

DEC 08 1990

Project M-32

Memorandum for: Charles J. Haughney, Chief
Fuel Cycle Safety Branch
Division of Industrial and Medical
Nuclear Safety, NMSS

From: R. Davis Hurt
West Valley Project Manager
Advanced Fuel and Special
Facilities Section
Division of Industrial and Medical
Nuclear Safety, NMSS

SUBJECT: WEST VALLEY MANAGEMENT MEETING

On November 20, 1990, representatives of the West Valley Demonstration Project (WVDP) made a presentation to NRC management on the general status of the WVDP and upcoming issues that may require NRC action. A meeting agenda, a list of meeting attendees, and a copy of the viewgraphs presented by the WVDP speakers are enclosed.

The presentations covered the high-level waste processing that remains to be done and support from NRC that the Project expects to need in this area in the near future. There was considerable discussion of the WVDP's relationship with the Environmental Protection Agency, various New York State regulatory authorities, and the Department of Energy's (DOE's) Office of Civilian Radioactive Waste Management.

The heaviest emphasis of the presentations was on the site closure Environmental Impact Statement (EIS) being prepared by DOE and the New York State Energy Research and Development Authority. By the terms of the West Valley Demonstration Project Act, NRC will have to prescribe decontamination and decommissioning requirements for the WVDP. DOE is anxious for NRC to provide this prescription as soon as possible.

Original Signed by
R. Davis Hurt
Advanced Fuel and Special
Facilities Section
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety

Enclosures:

- 1. Meeting Agenda
- 2. List of Attendees
- 3. WVDP Viewgraphs

cc: NRC Meeting Attendees
(w/ enclosures)

DISTRIBUTION:

| | | | |
|-----------------|-------------------|--------------|------------------|
| Project M-32 | IMAF R/F | RDHurt | LPittiglio, LLWM |
| PDR/LPDR | IMSB R/F | GComfort | FBrown (LA file) |
| NRC File Center | IMNS Central File | JRoth, Reg I | RWeller, HLWM |
| NMSS R/F | JJSwift | IE Reg I | RECunningham |
| GLSjoblom | MAustin, Reg I | | |

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NF14

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| DFC | :IMAF RDL | :IMTF | :IMAF | : 9012060094 | : 901203 | : |
| NAME | :DHurt:ls | :Brown | :JSwift | : PDR PROJ | : PDC | : |
| DATE | :11/20/90 | :11/30/90 | :12/03/90 | : | : | : |

AGENDA

MEETING ON THE WEST VALLEY DEMONSTRATION PROJECT
9:00 a.m. - 12:00 noon
NOVEMBER 20, 1990
ROCKVILLE, MARYLAND

1. Introduction - Thomas J. Rowland
Acting Director
West Valley Project Office, DOE
2. Project Overview - William G. Poulson
Executive Vice-President
West Valley Nuclear Services
 - a. project history
 - b. project status
3. Phase II EIS - Sandy J. Szalinski
Post-Solidification Project Manager
West Valley Nuclear Services
 - a. EIS status
 - b. key NRC issues
4. HLW Processing - Robert E. Lawrence
Vitrification Project Manager
West Valley Nuclear Services
 - a. status of HLW processing
 - b. key NRC issues
5. Summary - Thomas J. Rowland and William G. Poulson
 - a. periodic review
 - b. concepts and solutions
 - c. communications

MEETING ON THE WEST VALLEY DEMONSTRATION PROJECT
 NOVEMBER 20, 1990
 ROCKVILLE, MARYLAND

Attendees

Department of Energy

| | |
|-----------------------|---|
| Thomas J. Rowland | Acting Director, West Valley Project Office |
| Richard B. Provencher | West Valley Project Office |
| Philip S. Van Loan | West Valley Project Office |
| Theodore W. McIntosh | West Valley Program Manager, HQ |
| Kenneth G. Picha | BDM Corporation (DOE contractor) |

New York State Energy Research and Development Authority

| | |
|--------------------|---|
| Theodore K. DeBoer | Director, Radioactive Waste Management Programs |
|--------------------|---|

West Valley Nuclear Services (DOE contractor)

| | |
|--------------------|---|
| Joseph J. Buggy | President |
| William G. Poulson | Executive Vice-President |
| Robert E. Lawrence | Vitrification Project Manager |
| Carlyle J. Roberts | Safety & Environmental Assessment Manager |
| Gary G. Baker | Environmental Compliance Manager |
| Sandra Szalinski | Post-Solidification Project Manager |
| David H. Kurasch | Waste Characterization Manager |

