United States Government **Department of Energy**

memorandum

Ohio Field Office
West Valley Demonstration Project

DATE: April 24, 2001

Recd.- Rec. Mgmt.
DW:2001:0313
April 25, 2001

SUBJECT: Vitrification Completion Team Results and Commitments

TO: Alice C. Williams, Director
OH/WVDP

Per your direction, the Vitrification Completion Team, consisting of representatives from the U.S. Department of Energy (DOE), New York State Energy Research and Development Authority (NYSERDA), West Valley Nuclear Services Company (WVNS), as well as the U.S. Nuclear Regulatory Commission (NRC), completed its review of issues surrounding the ability to complete vitrification operations. During workshops conducted in December 2000, January 2001, and February 2001, the Team developed a common understanding for the technical and regulatory issues and discussed various trade-offs to be considered in determining the optimum time for completing high-level waste processing and ceasing melter operations. The Team recommendations, which were provided to you in February of this year, proposed several parallel paths to (1) continue mechanical removal efforts, (2) develop improved mechanical cleaning capability, (3) continue tank characterization efforts, and (4) evaluate and develop a plan for safe chemical decontamination in the event that mechanical methods are insufficient.

The attached, signed commitments demonstrate the site's commitment to proceed in parallel with these efforts. Also attached is a final flow sheet that provides a schematic representation of the path forward to completing vitrification. Although the flow sheet is "time phased" to provide a relative understanding of the sequence of the efforts, it is not intended to represent a schedule. As the site moves forward and technical and regulatory information is gathered, it may be necessary to alter the activities (or their sequence). All information from the three workshops held in support of this effort, including presentation material and discussion, have been captured in the attached, bound booklets. Also, attached is a brief, one-page summary of the information covered in the workshops.

On behalf of the Team, I would like to extend our appreciation to you for chartering this very worthwhile effort, which has resulted in not only a modified path foward for the site, but also in a common understanding of that path forward.

Elizabeth Lowes

Elizabeth A. Lowes, Deputy Director
West Valley Demonstration Project

cc: See Page 2

Attachments: See Page 2

EAL:0126 - 77315 - 434.1.2
EAL/brb

cc: W. F. Hamel, OH/WVDP, WV-DOE, w/att. 1-3
J. J. May, OH/WVDP, WV-DOE, w/att. 1-3
D. W. Sullivan, OH/WVDP, WV-DOE, w/att. 1-3
C. L. Gerwitz, NYSERDA, WV-17, w/att. 1-3
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T. L. Sonntag, NYSERDA, WV-17, w/att. 1-3
R. R. Campbell, WVNS, WV-07, w/att. 1-3
F. W. Damerow, WVNS, WV-53, w/att. 1-3
D. C. Meess, WVNS, WV-54, w/att. 1-3
L. E. Rowell, WVNS, WV-53, w/att. 1-3
D. R. Westcott, WVNS, AOC-09, w/att. 1-3

Attachments: 1. Signed Commitments
2. Flow Sheet on Path Forward
3. One-Page Summary of Workshops
4. Three Bound Documents containing Workshop Material

EAL:0126 - 77315 - 434.1.2

EAL/brb

Vitrification Completion Commitments

Representatives from DOE, NYSERDA, and WVNS formed a team in FY2001 to develop a strategy for vitrification completion at the West Valley Demonstration Project. After several strategic meetings, the team developed commitments for FY2001 and beyond. WVDP management endorses these commitments:

Commit Resources for Additional Tank Cleaning:

1. Develop Additional Mechanical Cleaning Ability - to Include Second Sluicer (by June 2001) and Improved Third Sluicer (installed by December 2001 and operational by January 2002).

2. Initiate Preparations for Safe Chemical Decontamination.

   - Re-evaluate safety analysis implications (gap analysis by June 2001).
   - Develop strategy for meeting any necessary waste acceptance requirements (by October 2001).
   - Evaluate alternatives and develop plan for implementing chemical decontamination (by August 2001).

