

WM-32

January 31, 1997

Mr. Thomas Rowland, Director
U. S. Department of Energy, Ohio Field Office
West Valley Demonstration Project
P.O. Box 191
West Valley, New York 14171

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION MONITORING VISIT
JANUARY 6-9, 1997

Dear Mr. Rowland:

On January 6-9, 1997, a monitoring visit was made to the Department of Energy (DOE) West Valley Demonstration Project site to review activities of West Valley Nuclear Services Company, Inc., the DOE contractor. Specifically, the purpose of the monitoring visit was to review the status of the contractor's program for the operation of the vitrification facility relative to its impact on public health and safety from a radiological standpoint. This visit focused on the use of procedures. The monitoring visit was conducted by Mr. Todd Jackson, Project Engineer - West Valley, of this office. Details of this review are provided in Enclosure 1. Some of the individuals contacted during the visit are indicated in Enclosure 2.

As a result of this review, the monitor determined that the contractor has established and maintained controls, processes, and programs, which appear adequate to protect public health and safety. Through January 7, 1997, the contractor had filled 62 canisters of vitrified high-level radioactive waste.

If you have any questions about this report, please contact me at (610)337-5200.

Sincerely,

Original Signed By:
Ronald R. Bellamy

Ronald R. Bellamy, Ph.D., Chief
Decommissioning and Lab Branch
Division of Nuclear Materials Safety

Enclosures:

1. Review of the Project Status
2. Contact List

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T.R. Rowland, Director

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cc w/encls:

P. Piciulo, Program Director, Radioactive Waste Management Program
State of New York

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T.R. Rowland, Director

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ENCLOSURE 1

REVIEW OF THE PROJECT STATUS

The monitor observed selected activities in progress at the site, held discussions with cognizant DOE - West Valley Demonstration Project (WVDP) and contractor personnel (WVNS), and reviewed related documentation. This visit was a routine periodic monitoring visit to observe site operations and the current status of the project.

1.0 PROJECT STATUS OVERVIEW

DOE and the contractor presented updated status briefings on activities at the site. Presentations focused on:

- Operation of the Vitrification Facility

- Current Status of Site Operations

- Recent Vitrification Operations Events

- Results of the Technical Assessment of Analytical & Process Chemistry (A&PC) Labs

- Resolution of the 8D-2 Pan Inleakage

- Status of the Environmental Impact Statement and Citizen's Task Force Activities

2.0 OPERATION OF THE VITRIFICATION FACILITY

Vitrification operations continue at the site. As of January 7, 1997, WVNS was filling the 62nd waste canister, had completed the welding of 59 canisters, had decontaminated 58 canisters, and had transferred 56 canisters to the Chemical Process Cell (CPC) for storage.

At the time of this monitoring visit, 20 high level waste transfers from Tank 8D-2 had been completed, the most recent on January 8, 1997, at which time the cumulative activity transferred totalled approximately 2,696,000 Curies. On January 9 the melter was placed in standby for a planned outage to replace failing thermocouples used for melter glass temperature control. The outage duration was 13 hours, and melter feed was then resumed.

3.0 REVIEW OF RECENT EVENTS

The monitor examined recent events at the site, as well as other documented reviews of site activities. A number of the events and problems identified involved the use of procedures, and therefore this monitoring visit focused on that issue.

3.1 High Level Waste into Demineralized Water Line

3.1.a Background

On November 16, 1996 an unusual occurrence at the Vitrification Facility (DOE Occurrence Report OH-WV-WVNS-1996-VFS-0006) caused high level radioactive waste (HLW) to back up into a demineralized water line outside the vitrification cell, which resulted in increased local radiation levels. DOE and WVNS had performed investigations and analyses of the unusual occurrence, both of which were reviewed by the monitor. The event occurred when operators were attempting to backflush a line which they believed was blocked by slurry contents. Although a method for backflushing had been used previously (described in WVNS-SD-69A, "Vitrification Facility Sampling System Description"), a modified protocol was written for the operators on this occasion.

