89001089

JUN 21 1990

Mr. Ralph Stein, Associate Director
for Systems Integration and Regulations
Office of Civilian Radioactive Waste Management
U.S. Department of Energy, RW-30
Washington, D.C. 20585

Dear Mr. Stein:

SUBJECT: APRIL 27, 1990 QUALITY ASSURANCE MEETING

The purpose of this letter is to transmit the enclosed minutes of the April 27, 1990 quality assurance (QA) meeting. The participants were: the staff of the U.S. Nuclear Regulatory Commission (NRC), the U.S. Department of Energy (DOE), the State of Nevada (NV), and Nye County, NV.

The majority of this meeting involved presentations by the participants in the DOE Office of Environmental Restoration and Waste Management's (EM's) vitrification programs. While these presentations were quite interesting and presented well, they did not address the question of schedules and milestones for the submittal and acceptance of QA program descriptions or for the audit and acceptance of EM and participants QA programs by the DOE Office of Civilian Radioactive Waste Management (OCRWM). Prior to the meeting, representatives of OCRWM and the NRC staff had agreed that the topic of milestones and schedules would be the focus of the DOE presentations. Information provided at the next QA meeting, which was held on May 23, 1990, does indicate that progress has been made toward resolving this issue. It is hoped that an integrated schedule and milestones addressing the OCRWM QA audit, surveillance, and acceptance for EM activities will be forthcoming soon. In addition to this QA program information, it is also important to note that there are other significant outstanding issues related to the integration of vitrification program activities and DOE's overall repository program (see J. Linehan to R. Stein letters dated October 14, 1988, December 5, 1988, and February 7, 1989).

1/1

9006260182 900621
PDR WASTE
WM-11 PDC

102.7
WM-11
NH16

If you have any questions regarding this letter or the enclosed meeting minutes, please contact Mark Delligatti of my staff at 301/FTS 492-0430.

Sincerely,

/S/

John J. Linehan, Director
Repository Licensing and Quality
Assurance Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards

See Jacket

Enclosure: As Stated
cc: R. Loux, State of Nevada
C. Gertz, DOE/NV
S. Bradhurst, Nye County, NV
M. Baughman, Lincoln County, NV
D. Bechtel, Clark County, NV
D. Weigel, GAO

DISTRIBUTION

CNWRA	NMSS R/F	HLPD R/F	LSS
LPDR	ACNW	PDR	Central File
REBrowning, HLWM	BJYoungblood, HLWM	JBunting, HLEN	JLinehan, HLPD
RBallard, HLGP	On-Site Reps	MDelligatti, HLPD	JHolonich, HLPD
KHooks,HLPD			

OFC :HLPD MD	: HLPD KH	: HLPD JH	: HLPD	:
NAME:MDelligatti	: KHooks	: JHolonich	: JLinehan	:
Date:6/20/90	: 6/20/90	: 6/20/90	: 6/21/90	:

OFFICIAL RECORD COPY

MINUTES OF THE 4/27/90 QUALITY ASSURANCE MEETING

The monthly meeting of the staff of the United States Nuclear Regulatory Commission (NRC); representatives of the United States Department of Energy (DOE); and the State of Nevada (NV) to discuss issues of mutual interest with regard to quality assurance (QA) was held on April 27, 1990 at NRC Headquarters. While representatives of each of the Affected Units of Local Government were notified of the meeting, only Nye County, NV sent representatives. An attendance list is included as Attachment 1.

In opening remarks the NRC staff responded to several questions which had been asked by DOE since the last QA meeting with regard to how the NRC QA objection in the Site Characterization Analysis would be lifted. The NRC staff reiterated the explanations provided at previous QA meetings regarding the conditions which must be met before NRC can consider lifting the QA objection. Attachments 2 and 3 were used by NRC. In response to a question from DOE, the NRC staff stated that the QA objection could be lifted for individual programs.

DOE's opening remarks provided an update on the resolution of the Privacy Act issue. The Federal Register notice for the new record management system (DOE System 80) was in the DOE Office of General Counsel for review. The new system, as described in previous meetings will provide for NRC and NV access to the training and certification records of DOE staff working in the repository program. DOE reiterated that an existing records management system (DOE System 2) will be available for NRC review in the interim until the new system is implemented.

There was a brief discussion of the status of the proposed NRC-DOE QA workshop. A proposed planning meeting for NRC Division of High-Level Waste Management management and concerned staff and DOE Office of Civilian Radioactive Waste Management (OCRWM), Yucca Mountain Project Office (YMPO), DOE contractor technical project officers, and representatives from NV had been scheduled for May 22, 1990 in St. Louis, MO. A tentative agenda was proposed. Further activities and interchanges were to be discussed at the planning meeting.

The next topic was an NRC discussion of recent observations of audits/surveillances. The NRC staff discussed three recent observations. Regarding its observation of the Reynolds Electrical and Engineering Company (REECo), the NRC staff found the DOE/YMPO Audit 89-5 to be useful, but marginally effective (see Attachment 4). The staff agreed with the audit team's conclusions that REECo has an adequate

ENCLOSURE
FILED IN JACKET

QA program plan in place, but the effectiveness of implementation could not be determined. The DOE/YMPO Audit 89-7 of Los Alamos National Laboratory (LANL) was considered useful and generally effective. The staff agreed with the audit team conclusions that the LANL QA program was inadequate in the area of procedures, training, technical reviews and audits and surveillances (see Attachment 5). The NRC staff also discussed its observation of the DOE/YMPO surveillance of the United States Geologic Survey (USGS). In this case, the staff agreed with the surveillance team conclusion that implementation of the USGS software procedures reviewed during the surveillance was adequate (see Attachment 6).

The NV representative then provided the state's assessment of the three audit/surveillances. NV basically agreed with the NRC observations on the LANL audit. Concern was expressed about the USGS surveillance in that the surveillance did not appear to fulfill the scope as stated in the surveillance plan. Specifically, the NV representative expressed concern that a definitive determination was apparently not made about whether there were technical publications and procedures available for review by the surveillance team. DOE's response to this assessment was that the scope of the surveillance required DOE to review technical publications dated between August 1989 and the beginning of the surveillance if they had undergone technical review. Since none of the technical publications had undegone technical review, it was inappropriate to look at those documents. The NV observation about the SNL audit noted that Revision 2 of the Nevada Nuclear Waste Storage Investigations QA Plan 88-9 was still in use by SNL, even though Revisions 3 and 4 have been promulgated. DOE noted that Revisions 3 and 4 did not affect the SNL program, and therefore, did not affect the surveillance.

The bulk of the remainder of the meeting involved presentations by representatives of the DOE Office of Environmental Restoration and Waste Management on the activities being carried out by the waste glass form producers at the Savannah River Defense Waste Processing Facility, the West Valley Demonstration Project, and the Hanford Waste Vitrification Plant (see Attachments 7 through 10). The NRC staff noted that the question of when and how OCRWM will audit and accept the QA programs of these organizations was left unanswered. The NRC staff sees this as a critical question because activities may already be occurring which have bearing on the repository licensing process or on development of waste packages for emplacement in a high-level waste repository to be licensed by NRC under 10 CFR Part 60. The Nye County, NV representative stated that if there is a continued delay in OCRWM acceptance of these organizations' QA plans, consideration should be given to delaying quality or safety-related activities.

The final presentation of the day was on preparation of the QA Requirements Document and the QA Program Description. Since the original presenter was unable to attend the meeting, only an overview was provided. A full presentation was scheduled for the next QA meeting.

It was agreed that the next QA meeting would be scheduled for May 23, 1990, at the same location as the QA workshop meeting with an agenda to be determined later in telephone conferences between the principals.

After closing remarks, the meeting was adjourned.

No written statement was submitted by the State of Nevada for inclusion in these minutes.

Mark S. Delligatti, QA Project Manager
Repository Licensing and Quality
Assurance Project Directorate
Office of Nuclear Material Safety
and Safeguards, NRC

Corinne Macaluso
Repository Licensing Branch
Office of Civilian Radioactive
Waste Management, DOE

Received w/Ltr Dated 6/21/90

Rec'd. w/ltr. dtd. 900621
Accession No. 9006260182

ATTACHMENT 1

NRC DOE QA MEETING

April 27, 1990

NAME	ORGANIZATION	TELEPHONE
William Belke	NRC/HLWM	FTS 492-0445
Wayne H. Caplinger	WHC	FTS 444-5338
		(509) 376-5338
Kien C. Chang	NRC/HLEN	FTS 492-0525
Tom Chancy	USGS	776-1418
Christopher Charles	DOE-Weston	646-6754
Tom Colandrea	EEI-U Waste	(619) 487-7510
Jim Conway	NRC/HLWM	FTS 492-0453
Mark Delligatti	NRC/HLWM	FTS 492-0430
Gary Faust	Weston/UE&C	646-6729
Dave Fenstermacher	WSRC	(803) 557-1039
Norman C. Frank	CERCorp	276-9300
John Gilray	NRC/HLWM	(702) 293-5369
Thomas Gutmann	DOE/EM-343	FTS 233-5343
		(301) 353-5343
Elgie Holstein	Nye County, NV	(703) 834-1173
Kenneth R. Hooks	NRC/HLWM	FTS 492-0447
Donald G. Horton	DOE/YMP	FTS 544-7504
Nadine R. Karas	SAIC	FTS 544-7641
Michael Lee	NRC/HLWM	FTS 492-0421
Corinne Macaluso	DOE/HQ	586-2837
		FTS 896-2837
Eli Maestos	DOE/WVPO	FTS 473-4314
Ram B. Murthy	DOE/YMP	FTS 544-7968
Bruce Nicoll	DOE-Richland	FTS 444-6006
Phillip Niedzielski-Eichner	Nye County, NV	(703) 818-2434
Bill Pearson	DOE/SR-DWPF	(803) 557-1066
John A. Roedel	UE&C-Catalytic	(509) 377-1972
		FTS 444-7086
Gene Roseboom	USGS-Dir. Off.	(703) 648-4423
Mark Senderling	DOE/RW-3	FTS 896-2878
David L. Shvears	W WVNS	FTS 473-4827
Stephen Spector	CNWRA	(703) 979-9129
Dwight Shelor	DOE	586-7220
Carl Weber	Weston/UE&C	646-6777
Susan Zimmerman	State of Nevada	(702) 687-3744

102.7

NRC ACCEPTANCE OF QA PROGRAM

1. NRC ACCEPTANCE OF A HLW PARTICIPANT QA PROGRAM (DOE OR DOE CONTRACTOR PROGRAM) REQUIRES SATISFACTION OF TWO CONDITIONS:

   -- THE QA PLAN HAS BEEN REVIEWED BY THE NRC AND IS ADEQUATE
   -- EFFECTIVE IMPLEMENTATION OF THE QA PROGRAM HAS BEEN DEMONSTRATED TO THE NRC

   WHEN BOTH CONDITIONS HAVE BEEN SATISFIED, FOR A PARTICIPANT QA PROGRAM OR PORTION OF A QA PROGRAM, THE SCA OBJECTION WILL BE LIFTED FOR THAT PROGRAM OR PORTION OF THE PROGRAM. WHEN ALL PARTICIPANT PROGRAMS HAVE BEEN FOUND ACCEPTABLE BY THE NRC, THE SCA OBJECTION WILL BE LIFTED FOR THE OVERALL DOE HLW QA PROGRAM.

2. THE CURRENT LETTERS FROM DOE (I.E., MARCH 12, 1990 LETTER ON USGS) ARE INTENDED TO STATE THAT THE PARTICIPANT QA PLAN IS ADEQUATE AND THE QA PROGRAM IS ADEQUATE FOR FURTHER IMPLEMENTATION, SUCH AS THE DEVELOPMENT OF STUDY PLANS AND TECHNICAL PROCEDURES, WHICH CAN DEMONSTRATE EFFECTIVE IMPLEMENTATION OF THE QA PROGRAM.

3. NRC WILL RESPOND TO EACH DOE LETTER WITH A LETTER STATING WHETHER THE NRC STAFF BELIEVES THE DOE PROGRAM IS ADEQUATE FOR FURTHER IMPLEMENTATION WHICH CAN DEMONSTRATE ACCEPTABLE IMPLEMENTATION.

4. AT SOME TIME IN THE FUTURE, AFTER DOE CONSIDERS THAT EFFECTIVE IMPLEMENTATION HAS BEEN DEMONSTRATED, DOE WILL PROVIDE ANOTHER LETTER, WHICH WILL DISCUSS THE IMPLEMENTATION OF THE QA PROGRAM, WHEN DOE REQUESTS NRC APPROVAL OF THE PROGRAM (OR PORTION OF THE PROGRAM).

5. THE NRC STAFF WILL EVALUATE THE EVIDENCE OF EFFECTIVE QA PROGRAM IMPLEMENTATION AND RESPOND BY LETTER TO DOE.

6. NO NEW SITE CHARACTERIZATION WORK WILL BE PERFORMED UNTIL PROGRAM ACCEPTANCE BY DOE AND NRC.

DEOMONSTRATING EFFECTIVE QA PROGRAM IMPLEMENTATION

PREVIOUSLY (2/15/90 QA MEETING)

GUIDANCE ON ACTIONS NEEDED FOR STAFF TO COMPLETE EVALUATION OF AN ORGANIZATION'S QA PROGRAM

1. RESOLVE DEFICIENCIES IDENTIFIED BY DOE AUDITORS

   -- ORGANIZATION COMPLETES CORRECTIVE ACTION
   -- DOE SURVEILLANCE VERIFIES CORRECTIVE ACTION

2. IDENTIFY EXTENT OF PROGRAM IMPLEMENTATION SINCE AUDIT:

   -- AREAS OF ACTIVITY
   -- END PRODUCTS PRODUCED
   -- SURVEILLANCES AND AUDITS CONDUCTED (INTERNAL AND EXTERNAL)

3. STATE WHETHER EFFECTIVENESS OF QA PROGRAM CAN NOW BE DETERMINED, AND IF SO, WHAT THE DETERMINATION IS.

4. STATE WHAT AREAS OF THE QA PROGRAM ARE STILL ON HOLD, SUCH AS SOFTWARE QA, QA LEVEL ASSIGNMENTS, OR PRIVACY ACT RELATED ISSUES, AND STEPS TO BE TAKEN TO RESOLVE.

5. STATE DOE POSITION AS TO ADEQUACY OF QA PROGRAM AT THIS TIME (I.E., OK FOR FURTHER IMPLEMENTATION, OK FOR SITE CHARACTERIZATION, ETC.)

NRC Observation Audit of Reynolds Electrical and Engineering Company

Summary

The staff has determined that the DOE/YMPO Audit No. 89-5 of REECo was useful but marginally effective. The audit team seemed well-qualified in QA and their assignments and checklist items were adequately described in the audit plan. In general, the team satisfactorily assessed the REECo QA procedures and capabilities of the QA staff. The review of the implementation of the program by the line staff, however, was less effective for the following reasons. First, the REECo line staff has implemented almost none of the Level 1 QA program because of the nature and status of their responsibilities in the repository program (i.e., construction of the exploratory shaft). Second, DOE did not interview the line staff at REECo to determine their capabilities and understanding of the QA program requirements.

NRC staff agrees with the DOE/YMPO audit team findings that REECo has a sufficient QA program plan in place but that the effectiveness of implementation cannot be determined at this time. The Operations Equipment Department at REECo, however, was an area that the YMPO audit team identified as being ineffective which needs to be upgraded. Also, due to restrictions imposed by the Privacy Act, the NRC staff was unable to determine whether individuals are appropriately qualified.

For the above reasons, the staff is unable to make a determination on the ability of REECo to implement the QA program at this time. This is one of the conditions we have identified for acceptance of an organization's QA program. DOE should plan a follow-up audit or surveillance, to be observed by the staff, after some implementation has taken place as a prerequisite for NRC acceptance of the program.

NRC Staff Findings

(a) Observations

No NRC staff observations relating to audit team deficiencies or audited organization deficiencies were noted.

(b) Weaknesses

- DOE should conduct audits to the latest revision of the QAPP.
- Future audits should include technical staff on the audit team.
- An instruction or procedure should be developed by YMP to clearly define for participants what a Management Review consists of and how it is to be performed and documented.

- The constraints imposed by the Privacy Act in restricting review of personnel qualifications needs to be quickly resolved in order for NRC to determine whether individuals performing quality affecting activities are sufficiently qualified.

- The QAPP indicates that Administrative Procedure AP-5.8Q, "Resolutions and Reporting of Quality Concerns" is in effect. However, when NRC requested a copy for review, AP-5.8Q was still in the preparation and approval stage. AP-5.8Q needs to be reviewed during the next audit or surveillance.

- The QAPP requires the REECo QA Manager to maintain a QA Reporting System. This system needs to be more clearly defined in the REECo procedures.

- The QAPP should be revised to clarify the roles of LANL and EG&G.

NRC Observation Audit of Los Alamos National Laboratory

Summary

The staff has determined that the DOE/YMPO Audit No. 89-7 of LANL was effective. The programmatic portion of the audit was generally effective, but some of the technical portions of the audit were ineffective. Integration of the technical and programmatic portions of the audit was not as effective as in some recent DOE/YMPO audits.

In general, the NRC staff agrees with the preliminary DOE/YMPO audit team findings that the LANL QA program is inadequate in the areas of procedures, training, technical reviews, and audits and surveillances. The audit team identified approximately twenty potential deficiencies in the LANL QA program, of which twelve remained unresolved by the time of the exit meeting on November 17, 1989. Some of these deficiencies were further examples of deficiencies previously identified and thought to be corrected, which raises questions about the effectiveness of both the LANL corrective action program and the DOE surveillance program.

The potential deficiencies in the areas of adequacy of position descriptions and the lack of trend analyses are similar to deficiencies identified in several other contractor programs during calendar year (CY) 1989, and may be generic deficiencies throughout the contractor programs. The NRC staff recommends that DOE/YMPO evaluate the results of the CY 1989 audits for generic deficiencies, repeated failures of corrective action programs, and adverse program trends.

(a) Observations

- No NRC staff observations relating to deficiencies in the audit process were identified. Apparent deficiencies in the LANL QA program identified by the NRC staff were also identified and presented as potential deficiencies or observations by the DOE/YMPO audit team.

- The NRC staff observed that the DOE surveillance process for verifying corrective actions resulting from previously identified deficiencies appears inadequate. Several corrective actions which were verified by DOE surveillances, solely on the basis of procedural changes and training, appear to have been ineffective in resolving the root causes of the deficiencies. If this finding had been against the audit process it would have been classified as a Level 1 or Level 2 Observation. The NRC staff recommends that DOE evaluate the results of the CY 1989 audits for recurrence of deficiencies assumed to have been corrected by the DOE contractor organization and DOE.

(b) Weaknesses

The NRC staff identified the following weaknesses in the audit process:

- Some portions of the technical audit were inadequate; in particular, there was insufficient probing for the data and documents forming the bases for the SPs and objective evidence of the use of DPs in the technical process. This may be indicative of inadequate training of some technical specialists in QA requirements and audit process.

- The integration of the technical and procedural portions of the audit was highly variable, ranging from excellent to inadequate.

- The technical portion of the audit appeared in some instances to be driven by schedule or some other external forcing function.

- The LANL SPs associated with the technical areas included in the audit scope were not available to the NRC or State of Nevada observers prior to the start of the audit.

- The NRC staff believes that software QA should have been included in the scope of the audit. Significant work was being done by LANL in computer analyses in support of the SPs, although the LANL software QA plan has not been approved by DOE.

The NRC observers noted the following weaknesses in the LANL QA program which were not explicitly discussed by the Audit Team Leader in the exit meeting:

- The technical review process for documents such as DPs and SPs is inadequately documented to provide objective evidence of the adequacy of the reviews.

- LANL management assessments of the effective implementation of the LANL QA program are nonexistent or inadequate, based on the number and type of deficiencies identified in this audit and the ineffectiveness of the LANL corrective action system.

NRC SURVEILLANCE OBSERVATION OF UNITED STATES GEOLOGICAL SURVEY SOFTWARE QUALITY ASSURANCE

The NRC observers found the DOE/YMPO surveillance of the USGS software QA program useful and effective. The surveillance team was familiar with the USGS software QA Plan and the two procedures being implemented. Their checklist for this surveillance was well prepared and utilized in determining the status and effectiveness of implementation. The team seemed to have a good knowledge of the software QA requirements of Nevada Nuclear Waste Storage Investigations Quality Assurance Plan (NNWSI/88-9), Appendix H. The scope of this surveillance was limited to procedural implementation and no assessment of the technical adequacy and qualification of any of the computer codes was made during the surveillance. The NRC staff agrees with the DOE/YMPO surveillance team's conclusion that the implementation of both USGS software procedures is adequate.

ATTACHMENT 7

Environmental Restoration and Waste Management (EM-343)

HIGH LEVEL WASTE QUALITY ASSURANCE PROGRAMS

DOE/NRC

APRIL 27, 1990

INTRODUCTION

EM/HLW QUALITY ASSURANCE PROGRAMS

TOPIC	SPEAKER
• Status of EM-343 High-Level Waste Quality Assurance Program	T. S. Gutmann
• Status of Hanford (HWVP) High-Level Waste Quality Assurance Program	B. L. Nicoll
• Status of West Valley (WVDP) High-Level Waste Quality Assurance Program	E. Maestas
• Status of Savannah River (DWPF) High-Level Waste Quality Assurance Program	W. D. Pearson

