



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

January 3, 2013

Docket No. 05000201

License No. LSF-1

Bryan C. Bower
Director
West Valley Demonstration Project
U. S. Department of Energy
10282 Rock Springs Road
West Valley, NY 14171

SUBJECT: U. S. NUCLEAR REGULATORY COMMISSION MONITORING VISIT REPORT
NO. 05000201/2012001, WEST VALLEY DEMONSTRATION PROJECT, WEST
VALLEY, NEW YORK

Dear Mr. Bower:

On June 12-13, November 14-15, and December 4, 2012, the NRC conducted a series of monitoring visits at the U.S. Department of Energy's West Valley Demonstration Project site to review ongoing decommissioning activities. The monitoring visits consisted of observations by the NRC representative, interviews with personnel, and an examination of representative records. The results of the monitoring visits were discussed with you on December 4, 2012, and are provided in the enclosed report. No public health and safety issues were identified.

No reply to this letter is required. Please contact Mark Roberts at (610) 337-5094 if you have any questions regarding this matter.

Sincerely,

/RA/

Marc S. Ferdas, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure:
Report No. 05000201/2012001

cc w/enclosure:
Christopher Eckert, Safety and Site Programs Team Leader
Mark Bellis, Operations Activity Manager
John Rendall, Vice President, Regulatory Affairs
Paul Bembia, Program Director

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Monitoring Visit No.	POOM-032/2012001
Project No.	POOM-032
NRC Docket No.	05000201
NRC License No.	LSF-1
Location:	West Valley Demonstration Project 10282 Rock Springs Road West Valley, New York 14171
Monitoring Visit Dates:	June 12-13, November 14-15, and December 4, 2012
Monitoring Visit Exit Date:	December 4, 2012
NRC Staff:	Mark C. Roberts, Senior Health Physicist Decommissioning Branch Division of Nuclear Materials Safety Region I
Approved By:	Marc S. Ferdas, Chief Decommissioning Branch Division of Nuclear Materials Safety Region I

Enclosure

EXECUTIVE SUMMARY

U.S. Department of Energy (DOE)
West Valley Demonstration Project (WVDP)
NRC Monitoring Visit Report No. 2012001

A series of routine, announced monitoring visits were conducted on June 12-13, November 14-15, and December 4, 2012, by NRC staff at the DOE WVDP site in West Valley, New York. The program for conducting NRC monitoring visits at the WVDP is described in Inspection Manual Chapter (IMC) 0111, "Region I Monitoring Activities for the DOE West Valley Demonstration Project." The monitoring visits included a review of programs and activities associated with the WVDP site decommissioning project. The monitoring visits consisted of interviews with DOE, DOE contractor, and New York State Energy Research and Development Agency (NYSERDA) personnel; a review of documents; and tours of the facility. The NRC staff also attended the June 13 and November 15, 2012, WVDP Regulatory Roundtable Meeting and the November 14, 2012 DOE Quarterly Public Meeting. Based on the results of these activities, no public health and safety issues were identified.

REPORT DETAILS

1.0 Introduction

In accordance with the WVDP Act of 1980 and as implemented by a Memorandum of Understanding between the DOE and the NRC, a series of routine, announced monitoring visits were conducted on June 12-13, November 14-15, and December 4, 2012, by NRC staff at the DOE WVDP site in West Valley, New York. The program for conducting NRC monitoring visits at the WVDP is described in IMC 0111, "Region I Monitoring Activities for the DOE West Valley Demonstration Project." The monitoring visits included a review of programs and activities associated with the WVDP site decommissioning project.

2.0 High Level Waste Storage

a. Inspection Scope

The NRC reviewed the storage of vitrified High Level Waste (HLW) at the WVDP site. The monitoring visits consisted of interviews with DOE and DOE contractor personnel; a review of documents; and tours of the facility.

b. Observations and Findings

The NRC verified that the 275 stainless steel canisters of vitrified HLW were being adequately controlled in the mechanical process cell in the Main Plant Processing Building (MPPB). Relocation of the canisters is necessary in order to proceed with demolition preparations for the MPPB. The HLW canisters are to be relocated to a concrete pad to be constructed at the south end of the site. The HLW canisters are to be placed in specially designed and fabricated multi-purpose storage and transportation canisters and stored in shielded casks on a concrete pad (interim storage facility). NAC International has been selected as the sub-contractor for this project. Design and construction work is currently scheduled for completion in 2014 and the canister relocation completed as early as 2015.

c. Conclusions

No public health and safety issues were identified. The HLW canisters are appropriately being controlled. DOE is developing plans for the relocation of the canisters to an onsite interim storage facility.