Nuclear Regulatory Commission

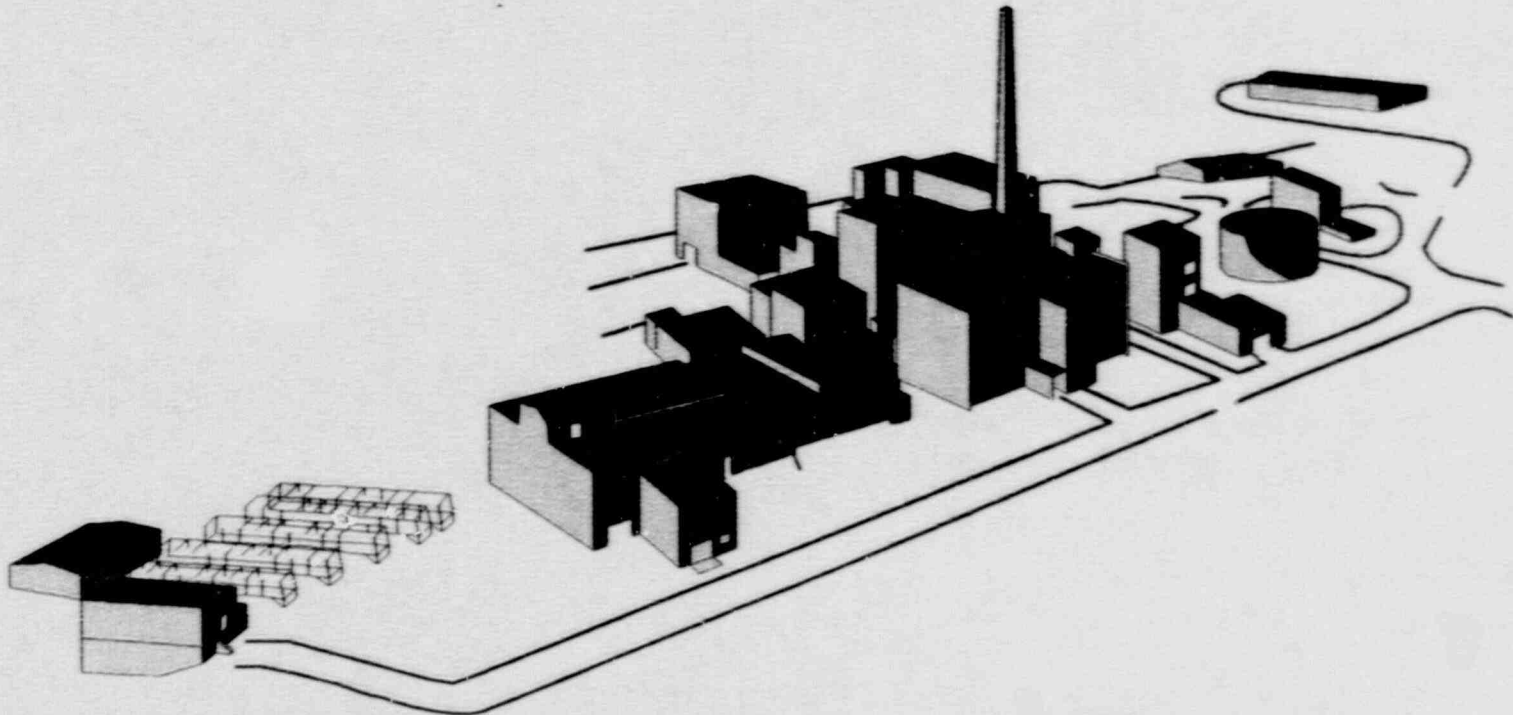
| | |
|-----------------------|---|
| Hugh L. Thompson | Deputy Executive Director for Nuclear Materials Safety |
| Robert M. Bernero | Director, Office of Nuclear Material Safety and Safeguards (NMSS) |
| Suy A. Arlotto | Deputy Director, Office of NMSS |
| Richard E. Cunningham | Director, Division of Industrial and Medical Nuclear Safety (IMNS) |
| Glen L. Sjoblom | Deputy Director, Division of IMNS |
| Richard L. Bangart | Director, Division of Low-Level Waste Management and Decommissioning (LLWM) |
| John T. Greeves | Deputy Director, Division of LLWM |
| Robert E. Browning | Director, Division of High-Level Waste Management |
| Malcolm R. Knapp | Director, Division of Radiation Safety & Safeguards, Region I |
| Charles J. Haughney | Chief, Fuel Cycle Safety Branch, INMS |
| John H. Austin | Chief, Regulatory Branch, LLWM |
| Jerry J. Swift | Section Leader, IMNS |

| | |
|--------------------|--|
| Timothy C. Johnson | Section Leader, LLWM |
| Richard A. Weller | Section Leader, HLWM |
| Robert J. Bores | Section Leader, Region I |
| R. Davis Hurt | NRC West Valley Project Manager, IMNS |
| C. Larry Pittiglio | LLWM West Valley Project Manager |
| Mary T. Adams | LLWM |
| Jack S. Parrott | LLWM |
| Joseph D. Kane | LLWM |
| James T. Conway | HLWM |
| James R. Wolf | Office of the General Counsel |
| Michael F. Weber | Office of the Commission |
| Susan G. Bilhorn | Office of the Commission |
| Howard J. Larson | Advisory Committee on Nuclear Waste |
| Prasad K. Nair | Center for Nuclear Waste Regulatory Analyses (NRC contractor) |

**West Valley
Demonstration Project**



**Presentation to
Nuclear Regulatory Commission**



November 20, 1990



T. J. Rowland

Acting Director

West Valley Project Office

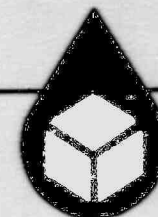
Purpose



WVDP Meeting with NRC November 20, 1990

- **Review WVDP Purpose**
- **Update WVDP Status**
- **Identify Key WVDP Issues Requiring NRC Interaction**
- **Present the Process and Timeframes for DOE Decision-Making**
- **Discuss Expectations**