NOTES

HIGH-LEVEL WASTE QUALITY ASSURANCE PROGRAMS

- BACKGROUND
- ORGANIZATION
- STATUS
- SCHEDULE

2

NOTES

EM/HLW QUALITY ASSURANCE PROGRAMS

Our programs have been in place for a period of time. They are not new programs

NOTES

DOE/EM-343
HIGH-LEVEL WASTE
QUALITY ASSURANCE PROGRAM

PRESENTER

T. S. GUTMANN

NOTES

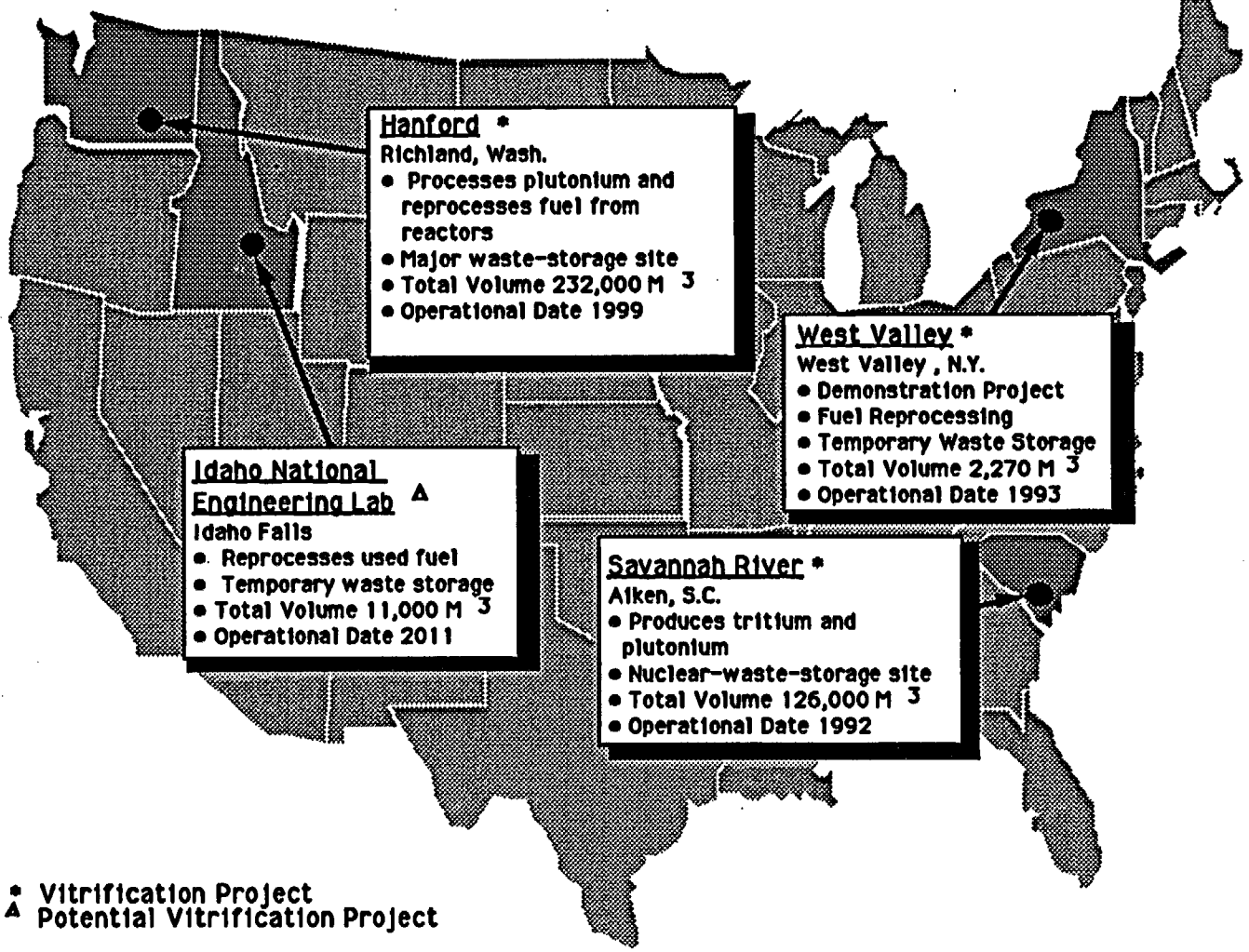
BACKGROUND

DOE/EM-343
VITRIFICATION PROJECTS
HIGH-LEVEL WASTE
QUALITY ASSURANCE PROGRAMS
OVERVIEW

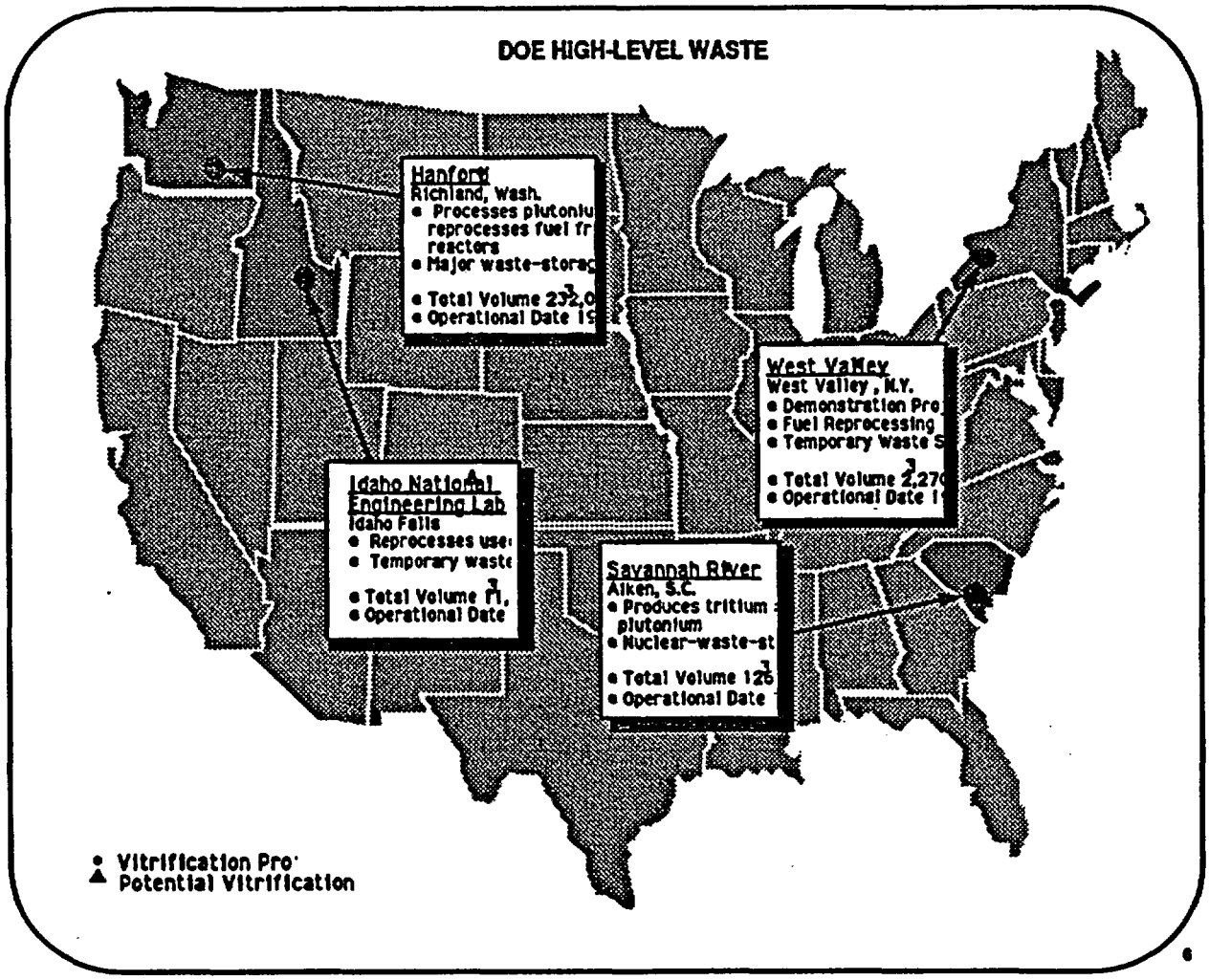
5

NOTES

DOE HIGH-LEVEL WASTE



* Vitrification Project
▲ Potential Vitrification Project


DOE HIGH-LEVEL WASTE
Hanford
Richland, Wash.
• Processes plutoniu
reprocesses fuel fr
reactors
• Major waste-storag
• Total Volume 23,0
• Operational Date 19
West Valley
West Valley, N.Y.
• Demonstration Pro
• Fuel Reprocessing
• Temporary Waste S
• Total Volume 2,27
• Operational Date 1
Idaho National Engineering Lab
Idaho Falls
• Reprocesses use
• Temporary waste
• Total Volume 11,
• Operational Date
Savannah River
Aiken, S.C.
• Produces tritium
plutonium
• Nuclear-waste-st
• Total Volume 126
• Operational Date
• Vitrification Pro
▲ Potential Vitrification

NOTES

ORGANIZATION

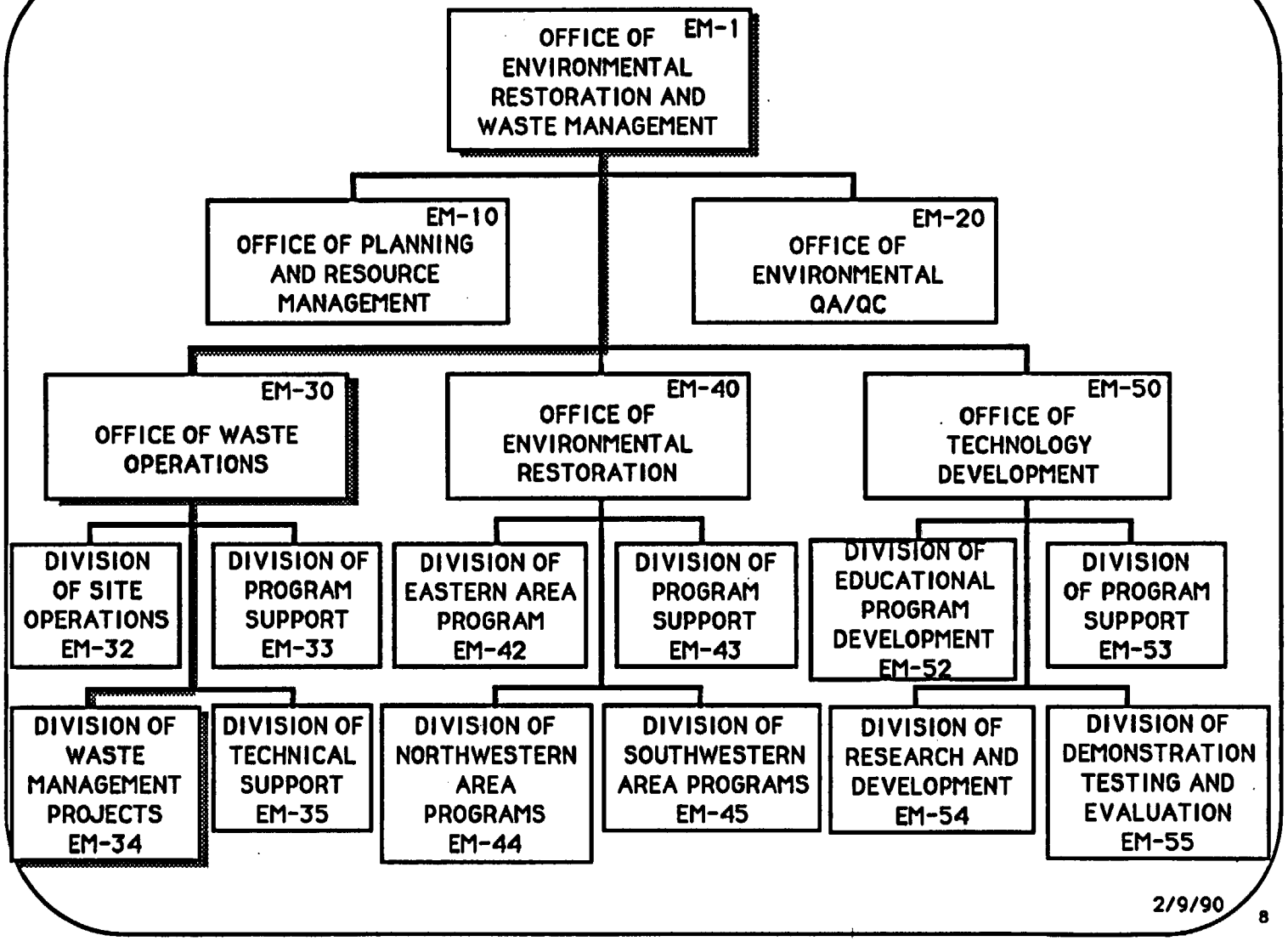
In February 1990 we presented a general overview of the High-level Waste Vitrification Projects.

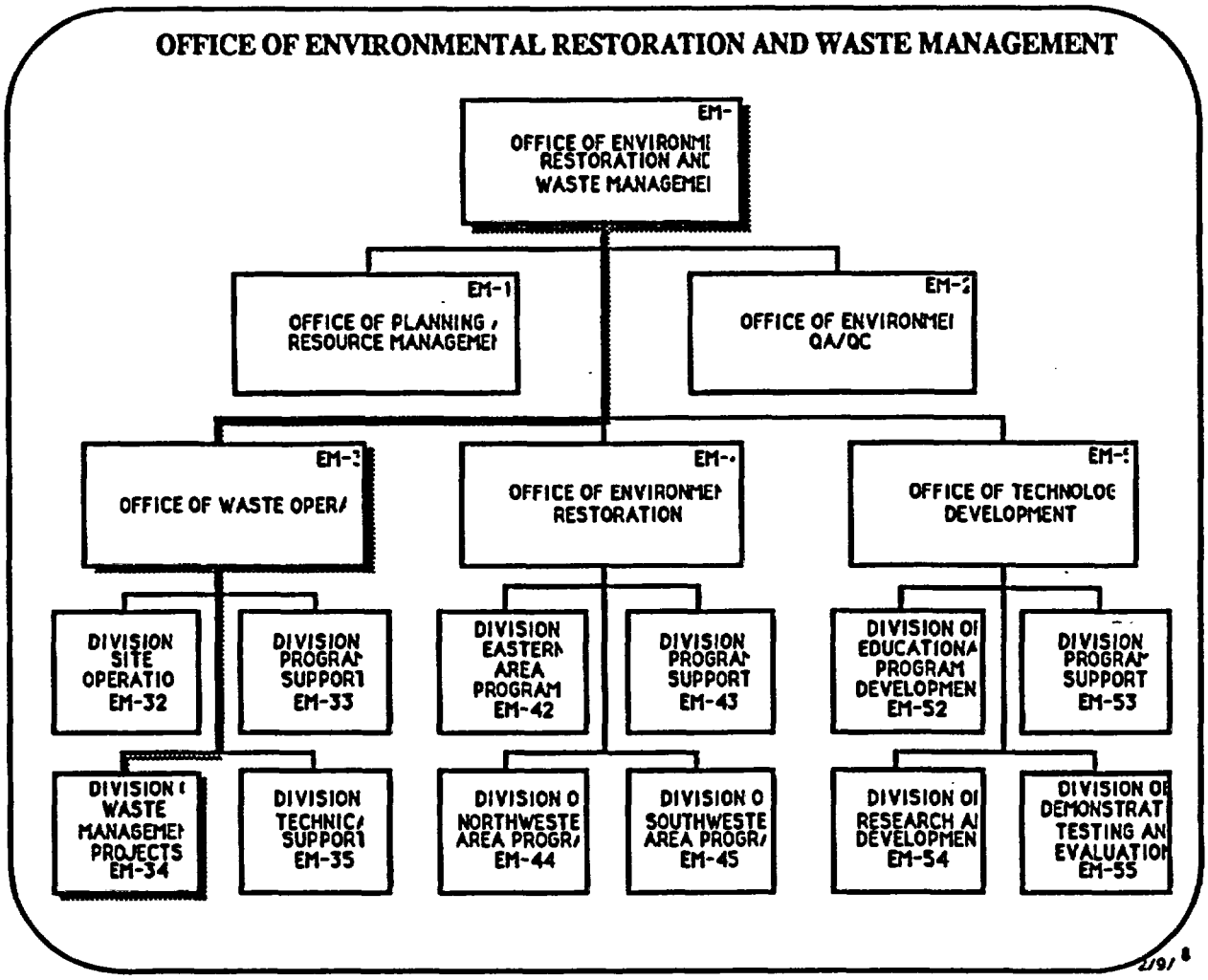
Now, we will look at these projects in more detail. . .

7

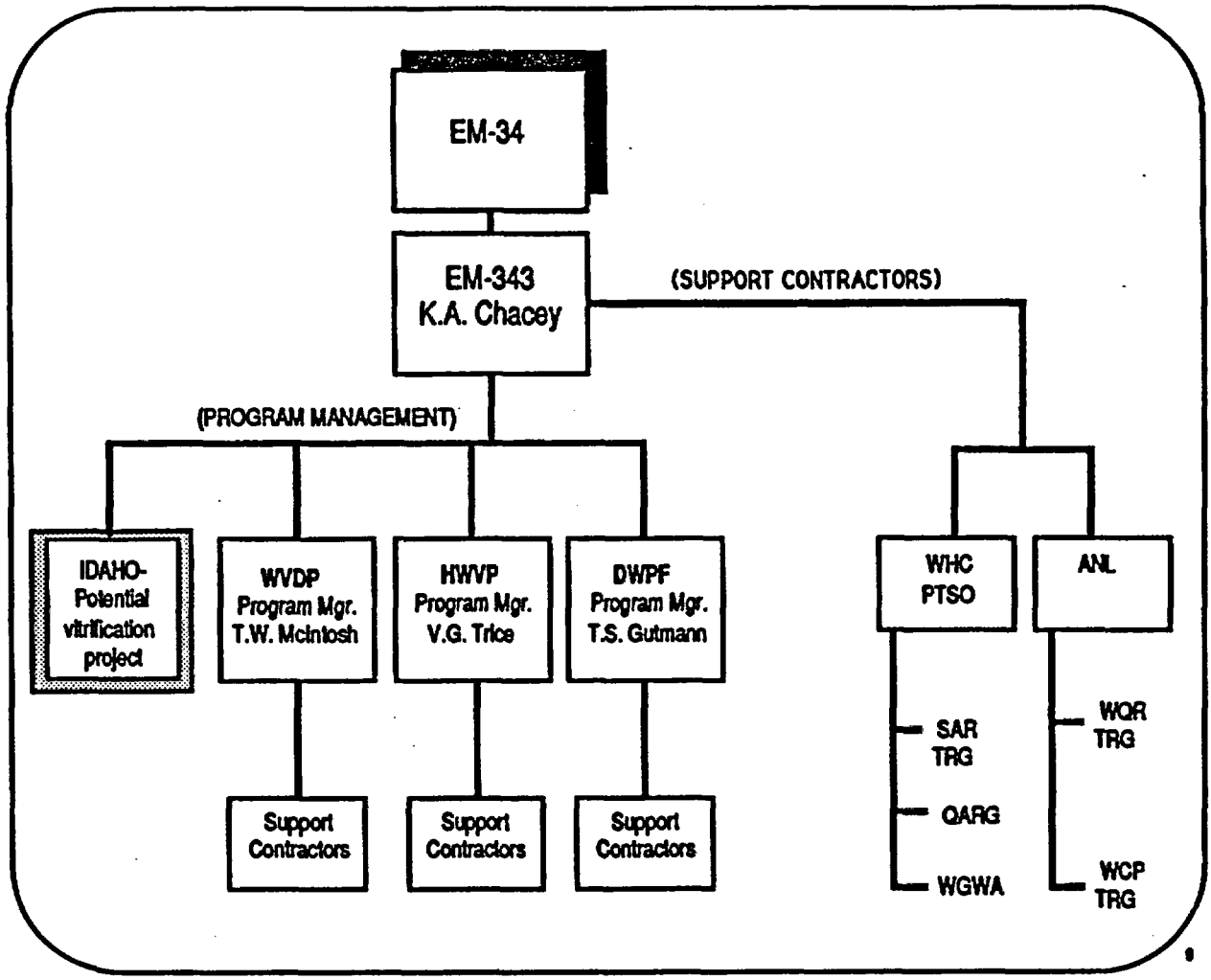
NOTES

OFFICE OF ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT



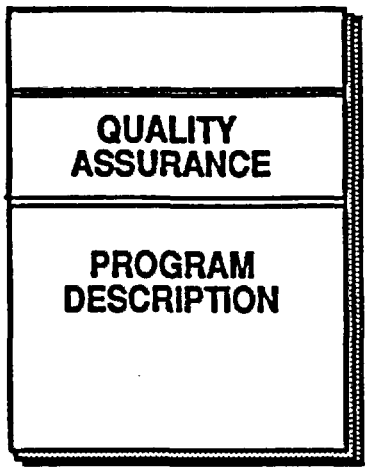

OFFICE OF ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT
EM-
OFFICE OF ENVIRONM RESTORATION AN WASTE MANAGEME
EM-1
OFFICE OF PLANNING RESOURCE MANAGEME
EM-2
OFFICE OF ENVIRONME QA/QC
EM-3
OFFICE OF WASTE OPER
EM-4
OFFICE OF ENVIRONME RESTORATION
EM-5
OFFICE OF TECHNOLOG DEVELOPMENT
DIVISION SITE OPERATIO EM-32
DIVISION PROGRA SUPPORT EM-33
DIVISION EASTERN AREA PROGRAM EM-42
DIVISION PROGRA SUPPORT EM-43
DIVISION OF EDUCATIONA PROGRAM DEVELOPMEN EM-52
DIVISION PROGRA SUPPORT EM-53
DIVISION WASTE MANAGEME PROJECTS EM-34
DIVISION TECHNIC SUPPORT EM-35
DIVISION O NORTHWESTE AREA PROGR EM-44
DIVISION O SOUTHWESTE AREA PROGR EM-45
DIVISION OF RESEARCH A DEVELOPMEN EM-54
DIVISION OF DEMONSTRAT TESTING AN EVALUATION EM-55

NOTES


EM-34
EM-343
K.A. Chacey
(SUPPORT CONTRACTORS)
(PROGRAM MANAGEMENT)
IDAHO-
Potential
vitrification
project
WVDP
Program Mgr.
T.W. McIntosh
HWVP
Program Mgr.
V.G. Trice
DWPF
Program Mgr.
T.S. Gutmann
WHC
PTSO
ANL
Support
Contractors
Support
Contractors
Support
Contractors
SAR
TRG
QARG
WGWA
WQR
TRG
WCP
TRG

NOTES

STATUS



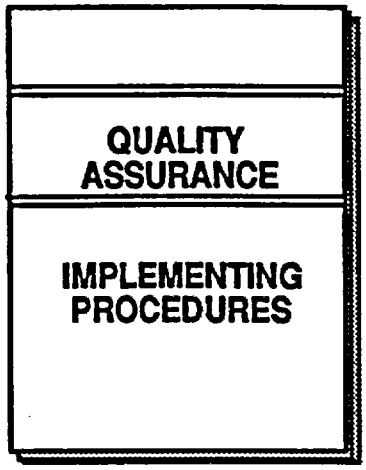
- HLW Quality Assurance Program Description was approved by DWTM.
  Rev. 0, October 1988
  Rev. 1, May 1989

- QAPD is being revised to meet DOE/RW-0214, Rev.2 and the DWTM to EM transition.

10

NOTES

IMPLEMENTATION



- DP-12 procedures (DWTM) are approved and in place for implementation by Headquarters.
- Generic Standard Practice Procedures for implementation by support organizations are issued and in place.

11

NOTES

TRAINING

Training in procedure implementation has been accomplished for the staff.

12

NOTES

EVALUATION & ASSESSMENTS

THE QUALITY ASSURANCE PROGRAMS ARE SUBJECT TO VARIOUS EVALUATION AND ASSESSMENT ACTIVITIES...

- REVIEWS
- SURVEILLANCES
- AUDIT
  - An audit of Savannah River Site Operations Office implementation of their quality assurance program for the DWPF is tenatively scheduled for June 19-22, 1990.

13

NOTES

SCHEDULE

HLW Quality Assurance Program Qualification Schedule is coincident with DWPF qualification schedule.

- QAPDs to RW by June 12, 1990
- EM Qualification Surveys complete for cold runs by September 15, 1990
- EM Qualification Surveys complete for production by March 20, 1992

- DWPF Startup: - Process Qualifying Cold runs by February 28, 1991.
  - Hot operations byJune 30, 1992.

