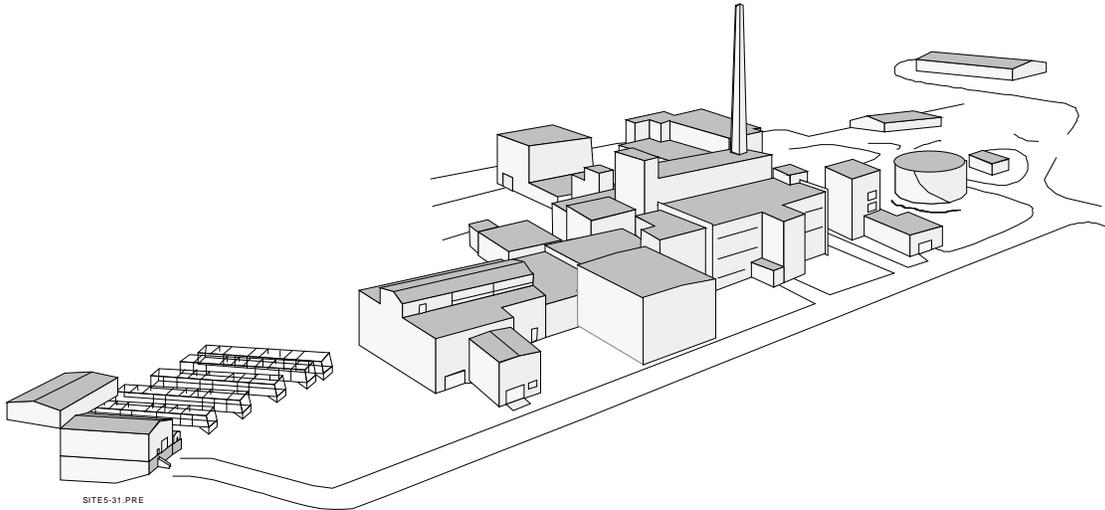

WEST VALLEY DEMONSTRATION PROJECT ANNUAL SITE ENVIRONMENTAL REPORT CALENDAR YEAR 2005



**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
DOE-WVDP

Under: Contract DE-AC24-81NE44139

September 2006
10282 Rock Springs Road
West Valley, New York 14171-9799



Department of Energy
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) West Valley Demonstration Project (WVDP), summarizes the environmental protection program at the WVDP for calendar year 2005.

Monitoring and surveillance of the WVDP facilities are conducted to verify that public health and safety and the environment are protected. The quality assurance requirements applied to the environmental monitoring program by the DOE ensure the validity and accuracy of the monitoring data.

At the WVDP, radiological air emissions are controlled and permitted by the U.S. Environmental Protection Agency (EPA) under National Emission Standards for Hazardous Air Pollutants, Subpart H, regulations. Nonradiological liquid effluent discharges are controlled and permitted through the New York State Pollutant Discharge Elimination System.

Air, surface water, groundwater, storm water, drinking water, soil, sediment, and biological samples are collected and analyzed for radiological and nonradiological constituents. The resulting data are evaluated to assess 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 radiological releases in 2005 were less than one-tenth of one percent of the EPA limit. Combined airborne and waterborne radiological releases in 2005 to the same individual were less than one-tenth of one percent of the DOE limit.

The Project's continuing commitment to safety was reaffirmed in 2005 when it was recommended for recertification as a DOE-Voluntary Protection Program (VPP) STAR site and continued membership in the EPA's National Environmental Performance Track. The WVDP is one of the few DOE sites to be awarded both the VPP STAR and National Environmental Performance Track membership. By the close of 2005, WVDP employees achieved 3.7 million safe work hours and three years without a lost time work accident. In recognition of this safety record, the WVDP was awarded the Washington Group President's Award for Safety for the third consecutive year.

If you have any questions or comments about the information in this report, please contact the WVNSCO Communications Department at (716) 942-2152 or complete and return the enclosed survey.

Sincerely,

A handwritten signature in black ink, appearing to read "B C B", written over a horizontal line.

Bryan C. Bower, Director
West Valley Demonstration Project



Can We Make This Report More Useful to You?

We want to make the *WVDP Annual Site Environmental Report* more useful to its readers. Please take a few minutes to let us know if the report meets your needs. Then fold and tape this page so the mailing address is visible and place it in the mail.

1. How do you use the *WVDP Annual Site Environmental Report*?

- To learn general information about the WVDP
- To learn about doses received for the current year
- To learn about site compliance information
- To gather effluent or environmental surveillance data
- Other: _____

2. What part(s) of this report do you use the most?

- Summary
- Main report
- Data tables
- Section _____

3. Which part of the report do you find easier to use?

- Printed report
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4. Does the *WVDP Annual Site Environmental Report* contain enough:

- a. Useful illustrations and graphs? Yes No
- b. Project background information? Yes No
- c. Scientific background information? Yes No

Comments: _____

5. Is this report: (please check one)

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6. If you could change this report to make it more readable and useful to you, what would you change?

7. What is your affiliation?

- U.S. DOE Elected official
- NYSERDA Media
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- Public interest group Other individual: _____

8. To help us identify our audience, please indicate your educational background.

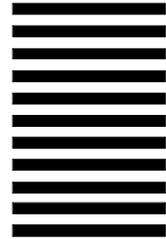
- Graduate degree: Scientific Nonscientific
- Undergraduate degree: Scientific Nonscientific
- Experience with science outside college setting
- Little or no scientific background

If you wish to be added to the WVDP Annual Site Environmental Report mailing list, please call the WVDP Communications Department at (716) 942-2152, or send an e-mail message to sonja.allen@wvnsco.com.