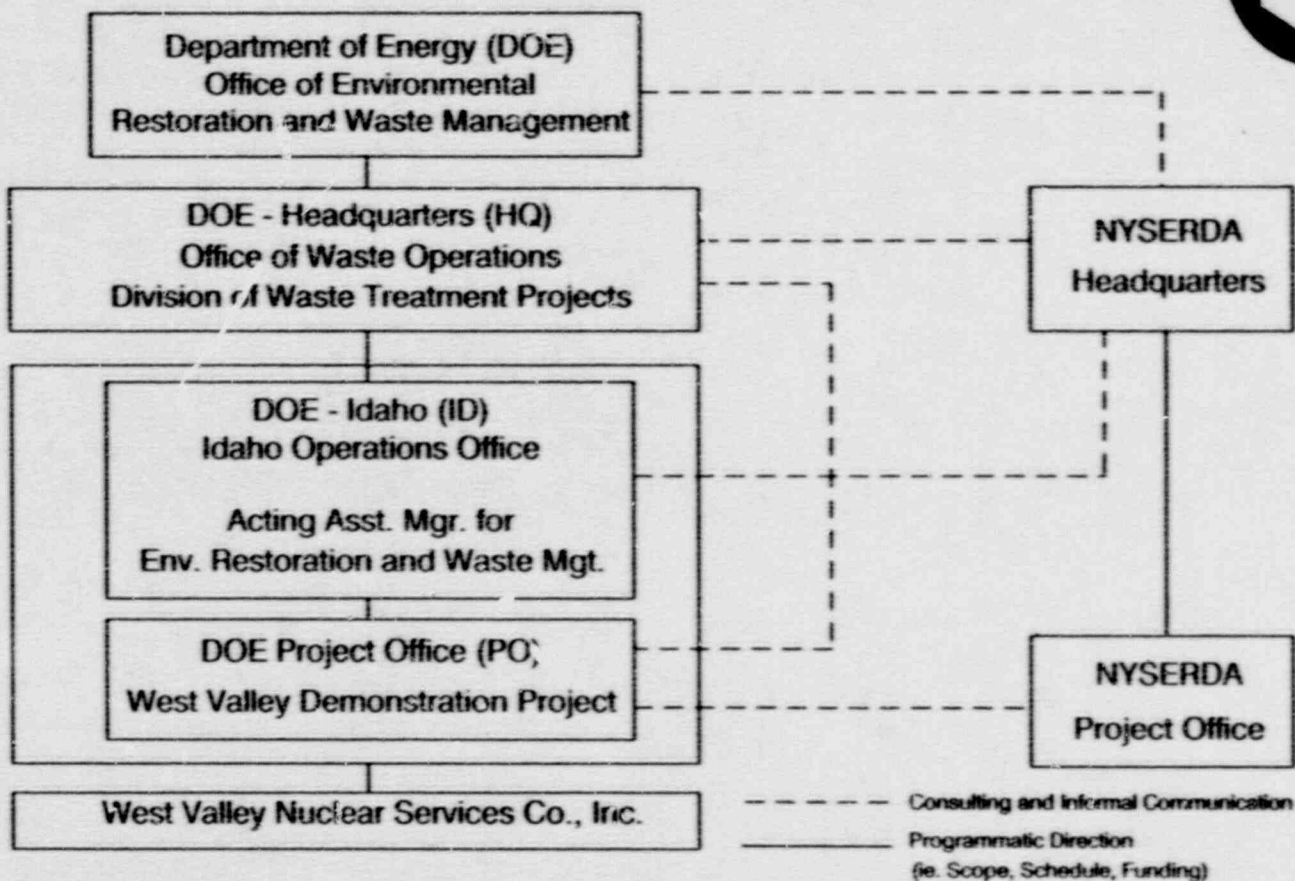
Agenda

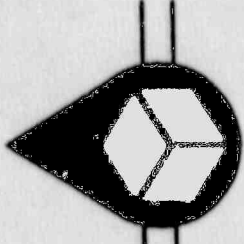


WVDP Meeting with NRC November 20, 1990

- **Introduction** T. J. Rowland, Acting Director
West Valley Demonstration Project
- **Project Overview** W. G. Poulson, Executive Vice President and
Deputy General Manager
West Valley Nuclear Services Co., Inc.
- **Phase II EIS Overview** S. J. Szalinski, Post-Solidification Project
Manager
- **HLW Process** R. E. Lawrence, Vitrification Project Manager
- **Summary / Expectations** T. J. Rowland, W. G. Poulson

Project Organization



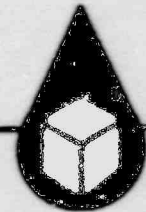


W.G. Poulson

**Executive Vice President
and Deputy General Manager**

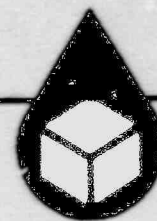


WEST VALLEY DEMONSTRATION PROJECT HISTORY



- 1962 Nuclear Fuel Services (NFS) Reached Agreement with the Atomic Energy Commission and New York State to Construct the First Commercial Reprocessing Plant in the United States.
- 1966-1972 During Operation, Approximately 640 Metric Tons of Spent Nuclear Fuel were Reprocessed to Recover Usable Uranium and Plutonium.
- 1972 Reprocessing Plant Shut Down for Modifications to Increase Capacity.
- 1976 NFS Withdrew from the Reprocessing Business. Responsibility for the Site was Turned Over to New York State.
- 1980 U.S. Congress Passed the West Valley Demonstration Project Act Authorizing DOE to Carry Out a High-Level Nuclear Waste Management Demonstration Project.
- 1981 West Valley Nuclear Services was Selected as Operating Contractor for the West Valley Demonstration Project.
- 1982 DOE and West Valley Nuclear Services Assumed Operational Control of the Site. New York State Retained Ownership of the Site.

West Valley Demonstration Project



Objective

Demonstrate Solidification and Preparation of High-Level Waste for Permanent Disposal

Authority

Public Law 96-368, West Valley Demonstration Project Act

Scope

Solidify Liquid High-Level Waste

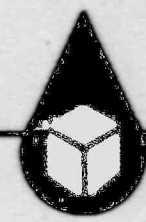
Develop Containers

Transport to Federal Repository

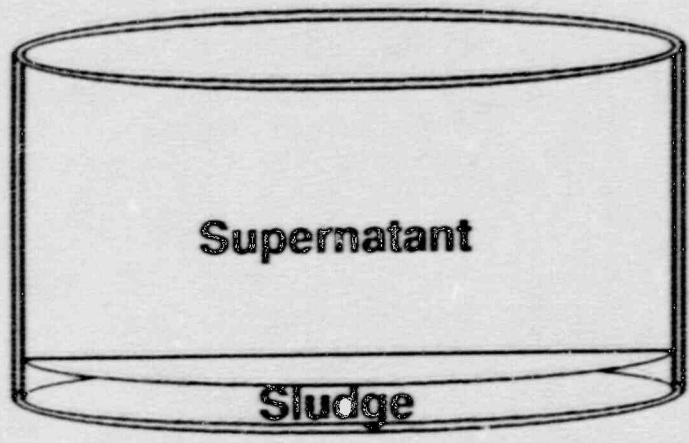
Dispose of Low-Level and Transuranic Waste