3.1.b Use of Procedures

The policy of the Vitrification Operations organization within WVNS is that "All operations conducted will be in accordance with approved SOPs, Work Orders, Test Plans, or Test Procedures" (Vitrification Operations Standing Order #96-01, Rev. 1, 5/6/96, "Use of Vitrification Operations Procedures"). However, neither the modified backflush protocol provided to operators on November 16, 1996 nor WVNS-SD-69A qualified as any of the procedure document types specified in the Standing Order. WVNS policy on use of procedures was also discussed in section 2.5 of the DOE Report, "Independent DOE Investigation and Analysis of Unusual Occurrence OH-WV-WVNS-1996-VFS-0006 on November 16, 1996". The DOE Investigation referenced WVDP-002, Quality Management Manual, Section QM 5, Rev. 3, as stating, "WVNS activities affecting quality shall be prescribed by, and performed in accordance with, approved instructions, procedures or drawings".

SOP 00-02, "Preparing, Issuing, Field Changing, and Revising Developmental Procedures, Standard Operating Procedures, and Special Instruction Procedures", Rev. 11, was also reviewed by the monitor. This document provided an administrative framework for field changes to existing procedures for circumstances which were not foreseen or anticipated when procedures were written. SOP 00-02 accommodates unexpected situations or circumstances while still providing a formal administrative mechanism to control such procedural changes. However, it was not followed during the course of the November 16, 1996 event. In the WVNS Report of the Root Cause Analysis for the November 16, 1996 event (WVNS Memo IA:96:0038) one of the two root causes presented in Section 2.5.1 was that "An approved operational procedure was not used to provide backflush instructions."

Additional examples of not following procedures were included as a related issue in the DOE report of the November 16, 1996 event (OH-WV-WVNS-1996-VFS-0006). In Section 4.3 was an "Item of Note" as follows:

Categorization of this event exceeded the two-hour limit as required by WVDP-242. A review of the occurrence reports for the last year reveals that 15 of 25 occurrence reports exceeded the time limit for categorization

(anywhere from a few hours to several days).

3.1.c Identified Corrective Action

DOE Investigation Report OH-WV-WVNS-1996-VFS-0006 stated that failure to follow SOP 00-02 eliminated the fourth barrier (the procedural control) to the event. The WVNS response to the DOE report was described in the January 10, 1997 letter from P. Valenti to T. Rowland, letter number WD:97:0024 ("WVNS Corrective Actions as Identified in the WVNS Corrective Action Request for Significant Issues (CARSI) Which Addresses All Deficiencies and Recommendations in the Independent DOE Investigation and Analysis of Unusual Occurrence, Dated November 27, 1996"). In Appendix A to that letter WVNS referenced five corrective action areas which addressed failure to follow procedures (Items 1, 2, 4, 31, and 33). The specific corrective actions described include; refresher training/briefings for personnel and their supervisors, discussions for Vitrification Operations operators and supervisors relating to the requirement for use of approved paperwork to perform work, additional briefings to reinforce the importance of using formal site procedures for work direction, and briefings for facility managers to assure proper notification and time limits are not exceeded.

3.2 Partial Conduct of Operations Assessment

In December 1996, DOE conducted a partial Conduct of Operations Assessment at West Valley. The review produced one concern applicable to Waste Management Operations and several findings. The concern stated, "Waste Management Operations Standard Operating Procedures contain significant discrepancies making them potentially difficult to implement", and cited examples of procedures which could not be followed as written. The procedures referenced had been in use and the work controlled by the procedures had been performed in the past, yet the procedures had not been revised.

The Conduct of Operations Assessment also included the following procedure-related findings, presenting additional examples of instances where personnel did not follow existing procedures:

-Finding 4: "An unauthorized individual had performed Lockout/Tagout (LO/TO) activities for lockout APC 0279." The individual's name was not included in a memo which listed personnel authorized to perform the procedure.

-Finding 6: "During the canister load-in to the Equipment Decontamination Room an operator handled the canister with his bare hand. SOP 68-02 requires canister handlers to wear cotton gloves."

-Finding 8: "Canister handling operations in the Vitrification Cell are not being performed in accordance with Cart Operation SOP 63-56."

-Finding 10: "The 'Vit Control Room Drawings' list of controlled drawings maintained in the Vitrification Control Room are not established and could not be demonstrated."

3.3 Monitor's Observations and Comments on the Use of Procedures

The Monitor discussed these observations and comments in detail with DOE and contractor personnel during the visit and at the exit meeting.

