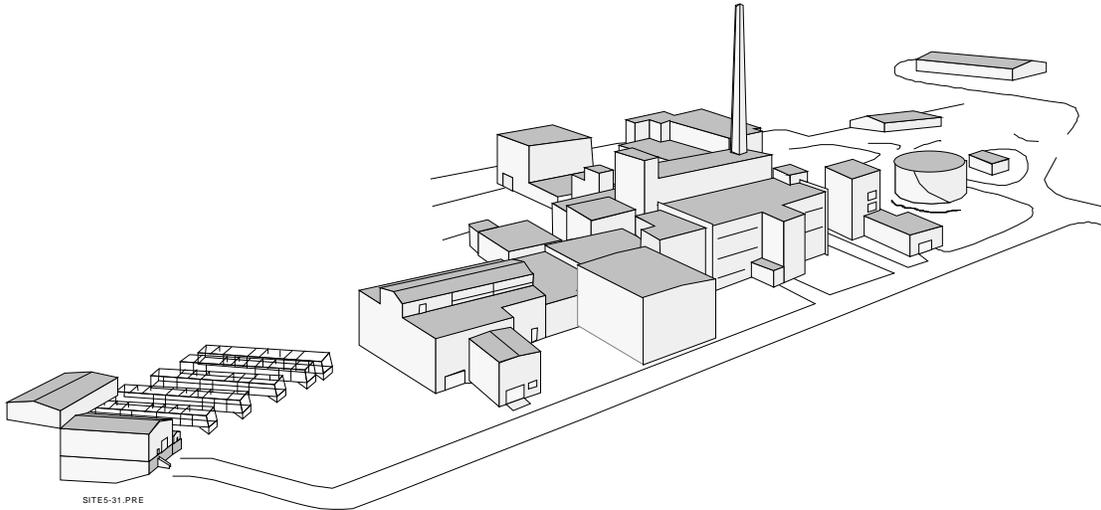

WEST VALLEY DEMONSTRATION PROJECT ANNUAL SITE ENVIRONMENTAL REPORT CALENDAR YEAR 2003



**WEST VALLEY NUCLEAR SERVICES COMPANY
AND
URS GROUP, INC.**



Prepared by: West Valley Nuclear Services Co. and URS Group, Inc.
Prepared for: U.S. Department of Energy
Ohio Field Office OH/WVDP

Under: Contract DE-AC24-81NE44139

August 2004
10282 Rock Springs Road
West Valley, New York 14171-9799



Department of Energy
Ohio Field Office
West Valley Demonstration Project
10282 Rock Springs Road
West Valley, NY 14171-9799

To the Reader:

This report, prepared by the U.S. Department of Energy (DOE) Ohio Field Office West Valley Demonstration Project (OH/WVDP), summarizes the environmental protection program at the West Valley Demonstration Project (WVDP) for calendar year 2003. As has been the practice in prior years, this report is being made available to the public as soon as possible in advance of DOE's required release date of October 1, 2004.

Monitoring and surveillance of the WVDP facilities are conducted in order to verify that public health and safety and the environment are protected. The quality assurance protocols applied to the environmental monitoring program by the DOE ensure the validity and accuracy of the monitoring data. Also included in this report are groundwater and ambient air data from the New York State Energy Research and Development Authority's (NYSERDA) New York State-licensed Disposal Area (SDA).

Air, surface water, groundwater, soil, sediment, and biological samples collected and analyzed for radiological and nonradiological constituents are evaluated for indication of potential effects of activities at the WVDP. Monitoring of treated water effluents and facility ventilation system emissions verified that the dose received by off-site residents continues to be minimal.

Calculated doses to the hypothetical maximally exposed off-site individual from airborne and waterborne radiological releases in 2003 were less than one percent of the DOE limit. Radionuclide concentrations in biological samples were at levels near or statistically identical to background concentrations.

Nonradiological liquid effluent discharges are controlled and permitted through the New York State Pollutant Discharge Elimination System (SPDES). Discharges in 2003 were within effluent limits without exception.

The Project's continuing commitment to safety was reaffirmed in 2003 when it was again awarded the DOE Voluntary Protection Program Star of Excellence Award. The WVDP is one of the few DOE sites to be awarded both the VPP Star and National Environmental Performance Track membership.

If you have any questions or comments about the information in this report, please contact the West Valley Nuclear Services Company (WVNSCO) Community Relations Department at (716) 942-2152 or complete and return the enclosed survey.

Sincerely,

A handwritten signature in black ink, appearing to read "T. J. Jackson", written over a horizontal line.

T. J. Jackson, Acting Director
West Valley Demonstration Project



SUMMARY OF CHANGES TO THE 2003 WVDP ANNUAL SITE ENVIRONMENTAL REPORT FROM THE 2002 ANNUAL SITE ENVIRONMENTAL REPORT

This report, prepared by the U.S. Department of Energy (DOE) West Valley Demonstration Project (WVDP) office, summarizes the environmental protection program at the WVDP for calendar year (CY) 2003. Monitoring and surveillance of the facilities used by the DOE for the WVDP are conducted in order to protect public health and safety and the environment. The quality assurance protocols applied to the environmental monitoring program by the DOE ensure the validity and accuracy of the monitoring data. Also included in this report are groundwater and ambient air data from the New York State Energy Research and Development Authority's New York State-licensed Disposal Area.

Changes in content for the 2003 Annual Site Environmental Report (ASER) are summarized below.

