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NUCLEAR REGULATORY COMMISSION
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January 29, 2007

Bryan Bower, Director
Department of Energy
West Valley Demonstration Project
10282 Rock Springs Road
P.O. Box 191
West Valley, NY 14171-0191

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION MONITORING VISIT 2006-003

Dear Mr. Bower:

On December 5-7, 2006, Robert Prince of this office conducted a routine monitoring visit at the Department of Energy's (DOE) West Valley Demonstration Project to review the activities of West Valley Nuclear Services Company (WVNSCO), Inc., the DOE contractor at the site. The purpose of the monitoring visit was to review the groundwater monitoring program, the use of trigger levels associated with radiological concentrations measured in groundwater samples, the status of ongoing structure decommissioning, and to review selected occurrence reports. The results of this monitoring visit were discussed with you and other members of your staff on December 7, 2006. Details of this review are provided in the enclosed report.

As a result of this review, the monitor determined that ongoing building and structure demolition activities have been adequately conducted. Additionally, the monitor determined that additional monitoring efforts are required to complete the review of recommendations noted in selected quarterly groundwater trend analysis reports and the implementation status and effectiveness of corrective actions for selected occurrence reports.

Please contact me at (610) 337-5094 if you have any questions about this report.

Thank you for your cooperation.

Sincerely,

/RA/

Mark Roberts, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure:
Monitoring Report No. 2006-003

B. Bower
Department of Energy

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cc:
Paul Piciulo, Ph.D., Program Director, NYSERDA
State of New York
Herman Moore, Team Leader, DOE, WVDP

B. Bower
Department of Energy

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**U.S. NUCLEAR REGULATORY COMMISSION
REGION I**

MONITORING REPORT

Monitoring Visit Number: POOM-032/2006003

Project Number: POOM-032

Location: West Valley Demonstration Project
10282 West Spring Road
West Valley, NY 14171-9799

Visit Dates: December 5-7, 2006

Monitor: Robert Prince
Health Physicist
Decommissioning Branch

Approved by: Mark Roberts, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

U. S. Department of Energy (DOE)
West Valley Demonstration Project

NRC Monitoring Report No. 06-003

This report summarizes the monitoring visit conducted over the period of December 5-7, 2006, at the West Valley Demonstration Project (WVDP). The purpose of this monitoring visit was to review the groundwater monitoring program, the use of trigger levels associated with radiological concentrations measured in groundwater samples, the status of ongoing structure demolition and decommissioning activities, and review selected occurrence reports.

The groundwater monitoring plan (GMP) contains adequate guidance relating to requirements associated with data collection, evaluation, and analysis. The GMP and supporting procedures are sufficiently detailed and comprehensive to ensure that data is properly validated and results recorded in a timely manner. Future monitoring efforts will focus on reviewing recommendations noted in quarterly groundwater trend analysis reports.

Appropriate control measures were implemented to support the safe demolition of buildings. Surveys performed on potentially contaminated buildings and structures prior to demolition adequately assessed radiological conditions. Surveys performed on foundations and structures remaining in place after demolition work was completed were comprehensive and completed in accordance with approved procedures. Radiological surveys confirmed the effectiveness of decontamination efforts and verified that no contamination was present in excess of release limits.

The Occurrence Reporting program is effectively used to document events and to develop corrective actions. Line organizations take ownership of events and are involved in the evaluation and the establishment of corrective actions. Future monitoring activities will focus on the implementation status and effectiveness of corrective actions for selected Occurrence Reports.

REPORT DETAILS

I. Introduction

This report documents the monitoring visit to the WVDP on December 5-7, 2006. The purpose of the monitoring visit was to review the groundwater monitoring program, the use of trigger levels associated with radiological concentrations measured in groundwater samples, overview status of ongoing structure demolition and decommissioning activities, and review of selected occurrence reports.

II. Groundwater Monitoring Program

A. Inspection Scope

The NRC monitor reviewed the WVDP GMP and the processes relating to the review, evaluation, and communication of groundwater monitoring data. Monitoring activities consisted of tours of site areas, review of documentation, and interviews with cognizant personnel.

B. Observations

DOE and contractor personnel presented a summary of the WVDP GMP. The groundwater monitoring program for WVDP is detailed in WVDP-239, GMP. The GMP implements the requirements of the Resource Conservation and Recovery Act (RCRA) and the Department of Energy (DOE) Order 450.1. The GMP summarizes groundwater monitoring locations, lists the specific parameters monitored at a given location, specifies the monitoring frequency for each location, and provides guidance relating to data collection and analysis requirements. The GMP and supporting procedures detail data validation, evaluation, and reporting requirements.