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SUMMARY OF CHANGES TO THE 2005 WVDP ANNUAL SITE ENVIRONMENTAL REPORT FROM THE 2004 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) 2005. 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.

Changes in content for the 2005 Annual Site Environmental Report (ASER) are summarized below.

REVISIONS AND ADDITIONS

- The Environmental Compliance Summary was updated for CY 2005 to describe continued implementation of the WVDP environmental management system. A new “Compliance Status Summary” table was incorporated to summarize and highlight the compliance status of the WVDP with applicable environmental statutes, executive orders, and DOE directives.
- A “Summary of Waste Management Achievements” table was incorporated into the Environmental Compliance Summary in an effort to consolidate and streamline information. Environmental permits effective during CY 2005 were updated.
- Data formerly discussed in Chapters 1 and 2 were consolidated into new figures and/or tables.
- Numerous modifications to the environmental monitoring program were implemented in early 2005. These changes, summarized in Appendix B, resulted from a comprehensive, systematic evaluation of the existing program. The evaluation included comparison of monitoring locations, analytical parameters, sample types, and sampling frequencies with those at other DOE and commercial sites. These changes, which took into consideration the reduction of radiological risk as site cleanup progresses, were incorporated to maximize the program’s efficiency and cost effectiveness.
- Data and text were updated throughout to reflect results from the CY 2005 environmental monitoring program. Tables, graphs, maps, supplemental information sections, and references were updated.
- A modified State Pollution Discharge Elimination System (SPDES) permit received in 2005 included requirements for monitoring 20 new storm water outfalls. Storm water monitoring locations are presented on maps in Appendix A, analytical requirements are outlined in Appendix B, and the data tables are presented in Appendix C-3.
- A brief discussion was added about the “Memorandum of Understanding” (MOU) between the Environmental Protection Agency and the Nuclear Regulatory Commission (NRC) pertaining to decommissioning and decontamination of contaminated NRC-licensed sites. This MOU specified “triggers” (i.e., radiological concentration thresholds) for residential and commercial/industrial soil contamination that would trigger consultation between the agencies. A data table presenting the trigger levels was added to Appendix G-1.
- The meteorological wind frequency roses were removed from Appendix I.
- New York State Energy Research and Development Authority (NYSERDA) groundwater monitoring data for the State-Licensed Disposal Area were removed from the ASER, and all text discussions regarding NYSERDA operations were referred to the NYSERDA website at www.nyserda.org.

SPECIAL ISSUES IN CY 2005

- By the close of CY 2005, the employees at the WVDP achieved more than 3 years and 3.7 million cumulative work hours without a lost-time work accident.
- The challenging dismantlement and removal of major pieces of equipment from the vitrification cell was completed in July 2005, making the WVDP the first site in the nation to design, construct, operate, shut down, and dismantle a full-scale radioactive vitrification system.
- Remote mixed waste processing continued in the remote-handled waste facility, which handled 39 containers holding approximately 3,250 cubic feet of waste in 2005, including four boxes of historical waste from the chemical process cell waste storage area.
- A record volume of more than 300,000 cubic feet of low-level waste (LLW) was shipped off site, by truck and rail, for disposal.
- The site's infrastructure capacity was reduced dramatically, as employees were relocated off site to the Ashford Office Complex or to a few consolidated areas on site, and the equivalent of 115 office trailer units were emptied and removed from service.
- Portable ventilation units were again used in 2005 in an expanded role to protect workers during waste processing activities.
- The DOE published its record of decision for the WVDP Waste Management Final Environmental Impact Statement in June 2005. The decision was to implement Alternative A for management of WVDP LLW and mixed LLW that are either currently in storage at the site or will be generated at the site over the next 10 years. A decision on transuranic waste will be deferred, contingent upon a determination by the DOE that the waste meets all statutory and regulatory requirements for disposal at the Waste Isolation Pilot Plant near Carlsbad, New Mexico. The high-level waste canisters will remain in storage on site until they can be shipped directly to a repository.
- Under the Resource Conservation and Recovery Act §3008(h) Administrative Order on Consent, the New York State Department of Environmental Conservation (NYSDEC) reviewed the "WVDP Solid Waste Management Unit (SWMU) Assessment and Description of Current Conditions Report." As a result of this review, NYSDEC requested that corrective measures studies (CMSs) be performed for select SWMUs at the WVDP. Draft CMSs for six of the units are scheduled to be submitted to NYSDEC in mid-2006. Closure of two SWMUs was deferred to closure under SPDES requirements.
- In November 2005, the DOE approved the downgrade of the WVDP to a Category 3 nuclear facility, making it the first time in the site's history that it has been assigned the least of the three DOE nuclear facility designations.

West Valley Demonstration Project
Annual Site Environmental Report
for
Calendar Year 2005

Prepared for the U.S. Department of Energy

West Valley Demonstration Project Office

under contract DE-AC24-81NE44139

September 2006

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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. The data collected provide a 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 at 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 management 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 on-site and off-site environmental monitoring data collected during 2005 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 K can be found in electronic format on the compact disk (as indicated by the  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 2005 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.

Requests for additional copies of the 2005 Annual 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: 716-942-2152). Additional Project information, including WVDP site environmental reports, is available on the internet at <http://www.wv.doe.gov>.

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