Decontaminate and Decommission Facilities Used to Support Solidification

NUCLEAR WASTE MANAGEMENT CHALLENGE



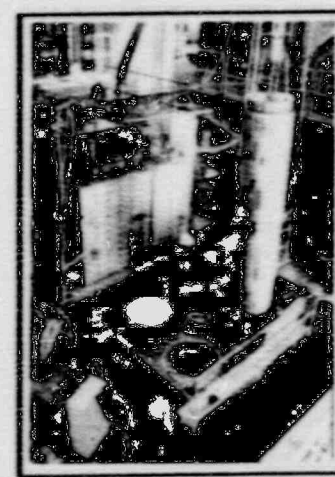
The Challenge:
660,000 Gallons



8D-2

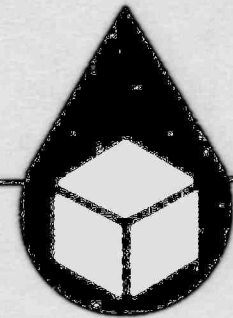


15,000
Low-Level Waste
Cement Drums

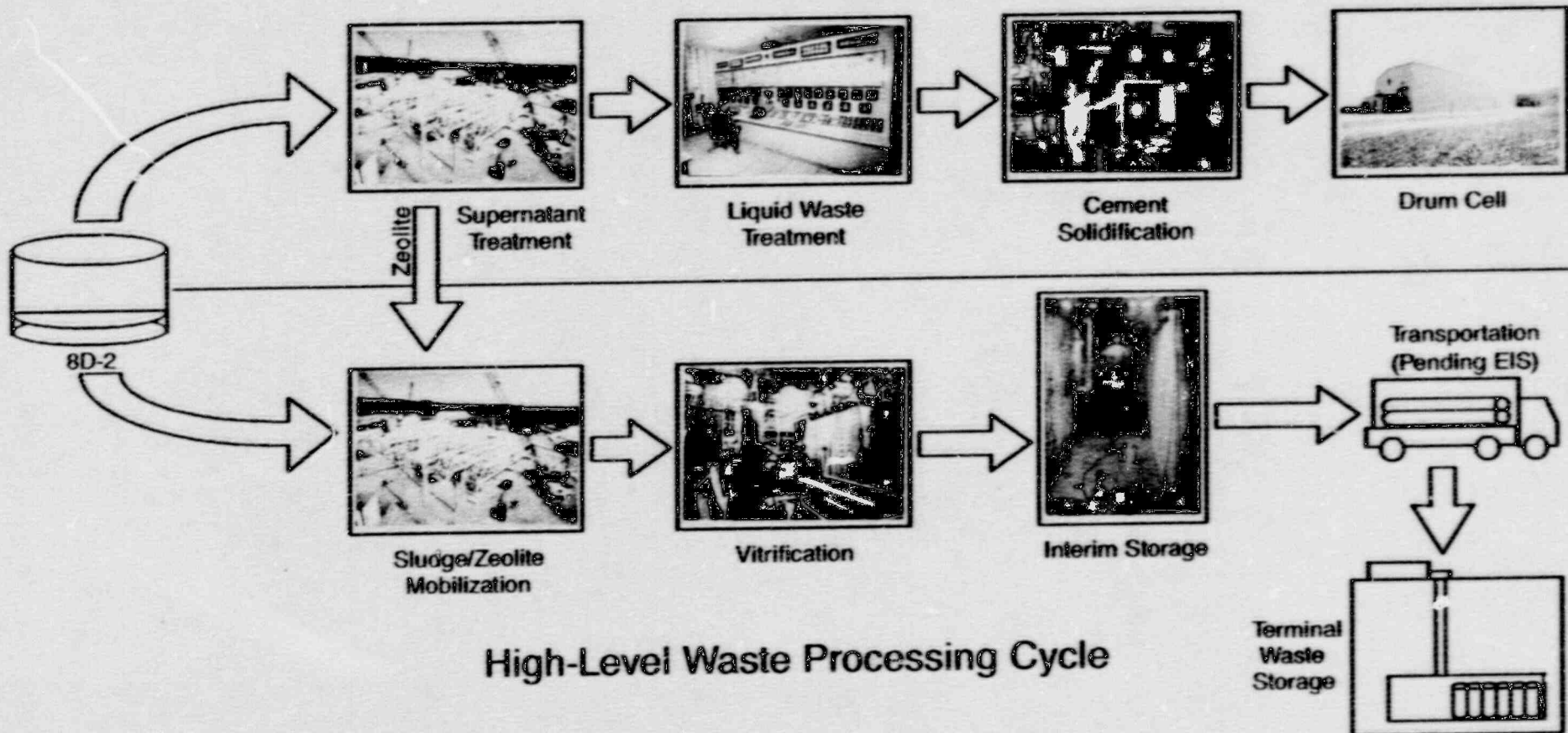


300
Glass
Canisters

Nuclear Waste Management Processes



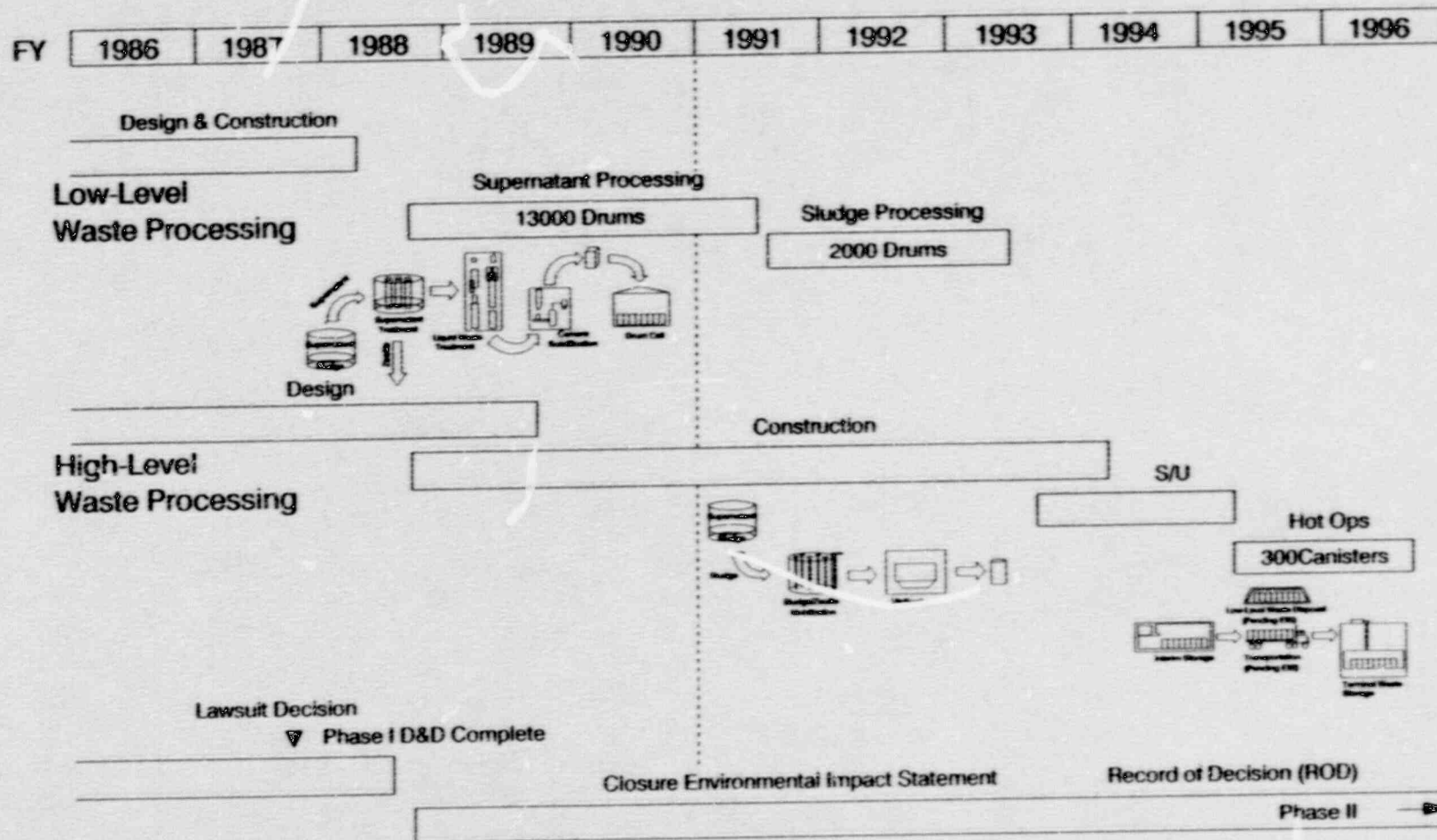
Low-Level Waste Processing Cycle



High-Level Waste Processing Cycle

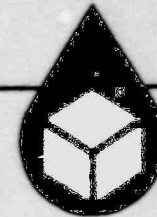
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SUMMARY MASTER SCHEDULE



West Valley Demonstration Project

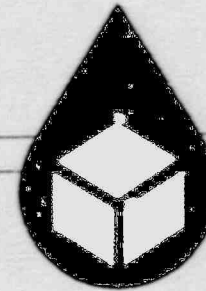
Status



- **Supernatant Treatment 75% Complete**
 - 414.00 Gallons Processed
 - 10,000 Drums Produced
 - 5.20×10^6 Ci Cesium Removed

- **Completed Vitrification Full-Scale Test Program**
 - 45-Day Remote Run
 - Waste Acceptance Specification Accepted
 - Waste Compliance Plan Issued

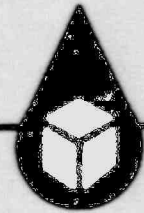
- **Vitrification Construction 35% Complete**



S. J. Szalinski

Post-Solidification
Project Manager

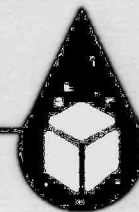
PHASE II ENVIRONMENTAL IMPACT STATEMENT



Requirements

The National Environmental Policy Act (NEPA) and the New York State Environmental Quality Review Act (SEQRA) mandate that all Federal and State agencies prepare detailed environmental statements on major actions significantly affecting the quality of the human environment.

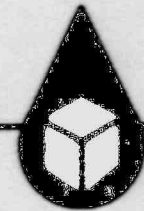
PHASE II ENVIRONMENTAL IMPACT STATEMENT



History

- 1982 • EIS for Long-Term Management of Liquid High-Level Waste
- 1986 • Environmental Assessment for Project Disposal of Low-Level Waste
- 1987 • Stipulation of Compromise Settlement Regarding Low-Level Waste Disposal
- 1988 • Notice of Intent to Prepare a Joint Project Completion and Site Closure EIS

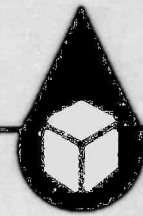
PHASE II ENVIRONMENTAL IMPACT STATEMENT



Purpose

- Provide Environmental Information for Consideration in Federal and State Decision-Making Related to:
 - Project Completion Activities by the Department of Energy (DOE)
 - Closure of the Western New York Nuclear Service Center (WNYNSC) by the New York State Energy Research and Development Authority (NYSERDA)

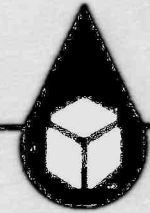
PHASE II ENVIRONMENTAL IMPACT STATEMENT



Scope

- Decontamination & Decommissioning (D & D) of Project Facilities
- Shipment of High-Level Waste (HLW) to Repository
- Disposal of Transuranic (TRU) and Low-Level Waste (LLW)
- D & D of Balance of Center as a Whole
- Site Closure and/or Long-Term Management

PHASE II ENVIRONMENTAL IMPACT STATEMENT



Responsibilities

DOE

- Lead Agency for NEPA Compliance
- Record of Decision for Federal Actions

NYSERDA

- Lead Agency for SEQRA Compliance
- Record of Decision for State Actions

EIS Contractor

- Review and Analyze Data
- Perform Environmental Analysis
- Prepare EIS Document

WVNS

- Collect and Develop Waste Characterization Data
- Define Feasible Alternatives
- Support Public Review Process

Dames & Moore

- Collect and Develop Site Characterization Data

SCHEDULE FOR EIS PROCESS

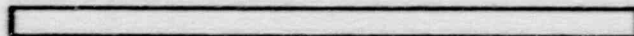


| FY89 | FY90 | FY91 | FY92 | FY93 | FY94 | FY95 | FY96 |
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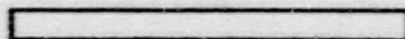
Notice of Intent

△ 12/88

Waste & Site
Characterization



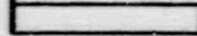
Alternatives Development



EIS Contract Award



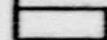
DEIS Preparation



DEIS Public Review



FEIS Preparation



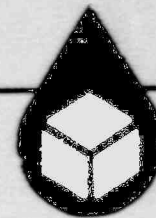
FEIS Review



Record of Decision

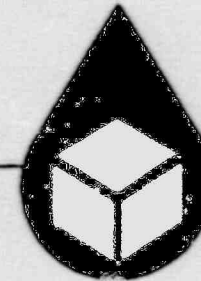


Milestones



- **EIS Contract Award** **May 1991**
- **DEIS Available** **July 1992**
- **Public Review Complete** **January 1993**
- **FEIS Available** **July 1993**
- **Record of Decision** **October 1993**

Accomplishments

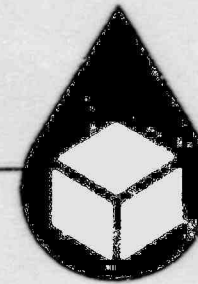


- **Scoping Process**
 - Notice of Intent 12/30/88
 - Formal Comment Period Closed 2/23/89