14

NOTES

HANFORD (HWVP) HIGH-LEVEL WASTE QUALITY ASSURANCE PROGRAM

PRESENTER

B. L. NICOLL

15

NOTES

WEST VALLEY (WVDP) HIGH-LEVEL WASTE QUALITY ASSURANCE PROGRAM

PRESENTER

E. MAESTAS

16

NOTES

SAVANNAH RIVER (DWPF) HIGH-LEVEL WASTE QUALITY ASSURANCE PROGRAM

PRESENTER

W. D. PEARSON

17

NOTES

CONCLUSION

- DOE IS IN CONTROL OF THE HIGH-LEVEL WASTE PROJECTS
- QUALITY ASSURANCE PROGRAMS FOR THESE PROJECTS HAVE BEEN IN PLACE FOR SOME TIME. THEY ARE NOT NEW PROGRAMS
- DOE's OVERVIEW AND CONTROL OF THESE PROGRAMS PROVIDE AN OBJECTIVE BASIS FOR CONFIDENCE THAT THE VITRIFICATION PROJECTS WILL MEET REQUIREMENTS

18

NOTES

ACRONYMS :

ANL - Argonne National Laboratory
DOE - Department of Energy
DWPF - Defense Waste Processing Facility (Savannah River Site)
EM - DOE Office of Environmental Restoration and Waste Management
HWVP - Hanford Waste Vitrification Project
PTSO - Project Technical Support Office (WHC)
QAPD - Quality Assurance Program Description
QARG - Quality Assurance Review Group
RW - DOE Office of Civilian Radioactive Waste Management
SAR - Safety Analysis Report
TRG - Technical Review Group
WCP - Waste Form Compliance Plan
WGWA - Working Group for Waste Acceptance
WHC - Westinghouse Hanford Company
WQR - Waste Form Qualification Report
WVDP - West Valley Demonstration Project

19

NOTES

ATTACHMENT 8

Hanford Waste Vitrification Plant Status

Project Quality Assurance Program

U.S. Nuclear Regulatory Commission
U.S. Department of Energy

Monthly Meeting on Quality Assurance

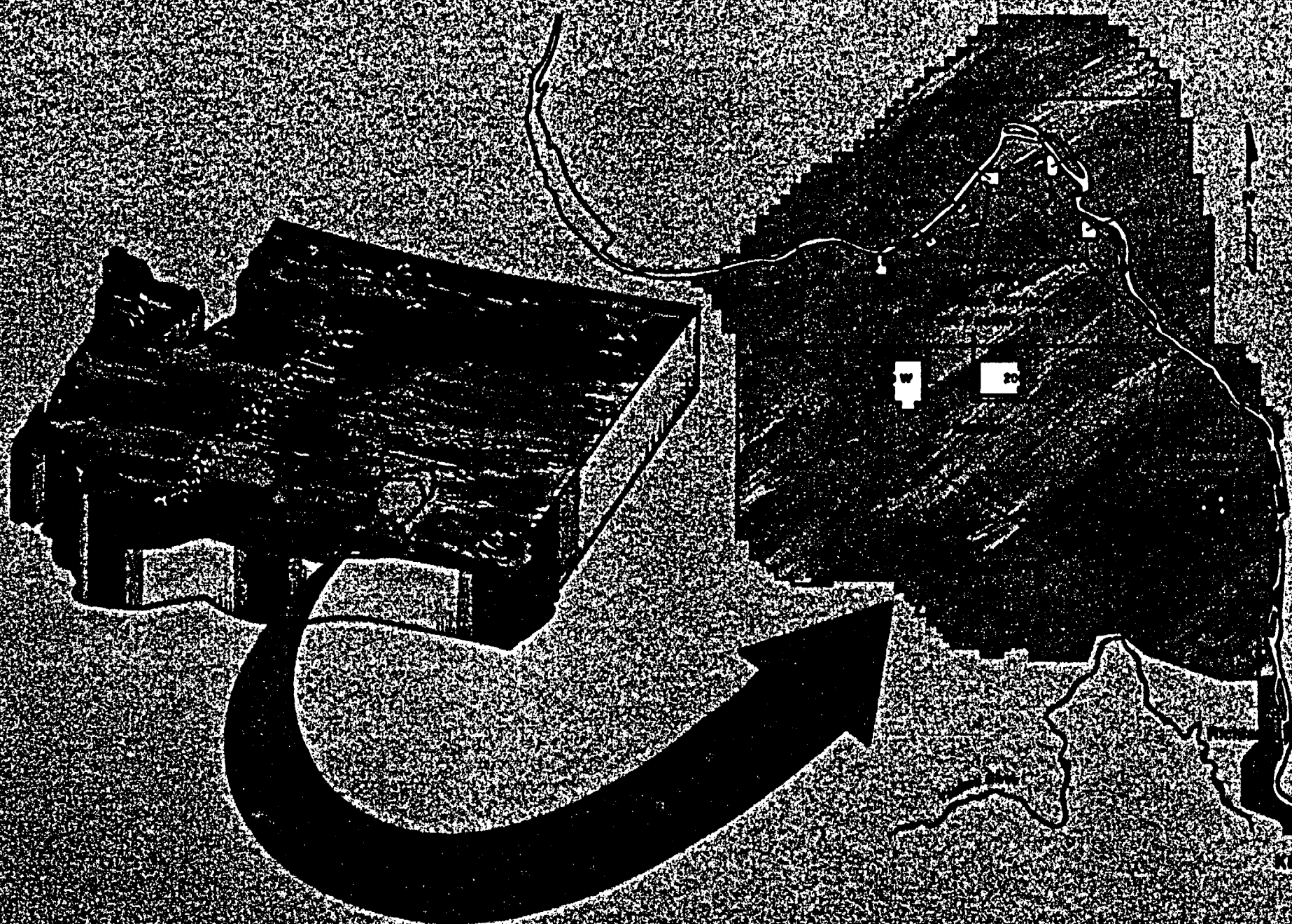
April 27, 1990

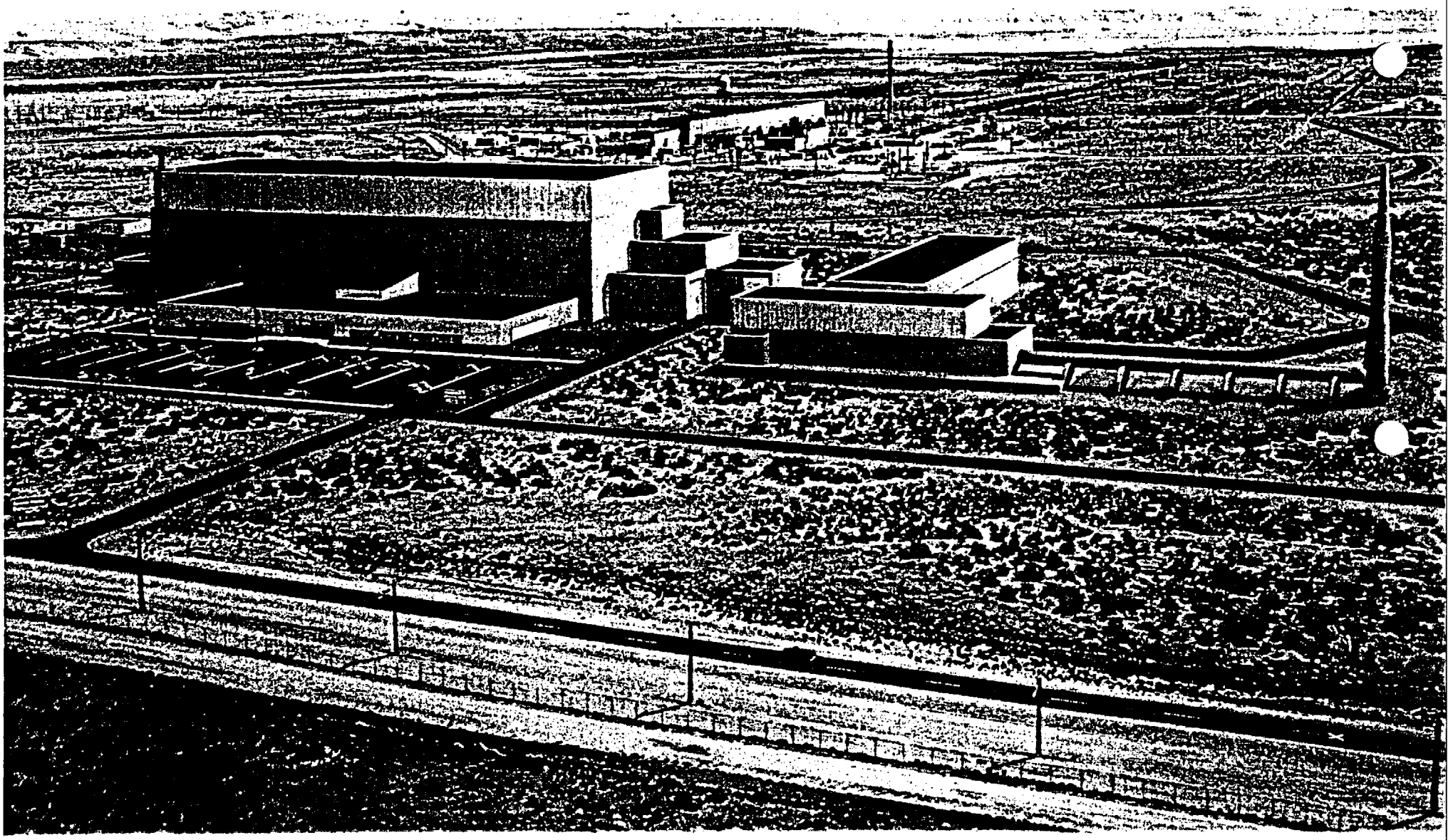
79004244.1

Hanford Waste Vitrification Plant

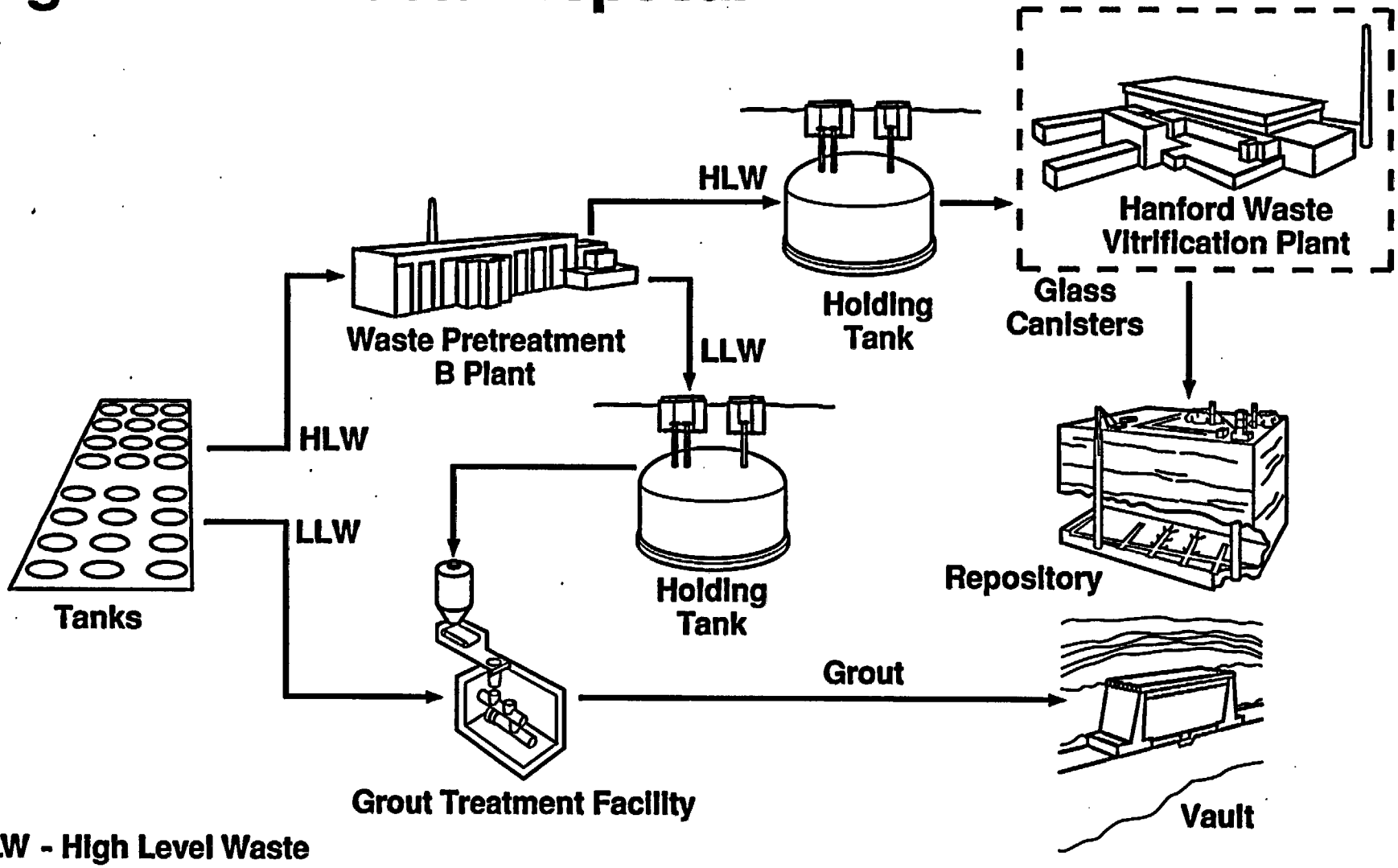
Bruce Nicoll
U.S. Department of Energy
Richland Operations Office

THE HANFORD SITE





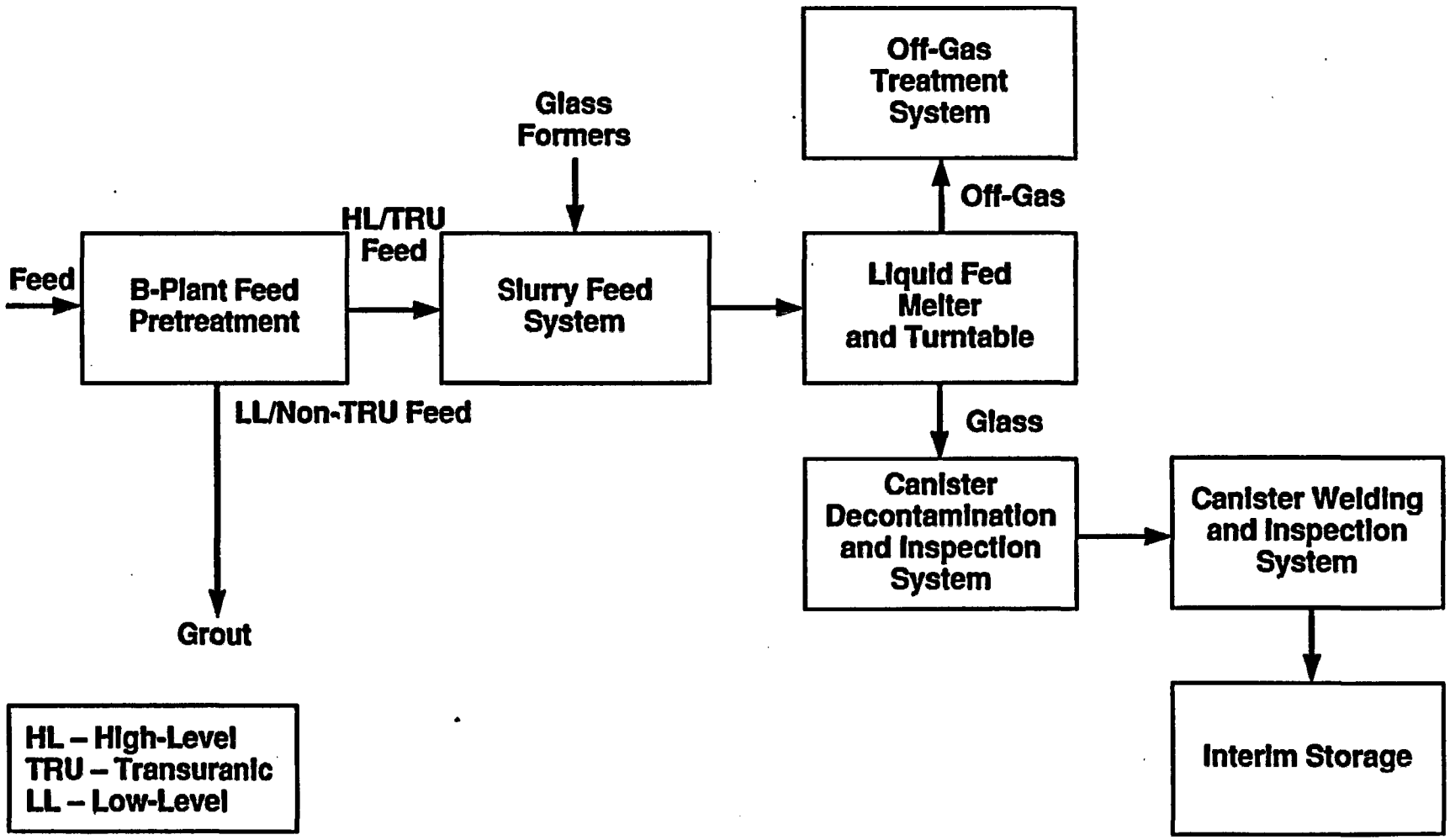
HWVP's Role in Hanford Defense High-Level Waste Disposal



HLW - High Level Waste
LLW - Low Level Waste

79004244.A

HWVP Process Flow Diagram



79004244.5

Technical Baseline/Design Criteria

Item	Baseline Description
Process Rate	0.8 GPM
Product	Borosilicate Glass
Melter Throughput	100 Kg/hr (220 lbs/hr)
Plant Throughput	1,350,000 lbs/yr
Shielding	1 REM per year
Seismicity	0.25G
Canister Storage	2,000 Canisters
Plant Design Life	40 Years
Process Design Life	20 Years

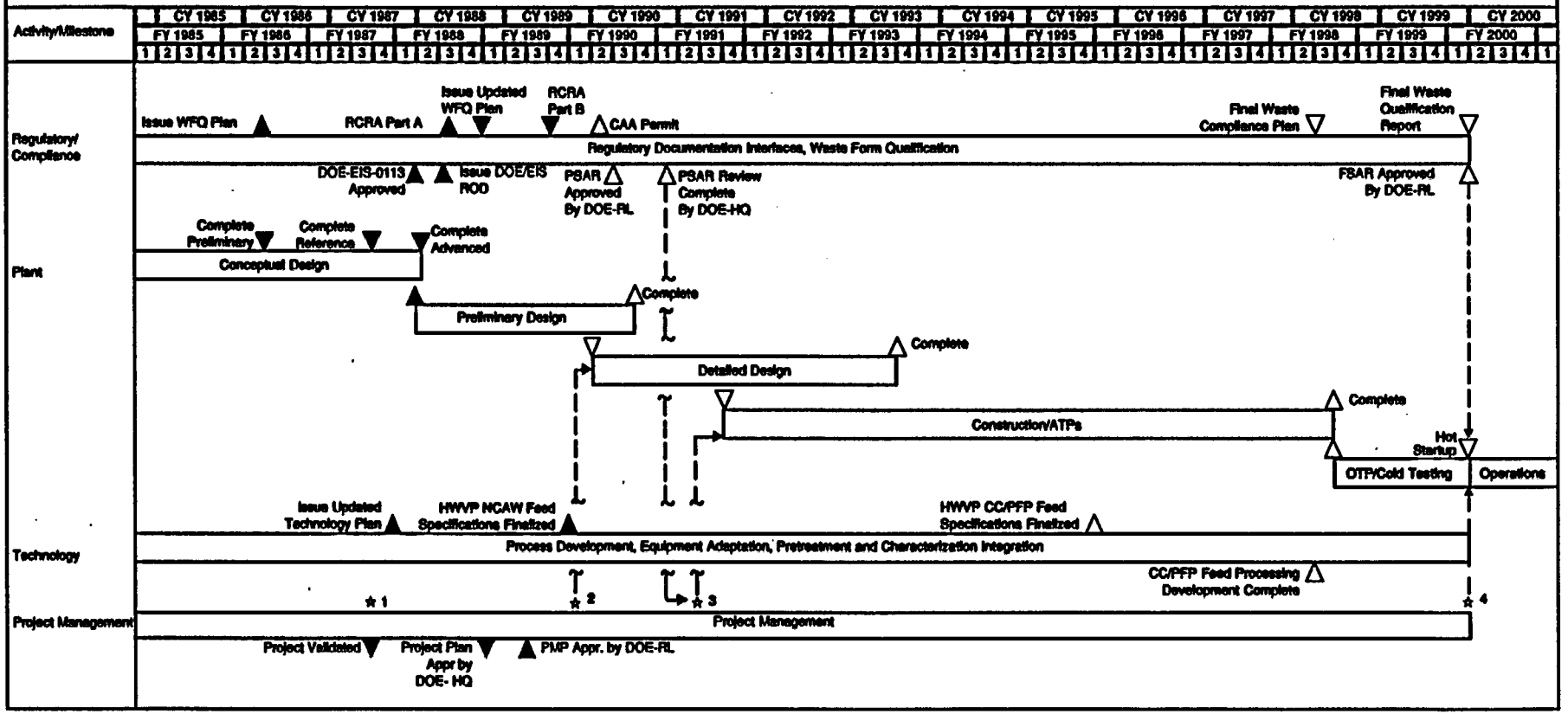
HWVP Project Formation

- The justification for New Start for Hanford Waste Vitrification Plan (HWVP) was approved in September 1987
- Westinghouse Hanford Company (WHC) was designated as the project technical manager
- Battelle – Pacific Northwest Laboratories (PNL) was designated as the vitrification technology development contractor

HWVP Project Formation (Cont.)

- Fluor Daniel, Inc. (Fluor) was selected as the Architect/Engineer for HWVP
- DOE-RL Vitrification Project Office (VPO) was formed in March 1988
- UE&C – Catalytic, Inc. (UE&C) will construct the HWVP

Hanford Waste Vitrification Plant
Project Summary Schedule



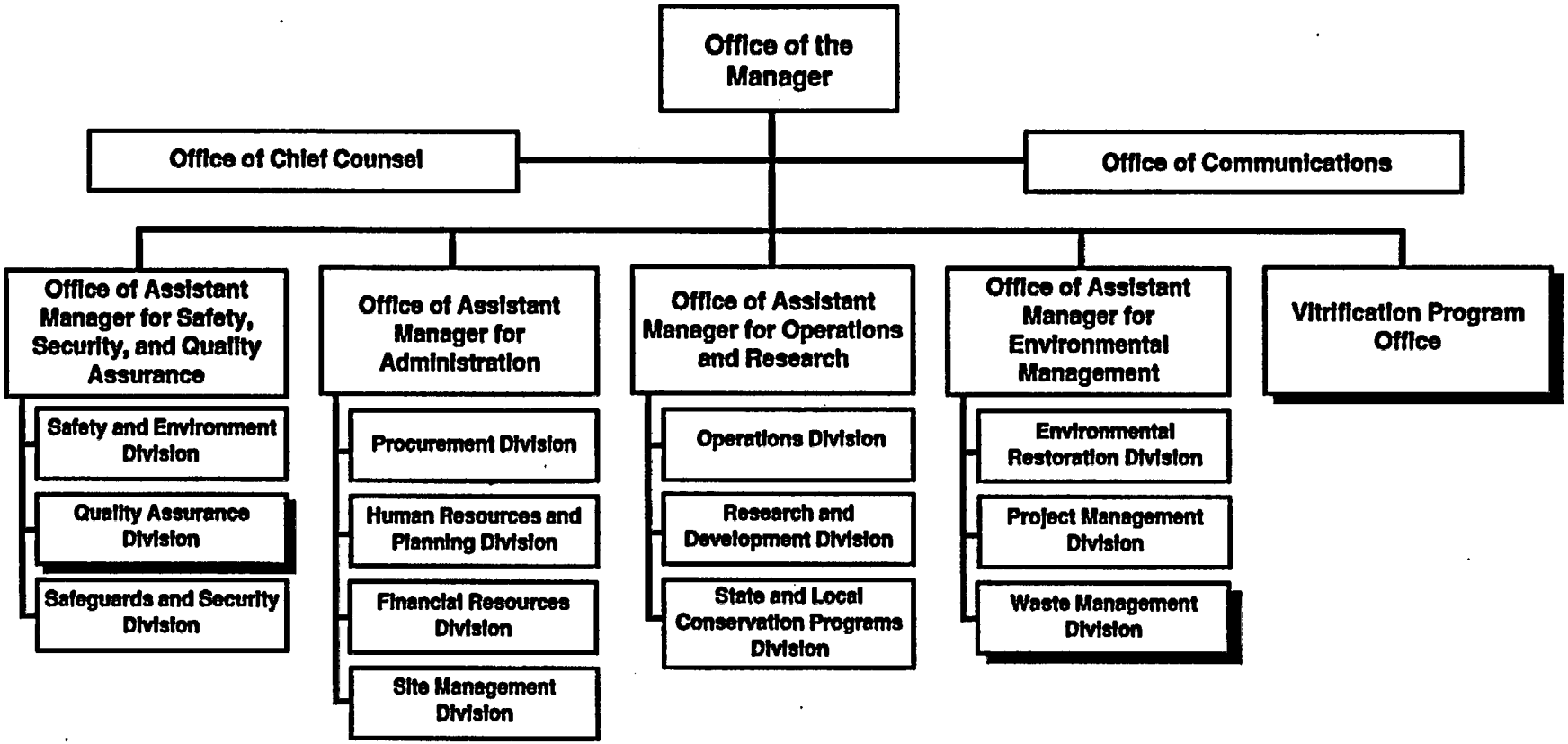
LEGEND: ☆ Key Decisions △ DOE-RL Controlled Milestone ▽ DOE-HQ Controlled Milestone

ACRONYMS:
- ATP - Acceptance Test Procedure
- CAA - Clean Air Act
- CC - Complexant Concentrate
- EIS - Environmental Impact Statement
- FSAR - Final Safety Analysis Report
- NCAW - Neutralized Current Acid Waste
- OTP - Operations Test Procedure
- PFP - Plutonium Finishing Plant
- PSAR - Preliminary Safety Analysis Report
- RCRA - Resource Conservation & Recovery Act
- ROD - Record of Decision
- WFQ - Waste Form Qualification

☆ Key Decision
1. Approval of New Start
2. Approval to Commence Detailed Design
3. Approval to Commence Construction
4. Approval to Commence Operation

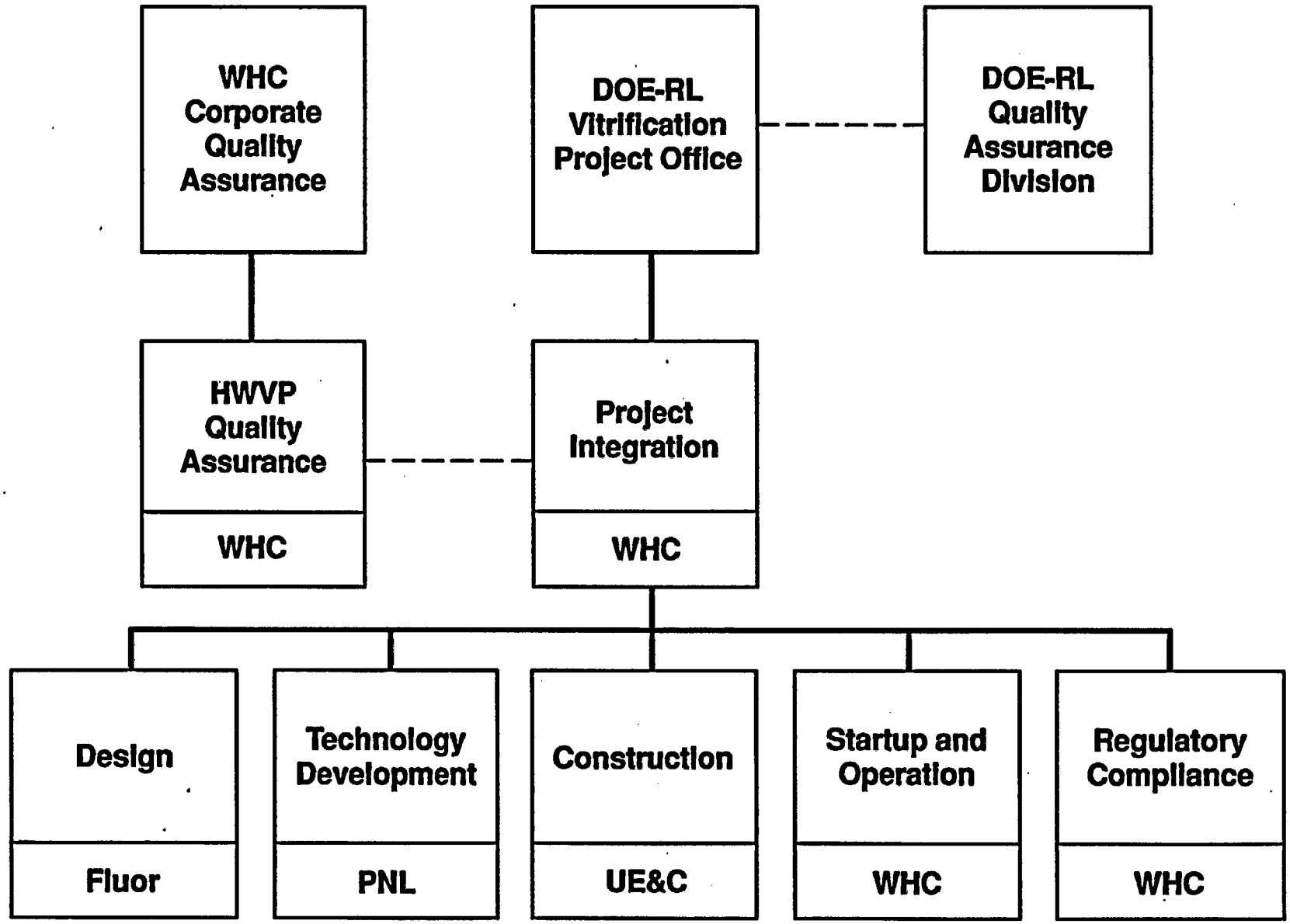
DOE Controlled
Rev. 4-TPA

Richland Operations Office Organization



79004244.10

HWVP Project Organization



79004244.11

Hanford Site Quality Assurance History

- The Hanford Site has been accomplishing its work in accordance with the quality assurance requirements established by the Atomic Energy Commission, the Energy Research and Development Administration, and the Department of Energy (DOE)

- The quality assurance programs for DOE-RL and its contractors have been progressively updated to meet new requirements

Hanford Site Quality Assurance History (Cont.)