The GMP provides details on establishing "trigger levels" for chemical and radiological parameters. These trigger levels are utilized to assist with data evaluation and trend analysis, and for other purposes as needed. The monitor noted that the DOE contractor has developed trigger levels for specific monitoring locations based upon historical data. Trigger levels, for instance, serve as the basis for determining if a statistical increase in groundwater activity concentration has occurred since the last sampling period for a given location.

DOE Order 5400.5, establishes Derived Concentration Guide (DCG) values for radionuclides in water. Cognizant personnel stated that groundwater monitoring results are compared to the applicable DCG to evaluate the effectiveness of the WVDP environmental protection program. The monitor noted that the radioactivity concentration trigger levels for many of the groundwater monitoring locations, down gradient of the North Plateau plume, were lower than the Sr-90 DCG and ranged from approximately 10 to 170 pCi/l. The DCG for Sr-90 is 1,000 pCi/l.

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Cognizant personnel stated that changes in groundwater monitoring sample results are statistically evaluated on a quarterly basis for each monitoring location. These results are compared to historical monitoring data obtained for a given location. If the most recent monitoring results differ statistically from previous results, the data is evaluated and if appropriate, recommendations provided in the applicable quarterly Groundwater Trend Analysis Report. The monitor discussed the use of trigger levels and the development of recommended actions in the event that trigger levels were to be exceeded at a given monitoring location. Cognizant personnel stated that under these circumstances, recommended actions would be provided in the associated quarterly Groundwater Trend Analysis Report. Recommended actions could include re-setting a given trigger level based on the identification of a confirmed trend, acquiring additional data to further evaluate the situation, or specific recommendations offered to minimize potential environmental impacts.

The monitor reviewed the most recent quarterly report, third quarter 2006, to identify monitoring locations depicting an increasing historical trend in activity concentrations. Several monitoring locations (e.g., wells 104, 105, 106, and 116) indicated a historical increase in either gross beta or strontium-90 activity values. Recommended corrective actions that may have been previously suggested for locations such as these will be reviewed and evaluated during a forthcoming monitoring visit.

C. Conclusions

The GMP contains adequate guidance relating to requirements associated with data collection, evaluation, and analysis. The GMP and supporting procedures are sufficiently detailed and comprehensive to ensure that data is properly validated and results recorded in a timely manner. Future monitoring efforts will focus on reviewing recommendations noted in quarterly groundwater trend analysis reports.

III. Demolition and Building Decommissioning Activities (D4 Projects)

A. Inspection Scope

Programs and processes associated with the planning and implementation of D4 project activities were reviewed. Monitoring activities consisted of tours of site areas, review of documentation, and interviews with cognizant personnel.

B. Observations

DOE and contractor personnel continue efforts associated with decontamination and demolition of various structures. Several buildings and miscellaneous structures have been dismantled since the last monitoring visit. Cognizant personnel presented an overview of demolition activities performed under the D4 project. Responsible personnel were intimately involved in the D4 effort and demonstrated ownership in the development of work packages and a conservative approach in evaluating the unique safety challenges posed by dismantling activities. Cognizant personnel conducted a

tour of site locations where recent dismantling activities were completed and answered questions asked by the monitor.

Structures recently decontaminated and demolished that had involved radiological safety considerations included the Lag Storage Building, LSA-1 radioactive material storage facility, 02 Building, and the Fuel Receiving and Storage (FRS) ventilation building. Cognizant personnel described the radiological control measures employed during demolition activities. In addition, surveys conducted on remaining structures and building foundations, that will be addressed in later remediation efforts were reviewed. The monitor reviewed radiological surveys performed to release the Lag Storage, LSA-1, and FRS ventilation building and foundation areas. The surveys were comprehensive and results indicated that building materials and foundation areas were appropriately surveyed to confirm compliance with radiological release criteria. The monitor noted during field observations that foundation areas were posted and barricaded to restrict both personnel and equipment access to areas previously surveyed and released, thus minimizing the potential for cross-contamination of these areas.

The monitor noted that radiological surveys performed on certain building materials and foundation areas utilized guidance provided in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). The guidance in the MARSSIM manual is typically employed to demonstrate compliance with dose and risk-based regulations at the time of final decommissioning of a site. The monitor noted that early utilization and familiarization with MARSSIM guidance and techniques was noteworthy.

C. Conclusions

Appropriate control measures were implemented to support the safe demolition of buildings. Surveys performed on potentially contaminated buildings and structures prior to demolition adequately assessed radiological conditions. Surveys performed on foundations and structures remaining in place after demolition work was completed were comprehensive and completed in accordance with approved procedures. Radiological surveys confirmed the effectiveness of decontamination efforts and verified that no contamination was present in excess of release limits.