- **Implementation Plan**
 - Prepared per DOE Requirements to Record Scoping
 - Process and Guide Preparation of EIS
 - Draft A Issued 7/89
 - Draft C Issued 3/90
 - Includes Public Comments Thru 12/20/89
 - Reviewed by NRC

- **Site Characterization Plan**
 - Describes Scope of Site Characterization Studies for EIS
 - Prepared 7/89
 - Reviewed by NRC
 - Sent to EPA and NYSDEC for Review

Accomplishments (Continued)



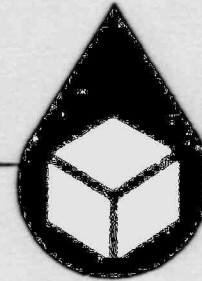
- **Performance Assessment**

- Review Methodology and Computer Codes for Pathways Analysis
- Prepared 7/89
- Reviewed by NRC

- **Strategic Plan**

- Identifies 11 Strategic Issues and Proposes Approaches for Each
- Draft 4/90
- Final 8/90
- D&D Criteria & Radioactive Waste Disposal Represent 7 of the 11 Issues

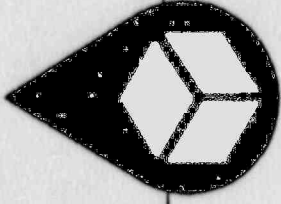
Accomplishments (Continued)



● **Potential Site Closure Alternatives**

- Outlines 6 Potential Site Closure Alternatives for Evaluation in the EIS**
- Identifies Conceptual Closure Options for 21 Groups of Facilities for Each Alternative**
- Provides a Framework for Planning and Developing Specific Closure Activities**

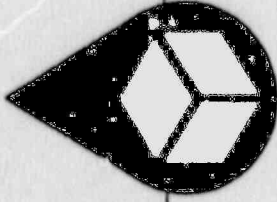
Key Issues



- **D&D Performance Criteria**
 - DOE Project Completion Relative to NYSERDA Site Closure
 - Closure of Solid Waste Management Units
 - Precedence for Other Sites
 - NRC D&D Criteria Relative to EPA RCRA Closure Criteria

- **Spent Fuel**
 - Currently on Site
 - Disposition Uncertain

Key Issues (Continued)

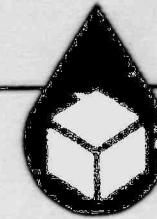


- High-level Waste
 - Repository Availability Uncertain

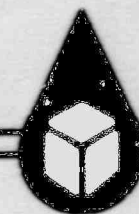
- Greater Than Class C and "Commercial" TRU
 - Definition of TRU (10mCi/gm vs 100 nCi/gm)
 - Disposition Uncertain

- Low-level Waste Disposal
 - EIS Will Evaluate On-site Disposal
 - Off-site Options are Becoming Fewer

Expectations

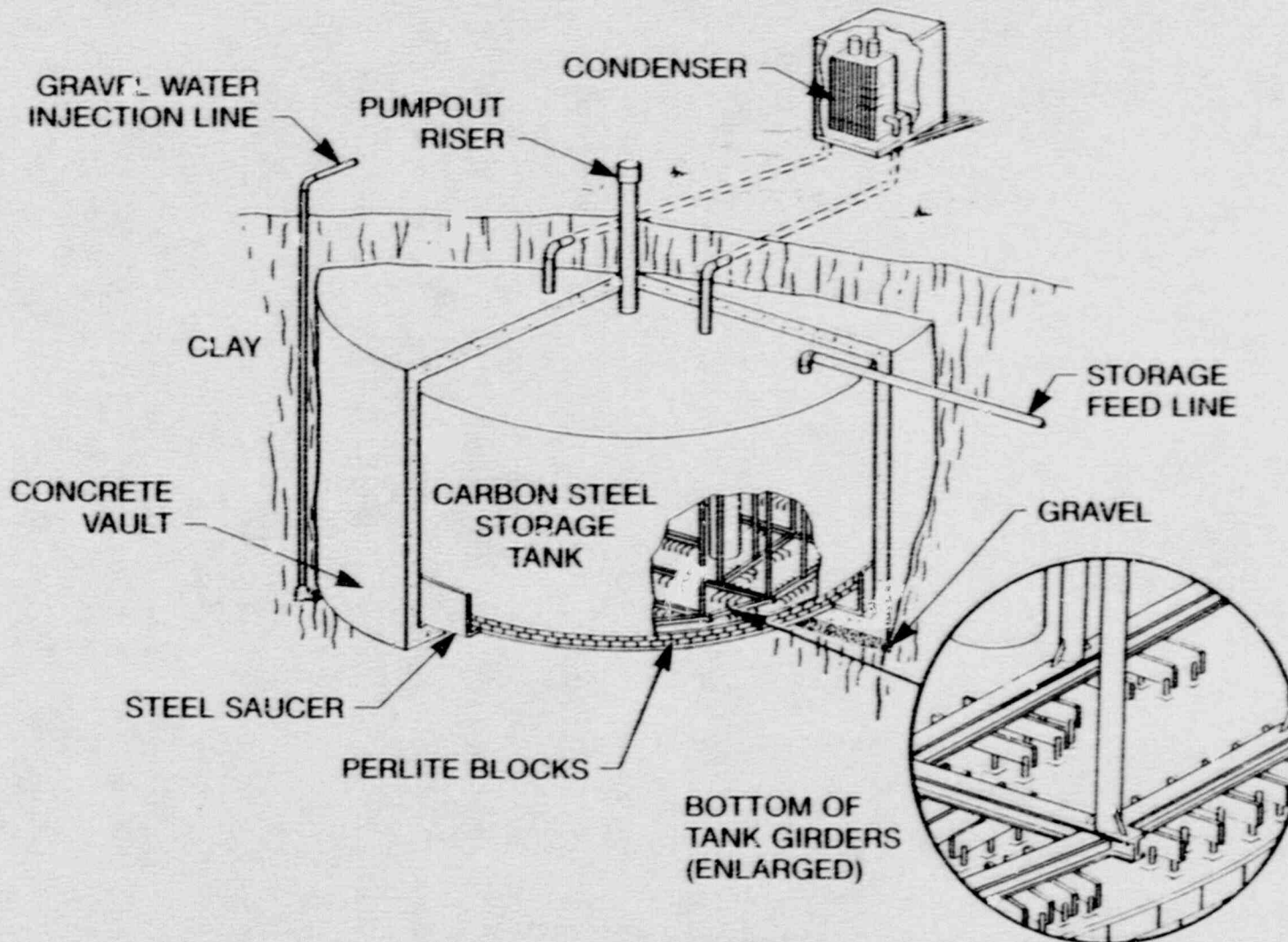


- **Development of Concepts**
 - Review and Discuss WVDP Concepts and Proposed Solutions
e.g. LLW Disposal, Erosion Protection, Engineered Barrier Lifetimes
- **Timely Review**
 - Aid Project in Keeping on Schedule
- **Partners in Progress**
 - Provide Input to Assist WVDP in Developing Solutions to Generic Problems e.g. Old Burial Grounds and New LLW Disposal Facilities
- **Regularly Scheduled Meetings**
 - Maintain On-going Communication
 - Keep Forward Momentum
 - Know the Players
 - Keep Teams Intact