Maximize Melter Use During HLW Tank Wall Washing Campaigns (e.g., treat sodium-laden tank residues) to Support:

1. Extending melter life by limiting "idle" periods.

2. Minimizing impact of melter failure by processing lower-activity waste.

Alice C. Williams
Director
DOE-WVDP

Robert R. Campbell
President
WVNS

Summary of the Vitrification Completion Team Workshops

Vitrification Completion Team
Initial Kick-Off Meeting, December 13, 2000

On December 13, 2000, the Vitrification Team assembled for background presentations and discussions concerning the current vitrification status. After review of the charter, presentations in various key areas were provided. These key areas included: Waste Incidental to Reprocessing (WIR) criteria, the West Valley Performance Assessment and the needs of the various interested parties, etc.

Following the presentations, discussions ensued and three sub-teams were formed. Each sub-team assembled and identified a list of priorities based on the presentations given during the December 13, 2000. These lists were handed out to Vitrification Completion Team the week of January 2, 2001.

Vitrification Completion Team
Working Sessions, January 8 and 9, 2001

On January 8 and 9, 2001, the Vitrification Completion Team working sessions were held. The sub-teams which were formed during the initial December 13 meeting, presented their lists of priorities. These lists were reviewed, discussed, and prioritized by the entire Vitrification Completion Team.

Based on the priorities developed, brainstorming sessions were held. The results of these brainstorming sessions culminated in a draft Vitrification Completion Process Flow Sheet. The priorities and draft Vitrification Completion Process Flow Sheet were presented to DOE, NYSERDA, and WVNS senior management at a closeout session on January 9, 2001.

The need for a wrap-up session was identified and scheduled for February 14, 2001. Prior to finalized the Vitrification Path Forward, it was determined that an analysis of "Vitrifying the Sodium Bearing Waste" was needed to be performed and the results presented to the Team at the wrap-up session. Also, a sub-team was formed to work on the Vitrification Completion Process Flow Sheet for the wrap-up session.

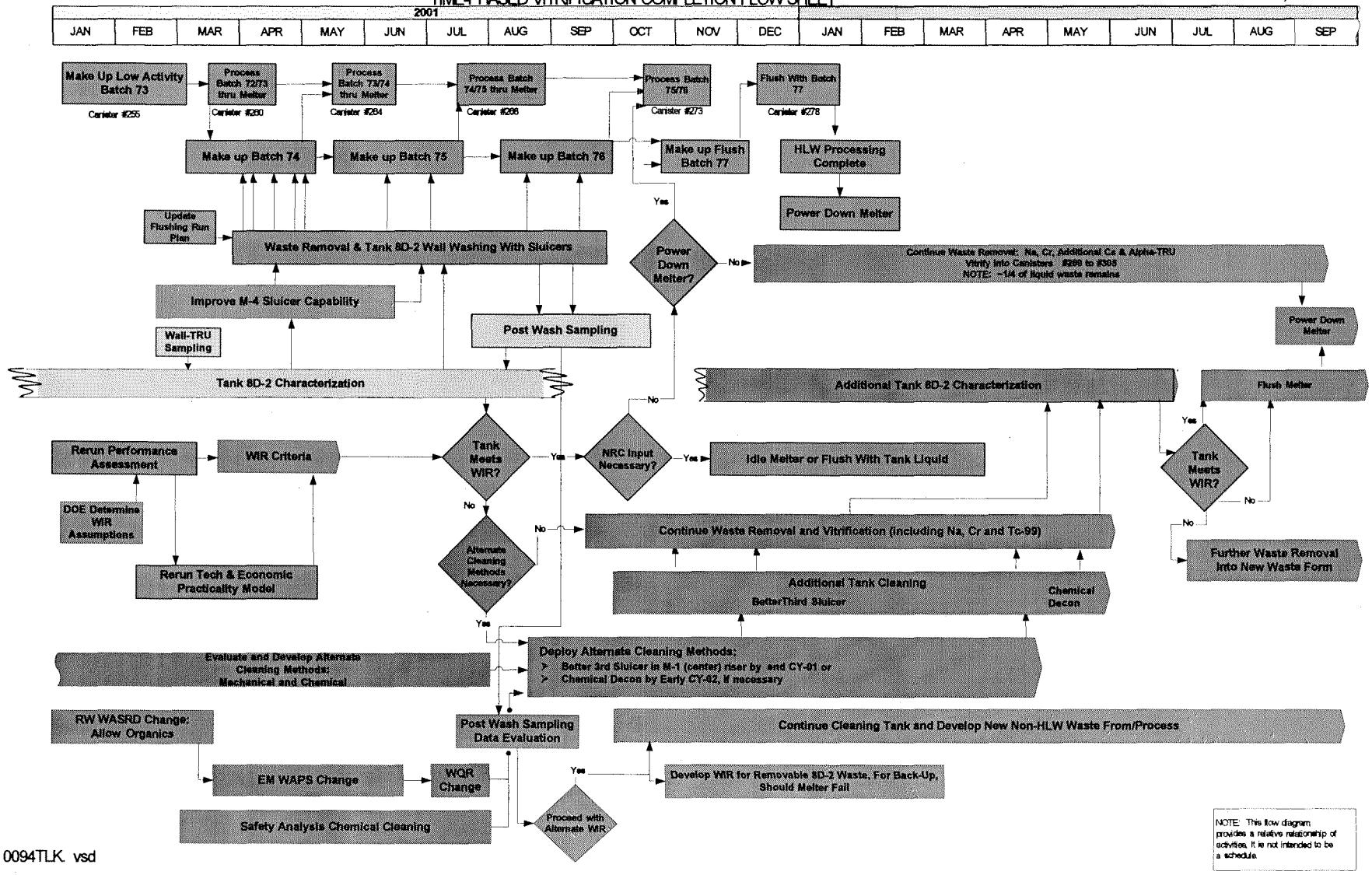
Vitrification Completion Team
Wrap-Up Session, February 14, 2001

