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

M-32

February 7, 1992

The Honorable Daniel P. Moynihan
United States Senator
Guaranty Building
28 Church Street, Suite 203
Buffalo, New York 14202

Dear Senator Moynihan:

I am responding to your January 17, 1992, inquiry, about the West Valley Demonstration Project, on behalf of your constituent, Joshua Kozlowski. The following briefly describes nuclear waste activities at this site.

The West Valley site originally had a commercial plant for chemical processing of irradiated nuclear fuel; it operated from 1966 to 1972. The Department of Energy (DOE) officially took over site operations in February 1982, to carry out a high-level waste-management demonstration project, as mandated by Congress, pursuant to the West Valley Demonstration Project Act (P.L. 96-368). This Act directs DOE to undertake the following five major activities: (1) solidify the liquid high-level waste stored at the site; (2) develop containers for the solidified high-level waste; (3) transport the waste to a federal repository, for disposal; (4) dispose of low-level waste and transuranic waste produced during the project; and (5) decontaminate and decommission the project facilities. The Nuclear Regulatory Commission (NRC) has been given the role of overseeing the project, by reviewing provisions to protect the health and safety of the public. This oversight role includes evaluating the stability and reliability of the waste forms resulting from project activities.

The high-level radioactive wastes are contained in three underground tanks at the site. The largest quantity of high-level wastes, by far, is stored as an alkaline solution in a carbon steel tank, designated as Tank 8D-2. Although most of the waste volume in Tank 8D-2 originally existed in a liquid form, the project has treated most of the liquid through a Supernatant Treatment System, leaving a sludge containing the bulk of the radioactive materials in Tank 8D-2. A much smaller quantity of high-level waste is contained, in an acidic solution, in a stainless steel tank designated as Tank 8D-4. No processing of Tank 8D-4 has occurred, up to the present. Finally, a third tank, Tank 8D-1, which houses the Supernatant Treatment System equipment, contains high-level radioactive waste (mostly cesium) extracted from the supernatant of Tank 8D-2. Eventually, the contents of these three tanks will be combined into Tank 8D-2 and then vitrified (i.e., solidified into a glass form) for disposal into a licensed high-level waste repository. Vitrification is scheduled to begin as early as 1996.

Although all activities at the West Valley site are oriented toward the ultimate disposal of the stored high-level waste and decommissioning of the site, many of those procedures create lower-level radioactive wastes.

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These include processing wastes, clean-up wastes, and wastes left onsite from previous operations. Although most of these low-level radioactive wastes are stored on site, DOE and the State of New York are currently preparing an environmental impact statement to provide a basis for a decision on the final disposition of the low-level wastes. This document is expected to be published in draft form in 1994.

Most of the low-level processing waste is a product of the aforementioned Supernatant Treatment System. The supernatant from Tank 8D-2 was run through resin columns to remove cesium, the liquid then evaporated, and the resulting low-level radioactive waste was made into a cement that was poured into square 70-gallon steel drums. So far, over 11,000 of these drums have been made, and this number is expected to reach near 15,000 drums after all processing is completed. Until a method of permanent disposal is decided on, these drums are stored, stacked on their sides, in a building onsite.

Miscellaneous wastes resulting from ongoing support activities and decommissioning of old facilities, including equipment having low levels of contamination, are stored in large tent-like structures on the site. This waste is generally found in stacked licensed containers. There is very little liquid of any type associated with these wastes. These wastes will eventually be disposed of in a low-level waste burial ground.

The bulk of the remaining waste was buried in past years in two separate burial areas onsite: one under NRC regulation; and the other under State of New York regulation. No radioactive materials have been buried onsite since the mid-1980s. Eventual permanent disposition of these buried wastes is still being considered.

The remaining wastes onsite include fixed contamination within the old processing building and covered bins of contaminated soil. Methods for disposition of these wastes are also being considered.

As can be noted by the descriptions of the onsite wastes, most of the radioactive wastes onsite are in a solid form, which minimizes the chance of leakage of radioactivity. The two large high-level waste tanks that do contain liquids are built with catch basins below them, and numerous leakage-detection methods are used to limit the spread of any possible leaks. If leakage does occur before the wastes in these tanks are solidified, each tank has a backup tank to which the contents of the leaking tank could be rapidly moved.

I trust that this reply responds to your constituent's concerns. Considerable information is also available to the public in the Local Public Document Room located at the Buffalo and Erie County Public Library, Lafayette Square, Buffalo, New York; and in the NRC's Public Document Room in Washington, DC under Project M-32.

Sincerely,
Original Signed By:
James M. Taylor
James M. Taylor
Executive Director
for Operations

bcc: PNair, CNWRA

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