IV. Corrective Action Program

A. Inspection Scope

The NRC monitor discussed selected occurrence reports that had been issued since the last monitoring visit. The activity consisted of interviews with cognizant personnel and review of documentation. These occurrence reports were reviewed to assess WVDP identification of issues and development of corrective actions. The purpose of this monitoring activity was to identify events to be reviewed during a subsequent monitoring visit. Future monitoring activities will focus on the implementation status and effectiveness of corrective actions.

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B. Observations

DOE and contractor personnel presented summaries of selected ORs. Summary presentations were provided for events involving the discovery of a damaged transuranic (TRU) waste container, a lid that had fallen from an intermodal container while opening, and the presence of residual acid in a sample line during demolition activities. A summary of completed and planned corrective actions was provided for each event. Cognizant personnel demonstrated ownership of the issues and aggressive pursuit of corrective actions to preclude recurrence of events. Although no serious injuries resulted from any of these events, the potential for serious injury (e.g., for the intermodal lid falling off and presence of acid in an abandoned line) was recognized and corrective actions were developed based on the significance of what could have happened under different circumstances. Based on discussions with cognizant personnel, corrective actions appeared to be appropriate and broad-based to preclude recurrence. The implementation status and effectiveness of corrective actions associated with these events will be reviewed during a subsequent monitoring visit.

The monitor noted that an internal review was chartered as a result of two events involving damaged waste containers. The monitor noted that team members were removed from the events so that they could provide an independent assessment. The results of this internal review were documented in a "Material Handling Report" issued on September 15, 2006. The internal review included a review of applicable procedures, personnel training aspects associated with material handling, material handling practices and methods, and included interviews with persons involved with handling of material containers. The monitor determined that the report was comprehensive and offered several suggestions to improve material handling activities at WVDP. The implementation status and effectiveness of these recommendations will be reviewed during a forthcoming monitoring visit.

C. Conclusions

The Occurrence Reporting program is effectively used to document events and to develop corrective actions. Line organizations take ownership of events and are involved in the evaluation and the establishment of corrective actions. Future monitoring activities will focus on the implementation status and effectiveness of corrective actions for selected ORs.

V. Management Meetings**Exit Meeting Summary**

The inspector presented the monitoring visit results during an out-briefing meeting with you and members of your staff, NYSERDA representatives and others upon conclusion of the onsite visit on December 7, 2006. DOE and DOE contractor personnel acknowledged the observations presented by the inspector.

Enclosure

Partial List of Persons Contacted

Department of Energy

*Bryan Bower, Deputy Director
David Cook
*Christopher Eckert
*David Gray
William Hunt
*Herman Moore, Facility & Waste Disposition Projects, Team Leader

NYSERDA

Paul Bembia, Program Manager
Colleen Gerwitz, Program Manager
*Paul Piciulo, Director
Ted Sonntag, Program Manager

WVNSCO

Dave Biela
*M. Neil Brosee
*Lettie Chilson, Nuclear Safety & Emergency Management
*Paula Ciszak
*Jack Gerber, Manager - Environmental, Safety, Health & Quality
*Richard Hazard, Radiation Protection
Joe Jablonski, Waste Facility Operations
*Ida Klahn
*Dave Klenk, Environmental Affairs
*Al Konetzni, President/Project Director
Howard Payne, Senior Engineer
*Paul Valenti
Sheila Westcott

*Denotes attendance at the onsite out-briefing held on December 7, 2006.

List of Documents Reviewed

WVNSCO Groundwater Trend Analysis Report 3rd Quarter 2006

DOE Order 450.1, Environmental Protection Program

DOE Order 5400.5, Radiation Protection of the Public and the Environment

WVDP-091, West Valley Demonstration Project Groundwater Protection Management Program Plan

WVDP-190, Groundwater Monitoring Equipment Decommissioning Plan

WVDP-239, Groundwater Monitoring Plan

Radiation and Contamination Survey Reports Numbers:

- 133456 - LAG building survey to release floor area
- 133630 - LSB building metal beams
- 133604 - LAG/LSA metal beams for removal
- 133660 - LSB building metal beams
- 136558 - FRS vent building roof
- 136565 - FRS vent building roof
- 136640 - FRS inside vent building
- 136912 - LAG/LSA curb/foundation

Radiological Engineering Calculation 2006-63, MARSSIM survey of LAG building samples

Radiological Engineering Calculation 2006-036, Radiological Survey Data Evaluation for LAG Storage Building - Exterior Walls

List of Acronyms

DCG	Derived Concentration Guides
DOE	Department of Energy
FRS	Fuel Receiving and Storage
GMP	Groundwater Monitoring Plan
LSA	Low Specific Activity
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
NYSERDA	New York State Energy Research Development Authority
ORs	Occurrence Reports
pCi/l	Picocuries per liter
RCRA	Resource Conservation and Recovery Act
Sr-90	Strontium 90

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TRU	Transuranic
WVDP	West Valley Demonstration Project
WVNSCO	West Valley Nuclear Services Company