On February 14, 2001, the final Vitrification Completion Team meeting was held. The sessions began by review the Team's progress to date, actions needed to finalized the Team's mission, and a discussion of the February 7, 2001 DOE Vitrification Expectations letter.

A presentation on "Vitrifying the Sodium Bearing Waste" was given. Several working sessions were held to finalized the Path Forward for Vitrification Completion. Key actions were identified in support of the Path Forward for Vitrification Completion and assigned to cognizant WVDP staff. The session ended with a presentation of the Team's recommended Path Forward for Vitrification Completion to DOE, NYSERDA, and WVNS senior management at a closeout meeting.

TIME-PHASED VITRIFICATION COMPLETION FLOW SHEET

March 1, 2001



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R. R. Campbell*	WV-07
F. W. Damerow*	WV-53
J. L. Mahoney*	WV-48
D. C. Meess*	WV-54
L. E. Rowell*	WV-53
P. J. Valenti*	WV-53
D. R. Westcott*	AOC-09

* Attachments 1-3 only

Vit Completion Team

HLW Path to Completion
Strategy & Recommended Path Forward
Workshop

February 14, 2001

Vit Completion Team

Sponsors: Alice Williams, Paul Piciulo, Robert Campbell

Charter: Provide a strategy and recommended path forward for determining the optimum date for discontinuing HLW vitrification operations. At a minimum, the strategy shall address all issues considered key to assisting decision makers in a manner that allows for a clear understanding of the relative risk(s) involved in the decision. In addition; the strategy/path forward shall be accompanied by clear action plans that include responsible persons as well as target completion dates.

Background: Recent characterization work has identified the presence of significant activity fixed to the 8D-2 tank walls. This fixed activity was not included in the earlier analysis of tank curie content that provided an initial basis for the path forward toward completion of vitrification operations.

A review of options, analyses, and requirements should be conducted to form a basis for consensus on arriving at a decision to terminate vitrification operations.

Team Commitment: Work together as a unified team to produce a strategy/path forward as specified above. This initiative will be based upon collective and collaborative efforts incorporating the experience and expertise of all team members.

Schedule: 12/13/2000 - One day off-site meeting to share information and develop a common understanding regarding the technical and regulatory basis from which the Vit Completion Team is starting.

1/8 & 9/2001 - Two day off-site workshop to brainstorm issues and alternatives and develop an initial strategy for discontinuing HLW vitrification operations.

- 1/9/01 - Afternoon presentation of strategy, path forward and actions to the Sponsors

2/9/2001 - Target completion date to deliver a final recommended path forward as described above.

Note - Status on interim progress, issues, and direction shall be reported to the senior DOE/NYSERDA/WVNS management weekly at the Project Status Meeting.