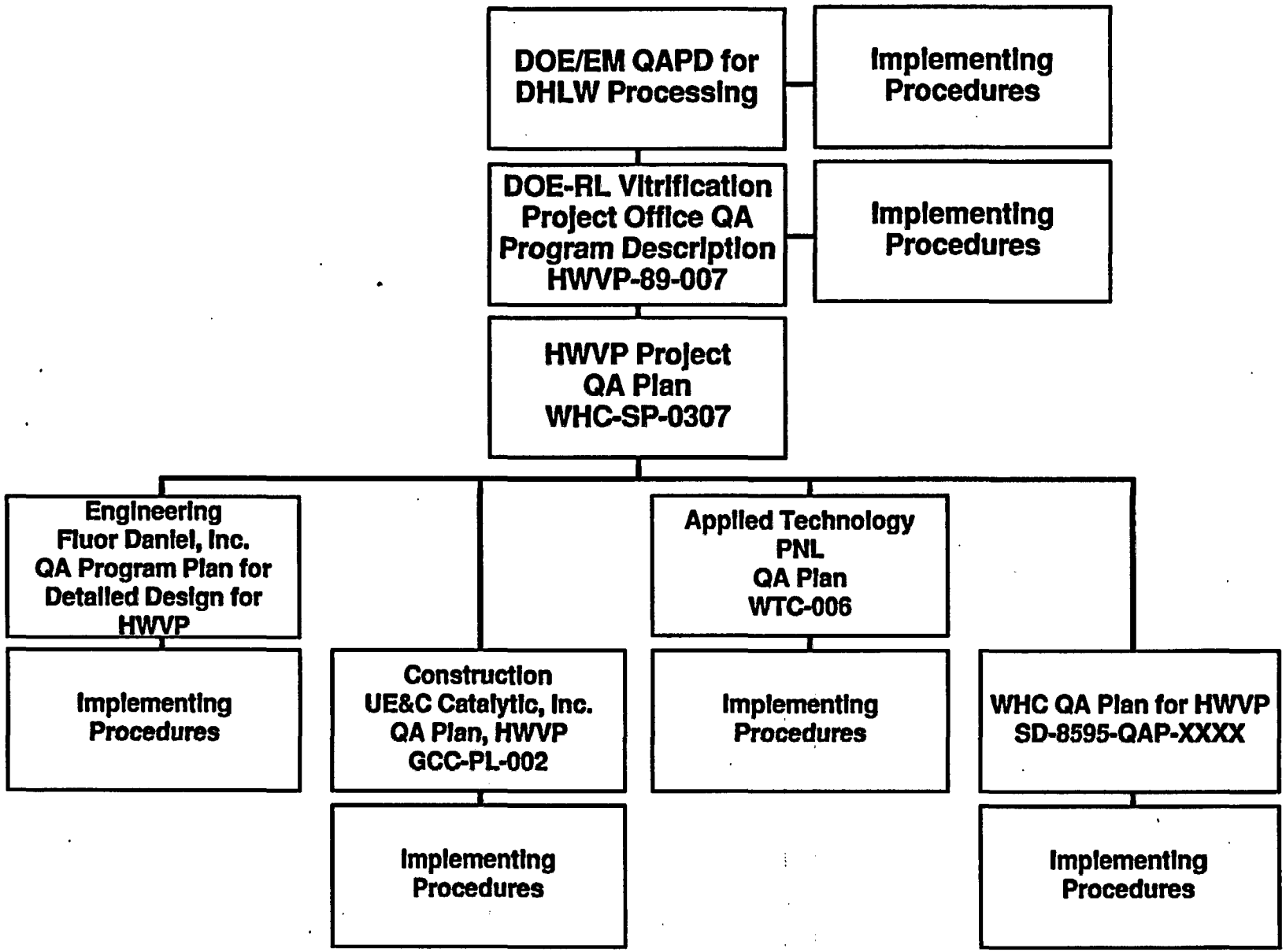
The HWVP has been working under NQA-1 quality assurance programs since the project's inception

- **WHC first implemented a quality assurance program that met the requirements of NQA-1 in August 1981**
- **Fluor Daniel, Inc. first established a 10 CFR 50, Appendix B, program in 1973 and an NQA-1 program in 1983**
- **PNL implemented an NQA-1 quality program in 1983. This program evolved from a 10 CFR 50 quality program that PNL established in 1979**

Hanford Site Quality Assurance History (Cont.)

- DOE-RL first established an NQA-1 quality assurance program in March 1985
- UE&C-Catalytic, Inc. established a 10 CFR 50 quality assurance program in 1971 and added NQA-1 in 1983

Waste Form Producer QA Program Documents



79004244.15

HWVP QA Program Status

	QA Plan	*Date Issued*	*Approved*
DOE – VPO	HWVP-89-007	March 1989	----------
WHC – HWVP	WHC-SP-0307	May 1988	September 1988
FLuor Daniel	QA Plan for HWVP	February 1990	February 1990
UE&C – Catalytic	GCC-PL-002	March 1990	Under Review
PNL	WTC-006	February 1990	February 1990
WHC – HWVP	SD-B595-QAP-XXXX	In Preparation	----------

79004244.16

HWVP QA Program Status (Cont.)

	Meets NQA-1	*Meets OGR/B-14*	*Meets RW-0214 REV. 2*	*Procedures*
DOE – VPO	X	X		X
WHC – HWVP	X	X		X
FLuor Daniel	X	X		X
UE&C – Catalytic	X		X	In Preparation
PNL	X	X		X
WHC – HWVP				X

79004244.17

HWVP QA Program Status (Cont.)

DOE/RW-0214

- The HWVP quality programs have responded to the requirements of OGR/B-14
- On February 1, 1990, the Office of Civilian Radioactive Waste Management issued Revision 2 of DOE/RW-0214, which superseded OGR/B-14
- HWVP will be revising their quality documents to reflect the requirements of DOE/RW-0214
- HWVP is targeting to complete incorporation of these requirements by the end of 1990

Preliminary HWVP QAPD Schedule

• DOE-RL, VPO, QAPD revised	July 1990
• VPO implementing procedures completed	October 1990
• HWVP project participant QAPDs submitted to VPO for acceptance	January 1991
• HWVP QAPDs submitted to DOE-HQ (EM) for acceptance	May 1991

Conclusion

- The Hanford Waste Vitrification Plant Project is in the early stages of design and waste form qualification activities
- Work is being accomplished in accordance with NQA-1, and the QA programs are well on their way to meeting the requirements of DOE/RW-0214
- The HWVP quality assurance program will be submitted to DOE-HQ for acceptance early in FY 1991
- HWVP expects to have a qualified quality assurance program in place prior to the start of construction.

ATTACHMENT 9

West Valley Demonstration Project

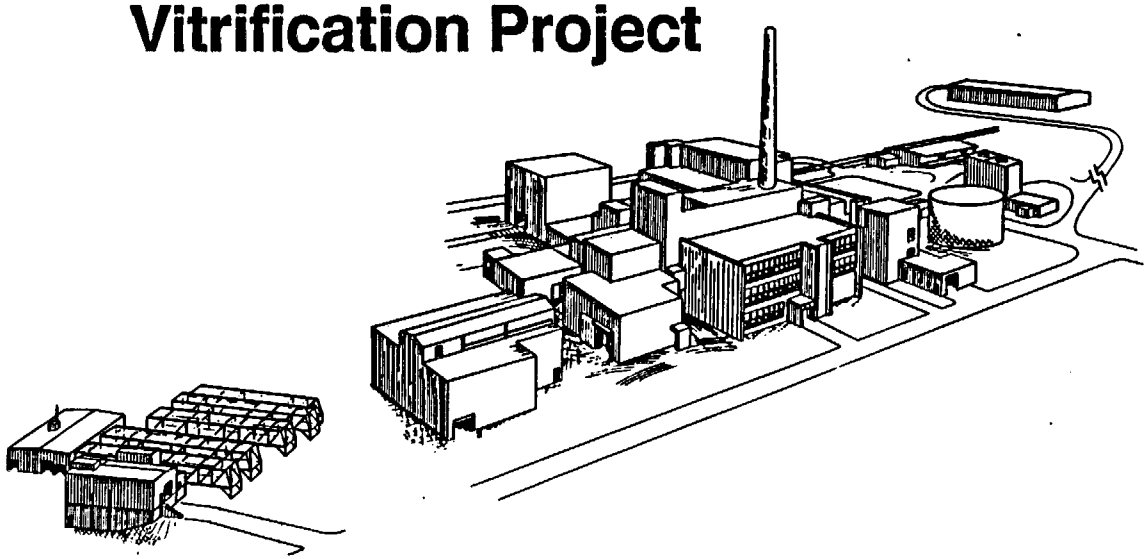
Project Overview

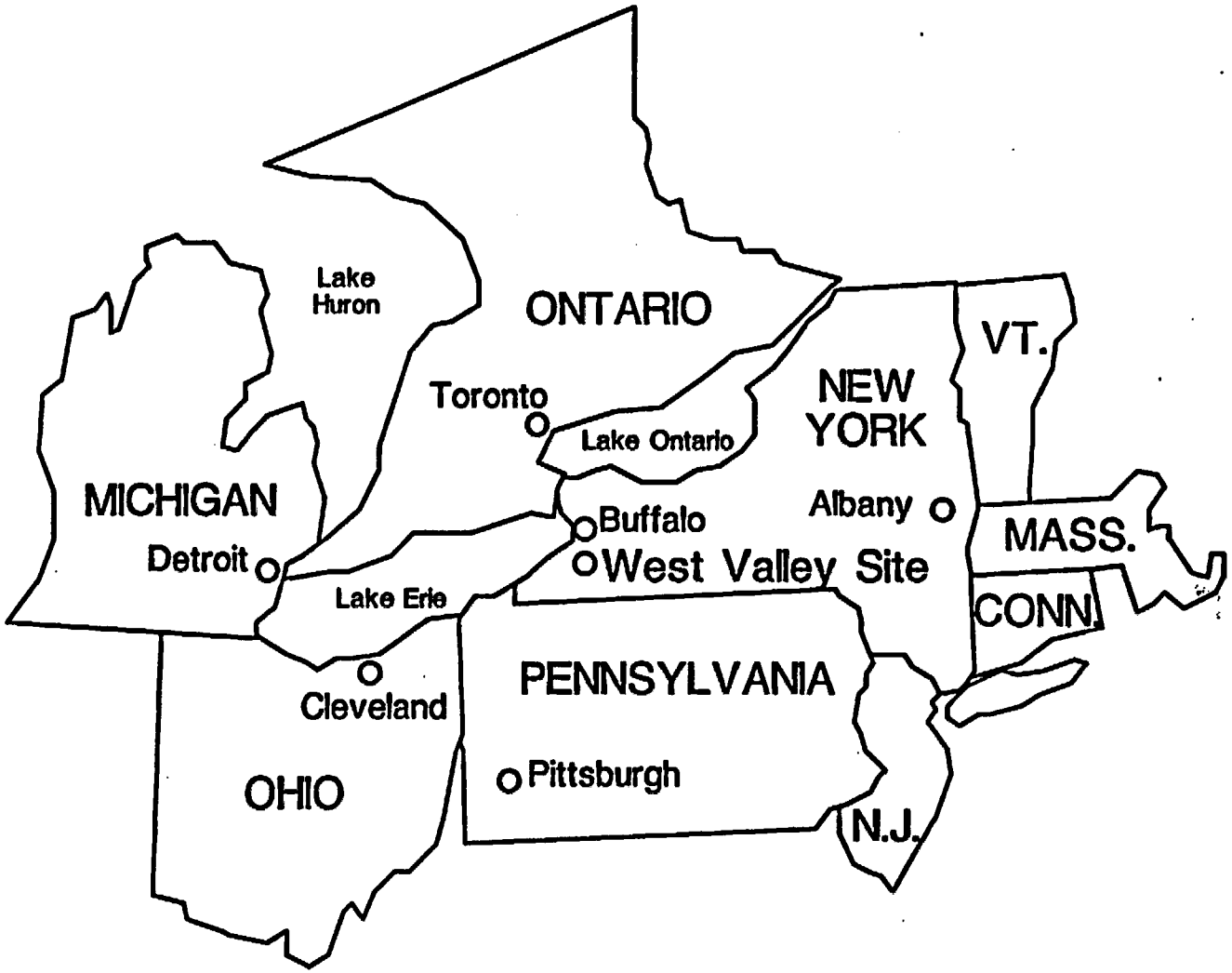
Presented by

Eli Maestas

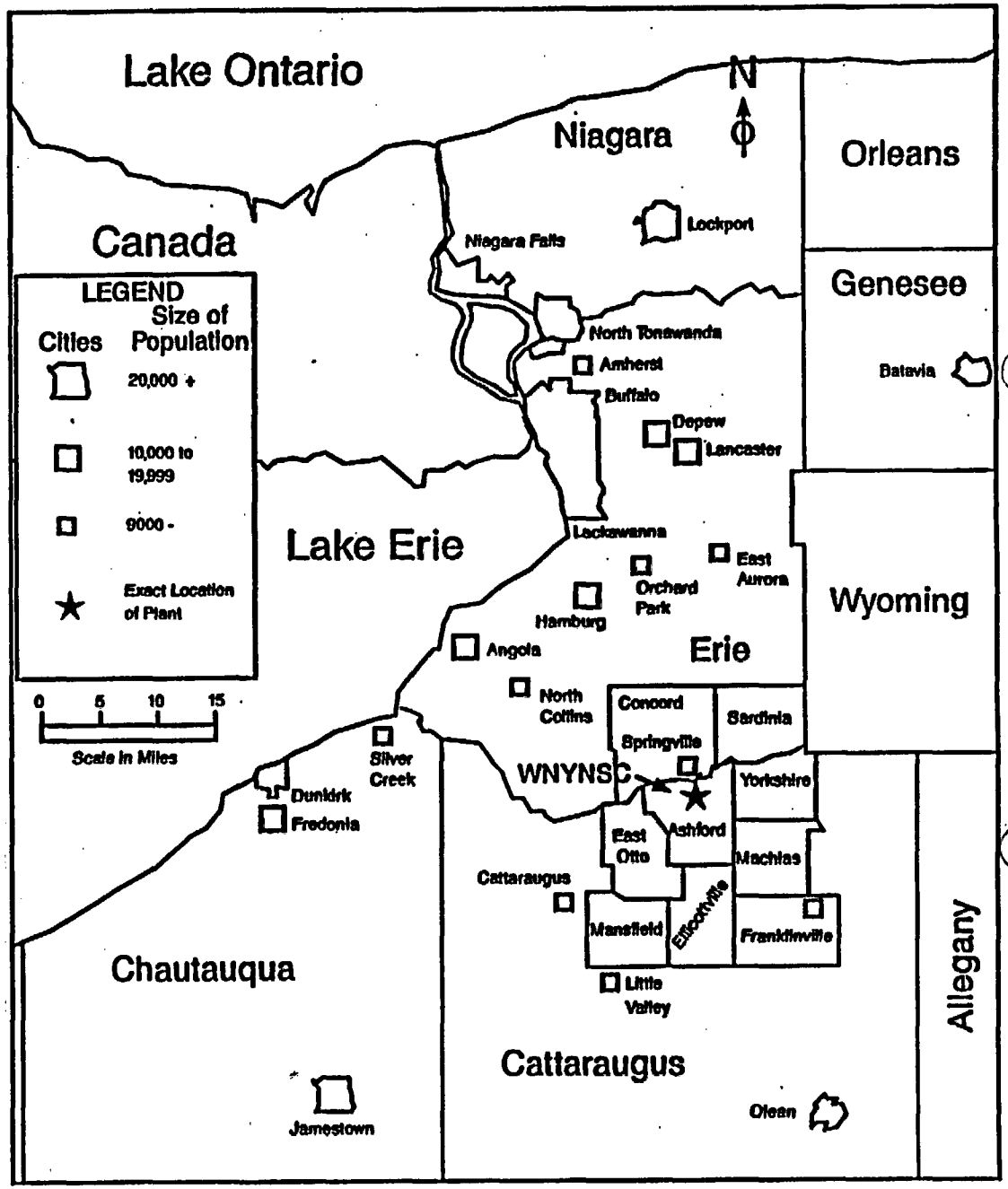
West Valley Project Office

Vitrification Project




Lake Huron
ONTARIO
Toronto
Lake Ontario
NEW YORK
VT.
MICHIGAN
Detroit
Buffalo
Albany
West Valley Site
MASS.
CONN.
Lake Erie
Cleveland
PENNSYLVANIA
Pittsburgh
OHIO
N.J.
C5388WV006

SITE LOCATION OF WVDP



C5468WV017

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.

C6829WV003

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

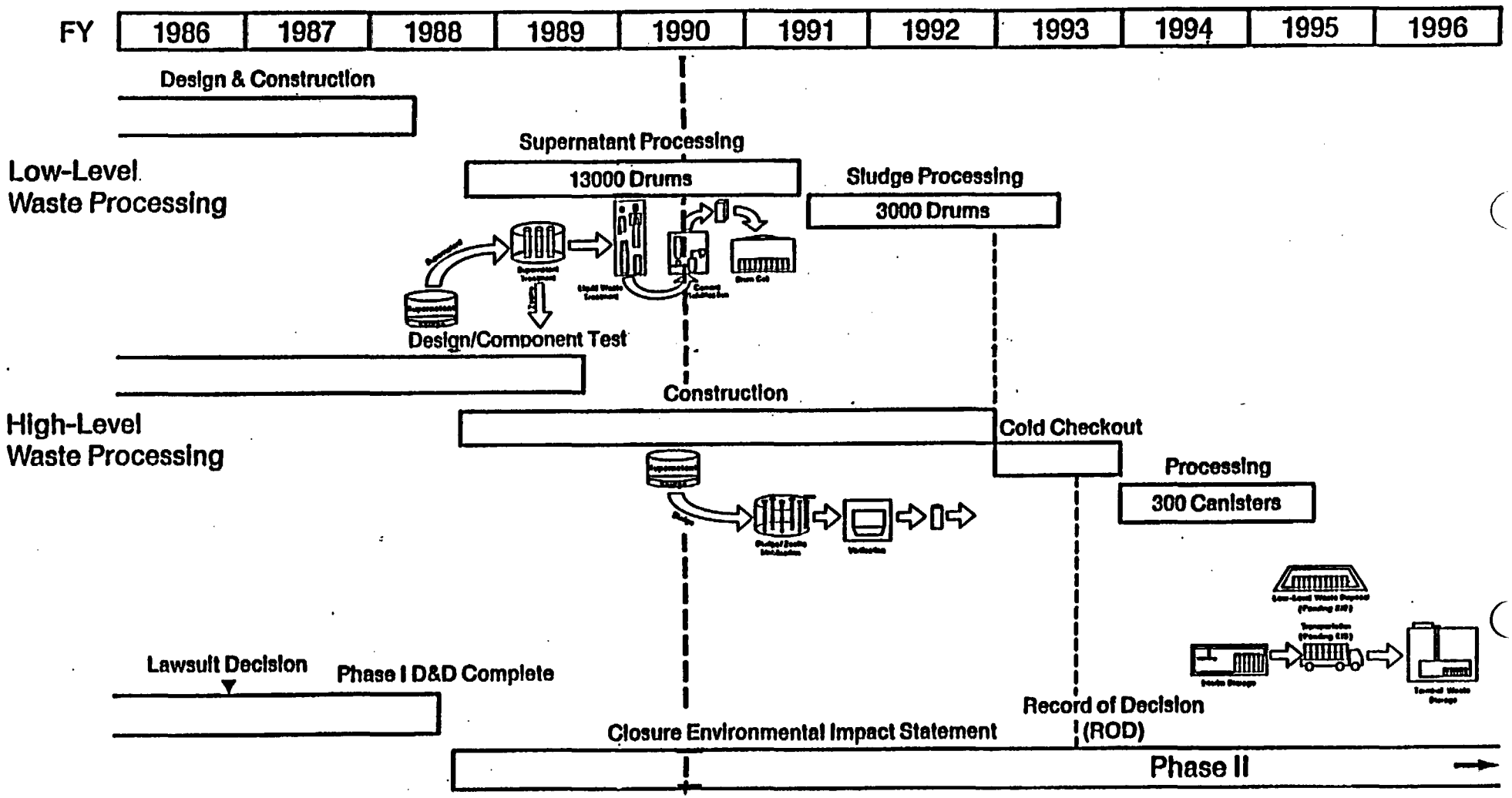
Transport to Federal Repository

Dispose of Low-Level and Transuranic Waste

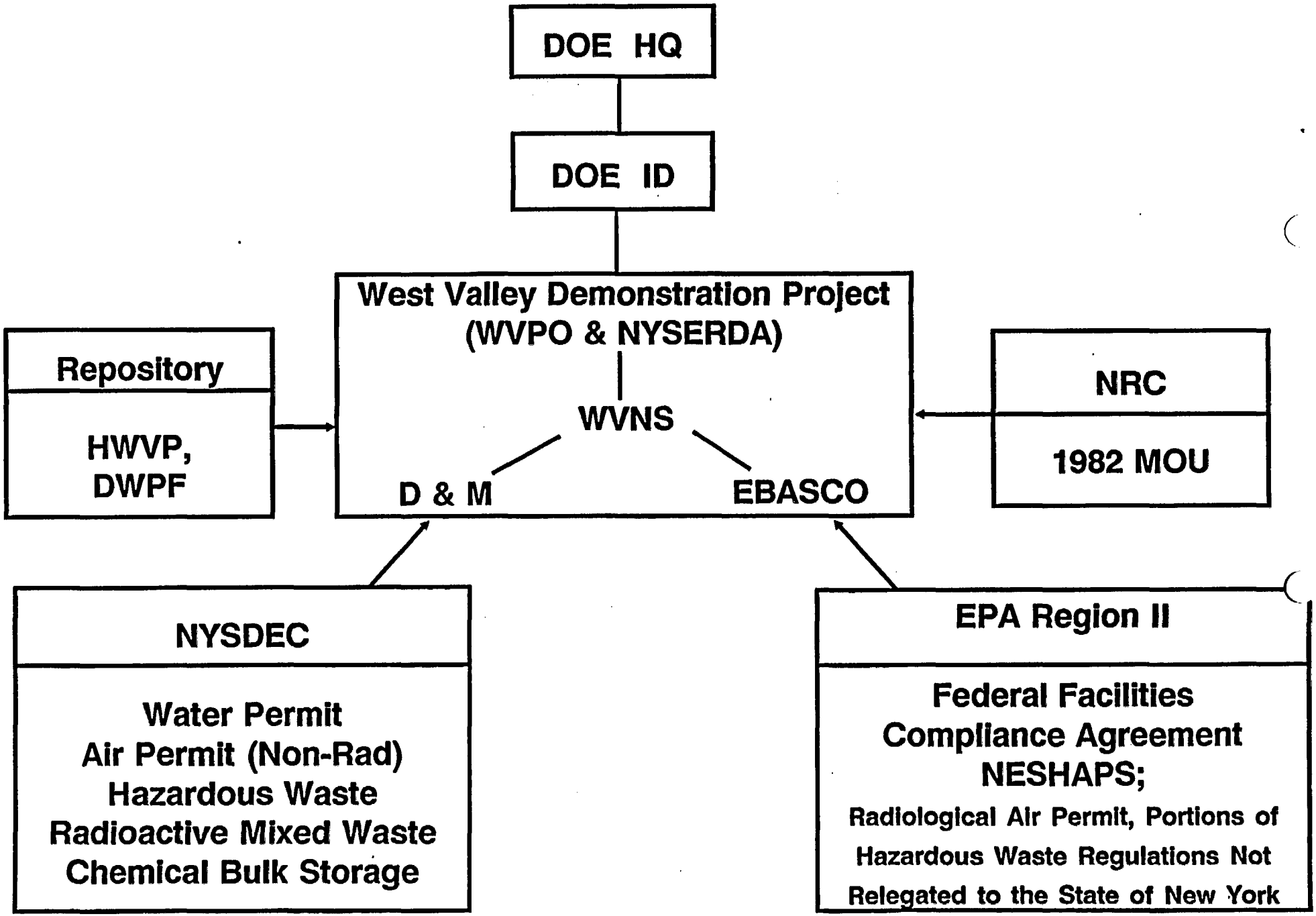
Decontaminate and Decommission Facilities Used (To Support Solidification)

