
WEST VALLEY DEMONSTRATION PROJECT SITE ENVIRONMENTAL REPORT CALENDAR YEAR 2000



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

Under: Contract DE AC24-81NE-44139

August 2001
10282 Rock Springs Road
West Valley, New York 14171-9799



Department of Energy
Ohio Field Office
West Valley Demonstration Project
10282 Rock Springs Road
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To The Reader:

This report, prepared by the U.S. Department of Energy (DOE) West Valley Demonstration Project (OH/WVDP), summarizes the environmental protection program at the West Valley Demonstration Project (WVDP) for calendar year 2000. Consistent with prior years, this report is being made available to the public as soon as possible and well in advance of DOE's required release date of October 1, 2001.

Monitoring and surveillance of the WVDP facilities 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 (NYSERDA) New York State-licensed Disposal Area (SDA).

Air, surface water, groundwater, soil, and biological samples are collected and analyzed for radiological and nonradiological constituents in order to evaluate the potential effects of activities at the WVDP. Calculated doses to the hypothetical maximally exposed off-site individual from air- and waterborne radiological releases in 2000 were less than one percent of the DOE limit. Radionuclide concentrations in biological samples were at levels near or statistically identical to background concentrations.

Results of nonradiological (chemical) tests of surface water and soil samples showed no effects on the off-site environment. Nonradiological liquid effluent releases are controlled and permitted through the New York State Pollutant Discharge Elimination System (SPDES). Releases in 2000 were below regulatory limits with no exceptions. Monitoring of treated water effluents and facility ventilation system emissions verified that the dose received by off-site residents continues to be minimal.

The Project's commitment to safety and environmental responsibility was recognized in 2000 when it was awarded the DOE Voluntary Protection Program Star and accepted by the U.S. Environmental Protection Agency as a National Environmental Performance Track charter member.

If you have any questions or comments about the information in this report, please contact the West Valley Nuclear Services Company (WVNS) Communication Department at (716) 942-4555 or complete and submit the enclosed survey.

Sincerely,

A handwritten signature in cursive script, reading "Alice C. Williams".

Alice C. Williams, Director
West Valley Demonstration Project



SUMMARY OF CHANGES TO THE 2000 WVDP SITE ENVIRONMENTAL REPORT FROM THE 1999 SITE ENVIRONMENTAL REPORT

This report, prepared by the U.S. Department of Energy (DOE) West Valley Demonstration Project office, summarizes the environmental protection program at the West Valley Demonstration Project (WVDP) for calendar year (CY) 2000. 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 (NYSERDA) New York State-licensed Disposal Area (SDA).

Changes in content for the 2000 WVDP annual Site Environmental Report are summarized below. The overall organization of the report is the same as that of the 1999 Site Environmental Report.

REVISIONS AND ADDITIONS

- The Executive Summary lists the seven major focus areas leading to completion of Project cleanup and briefly describes implementation of the environmental monitoring program for CY 2000.
- The Environmental Compliance Summary has been updated to reflect the CY 2000 regulatory compliance status. New tables summarizing NESHAP compliance, SPDES compliance, release of property containing residual radioactive material, and reportable chemicals were added. All tables relating to compliance issues were moved to a separate section at the end of the chapter. In addition, the table listing WVDP environmental permits (formerly Table K-3 in Appendix K of the 1999 Site Environmental Report) was moved to this new section of the Environmental Compliance Summary.
- Data and text have been updated throughout the report to reflect results from the CY 2000 environmental monitoring program. Tables, graphs, maps, and references also were updated.
- Chapter 1 summarizes CY 2000 activities at the WVDP. Graphs summarizing performance measures were updated to include results from CY 2000. The graph depicting curies transferred to the vitrification facility (Fig. 1-7) now covers the duration of the entire vitrification project, 1996 through 2000, rather than just the individual subject year.
- Chapter 2 includes a discussion of 2000 radiological results from samples taken from air emissions and water effluents as compared with DOE concentration guides (as applicable). Results from air, water, and soil samples taken from other on-site, near-site, and community locations are compared with results from background locations in order to evaluate effects of site activities. The current status of nonradiological monitoring on-site is also discussed. The section addressing special monitoring during the year (both radiological and nonradiological) was moved to the end of the chapter, and the discussions of special monitoring for iodine-129 emissions in stack air and mercury in waters from the low-level waste treatment facility were updated. One graph summarizing estimated iodine-129 emissions in air since vitrification began was added to this chapter.

- Chapter 3 was updated to summarize and discuss results of the 2000 groundwater monitoring program, including continued monitoring, characterization, and mitigation of the strontium-90 plume on the north plateau. Figures were updated to reflect monitoring results in CY 2000. One new figure (Fig. 3-14) was added to depict monitoring results for tributyl phosphate at selected locations in the sand and gravel unit.
- Chapter 4 provides an assessment of dose to the general public resulting from exposure to radiation and radionuclides released by the Project to the surrounding environment in CY 2000. An estimate of dose attributable to radon-220 was added to Table 4-2 and a new sidebar containing a discussion of radon-220, including a graph of estimated releases from the WVDP since 1995, was added on p. 4-9. One new table (Table 4-3) summarizing radiological doses and releases was added in response to DOE guidance for site environmental reports requesting a standardized format for reporting dose and release data collected from all DOE sites. As in previous years, the WVDP was found to be in compliance with all applicable effluent radiological guidelines and standards.
- Chapter 5 was updated to include changes regarding the WVDP quality assurance program in CY 2000 and to summarize the results of assessments of the environmental monitoring program. NPDES crosscheck results, not available in CY 1999, became available again in CY 2000 and are listed in Appendix J, Table J-3.
- Maps in Appendix A were updated to include graphic scales in both standard and metric units. Sampling locations were updated to reflect CY 2000 environmental monitoring and groundwater monitoring programs.
- Changes in the environmental monitoring program are summarized at the beginning of Appendix B.
- Appendices C, D, E, F, and H — the data tables summarizing results from samples of water, sediment, soil, air, groundwater, and biological matrices, and data from direct radiation monitoring — were updated with CY 2000 results. A convention for bolding high and low data within the data tables was initiated in this year's report. A key describing the criteria for bolding has been included at the beginning of each of the abovementioned appendices.
- There were no errata or corrigenda from the 1999 Site Environmental Report.

SPECIAL ISSUES

The WVDP was awarded the DOE Voluntary Protection Program STAR designation in early 2000.

The WVDP was accepted into the EPA's National Environmental Performance Track in CY 2000 and was awarded charter member status as part of the first group of applicants.

For the third consecutive year no SPDES exceptions were noted at the WVDP.

No unplanned radiological releases to the off-site environment occurred in 2000.

West Valley Demonstration Project
Site Environmental Report
for
Calendar Year 2000

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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West Valley Nuclear Services Co.

10282 Rock Springs Road

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Preface

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

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 legislation 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 2000 by environmental monitoring personnel. The environmental monitoring program and results are discussed in the body of this report. The monitoring data are presented in the appendices. Appendix A contains maps of on-site and off-site sampling locations. Appendix B is a summary of the site environmental monitoring schedule. Appendices C through J contain summaries of data obtained during 2000 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 (SDA).

Requests for additional copies of the 2000 Site Environmental Report and questions regarding the report should be referred to the WVDP Communications Department, 10282 Rock Springs Road, West Valley, New York 14171 (telephone: 716-942-4555). Site environmental reports also are available electronically at <http://www.wvnsc.com> under the Media Research link.