Team Membership:

DOE	NYSERDA	WVNS
Elizabeth Lowes, Lead Bill Hamel Joe May Dan Sullivan	Ted Sonntag Colleen Gerwitz	Steve Barnes Fred Damerow Laurene Krieger Dan Westcott Dan Meess
NRC TEAM MEMBER - Jennifer Davis		
FACILITATOR - Ed Urbanawiz EXTERNAL EXPERT - Robert Perdue COORDINATION & LOGISTICS - Eric Frazer, Joe Pillittere, Luba Szyszkowski		

Vitrification Completion Commitments

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Alice C. Williams
Director
DOE-WVDP

Robert R. Campbell
President
WVNS

VIT COMPLETION TEAM
PATH FORWARD

STATUS OF ISSUES AND ACTIONS

ISSUES

Issue 1 - How do we address Class C portion of the WIR?

- **WVNS to Provide Proposed Assumptions**
  - **assigned to Damerow - due February 28, 2001**
- **DOE Provide SAIC with Assumptions**
  - **assigned to Sullivan, due by March 5, 2001**
- **SAIC Provide Results By March 19, 2001**
- **WVNS Revise Basis Document**
  - **assigned to Damerow - due by April 2, 2001**

ISSUES

Issue 2 - NRC Review of WIR

- Submit WIR to NRC
  - assigned to May - due May 15, 2001
- Evaluate Approval/Concurrence Question on WIR
  - assigned to NRC - expected by March 15, 2001
- NRC Review of WIR
  - expected by February, 2002

ISSUES

Issue 3 - Determine If the Technology is Adequate to Clean the Tank

- Perform a Summary Presentation On Approach/Options for Increased Waste Removal
  - assigned to Meess - due January 31, 2001 (complete)
- Obtain Information on SRS Tank Ring
  - assigned to Krieger - due January 31, 2001 (complete)
- Provide a Presentation on the SAP (Defensibility of Data)
  - assigned to Krieger - due March 7, 2001
- Improve M-4 Sluicer Capability
  - assigned to Meess - due June 1, 2001
- Evaluate/Develop Plan For Deploying Third Sluicer
  - assigned to Meess - due August 1, 2001

ISSUES

Issue 3 - Determine If the Technology is Adequate to Clean the Tank (cont'd)

- Evaluate/Develop Plan For Chemical Decontamination
  - assigned to Meess - due August 1, 2001
- Re-Evaluate Safety Analysis Implications of Chemical Decontamination
  - assigned to Chilson/Bower - due June 1, 2001
- WASRD/WAPS Changes to Support Potential Chemical Decontamination
  - assigned to Hamel - due August 1, 2001
- WVNS Update Flushing Run Plan
  - assigned to Meess - due March 20, 2001

ISSUES

Issue 4 - Is It Beneficial to Vitrify Sodium Waste?

- Develop a Cost/Benefit Analysis to Support the Decision on Sodium Processing
  - assigned to Palmer - due March 9, 2001 (complete)
- WIR For Sodium Waste Form To Demonstrate Non-HLW
  - assigned to HLW Projects - due TBD

ISSUES

Issue 5 -Strategy for Application of WIR Groupings

- **Determine Whether to Proceed with Separate WIR for Waste Being Removed From Tank Following Initial Sluicing/Characterization**
  - **assigned to May/Hamel - due by September 30, 2001**

ADDITIONAL ACTIONS

Doe (Bill Hamel) to Request WVNS to Provide a Melter Life "Rick Assessment Plan" by February 28, 2001

Develop and Document Strategy for Addressing RCRA in Light of Current Path Forward

- assigned to Gerber/Maloney, due by August 1, 2001

Vitrification Completion Team Workshop

February 14, 2001

Attendees: Elizabeth Lowes, Colleen Gerwitz, Dan Westcott, Dan Meess, Bill Hamel, Ron Palmer, Dan Sullivan, Fred Damerow, Joe May, Eric Frazer

Status All Action Items From Off-Site Meeting; Re-Visit Side Issues

Agenda Overview - Elizabeth

-DOE Vit Expectations Letter

-DOE has a better understanding of risks, technologies, etc. from the Vit. Completion Team process and the letter is meant to provide better direction.

-DOE wants to focus on removal of waste and less on creating WIR analysis work. The letter is intended to provide direction for removal efforts.

Status of Actions

❑ ISSUE 1

❙ SAIC provided Np value to allow 500 m/Rem introduced dose.