C4258WV003

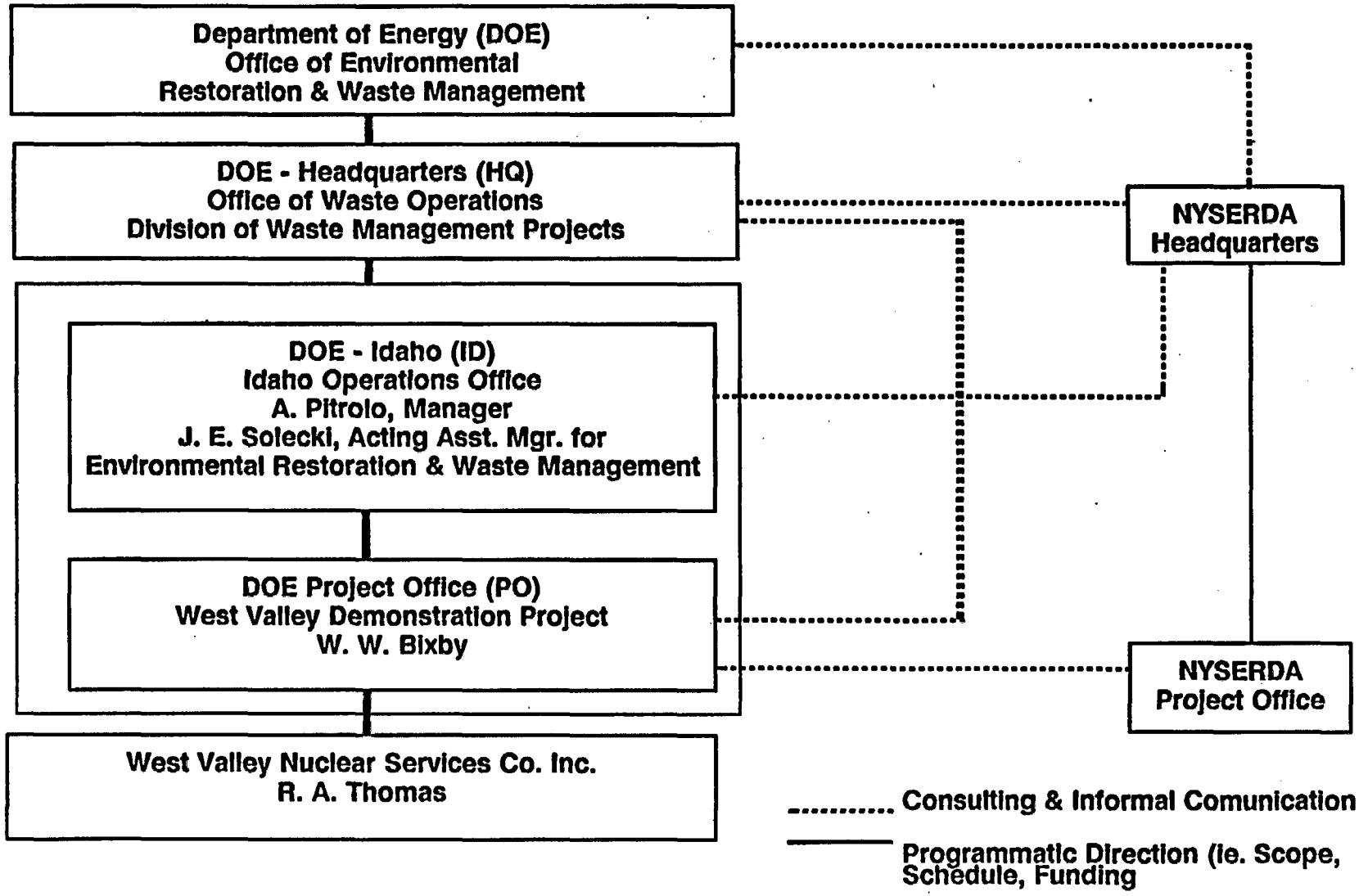
SUMMARY MASTER SCHEDULE



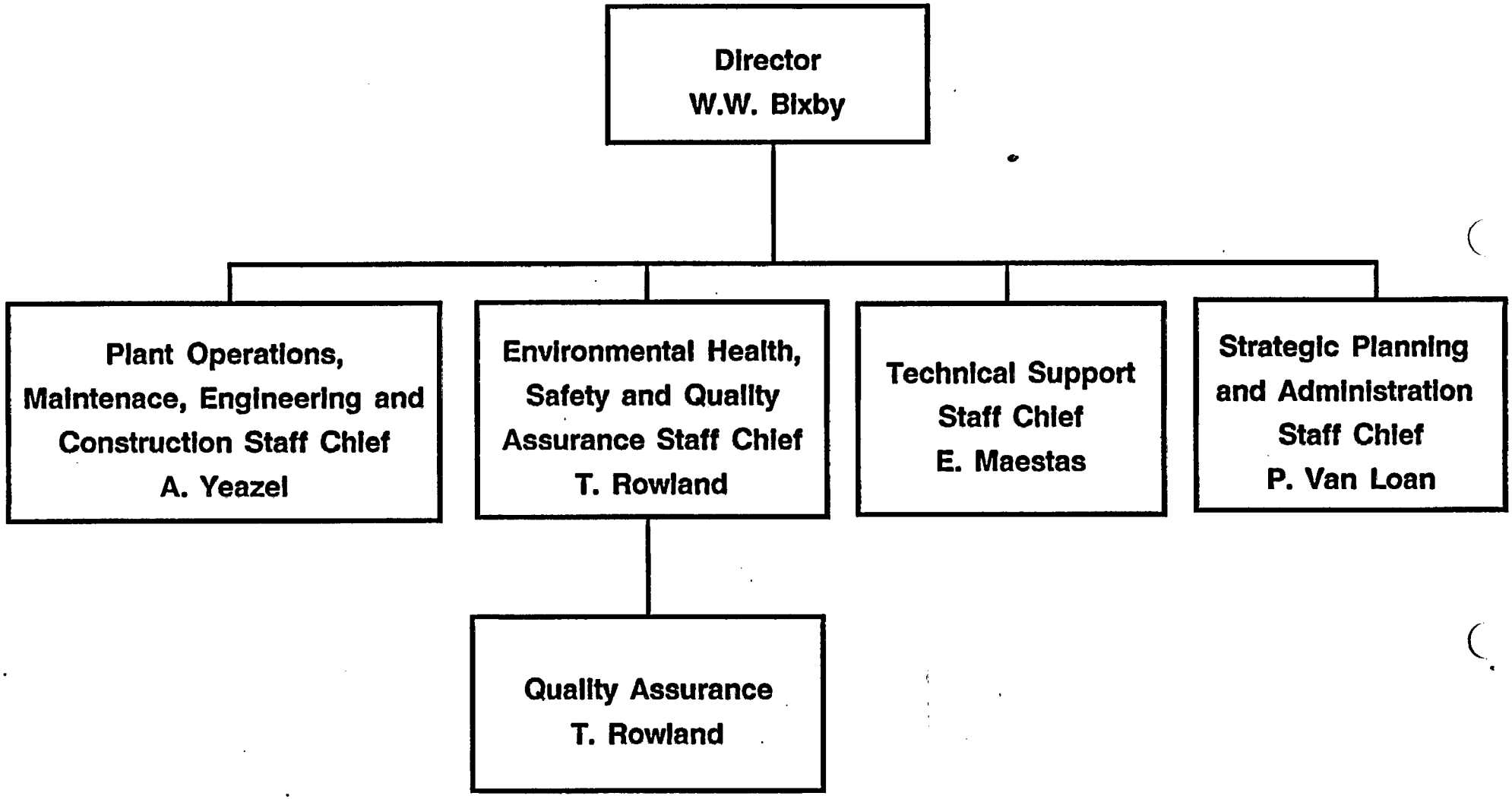
PROJECT INTERFACES



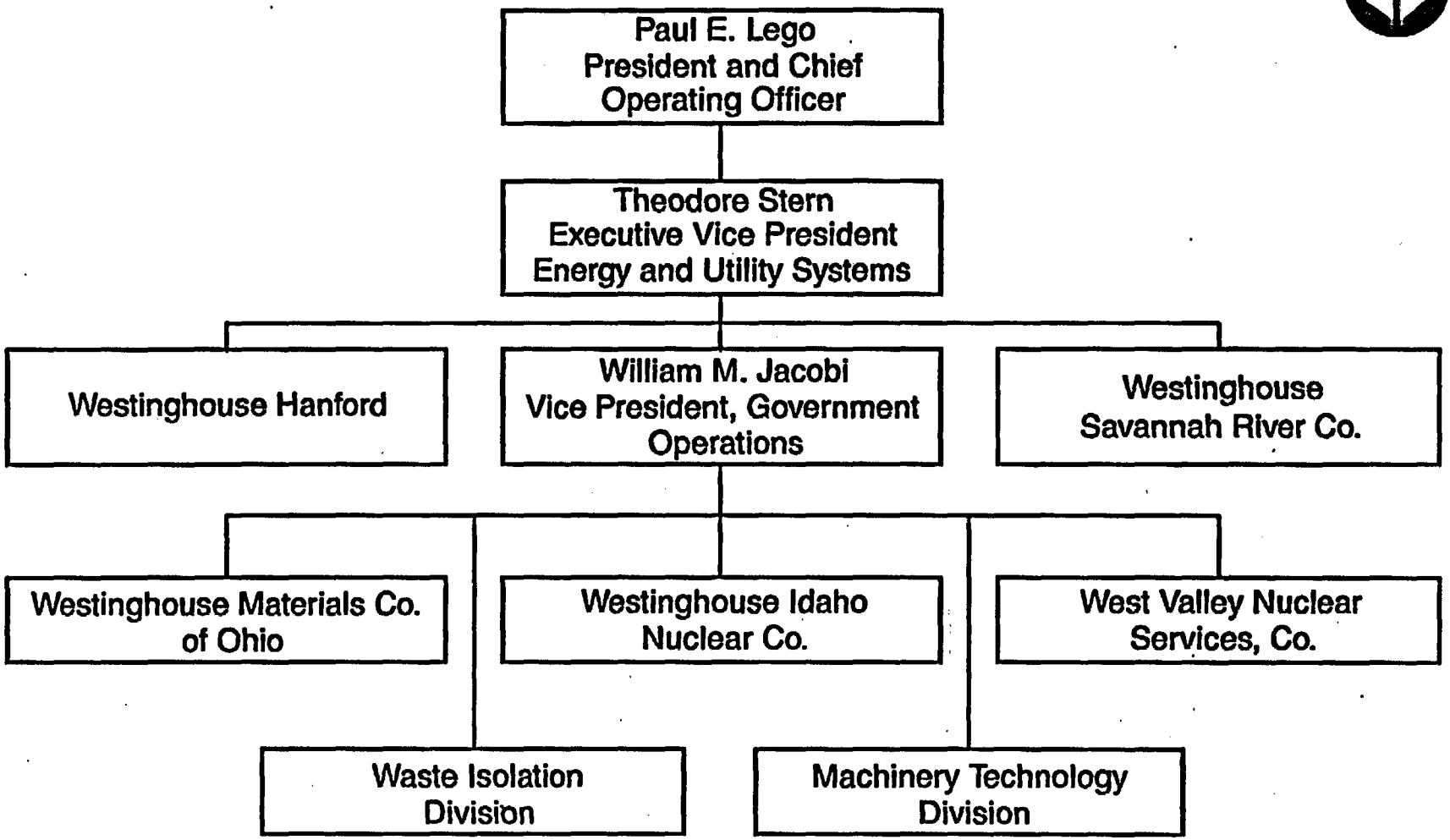
PROJECT ORGANIZATION



WEST VALLEY PROJECT OFFICE

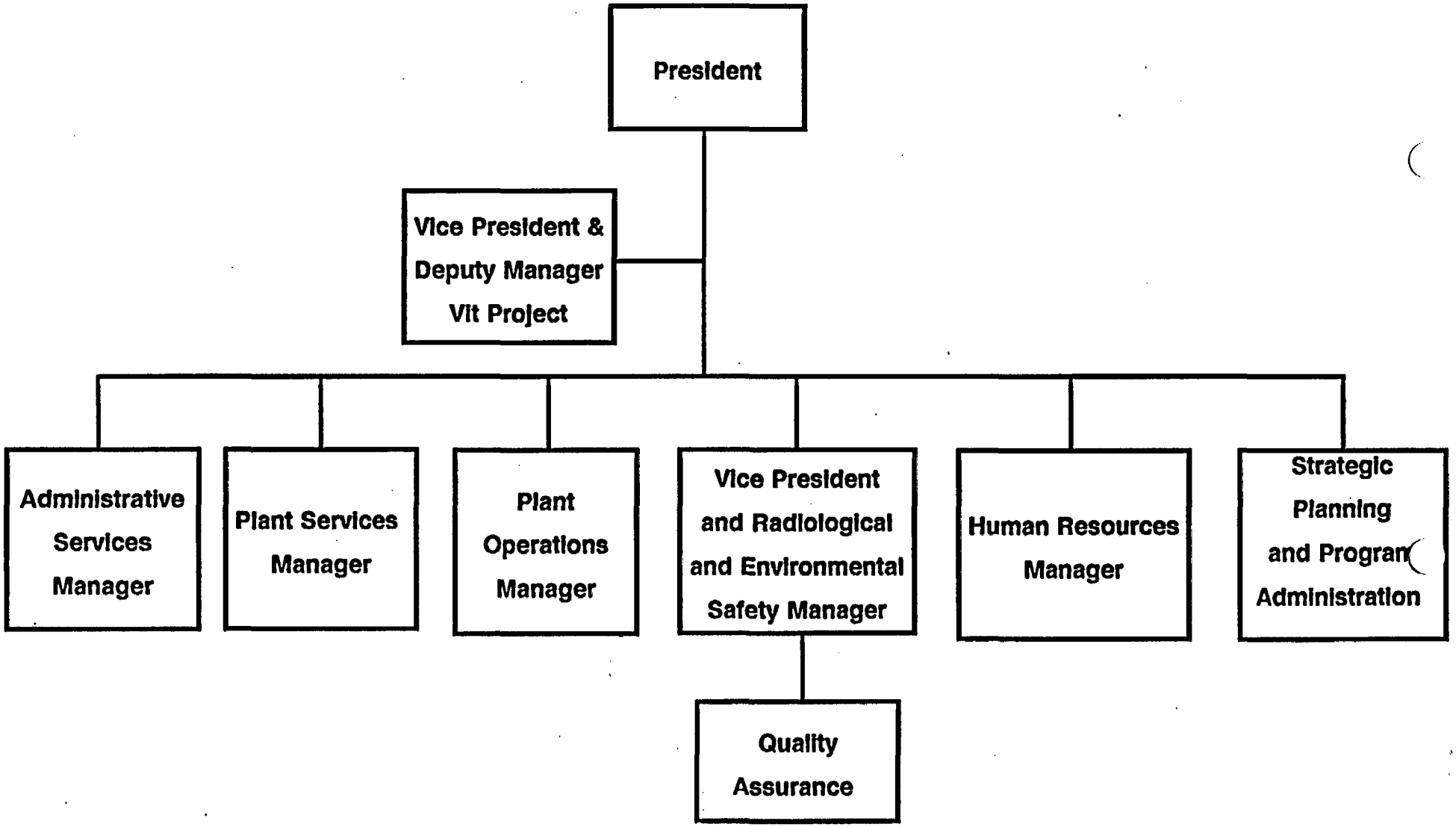


WESTINGHOUSE ORGANIZATION

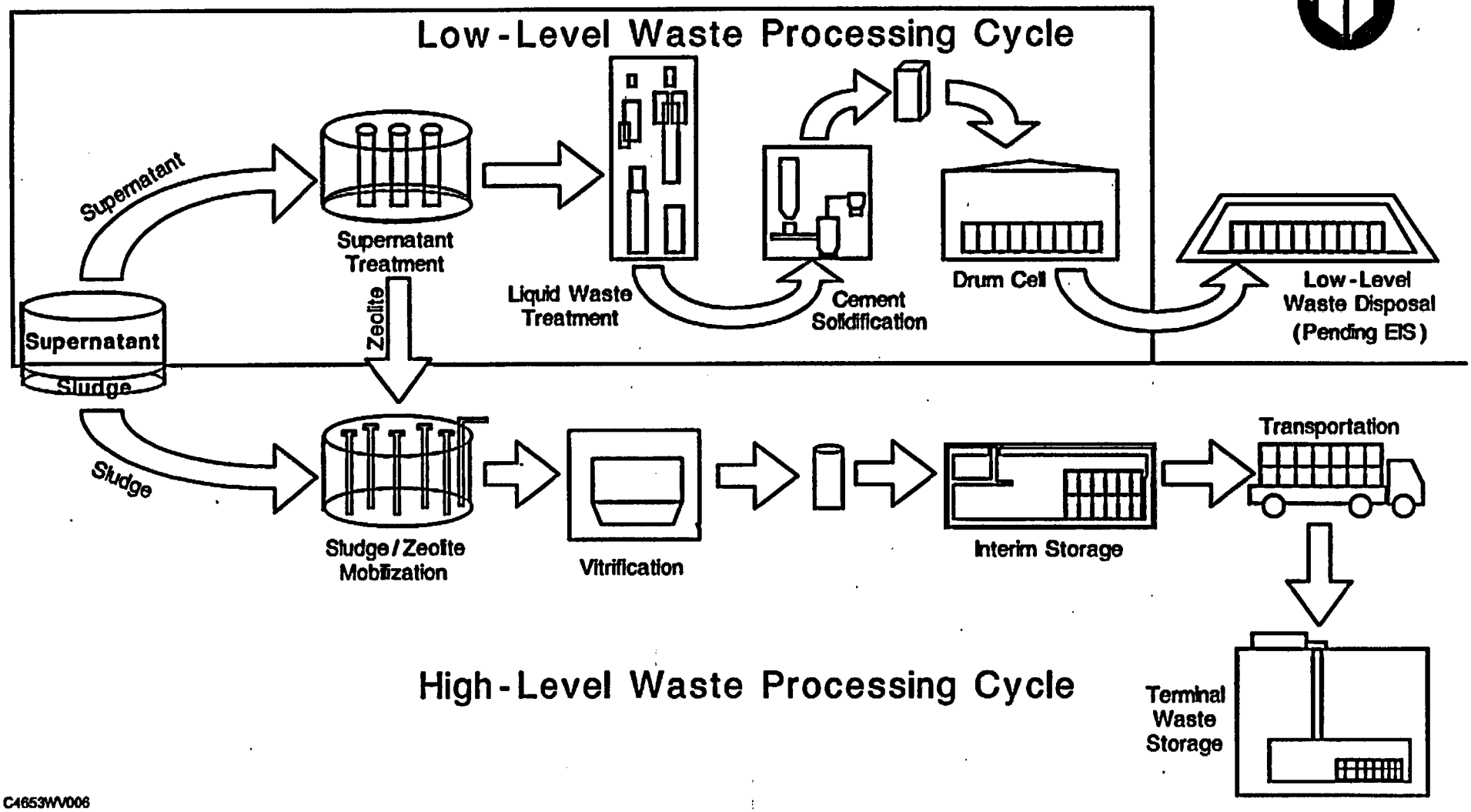


C6583WV001

WVNS ORGANIZATION CHART



PROCESS OVERVIEW



C4653WV006

WVDP HLW STATUS APRIL 1990

Objective

- Remove Liquid From 8D-2 To 32 Inch Level
- Produce Certified CSS Cement Drums (13,000 Drums)
- Remove Cesium From 8D-2 Liquid (6.6×10^6 Ci)

Progress To Date

- 310,000 Gallons (39 Wt% Supernatant) Removed From 8D-2 (59.6% Complete)
- 7808 Drums Produced (60.0% Complete)
- 4.02×10^6 Ci Cs Removed By Ion Exchange (60.9% Complete)

NRC LLWMD ENDORSES WVDP CEMENT WASTE FORM

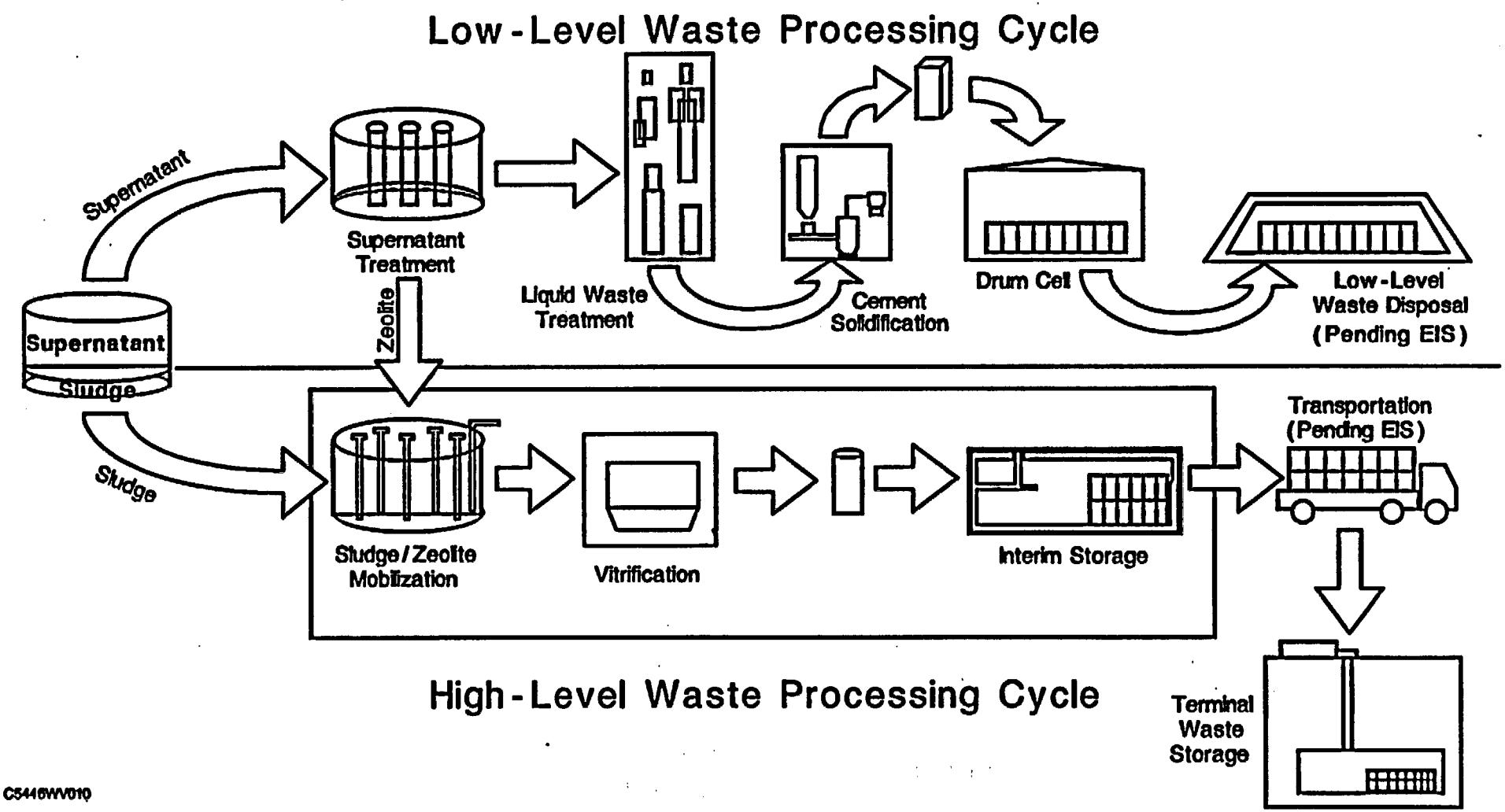
Basis

- WVDP Process Control Plan
- Technical Topical Report
- Product Verification Through Testing

