE allocations and costs through this report period. Operating contractor personnel reached 439 in December 1987, down from 473 at the end of last quarter.

Table 1

FINANCIAL REPORT ON THE  
WEST VALLEY DEMONSTRATION PROJECT  
FOR QUARTER ENDING DECEMBER 31, 1987

(Dollars in Millions)

	Cumulative Costs Through Sept. 30, 1987	Cost First Quarter FY 1988	Cumulative Costs Through Dec. 31, 1987
Operating Expenses	\$246.3	\$10.9	\$257.2
Capital Equipment	1.2	0	1.2
General Plant Projects	1.5	0	1.5
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Total	\$249.0	\$10.9	\$259.9

Address List

<u>Addressee</u>	<u>Copy List</u>
1. Honorable Robert A. Roe Chairman, Committee on Science, Space and Technology House of Representatives Washington, D.C. 20515	cc: Honorable Manuel Lujan, Jr. Ranking Minority Member
2. Honorable Morris K. Udall Chairman, Committee on Interior and Insular Affairs House of Representatives Washington, D.C. 20515	cc: Honorable Don Young Ranking Minority Member
3. Honorable Philip Sharp Chairman Subcommittee on Energy and Power Committee on Energy and Commerce House of Representatives Washington, D.C. 20515	cc: Honorable Carlos J. Moorhead Ranking Minority Member
4. Honorable Tom Bevill Chairman, Subcommittee on Energy and Water Development Committee on Appropriations House of Representatives Washington, D.C. 20515	cc: Honorable John T. Myers Ranking Minority Member
5. Honorable J. Bennett Johnston Chairman, Committee on Energy and Natural Resources United States Senate Washington, D.C. 20510	cc: Honorable James A. McClure Ranking Minority Member
6. Honorable J. Bennett Johnston Chairman, Subcommittee on Energy and Water Development Committee on Appropriations United States Senate Washington, D.C. 20510	cc: Honorable Mark O. Hatfield Ranking Minority Member
7. Honorable Daniel P. Moynihan United States Senate Washington, D.C. 20510	N/A

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|--|-----|
| 8. Honorable Alfonse D'Amato<br>United States Senate<br>Washington, D.C. 20510                                     | N/A |
| 9. Honorable Jack Kemp<br>House of Representatives<br>Washington, D.C. 20515                                       | N/A |
| 10. Honorable Amo Houghton, Jr.<br>House of Representatives<br>Washington, D.C. 20515                              | N/A |
| 11. Ms. Neile Miller<br>Office of Management and Budget<br>New Executive Office Building<br>Washington, D.C. 20503 | N/A |

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