REVISIONS AND ADDITIONS

- In an effort to streamline the ASER, sections were condensed throughout and Appendices B through L were moved from the text to a compact disk to be included inside the back cover of the final report.
- The Environmental Compliance Summary was updated to describe implementation of the WVDP environmental management system (EMS), compliance with new DOE Order 450.1 (*Environmental Protection Program*), status of regulatory compliance in CY 2003, and permits effective during the year. A new table summarizing the WVDP EMS was added.
- Discussions of the vitrification process in the 2002 ASER were greatly condensed or deleted altogether because CY 2003 was the first full year since vitrification was completed.
- Data and text were updated throughout to reflect results from the CY 2003 environmental monitoring program. Modifications to the list of sampling locations and analytical constituents were summarized. Tables, graphs, maps, supplemental information sections, and references were updated. Most graphs representing time-series data were standardized to include 10-year data sets.
- The "Dose to Biota" section in Chapter 2 was updated to include dose estimates derived using the new RESRAD-BIOTA Code, issued in 2003, in accordance with Guidance for the Preparation of DOE ASERs for CY 2003.
- Appendix C tables summarizing water monitoring data were updated to include changes to chemical constituents in the monitoring program in 2003 to refine the Project's ability to evaluate surface water quality. Newly-required site drinking water monitoring test data are also included in Appendix C. Air data tables in Appendix D were reformatted for consistency with the content and format of Appendix C.
- New Appendix K-3, "West Valley Demonstration Project Act," containing the complete text of the Act, was added.

SPECIAL ISSUES IN CY 2003

- Spent nuclear fuel rods that were packaged in 2001 and awaited shipment through 2002 were successfully shipped to the Idaho National Engineering and Environmental Laboratory.
- High-level waste tanks 8D-1 and 8D-2 were placed in lay-up mode by isolating the tanks from the main plant, deactivating components, replacing and relocating pumps, and placing grout around pipe penetrations to reduce groundwater infiltration.
- The fuel receiving and storage pools (the fuel storage pool and the cask unloading pool) were drained and cleaned.
- Decontamination of the main plant south product purification cell was completed.
- Decontamination of the head end cells and extraction cell #2, also in the main plant, began early in 2003 and continued throughout the year.
- A decontamination plan for dismantlement of the vitrification facility was drafted in 2003 for implementation in 2004.
- Construction of the remote-handled waste facility continued through 2003, with start-up to occur in 2004.
- Low-level radioactive waste shipments continued.
- The WVDP Waste Management Final Environmental Impact Statement was transmitted to DOE-HQ for release to the public in January 2004.

ERRATA and CORRIGENDA
West Valley Demonstration Project
Annual Site Environmental Report (ASER)
Calendar Year (CY) 2002

Petroleum spill: An eight (8) gallon spill of petroleum was recorded and reported to the New York State Department of Environmental Conservation (NYSDEC) in December 2002. This spill was not mentioned in the Environmental Compliance Summary (ECS), on page ECS-13, for CY 2002, nor was it included in Chapter 1, page 1-19 in Figure 1-6, Number of Immediately Reportable Spills or Releases. The 2002 spill has been noted in the ECS and included in Figure 1-6 of the 2003 ASER.

Figure units: The y-axis of Figure 2-12, Collective Effective Dose Equivalent From Liquid and Airborne Effluents to the Population Residing Within 50 Miles (80 km) of the WVDP, was labeled in units of mrem instead of person-rem in the 2002 ASER. Values in Figure 2-12 have been correctly labeled as person-rem in the 2003 ASER.

If you have any questions about the above information, please contact the West Valley Nuclear Services Company Community Relations Department at (716) 942-2152.

West Valley Demonstration Project
Annual Site Environmental Report
for
Calendar Year 2003

Prepared for the U.S. Department of Energy

Ohio Field Office

West Valley Demonstration Project Office

under contract DE-AC24-81NE44139

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Preface

Environmental monitoring at the West Valley Demonstration Project (WVDP) is conducted by the West Valley Nuclear Services Company (WVNSCO), under contract to the U.S. Department of Energy (DOE). The data collected provide an historical record of radionuclide and radiation levels and chemical data from natural and man-made sources in the survey area. The data also document the chemical and radiological quality of the groundwater on and around the WVDP and of the air and water released by the WVDP. Meteorological data are also presented.

It is the policy of the WVDP to conduct all activities, including design, construction, testing, start-up, commissioning, operation, maintenance, and decontamination and decommissioning, in a manner that is appropriate to the nature, scale, and environmental effects of these activities. The WVDP is committed to full compliance with applicable federal and New York State laws and regulations for the protection of the environment, to continual improvement, to the prevention and/or minimization of pollution, and to public outreach, including stakeholder involvement.

This report represents a single, comprehensive source of off-site and on-site environmental monitoring data collected during 2003 by environmental monitoring personnel. The environmental monitoring program and results are discussed in the body of this report. Additional monitoring information is presented in the appendices. Appendix A contains maps of on-site and off-site sampling locations. Appendices B through L can be found in electronic format on the compact disk (as indicated by the C icon) located inside the back cover. Appendix B is a summary of the site environmental monitoring schedule. Appendices C through J contain summaries of data obtained during 2003 and are intended for those readers interested in more detail than is provided in the main body of the report. Appendix K lists laws and regulations pertaining to the WVDP. Appendix L provides groundwater monitoring data from the New York State-licensed Disposal Area.

Requests for additional copies of the 2003 Annual Site Environmental Report and questions regarding the report should be referred to the WVDP Community Relations Department, 10282 Rock Springs Road, West Valley, New York 14171 (telephone: 716-942-4555). Additional Project information is available on the internet at <http://www.wv.doe.gov>.

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