Requirements

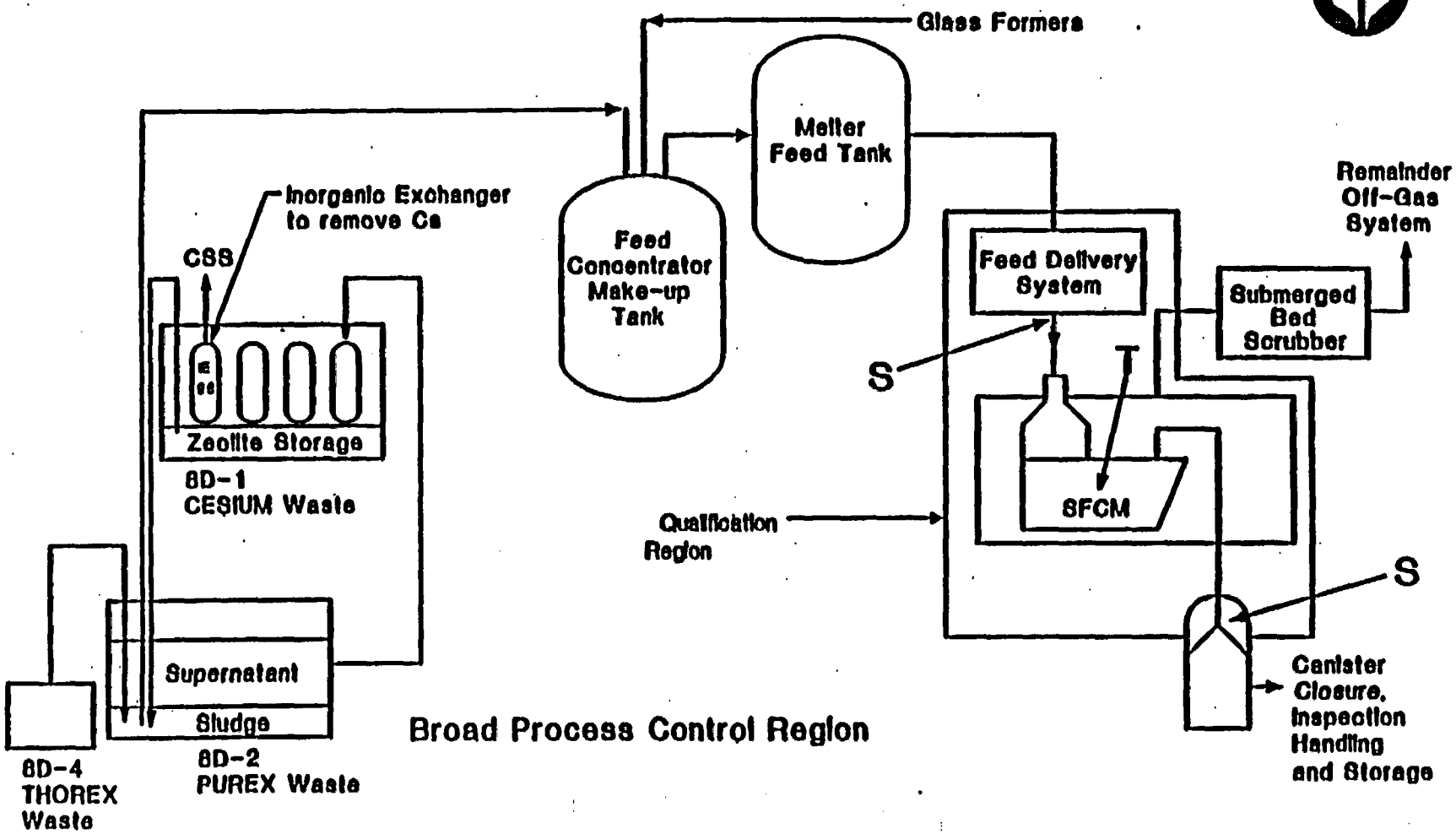
- 10CFR61
- NRC Technical Position Paper

PROCESS OVERVIEW



C5446WV010

WEST VALLEY HLW PROCESSING FLOW SHEET



VITRIFICATION SUMMARY

Glass Testing Program

- Test Program Successfully Completed
- The Data Indicate the Waste Glass Product Will Meet the Waste Acceptance Specification
- Demonstrated Full-Size Melter Performance
- Utilized an Integrated Team Effort
  PNL, CUA, AU, HWVP, and DWPF

VITRIFICATION SUMMARY

Status - Facility

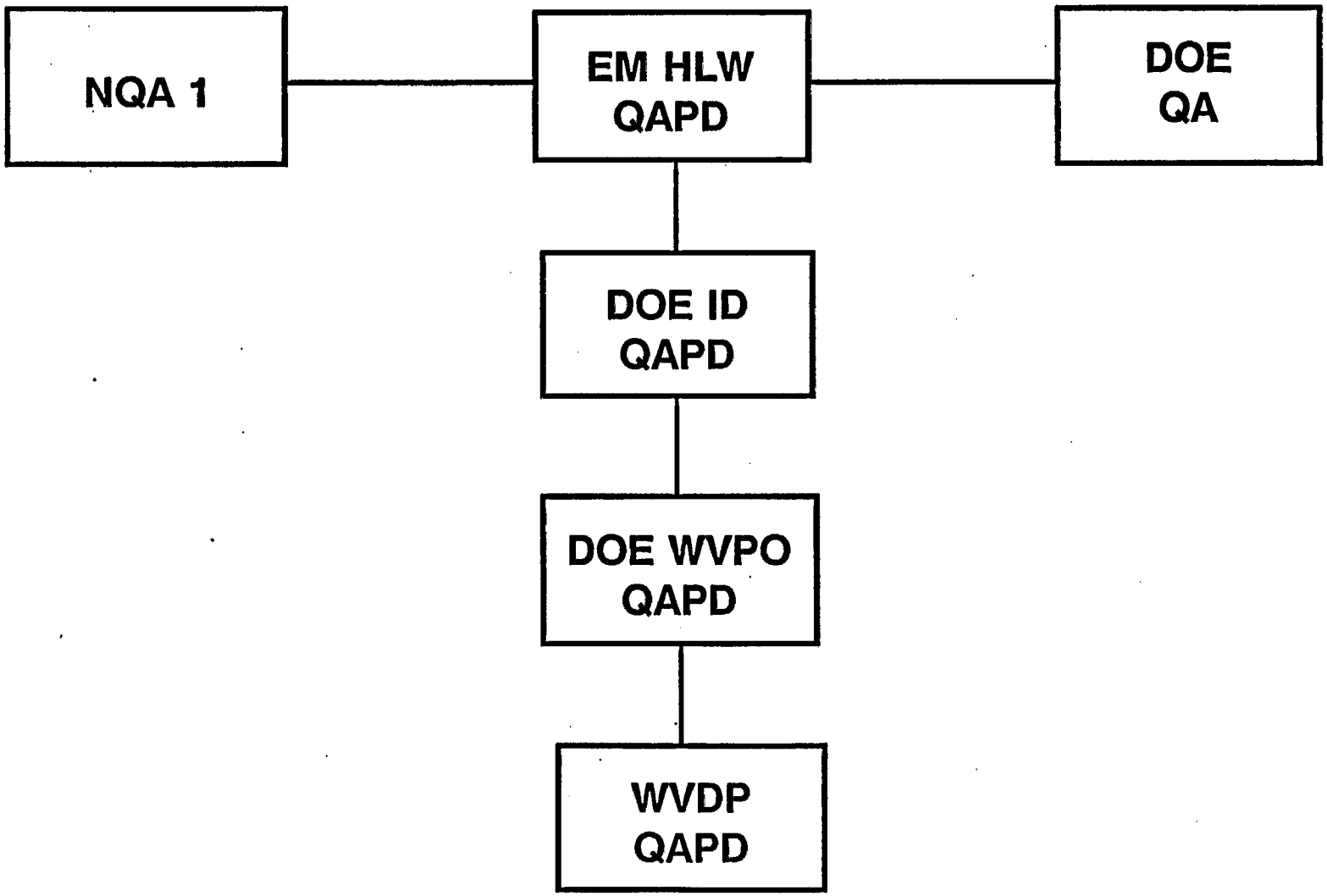
- Design, Procurement and Construction Activities Proceeding Well
- No Significant Melter Or Other Equipment Modifications Are Planned
- Cold Testing 10/92
- Hot Testing 10/93

QUALITY ASSURANCE REQUIREMENTS

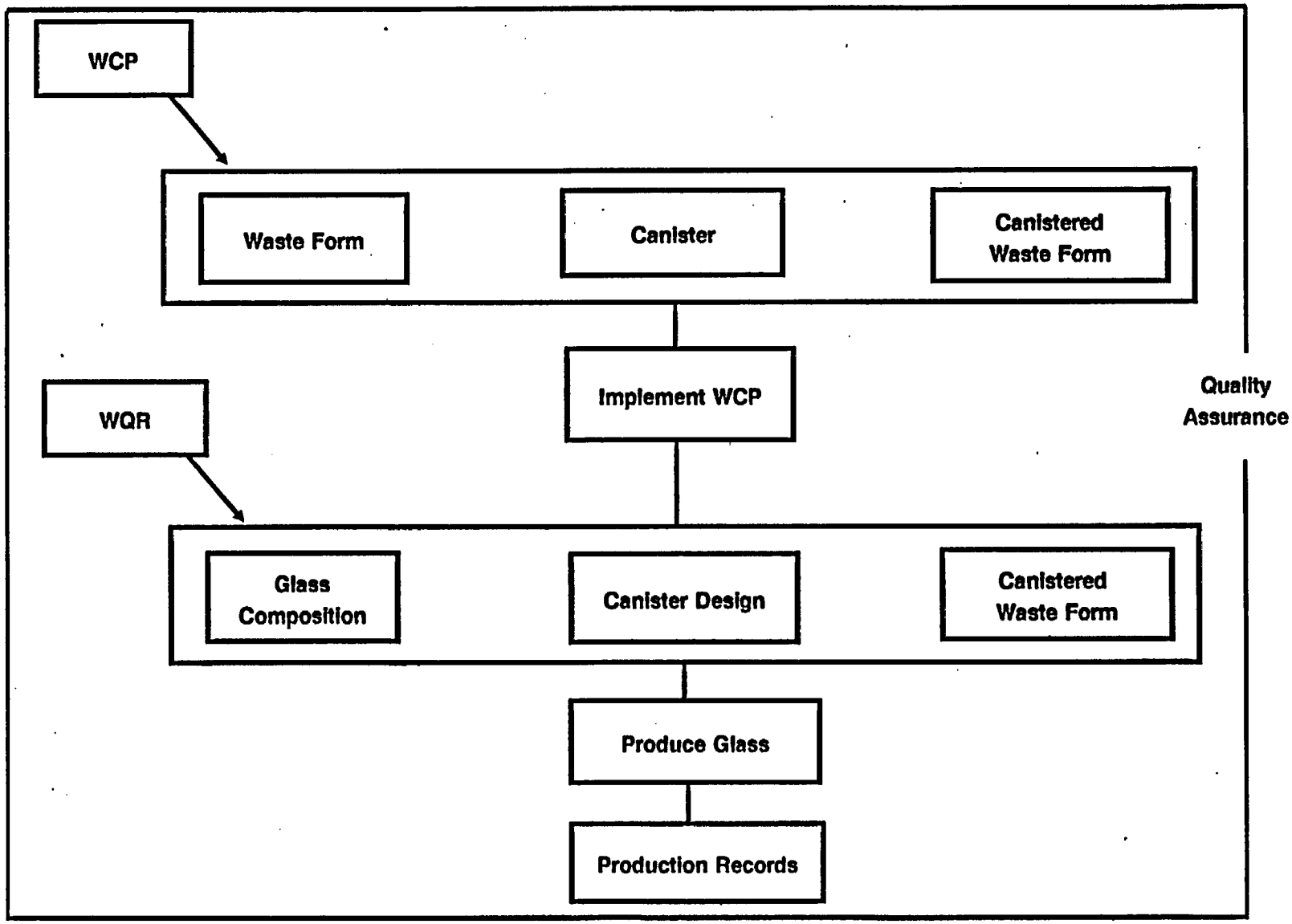
FOR

HIGH-LEVEL WASTE FORM PRODUCTION

WVDP QA PROGRAM DOCUMENTS



WVNS QUALITY ASSURANCE FOR HLW WASTE ACCEPTANCE PROCESS



QA PROGRAM CHRONOLOGY

• DOE Order 5700.6A	8/81
• WVNS Quality Program Based On NQA-1-79 and 10CFR50 Appendix B	1982 - 1986
• DOE Order 5700.6B	9/86
• WVNS Upgraded and Reissued Program Based On NQA-1-83 and Supplements	6/86
• WVNS QA Program Reviewed and Approved By DOE-ID	11/86
• QA Program Reviewed Against NQA-1-86	6/88
• Quality Assurance Program Description Are In Final Review	4/90

AUDIT HISTORY OF WVDP

NRC (Division of Industrial and Medical Nuclear Safety & Region I)

• QA Program	8/86
• Program Implementation	1/88
• Program Implementation	9/89
• Periodic Surveillances	——

DOE/ID

QA Program Implementation	March 1983
	August 1983
	May 1985
	May 1987
	July 1988
	June 1989
	July 1990 (Pending)

QUALITY ASSURANCE IMPLEMENTING PROCEDURES

- WVPO Procedures In Final Review
- Contractor Quality Management Manual
- Contractor Quality Assurance Department Procedures
- Other Contractor Department Implementing Procedures
  - Engineering
  - Procurement
  - Operations

VITRIFICATION DEVELOPMENT WORK

- Performed To Controlled Programs At Alfred and Catholic Universities, PNL
- All Are Required To Have, and Work To Approved Quality Assurance Programs That Meet HLW Requirements
- All Are Monitored By WVNS Quality Assurance
- All Are Audited By WVNS Quality Assurance
  - Qualification Of Personnel
  - Documentation Of Work
  - Results Reporting and Documentation
  - Log Books Are Complete
  - Collection and Maintenance Of Records
  - Procedure Performance

QUALITY ASSURANCE AT SUBCONTRACTORS

- Quality Assurance Plan Approved
- Implementing Quality Assurance Procedures In Place
- Quality Assurance Training On Procedure Implementation In Place
- Analytical Work Done To Approved Procedures
- Quality Assurance Surveillances Are Being Performed By an Independent Quality Assurance Representative
- WVNS Performing Periodic Surveillances Of All Work
- WVNS Audits Annually

HLW QA PROGRAM MILESTONES

- WAPS For West Valley (OGR-B9), Issued 1987
- WCP For West Valley, Issued 4/89
- Draft QAPD's Approved Through DOE/NE For WVDP, Issued 5/89
- Engr./Oper. Procedures For HLW In Place For Glass Process Cold Run Qualification (SF-12), 9/89

HLW QA PROGRAM MILESTONES (CONT'D)

- Prepared Procedures To Reflect Revision 2 Of RW-0214, 3/90
- Completed Revision To Draft QAPD, Which Reflect Format Changes Of RW-0214, 4/90
- QAPD To EM For Review, 5/90

CONCLUSION

- The West Valley Demonstration Project Vitrification Design and Construction Well Underway
- The Waste Compliance Plan Has Been Issued and Is In Final Technical Review
- The Waste Qualification Report Activities Are Proceeding
- Work Is Being Accomplished In Accordance With NQA-1 and the Requirements Of DOE/RW-0214
- The Quality Assurance Program Descriptions Will Be Submitted To EM For Review 5/90
- Will Continue To Keep NRC Informed On WVDP Progress

ATTACHMENT 10

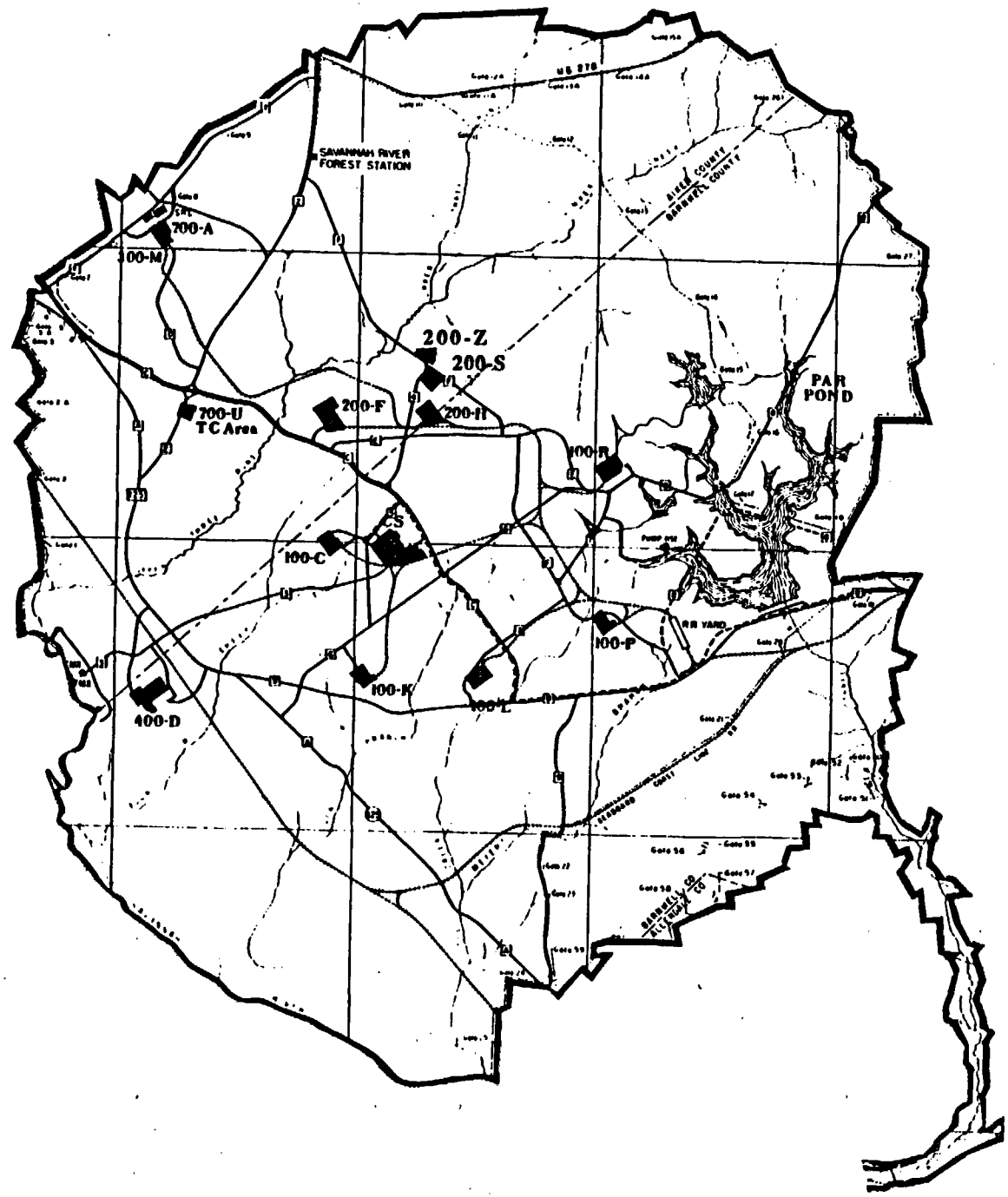
SAVANNAH RIVER

DEFENSE WASTE PROCESSING FACILITY QUALITY ASSURANCE PROGRAM STATUS

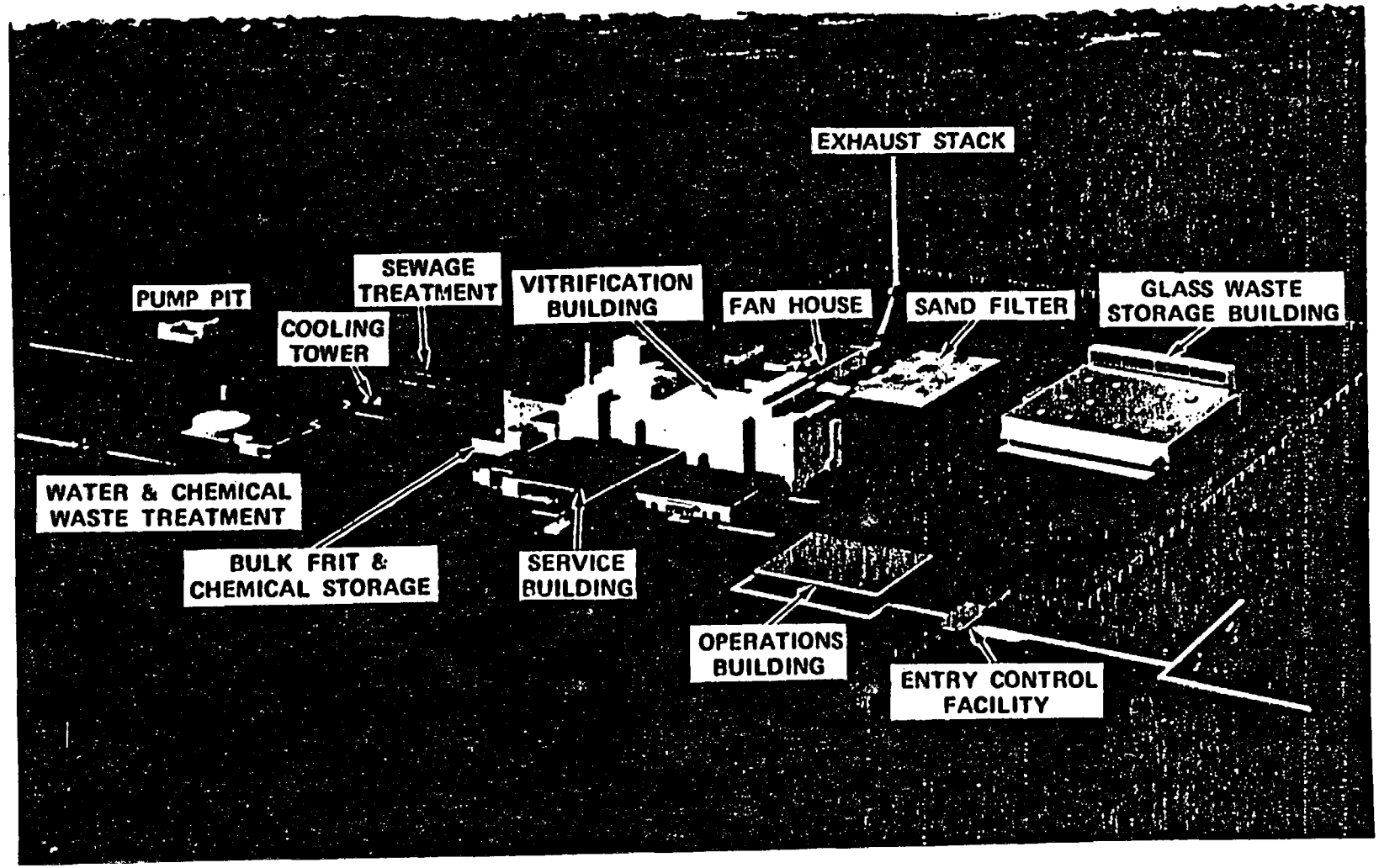
U.S. NUCLEAR REGULATORY COMMISSION
U.S. DEPARTMENT OF ENERGY
MONTHLY MEETING ON QUALITY ASSURANCE