R. E. Lawrence
Vitrification Project Manager

HIGH-LEVEL LIQUID WASTE TANK



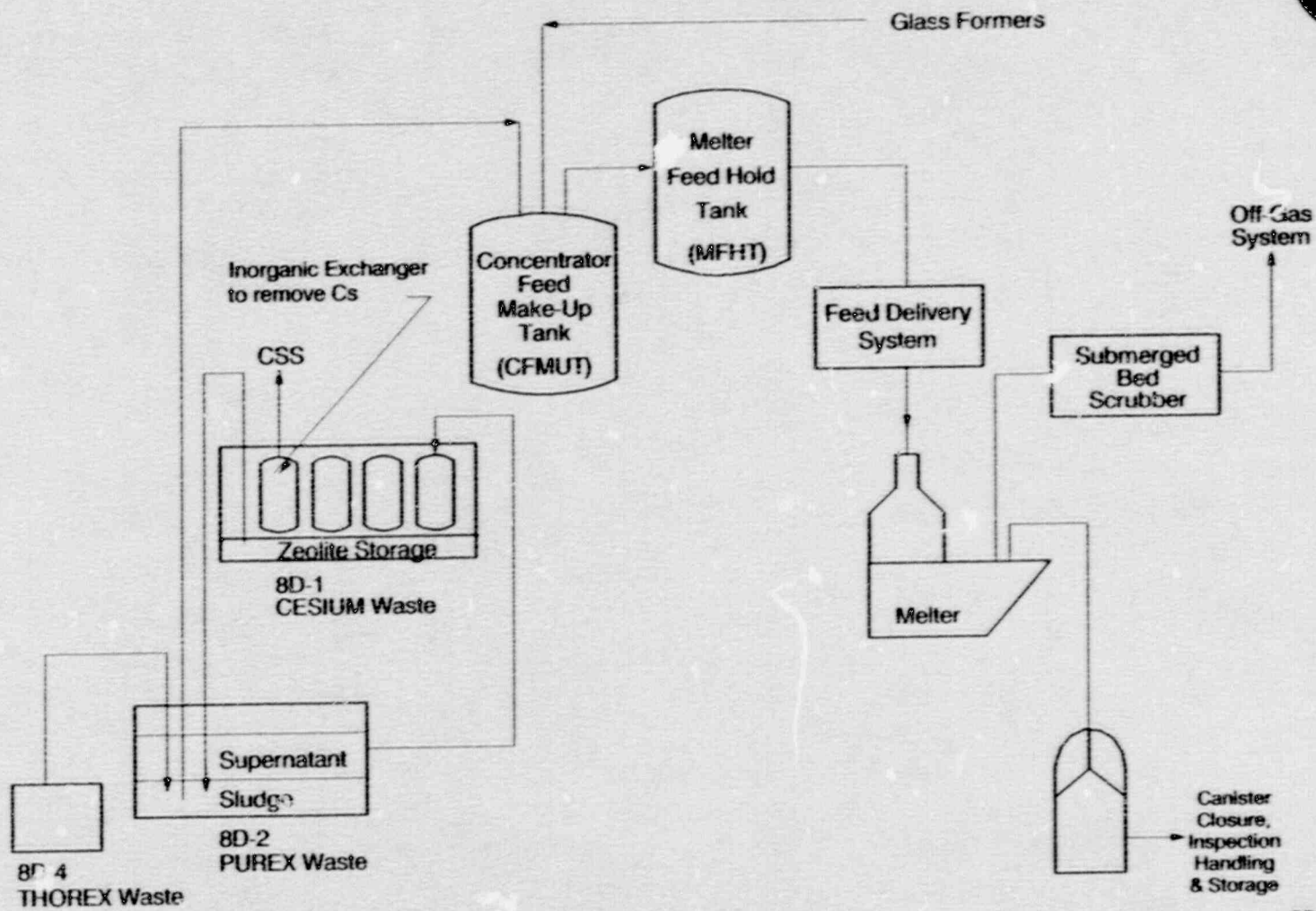
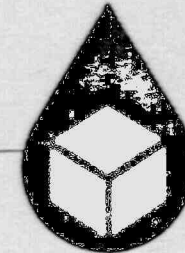
Sludge Wash



- **Reduce Sodium Salts in Melter Feed**
 - **Sulfates Troublesome**

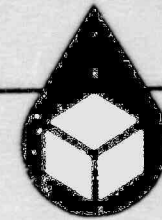
- **Process Wash Water Through IRTS**
 - **Ti-Coated Zeolite**
 - **SAR Addendum**
 - **Cement Recipe Qualification**
 - **Topical Report / Process Control Plan**