- Question: Is 500 m/Rem the right number?

▸We do have rough figures of 1/10 Ci of Np yields 100m/Rem to intruder

▸Fred still needs the information of the references based format in order to use the information for the site-specific application of 61:55

▸Thoughts - one that we need to pick targets for alpha-TRU components.

▸Need to send SAIC a memorandum directing SAIC on the tank inventory and spatial distribution information for Appendix F determination , further changes can be handled on a USQD type approach.

ACTIONS:

1) WVNS to send letter to DOE, due 2/28/01 by Fred Damerow
2) DOE send letter to SAIC, due 3/5/01 by Dan S.
3) SAIC run new "confirmatory analysis", due 3/19/01 by SAIC
4) Flow diagram, done
5) Finalize diagram, done
6) Evaluate feasibility of sending LLW glass canisters to NRS, due TBD by Hamel/Palmer
7) Evaluate feasibility of placing VEMP material into LLW glass, due TBD by Hamel/Palmer

❙ Revise basis document to recognize site-specific application of 61:55 bases upon discussing and new action, date moved to April 1, 2001. (Fred Damerow)

❑ ISSUE 2

- Submit WIR to the NRC by April 2001, move date to May 15, 2001
- Evaluate approval/concurrence question, or the WIR, due 2/02
  - Based upon new information, this action should be done 3/15/01.
- NRC review, response on the WIR is due 2/02 (date is as is).

❑ ISSUE 3

- Proceed with FY01 - ongoing
- Perform summary presentation - done
- Obtain relevant data from SRS tank ring evaluation - done but does not provide any significant or completely relevant information.
- Provide presentation on SAP - (Defensibility of Data) - due 3/07/01
- Improve the M-4 Sluicer Capability - due 6/01/01 Meess
- Evaluate/Develop a Plan for Deploying a Third Sluicer - due 8/1/01 Meess
- Evaluate/Develop a Plan for Chemical Decon - 8/01/01 Meess
- Re-evaluate the Safety Analysis Implications of Chemical Decon - 6/01/01 Chilson/Bower
- WASRD/WAPS Changes to Support the Potential Chemical Decon - due 8/01/01 Hamel
- WVNS Update the Flushing Run Plan - due 2/20/01 Meess

❑ ISSUE 4

Sodium Waste: Draft Cost Benefit Analysis - Done (Presented by Ron Palmer)

- WIR for Sodium Waste Form to Demonstrate Non-HLW - due TBD HLW Projects

❑ ISSUE 5

Strategy for Application of WIR Groupings - Actions deferred until 9/01

SIDE ISSUES:

1) System Flushing - current flushing plans are being reviewed and changes are being generated. This issue is currently being worked. (Hamel to issue letter to incorporate expectations into the Flushing Run Plan, due 2/28/01)

2) Back Up Plan For Melter Life - Hamel letter, have WVNS provide monitoring methods and potential investigation strategies for melter future modes.

3) Safe Lay-Up Configuration - August 2001 draft strategy per CPAF milestone, further evaluation after the August draft.

4) RCRA - Develop an Document the Strategy for Addressing RCRA in light of the current path forward - due 8/01/01 Gerber/Maloney

   Bill Hamel - needs to tie into the system lay-up strategy

Results of (Draft) Na Processing Cost/Benefit Analysis

A presentation was given by Ron Palmer on the draft cost Benefit Analysis. Some notes/discussion are as follows:

- There is a need to process approximately 2 Vit cans per month while working on cleaning methods.
- We should consider processing Na wastes into glass during this effort. The idea being that we are making cans regardless and processing the Na waste will help reduce the amount of activity within the Vit system thus reducing the risks should the melter die.
- An additional recommendation has surfaced to consider "other" options than solidification for the remaining Na Waste. (E.g. Ship via vendor as liquid LLW Tanker, or Process the liquid through a skid mounted treatment system)

Review/Finalize the Process Flow Diagram

- A discussion/presentation was given by Dan Meess on the current revision
- Some very minor changes were generated and incorporated into the flow diagram.

Presentation to the Sponsors - Comments/Responses

- Issue # 2 - NRC Review of the WIR sparked the following discussion points:
  - There was a concern expressed over the submission of the WIR for class C LLW end points. The concern being, what if we can not meet the class C requirements?