APRIL 27, 1990

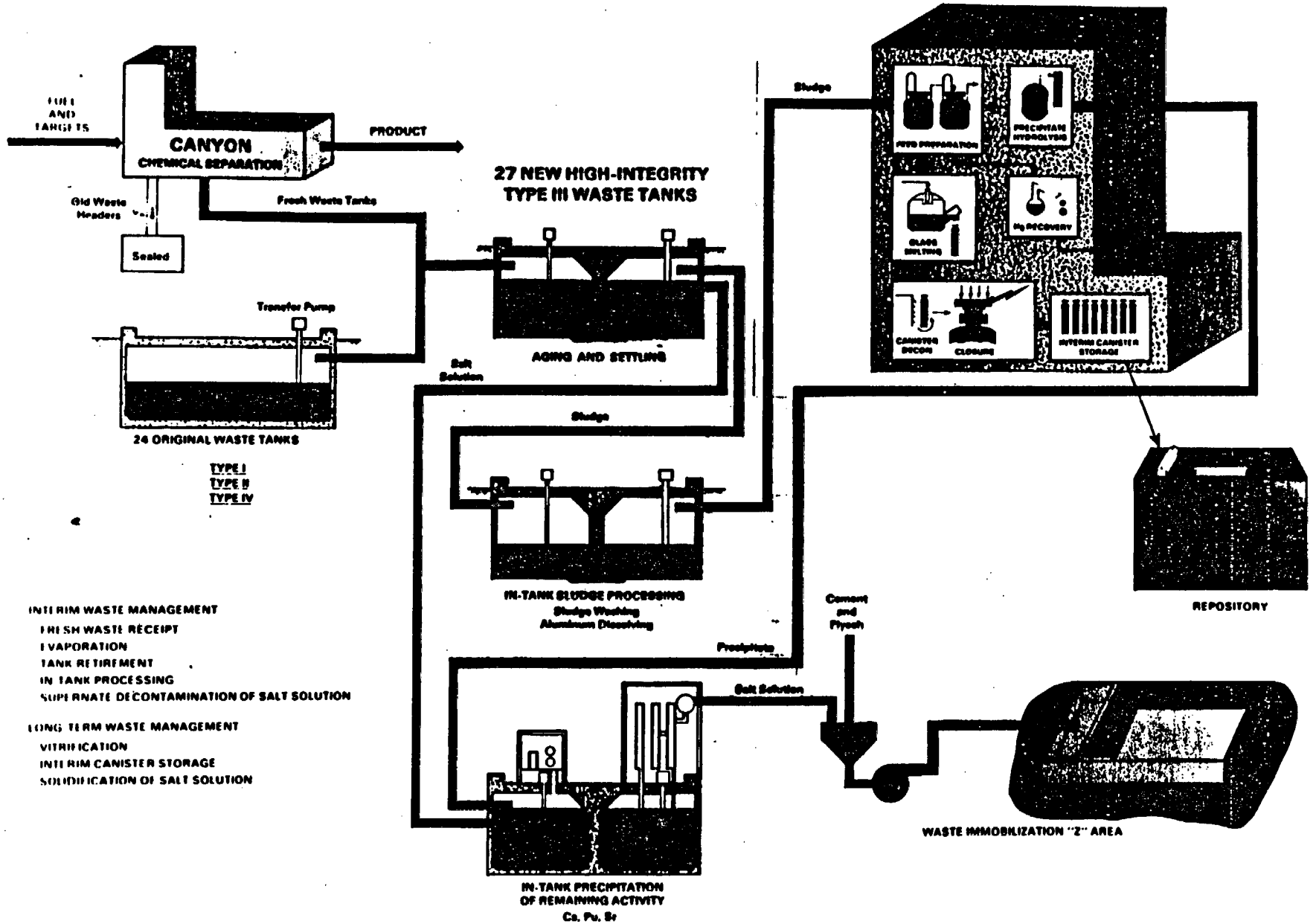
SAVANNAH RIVER PLANT SITE MAP



DEFENSE WASTE PROCESSING FACILITY



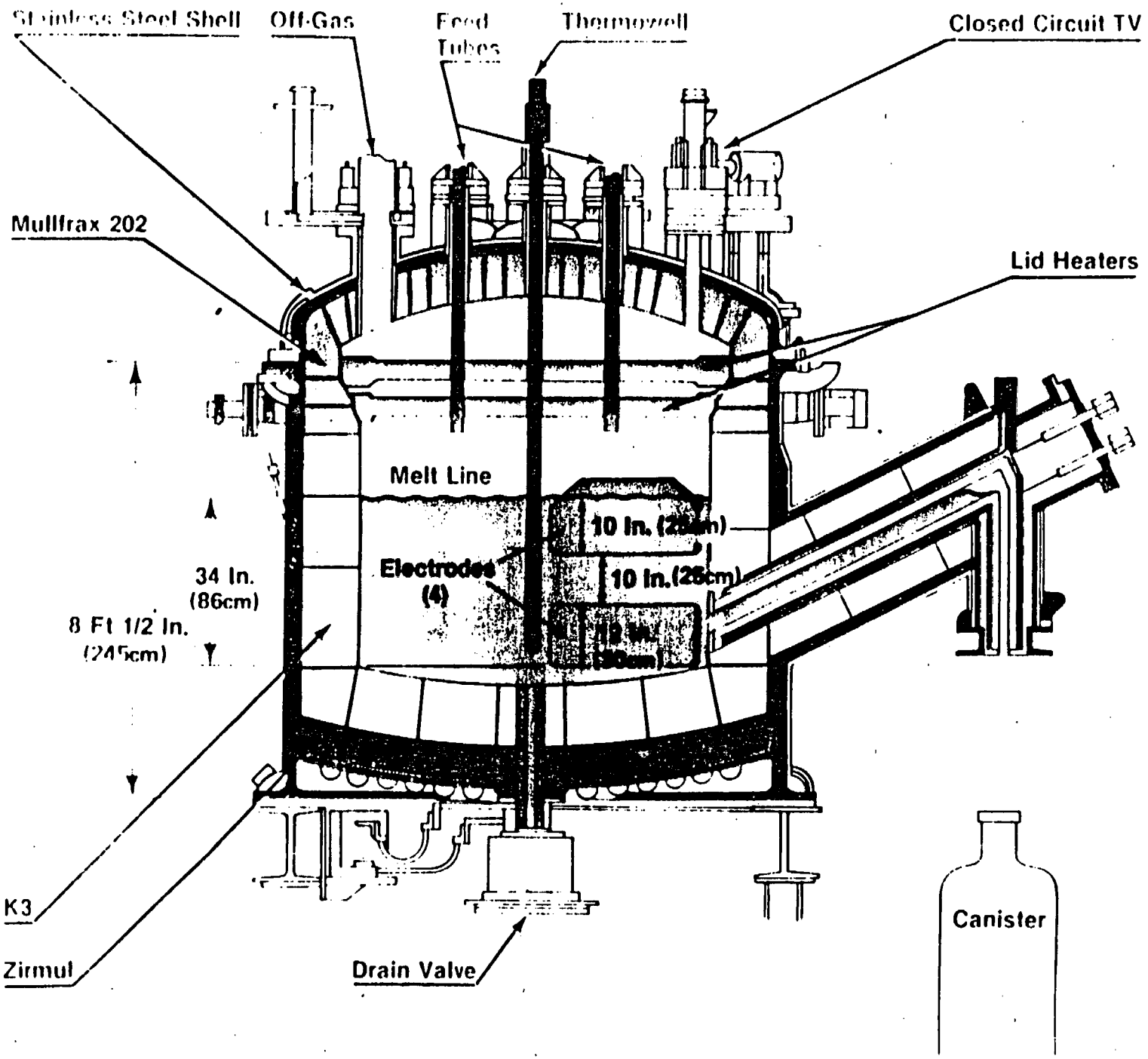
HIGH-LEVEL LIQUID WASTE MANAGEMENT
SAVANNAH RIVER PLANT



INTERIM WASTE MANAGEMENT
- FRESH WASTE RECEIPT
- EVAPORATION
- TANK RETIREMENT
- IN TANK PROCESSING
- SUPERNATE DECONTAMINATION OF SALT SOLUTION

LONG TERM WASTE MANAGEMENT
- VITRIFICATION
- INTERIM CANISTER STORAGE
- SOLIDIFICATION OF SALT SOLUTION

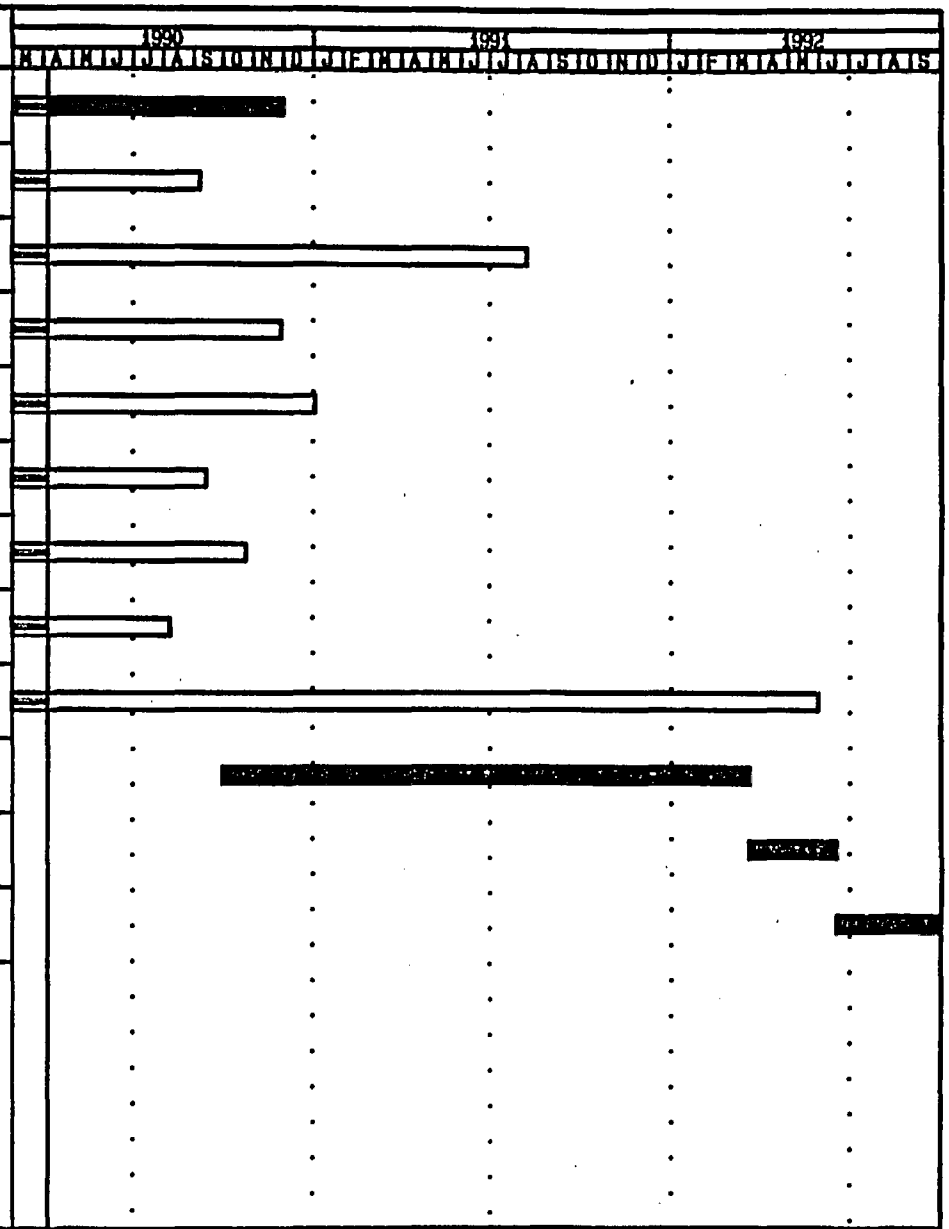
DWPF Melter


Stainless Steel Shell
Off-Gas
Feed Tubes
Thermowell
Closed Circuit TV
Mullfrax 202
Lid Heaters
Melt Line
10 In. (26cm)
Electrodes (4)
10 In. (26cm)
34 In. (86cm)
8 Ft 1/2 In. (245cm)
K3
Zirmul
Drain Valve
Canister

DWPF PROJECT STATUS

- Construction of the Defense Waste Processing Facility (DWPF) is now 98% completed.
- Integrated Water Runs of the DWPF are scheduled to start in September 1990.
- Qualification Runs for the vitrification process and equipment are scheduled to begin in March 1991. This will be accomplished using simulated (non-radioactive) sludge.
- The DWPF is scheduled to start radioactive operation in mid 1992.

HVAC PENETRATION SEALING AND DEMO TESTING	AS 5MAR90	EF 30NOV90
PROCESS HAZARDS REVIEW	AS 2JAN89	EF 6SEP90
SAR	AS 9FEB90	EF 8AUG91
DCS AUTOMATION & TESTING	AS 8AUG89	EF 28NOV90
TRAINING	AS 8SEP89	EF 2JAN91
COMPLETE SLUDGE COMMISSIONING	AS 20CT89	EF 13SEP90
MELTER OGCT FLUSHING	AS 6NOV89	EF 23OCT90
PRECIPITATE PROCESS COMMISSIONING	AS 30NOV89	EF 7AUG90
WASTE ACCEPTANCE	AS 16MAR89	EF 29MAY92
COLD RUNS	ES 10CT90	EF 19MAR92
SYSTEM FIX-UP/FINAL REVIEW AND APPROVAL	ES 20MAR92	EF 17JUN92
RADIOACTIVE OPERATION	ES 18JUN92	EF 14APR93



Activity Bar/Early Dates
Critical Activity
Progress Bar

Primavera Systems, Inc. 1986-1988

Planning Unit : Day

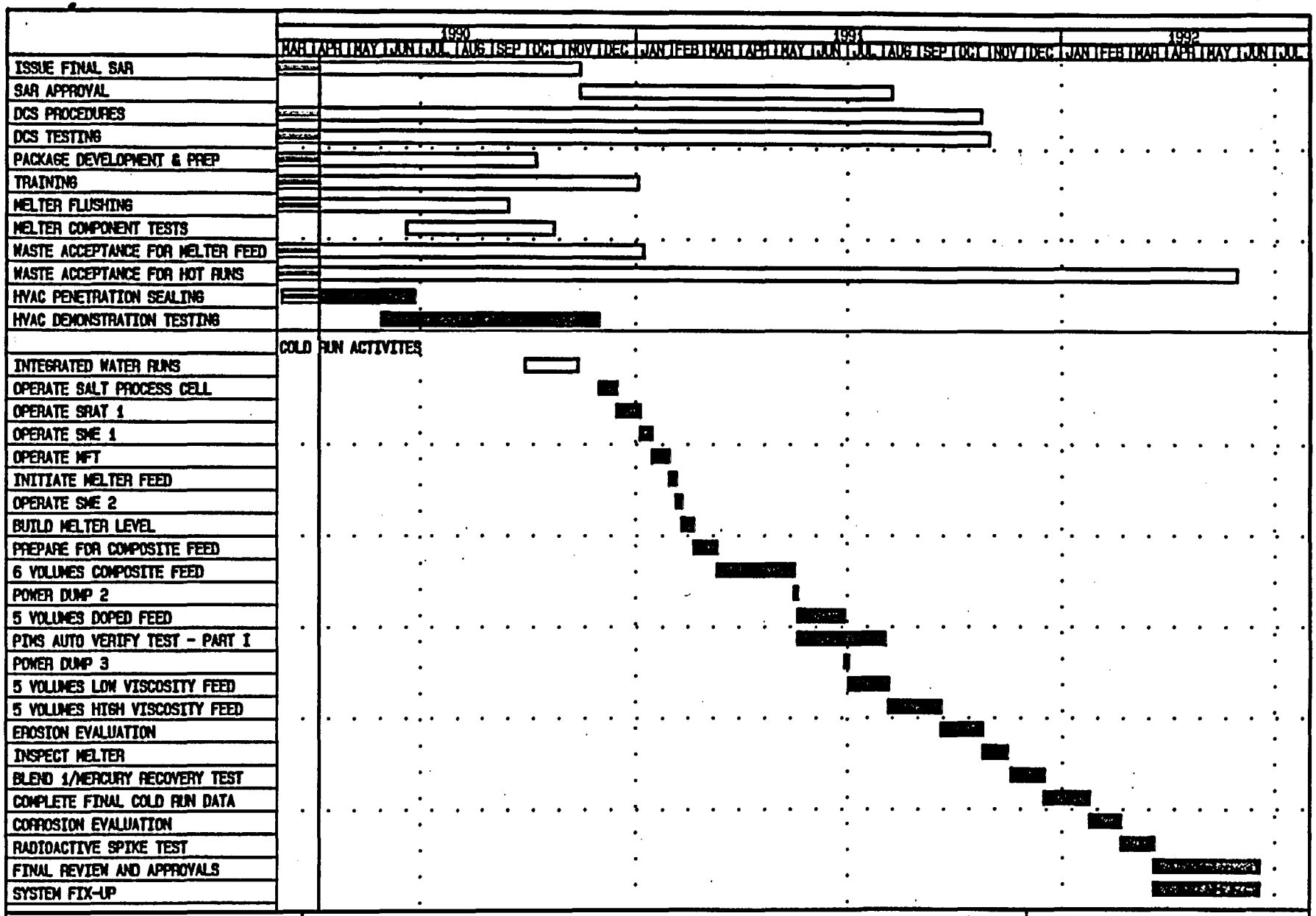
Project Start : 1JAN89
Project Finish 14APR93

STARTUP / COMMISSIONING SCHEDULE
DEFENSE WASTE PROCESSING FACILITY
LEVEL 1

Sheet 1 of 1

Data Date: 6APR90
Plot Date: 11APR90

Date	Revision	Checked	Approved



Activity Bar/Early Dates
Critical Activity
Progress Bar

Primavera Systems, Inc. 1985-1990

Planning Unit : Day

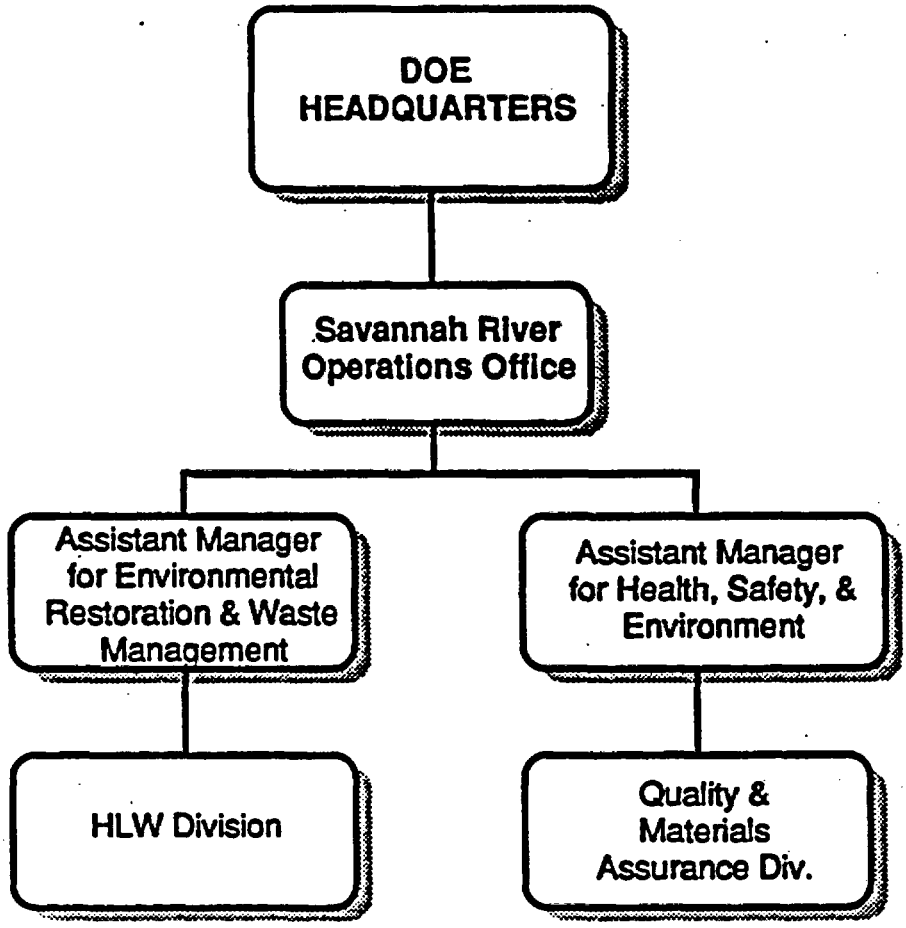
Project Start : 1JAN89
Project Finish: 14APR93