3.0 North Plateau Permeable Treatment Wall

a. Inspection Scope

The NRC reviewed the performance of the Permeable Treatment Wall (PTW) installed on the WVDP north plateau for mitigation of the strontium-90 (Sr-90) groundwater plume. The monitoring visits consisted of interviews with DOE and DOE contractor personnel; a review of documents; and tours of the facility.

b. Observations and Findings

The NRC reviewed information in the 2012 PTW Annual Monitoring Report, which summarizes the performance and condition of the PTW through the first year following installation. The report indicates that the performance of the PTW is meeting the established Remedial Action Objectives and functional requirements. Key objectives and requirements include a reduction in the down gradient Sr-90 concentrations (compared to up gradient concentrations) from the PTW, minimizing expansion of the contaminated groundwater plume, and no substantial diversion or alteration in groundwater flow. The NRC determined that the PTW appears to be removing Sr-90 from the plume as evidenced by the very low or non-detectable concentrations of Sr-90 in monitoring well samples within the wall. Concentrations of Sr-90 in monitoring well samples immediately down gradient of the PTW were generally lower than the corresponding up gradient wells. This reduction is also evident in wells within approximately 100 feet of the down gradient side of the PTW. The groundwater flow patterns have remained consistent with conditions prior to PTW installation and there does not appear to be any expansion of the plume except for areas that were already on the down gradient side of the PTW. Monthly visual inspections of the PTW have not identified any substantial changes to the PTW system.

c. Conclusions

No public health and safety issues were identified. Review of the initial PTW Annual Monitoring Report indicates the performance of the PTW is meeting the established Remedial Action Objectives and functional requirements.

4.0 Response and Follow-up to a Small Fire in the Vitrification Cell

a. Inspection Scope

The NRC reviewed the response and follow-up to a small fire in the vitrification cell on September 13, 2012. The monitoring visits consisted of interviews with DOE and DOE contractor personnel; a review of documents; and tours of the facility.

b. Observations and Findings

On September 13, 2012, WVDP waste operations staff, in accordance with approved procedures, was using an abrasive saw to remotely cut up contaminated equipment for disposal. After approximately 25 minutes of cutting, a fire watch observed smoke from a small fire coming from the cell floor. Cutting operations were immediately halted and emergency response operations were initiated. Response actions included an emergency announcement, initiation of fire suppression actions, and an on scene response by an Incident Commander. Due to the small size of the fire and its location within a shielded cell, the fire self-extinguished without use of the fire extinguishing agents that were being prepared to be deployed. A post-event fire watch was established and eventually secured. The apparent cause of the small fire was the ignition of wood fines and hydraulic oil in the grooves adjacent to the transfer cart rails within the cell.

The NRC verified that DOE's short-term and longer term responses to the event were appropriate. Immediate notifications were provided to the plant staff and follow-up notifications to appropriate regulatory organizations were subsequently made. The follow-up corrective actions included appropriate actions that should prevent recurrence.

c. Conclusions

No public health and safety issues were identified. DOE's response and corrective actions were appropriate and in accordance with applicable procedures.

5.0 Pre-demolition Preparations for the Open-Air Demolition of the 01-14 Building

a. Inspection Scope

The NRC reviewed DOE's pre-demolition preparations for the open-air demolition of the 01-14 building. The monitoring visits consisted of interviews with DOE and DOE contractor personnel; a review of documents; and tours of the area.

b. Observations and Findings

The 01-14 building is a 60-foot tall metal, block, and concrete building that covers an area of approximately 2200 square feet. The building housed support equipment for early WVDP operations and later housed equipment for the HLW vitrification off-gas treatment system. Although a separate building, it is attached to the MPPB and contains piping and electrical systems leading from the MPPB and the HLW vitrification facility.

DOE has been performing a number of pre-demolition activities intended to physically disconnect the 01-14 building from the remaining facilities. Piping, ventilation, and electrical systems have been isolated and capped. Contaminated piping and vessels remaining in the building have been drained, filled with a grout mixture, and capped. The NRC concluded that these actions should prevent dispersal of contamination during the demolition process. The NRC also noted that the DOE was implementing lessons learned from the Separations Process Research Unit (SPRU) Closure Project accident at another DOE facility in their work plans.