    Can we consider giving the NRC examples of the Performance Assessments for their review to help expedite a future (Actually Achievable) WIR submittal. This would provide for more flexibility without a promise to the NRC of being able to meet class C requirements.

- Recommendation # 1 - Commit resources for additional tank cleaning brought about the following comment:

  Convincing decision maker to use a chemical such as oxalic acid would not be easy and the potential for significant additional testing for tank safety issues would be necessary.

- Sponsor closing Comments:

  Bob Campbell - More testing than we currently think would be necessary prior to being

approved to use acid in the tank.

Paul Piciulo - Also believes that using acid would be a hard sell.

Alice Williams - Good change control could be an issue and may be key for recommendation # 1. Safety analysis is not "easy". The up-front thinking and work are a move in the proper direction, proceeding early is a smart approach. Alice would also like to learn more about the SRS low heat & high heat tanks - can we learn more than we currently think ?? The WIR issue should be looked at separately, we may again be able to learn more from SRS in this area.

Cost/Benefit Analysis for Sodium Processing: Glass vs. Cement

Summary

- A rough order of magnitude (R.O.M.) cost estimate and a brief benefit/risk assessment were done comparing the solidification of sodium-rich liquid waste in glass and cement.

Cost Estimate Assumptions Common to Glass and Cement

- Costs are in FY2002 dollars
- Most of the work will be done in FY2002
  - (after completion of HLW processing)
- Initial storage of canisters/drums will be on site
- Final disposal costs are not included
- Glass waste form will meet disposal site waste acceptance criteria
- Warehouse min/max costs are not included
- Waste Tank Farm support will be 24 hours per day, 7 days per week, for 1 year
- LWTS/STS operations is the same for both options (these costs are not included in the cost comparison)

Cost Estimate Assumptions for Glass

- Systems continue to operate for one year
- Routine maintenance for continued melter operations
- Canisters are already available
- HLW glass composition is ok for LLW
- Production of 60 canisters over one year
- **Final cost estimate: $12.2 million**

Cost Estimate Assumptions for Cement

- Project planning under way
- Low level radiological conditions in place
- A qualified vendor is available
- Existing CSS subsystem can be used
- No decontamination/decommissioning costs
- Estimate assumes system operation costs for WVNS personnel
- Two campaigns for six weeks each, 24 hours per day, 5 days per week
- **Final cost estimate: $5.6 million**

Major Benefits

- Solidification in glass has the major benefit that there is a vitrification system up and running which can be readily transformed to immobilizing the low level waste.
- Solidification in cement has the major benefit of being a compartmentalized, separate operation which can be done in low level radiological conditions.

Discussion of Risk

- The main risk factor in considering glass immobilization is the possibility of melter failure during the course of the campaign.
- The main risk factor in considering immobilization in cement is the lack of an approved waste form.

HOWEVER...

Conclusion

- Cost for cement is about 46% of glass.
- Risk of melter failure for glass is very high and much more likely than than the risk for not being able to produce an acceptable cement.
- The recommendation from this comparison is to make a cement waste form.

Department of Energy
Ohio Field Office
West Valley Demonstration Project
10282 Rock Springs Road
West Valley, NY 14171-9799

February 7, 2001

Mr. Robert R. Campbell, President
West Valley Nuclear Services Company
10282 Rock Springs Road
West Valley, NY 14171-9799

ATTENTION: P. J. Valenti, High-Level Waste Projects Manager, WV-53

SUBJECT: Expectations for High-Level Waste (HLW) Removal from the Waste Tank Farm

Dear Sir:

The U.S. Department of Energy (DOE), Ohio Field Office West Valley Demonstration Project (OH/WVDP) has determined that West Valley Nuclear Services Company (WVNS) requires clarification on OH/WVDP's expectations regarding the HLW removal from Tanks 8D-1 and 8D-2 during fiscal years (FY) 2001 and 2002. The following expectations should be factored into your current operations and out-year planning:

1. WVNS should continue to remove residual HLW from Tanks 8D-1 and 8D-2 until the limits specified in Code of Federal Regulations, 10 CFR61, "Licensing Requirements for Land Disposal of Radioactive Waste," §61.55, "Waste Classification" are not exceeded within reasonable uncertainty. Since the limiting scenario for supporting tank reclassification is the in-place closure scenario, DOE requests that guidance provided in the U.S. Nuclear Regulatory Commission (NRC) Branch Technical Position Paper on Concentration Averaging and Encapsulation (Revision in Part to Waste Classification Technical Position) be used to support a WIR for tanks. Consistent with this guidance, WVNS can take credit for up to 40 inches of a binding or solidification agent (e.g., grout) in the bottom of Tanks 8D-1 and 8D-2;

2. WVNS should continue to remove residual HLW from Tanks 8D-1 and 8D-2 until a successful Waste Management Area 3 Performance Assessment can be satisfied such that enough margins will exist for receptors receiving doses from other source terms;

3. WVNS should be proactive in developing and deploying appropriate methodologies to address removal of the fixed contamination from Tank 8D-2 to achieve items 1 and 2 above;

4. WVNS should revise the, "Technical Basis for Waste incidental to Reprocessing Determination for Tanks 8D-1 and 8D-2," to reflect meeting Class C limits stated in item 1 above;

5. The revised basis document should address the entire Waste Tank Farm, not just Tanks 8D-1 and 8D-2; and

6. All data collected to support demonstration of completion of items 1 and 2 above shall be defendable and collected per an approved plan.

If you have any questions regarding this matter, please contact me on Extension 4312.

Sincerely,

Alice C. Williams

Alice C. Williams, Director
West Valley Demonstration Project

cc: T. J. Jackson, OH/WVDP, WV-DOE
E. A. Lowes, OH/WVDP, WV-DOE
J. J. May, OH/WVDP, WV-DOE
D. W. Sullivan, OH/WVDP, WV-DOE
P. L. Piciulo, NYSERDA, WV-17
F. W. Damerow, WVNS, WV-53
D. C. Meess, WVNS, WV-54

WFH:0215 - 76099 - 434.1

WFH/sdm

TIME-PHASED VITRIFICATION COMPLETION FLOW SHEET

March 1, 2001

2001 | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP

Make Up Low Activity Batch 73
Canister #255

Process Batch 72/73 thru Melter
Canister #260

Process Batch 73/74 thru Melter
Canister #264

Process Batch 74/75 thru Melter
Canister #268

Process Batch 75/76
Canister #273

Flush With Batch 77
Canister #278

Make up Batch 74

Make up Batch 75

Make up Batch 76

Make up Flush Batch 77

HLW Processing Complete

Power Down Melter

Update Flushing Run Plan

Waste Removal & Tank 8D-2 Wall Washing With Sluicers

Yes

Power Down Melter?

No

Continue Waste Removal: Na, Cr, Additional Cs & Alpha-TRU
Vitrify into Canisters #269 to #305
NOTE: ~1/4 of liquid waste remains

Power Down Melter

Improve M-4 Sluicer Capability

Wall-TRU Sampling

Post Wash Sampling

Tank 8D-2 Characterization

Additional Tank 8D-2 Characterization

Flush Melter

Yes

Tank Meets WIR?

No

No

Further Waste Removal Into New Waste Form

Rerun Performance Assessment

WIR Criteria

Tank Meets WIR?

Yes

No

NRC Input Necessary?

Yes

Idle Melter or Flush With Tank Liquid

DOE Determine WIR Assumptions

Rerun Tech & Economic Practicality Model

No

Alternate Cleaning Methods Necessary?

No

Continue Waste Removal and Vitrification (including Na, Cr and Tc-99)

Additional Tank Cleaning
BetterThird Sluicer
Chemical Decon

Yes

Deploy Alternate Cleaning Methods:
- Better 3rd Sluicer in M-1 (center) riser by end CY-01 or
- Chemical Decon by Early CY-02, if necessary

Evaluate and Develop Alternate Cleaning Methods:
Mechanical and Chemical

RW WASRD Change: Allow Organics

Post Wash Sampling Data Evaluation

Continue Cleaning Tank and Develop New Non-HLW Waste From/Process

EM WAPS Change

WQR Change

Yes

Develop WIR for Removable 8D-2 Waste, For Back-Up, Should Melter Fail

Safety Analysis Chemical Cleaning

Proceed with Alternate WIR

NOTE: This flow diagram provides a relative relationship of activities. It is not intended to be a schedule.

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