West Valley HLW Processing Flow Sheet



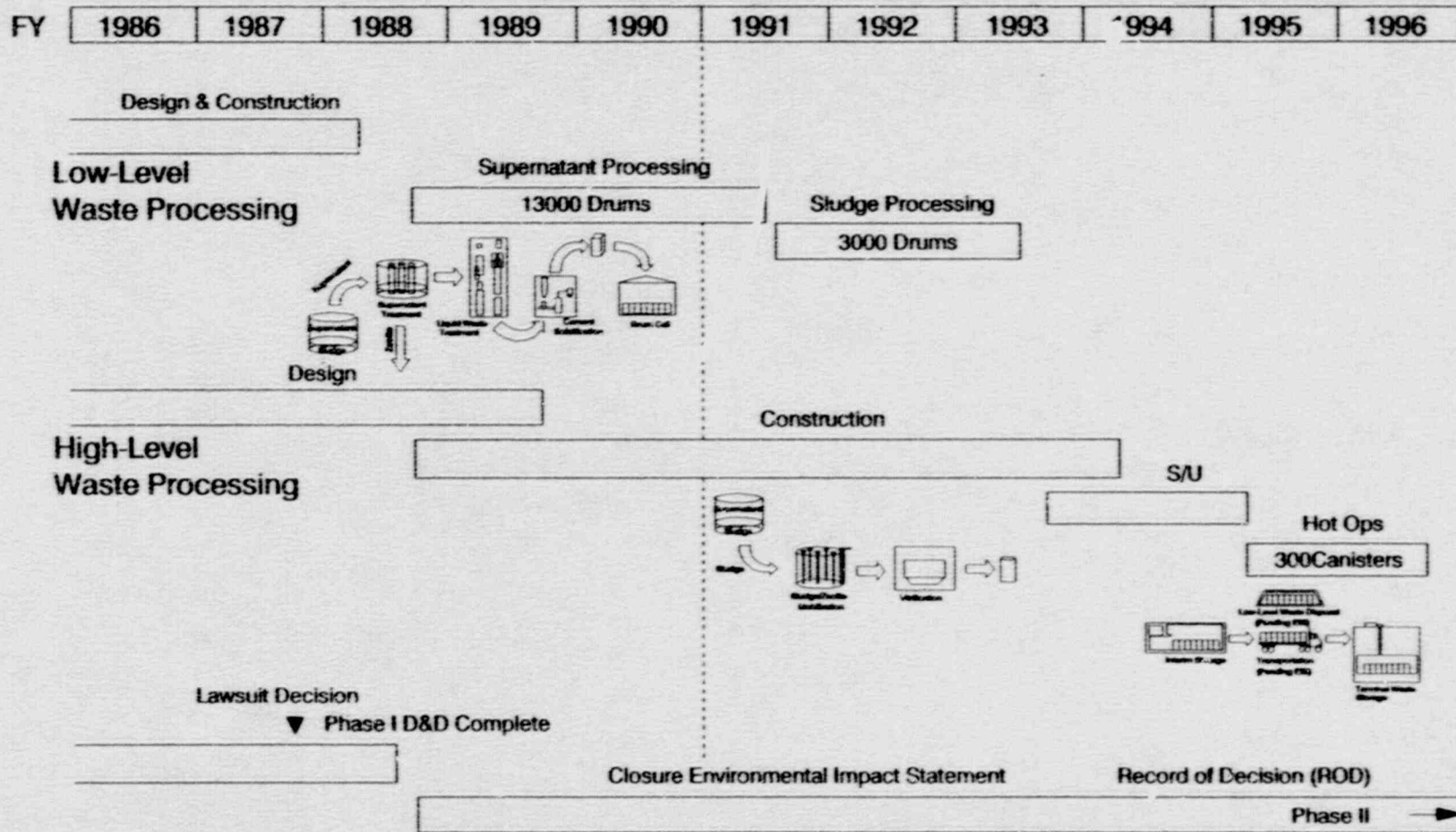
PP-HLW-0243

Vitrification Design Status

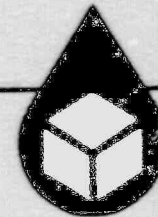


| <u>Activity</u> | <u>Status</u> |
|-------------------------------------|---|
| ● Civil / Structural | |
| – Seismic Structure (V-001) | ● Complete |
| – Architectural Structures (V-002A) | ● Design Complete/Under Construction |
| – Sludge Mobilization System | ● Drawings Complete/Under Construction |
| ● Mechanical / Electrical | |
| – Facility (V-002B) | ● Design Complete/Under Construction |
| – HLWIS | ● Rack Conceptual Design Complete |
| | ● Cell Cooling And Crane Upgrade Design Started |
| – Sludge Mobilization System | ● Transfer Piping System Complete |
| | ● Electrical Controls Nearing Completion |
| | ● Design in Progress |
| ● Off-Gas (01-14) | ● Pilot Plant Testing Complete |

SUMMARY MASTER SCHEDULE



West Valley Demonstration Project



Safety Analysis Report Schedule

| <u>Activity</u> | <u>FY QTR Completion</u> |
|--------------------------------|------------------------------|
| Sludge Washing | 91/2 |
| HLW Transfer | 92/3 |
| HLW Waste Interim Storage | 93/2 |
| Vitrification Facility (final) | 93/2 |

West Valley Demonstration Project



Vitrification Project Anticipated Interactions with NRC

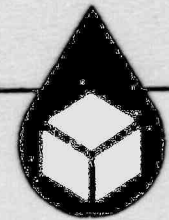
- **Sludge Wash and Related Activities**
 - SER Addendum - Sludge Wash
 - Class C LLW Recipe / Process Control Plan Concurrence
 - Assess Need for SER Modification

- **Waste Mixing, Mobilization and Transfer;
Includes Thorex Neutralization**
 - SER

- **Vitrification**
 - SER

- **Waste Form Acceptability for Repository**

Expectations



Environmental Impact Statement

- Review and Discuss WVDP Concepts and Proposed Solutions
- Timely Review to Aid Project in Keeping on Schedule

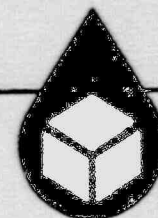
HLW Process

- Safety Analysis Review
- Safety Evaluation Reports

Regularly Scheduled Meetings

- Maintain On-Going Communication
- Keep Forward Momentum
- Know the Players
- Keep Teams Intact

West Valley Demonstration Project



Anticipated NRC Interactions

| <u>Subject</u> | <u>Key Interactions</u> | <u>Proposed Milestones</u> |
|---|-------------------------|----------------------------|
| - Pre-SAR Sludge Wash Review | December 1990 | |
| - LLW Form Review | December 1990 | |
| - Response to NRC Comments on EIS Site Characterization Plan and Performance Assessment | January 1991 | |
| - Conceptual Site Closure Alternatives Review | January 1991 | |
| - Discussion of D&D Criteria | March 1991 | |
| - Sludge Wash SER | | May 1991 |
| - Review of Site Closure Alternatives | June 1991 | |
| - NRC Acceptance of Topical Report and Process Control Plan for LLW Form | | June 1991 |
| - Proposed D&D Criteria | | December 1991 |