3.3.1 Compliance With Procedures

As described above, numerous examples have been identified in which personnel did not follow written procedures. Personnel at the WVDP receive training during General Employee Training (GET) or other routine training in the policy that procedures shall be used and followed. The monitor observed an example of such a presentation during GET on January 6-7, 1997. Corrective actions discussed in section 3.1.c above rely predominantly on retraining, briefings, and discussion of the importance of following procedures. Additional management attention is warranted to verify that these retraining activities are effective in ensuring procedure compliance. In coordination with the numerous specific procedure-related corrective actions in various stages of implementation, additional management attention is warranted to follow-up closely to determine the extent of compliance with this policy, as well as to better define what procedures require strict adherence, and what degree of worker discretion (if any) is appropriate for a given procedure or group of procedures.

3.3.2 Mechanisms to Assure Accurate Procedures

The Conduct of Operations Assessment found some completed procedures which were incorrect and could not have been followed as written, yet the work had been performed. Thus, workers have not been consistently identifying and documenting needed procedure revisions. WVNS personnel stated they had gotten some marked up procedures, which had generated about five pending revisions to Vitrification Operations procedures. In order to encourage personnel to follow procedures, the effectiveness and timeliness of the system to capture and track revisions to procedures should be reviewed, as well as the willingness of people to use the system.

4.0 RESULTS OF THE TECHNICAL ASSESSMENT OF THE ANALYTICAL & PROCESS CHEMISTRY (A&PC) LABS

Results were presented of a laboratory assessment performed by RUST Federal Services (a DOE contractor) on December 3-5, 1996. The primary focus of the lab is performance of analyses supporting determinations that the vitrification glass matrix materials are within specification for the final waste form. A report of the assessment was not yet available; the WVNS presenter stated that a copy of the report would be made available to the monitor when issued.

5.0 ELEVATED AIRBORNE ACTIVITY IN THE LOWER EAST OPERATING AISLE (LEOA)

On January 3, 1996, elevated airborne contamination in the Vitrification Facility LEOA resulted from an operation involving a blowdown flush of a pressure probe in the melter. WVNS personnel described the likely cause of the event as increased pressure in the electrical conduit leading to a cell wall penetration. The pressure increase was believed to

have been caused by the system automatic response to the blowdown, which occurred due to a failure to place the pressure control system in manual mode before the blowdown commenced. WVNS personnel stated the blowdown procedure specified the correct sequence of actions, however in this case it involved personnel in different locations within the vitrification facility who performed the actions out of sequence as written in the procedure. WVNS personnel stated it is common practice to control such operations by incorporating into the procedure sign-offs requiring completion of one step before the next step is begun. Additionally, activities requiring workers to be in different locations during performance are commonly coordinated by radio or telephone. Neither of these typical control mechanisms were present in the procedure for this blowdown activity. The monitor discussed with WVNS personnel the need to review other WVDP procedures which require personnel to be in different locations in order to assure that controls for coordination are incorporated as necessary.

6.0 FOLLOWUP ON THE 8D-2 PAN INLEAKAGE

The problem of water leaking into the vault and entering the collection pan under tank 8D-2 was described in the October 16, 1996 Monitoring report. The inleakage caused concern about adding to waste volumes and accelerating the corrosion rate of the high level waste tank exterior surface. WVNS had taken action to add grout in several locations which were believed to be the entry route for up to 800 gallons per day, and the inleakage was effectively stopped. It had not been necessary to pump out the pan since October 12, 1996.

7.0 STATUS OF ENVIRONMENTAL IMPACT STATEMENT (EIS) AND CITIZENS TASK FORCE ACTIVITIES

DOE staff provided a briefing to describe the expected schedule and status of review of comments submitted regarding the draft EIS and the inauguration of the Citizens Task Force. It was expected that the first meeting of the Task Force would be scheduled for January 29, 1997.

ENCLOSURE 2

1.0 Department of Energy - West Valley Demonstration Project

W. Hamel, Operations & Engineering Team Leader
T. Jackson, Safety, Health & QA Team Leader
B. Mazurowski, Deputy Director
R. Provencher, Associate Director for Operations and Safety
T. Rowland, Director
E. Lowes, Regulatory Strategy & Stakeholders Interface Team Leader
W. Hunt, Facility Representative

2.0 West Valley Nuclear Services, Inc.

W. Poulson, President
P. Valenti, Vitrification Operations Manager
D. Harward, Radiation Protection Manager
D. Ploetz, Vitrification Systems Engineering Manager
D. Meess, Vitrification and Integrated Radwaste Treatment System Operations
Engineering Manager
J. Mahoney, Analytical & Process Chemistry Manager

3.0 State of New York

P. Piciulo, Program Director, NYSERDA
T. Szonntag, NYSERDA