The NRC reviewed the proposed radiological controls, local air sampling, and radiological surveys to be employed during project operations. In addition to the local air sampling, the inspector noted that a network of offsite environmental air samplers surrounding the site will be in place to monitor potential ground level airborne releases.

c. Conclusions

No public health and safety issues were identified. DOE was actively incorporating lessons learned from a similar DOE demolition project into the 01-14 building demolition project to prevent similar occurrences.

6.0 Meetings

June 13 and November 15, 2012, WVDP Regulatory Roundtable Meetings

NRC Region I representatives attended all-day meetings of the WVDP Regulatory Roundtable on June 13 and November 15, 2012. The WVDP Regulatory Roundtable Meetings also included representatives from the NRC's *Office of Federal and State Materials and Environmental Management Programs*, the Environmental Protection Agency (Region II), NYSERDA, the New York State Department of Environmental Conservation, DOE, and the DOE WVDP contractor. The purpose of the meetings was to gain an understanding of future work activities and to foster dialogue among the participants regarding the regulatory requirements of the project. Items discussed during these meetings included the HLW canister relocation project, demolition activities, waste operations, PTW performance, an update on erosion studies, and waste tank 8D-4 characterization sampling. The June 13, 2012, meeting included a tour of an offsite environmental air sampling system that is representative of the network of samplers that were scheduled to be in place to monitor potential ground level airborne releases during demolition activities.

November 14, 2012, DOE Quarterly Public Meeting

NRC Region I representatives attended the DOE quarterly meeting held on the evening of November 14, 2012. Representatives from DOE provided updates to members of the public on the project and on the Phase I decommissioning studies that are to be undertaken for the next phase of the decommissioning project. Approximately twenty-five people were in attendance.

Exit Meeting Summary

On June 13, November 15, and December 4, 2012, the NRC representative discussed the monitoring visit results with Bryan Bower and other members of the DOE staff. Mr. Bower acknowledged the monitoring visit results. The NRC representative confirmed that proprietary information was not provided or examined during the monitoring visits.

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Department of Energy

M. Bellis, Operations Activity Manager
K. Bohan, Federal Project Director
B. Bower, Project Director
C. Eckert, Safety and Site Programs Team Leader
G. Gorsuch, Industrial Hygienist
J. Prowst, DOE Health Physics Support Contractor

NYSERDA

P. Bembia, Program Director
A. Mellon, Project Manager
E. Traverso, Radiation Safety Officer

CH2MHILL-B&W West Valley, LLC

C. Biedermann, Senior Consulting Engineer
N. Bridges, Radiation Protection Supervisor
T. Dogal, Manager, Facilities Disposition
H. Dukes, Nuclear Operations Manager
J. Rendall, Vice President, Regulatory Affairs

PARTIAL LIST OF DOCUMENTS REVIEWED

Monthly WVDP Project Performance Reports (various).

Permeable Treatment Wall Performance Annual Monitoring Report – 2012, Rev. 1, July 2012.

Weapons Complex Monitor, Volume 23, No. 36, August 3, 2012.

Presentations from the June 13 and November 15, 2012, Regulatory Roundtable Meetings, Ashford, New York.

Presentations from the November 14, 2012, DOE Quarterly Public Information Meeting, Ashford, New York.

Letter dated September 27, 2012 to New York State Department of Environmental Conservation from DOE WVDP – Hazardous Waste Contingency Plan Activation.

CH2MHILL B&W West Valley, LLC – Fact Finding Meeting Minutes, Meeting No. FF2012-021, Small Fire in Vit cell During Abrasive Cutting, September 19, 2012.

DOE-WVDP Oversight Assessment S12-054E, Fire in Hot Cell Corrective Actions, October 29, 2012.

Management Self-Assessment Final Report, Assessment No. NBG-MASS-0038, Building 01/14 Demolition, 12-3-2012.

Verification of Readiness to Start Up or Restart Nuclear Facilities, Order – DOE O 425.1D, 4-16-2010.

LIST OF ACRONYMS USED

DOE	Department of Energy
HLW	High Level Waste
IMC	Inspection Manual Chapter
MPPB	Main Plant Processing Building
NRC	Nuclear Regulatory Commission
NYSERDA	New York State Energy Research and Development Agency
PTW	Permeable Treatment Wall
SPRU	Separations Process Research Unit
Sr-90	Strontium-90
WVDP	West Valley Demonstration Project