STARTUP / COMMISSIONING SCHEDULE
DEFENSE WASTE PROCESSING FACILITY
LEVEL 2

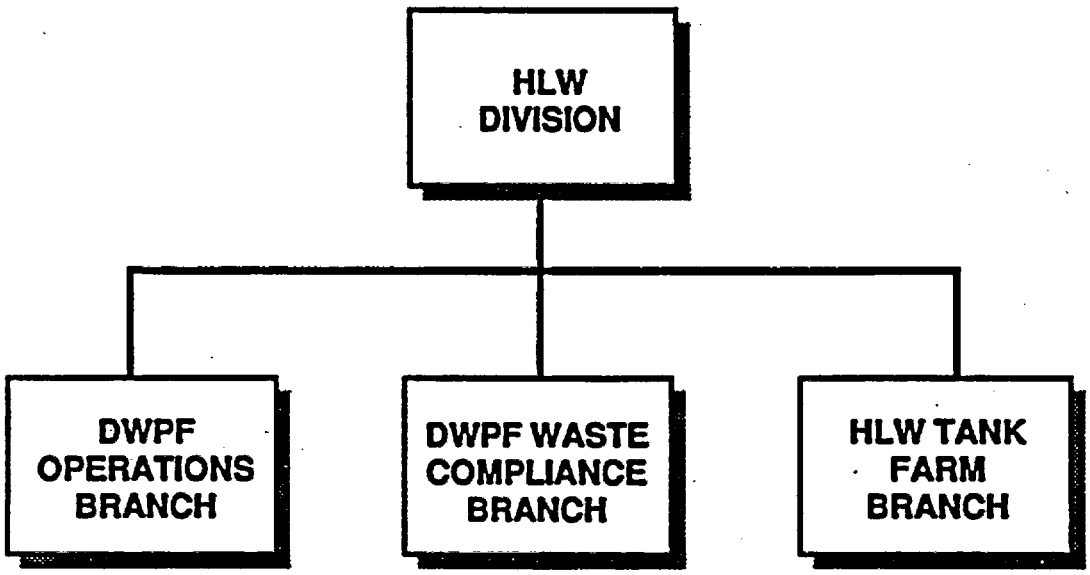
Sheet 1 of 1

Data Date: 6APR90
Plot Date: 11APR90

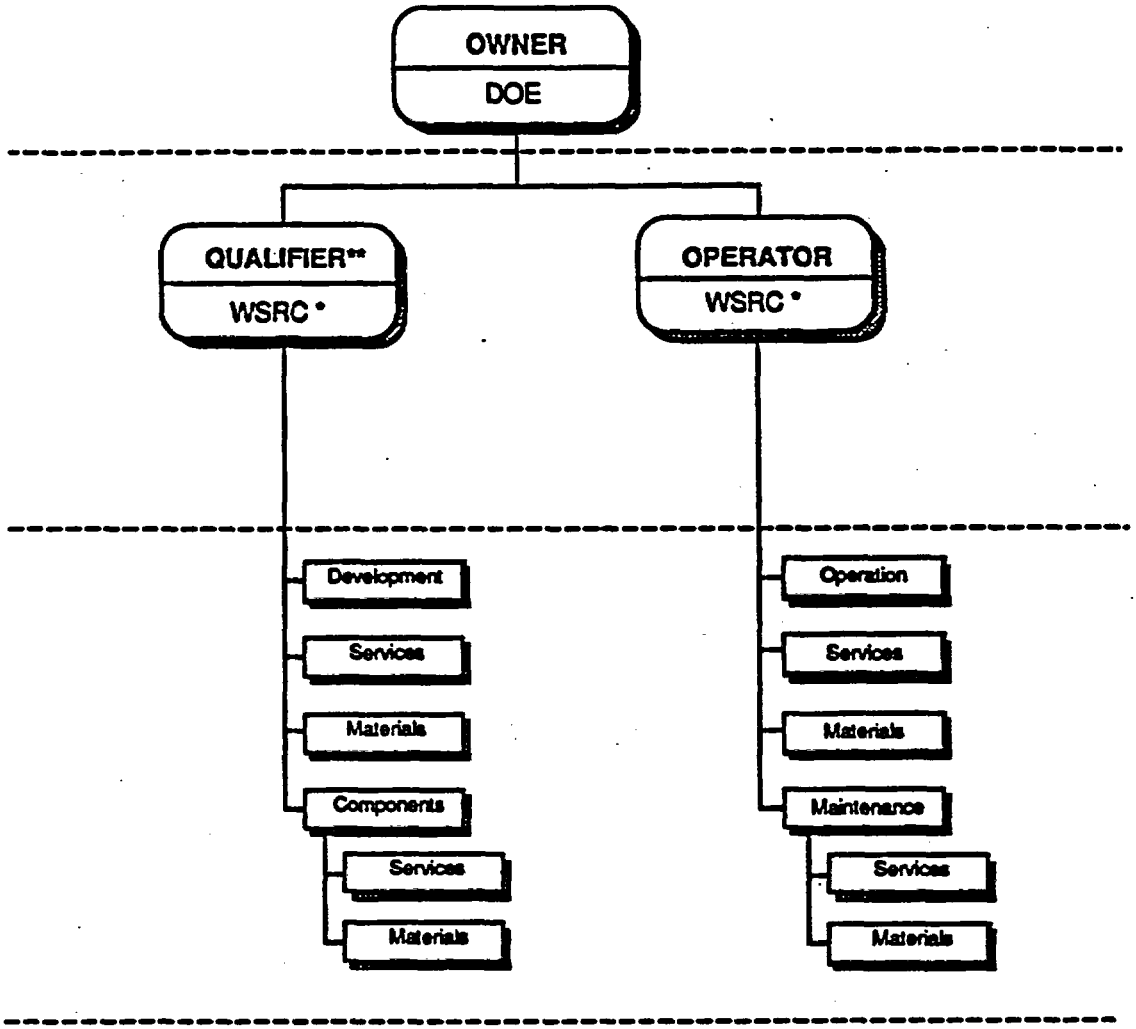
Date	Revision	Checked	Approved



DOE ORGANIZATION



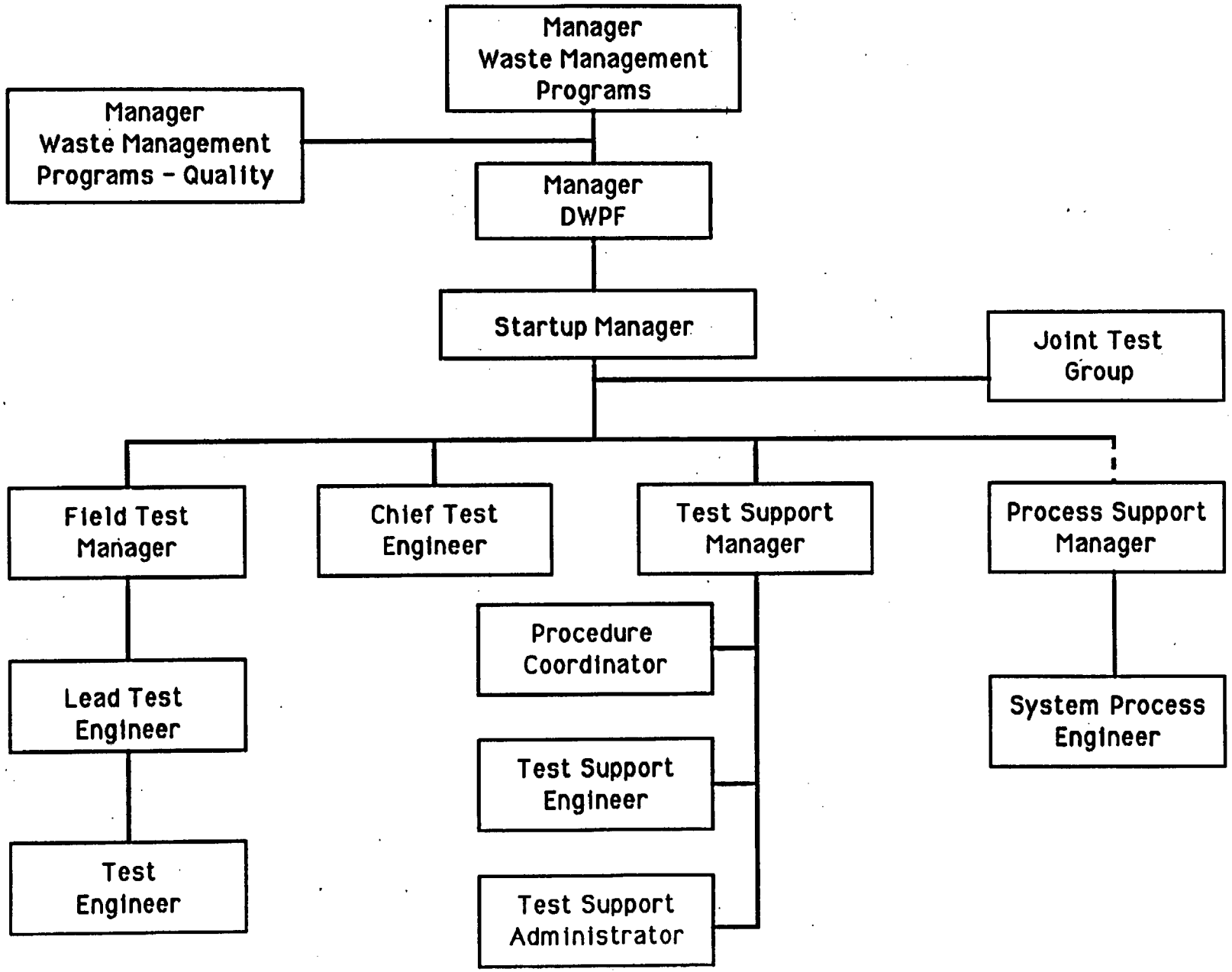
DOE/SR HLW DIVISION ORGANIZATION

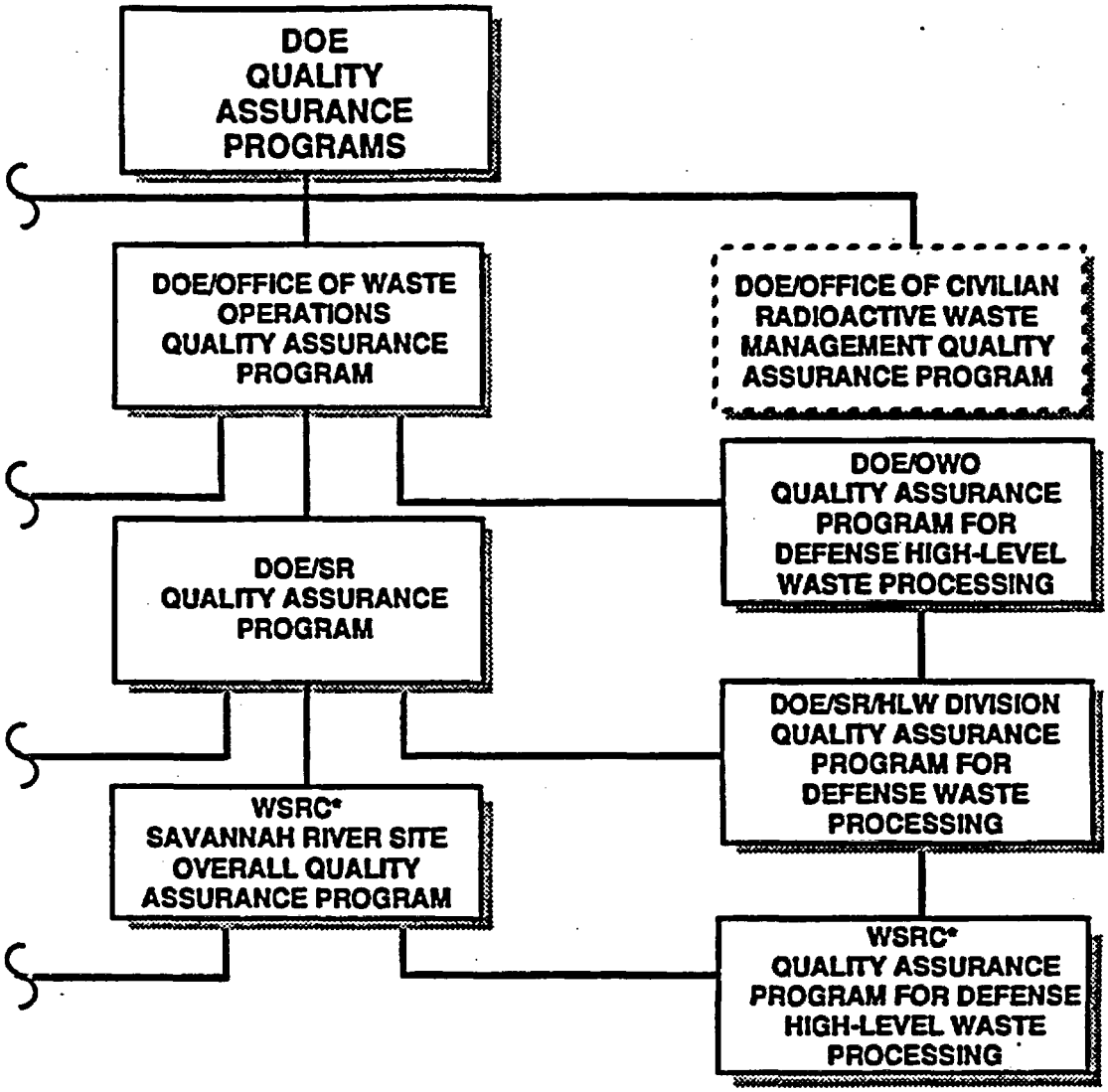


* Formerly DuPont
** Includes program responsibility for any developmental activities associated with qualification.

DOE/SR/DWPF QUALITY ASSURANCE
FUNCTIONAL ORGANIZATION OF PROGRAM RESPONSIBILTY

DWPF QUALIFICATION TEST RUNS
STARTUP DEPARTMENT ORGANIZATION

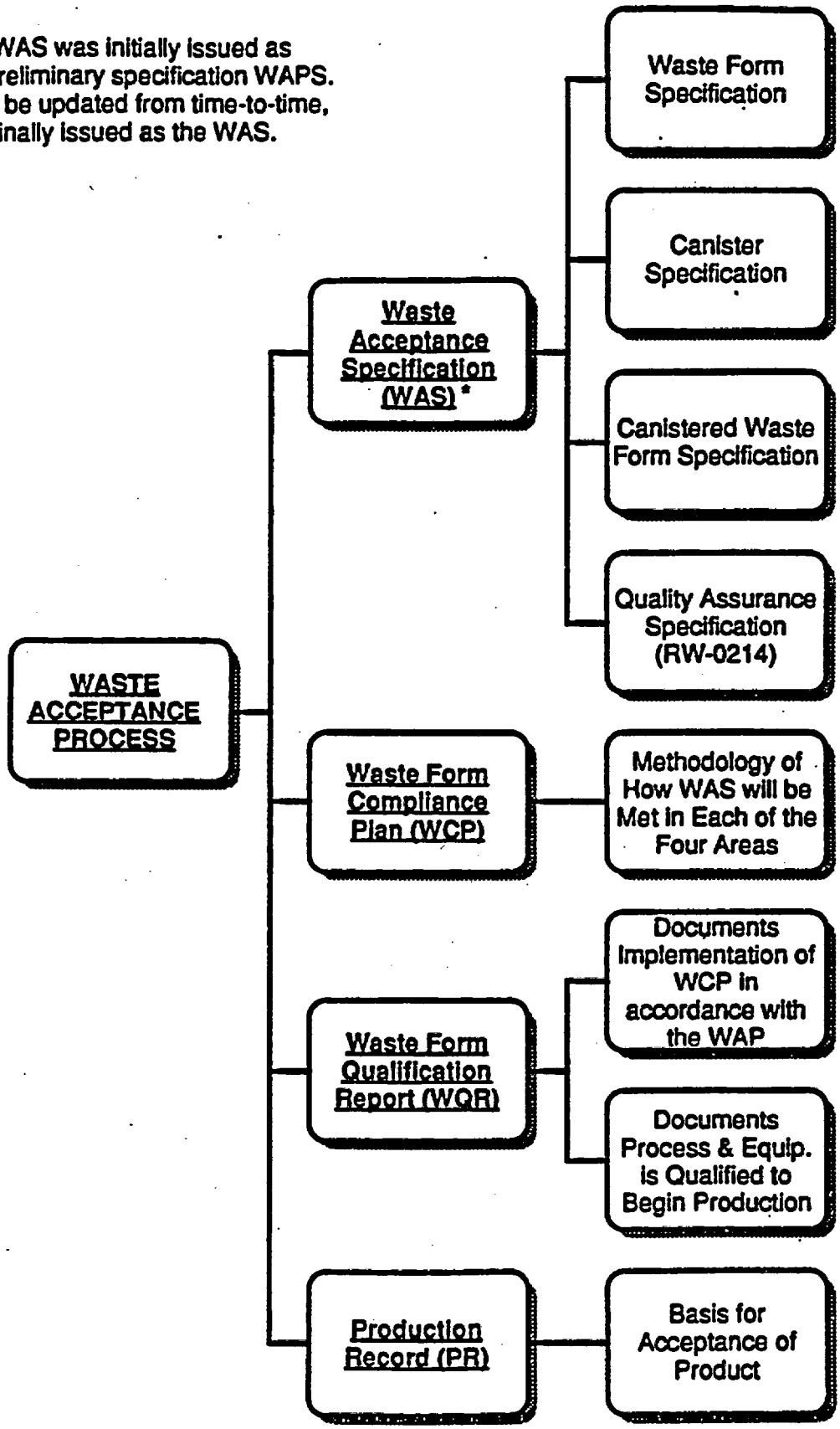




QUALITY ASSURANCE PROGRAM BREAKDOWN STRUCTURE

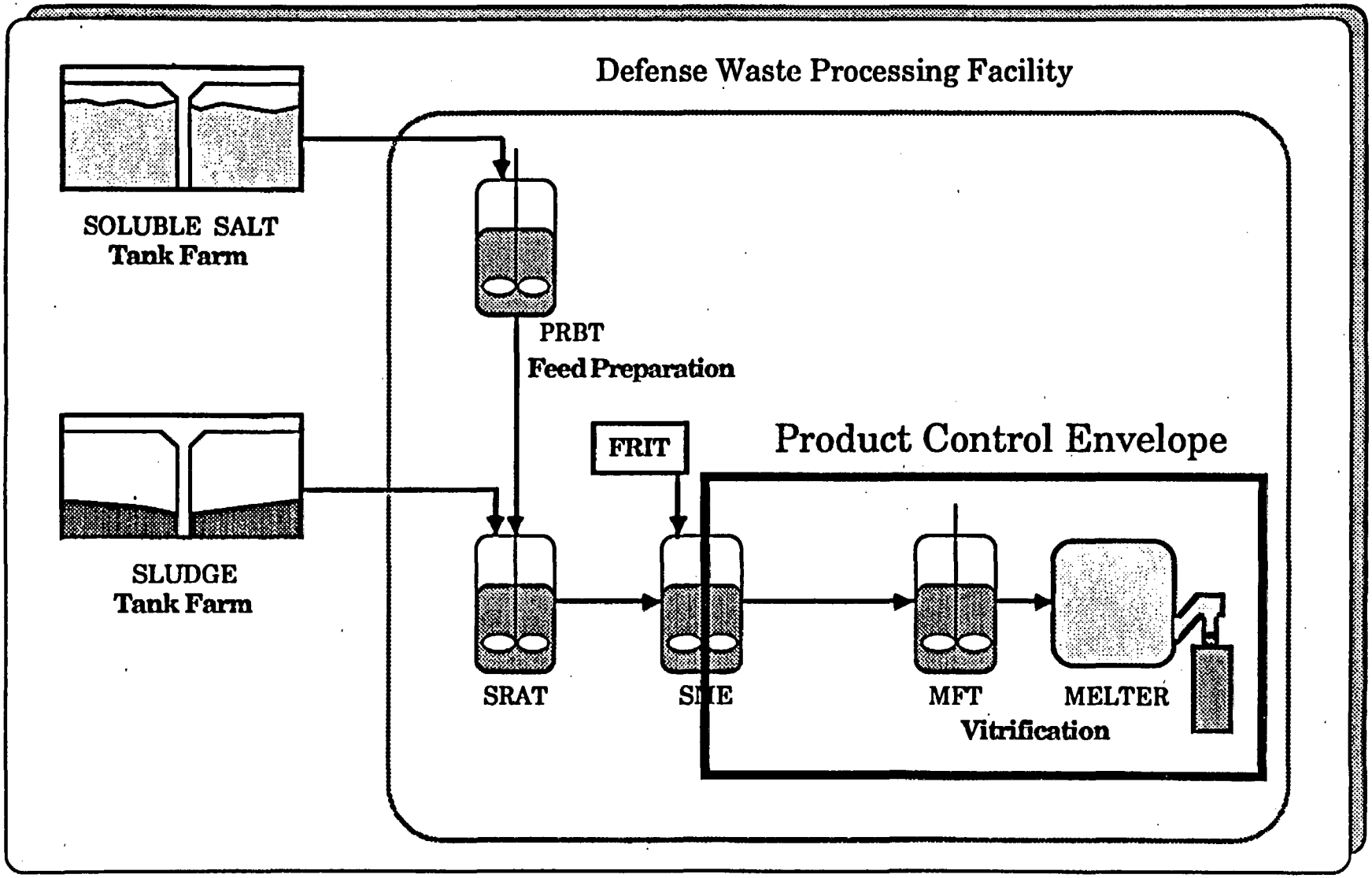
* Formerly DuPont

*The WAS was initially issued as the preliminary specification WAPS. It will be updated from time-to-time, and finally issued as the WAS.

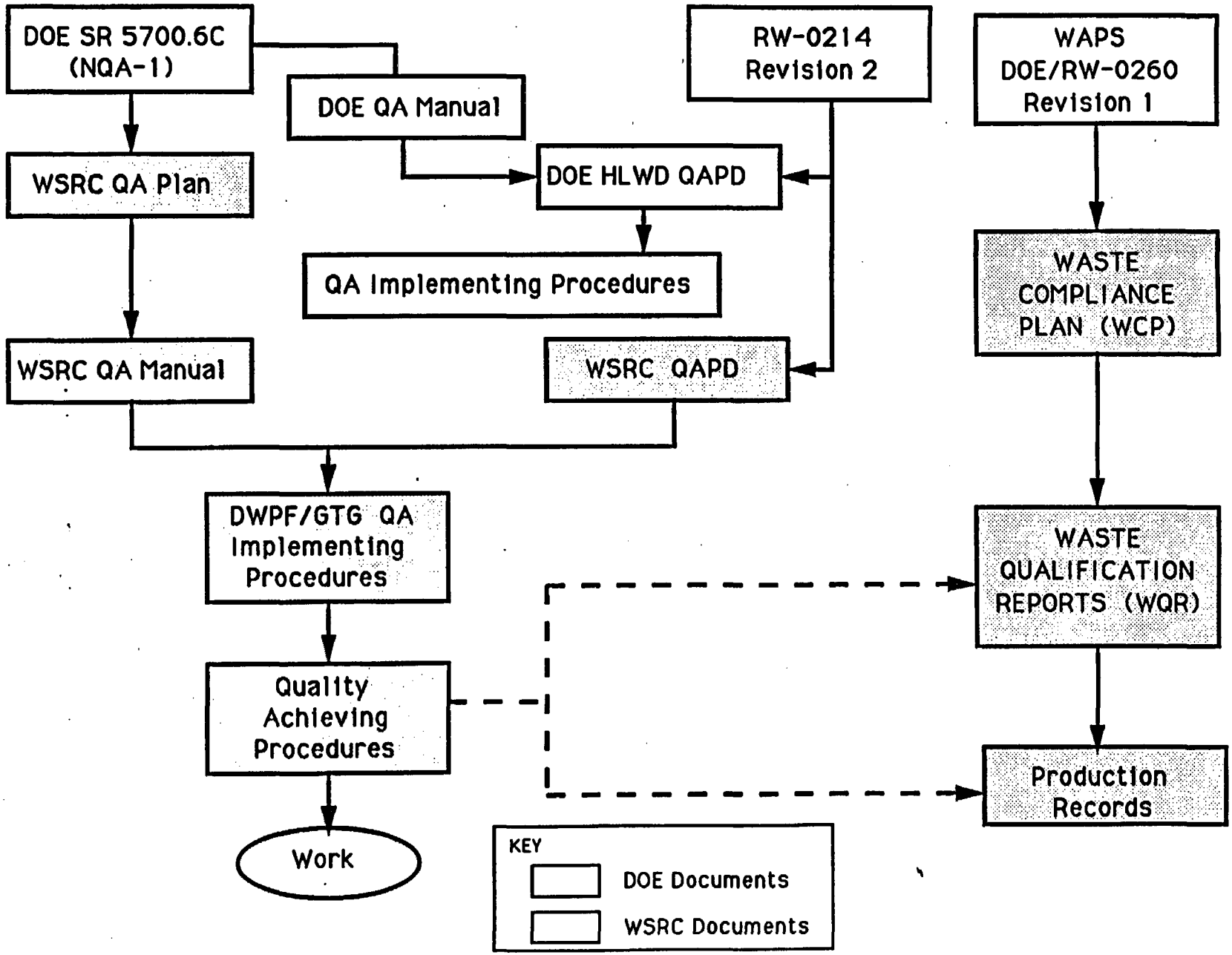


BREAKDOWN STRUCTURE OF DOE STRATEGY FOR WASTE ACCEPTANCE

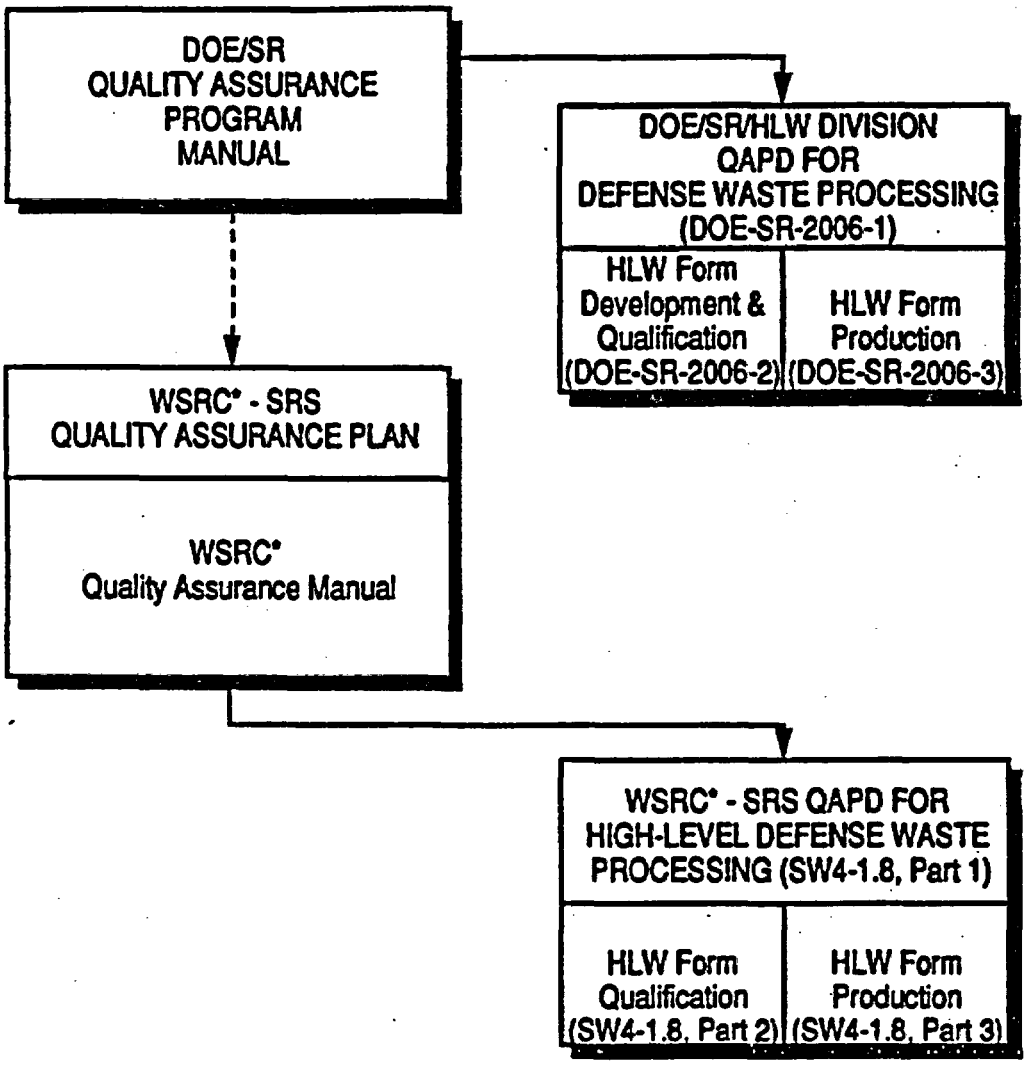
Product Control During Production



WASTE FORM PRODUCER QA PROGRAM DOCUMENTS



DKF 4/24/90



* Formerly DuPont

QUALITY ASSURANCE PROGRAM
DOCUMENTATION BREAKDOWN STRUCTURE

QUALITY ASSURANCE ACTIVITY STATUS
DOE-SR HIGH LEVEL WASTE DIVISION

DOE-SR QAPD 200G-1, -2, AND -3

- Updated to RW-0214, Revision 2, dated 2/1/90
- Documents in review by DOE-SR HLW Division and Quality Materials and Assurance Division
- Contractors NUS Corp. and Stone and Webster Engineering Corp. participating in review
- Expected completion date: May 1, 1990

IMPLEMENTING PROCEDURES

- Current procedures in effect are in compliance with OGR/B-14

  Expected completion date: June 1990

  16 QA revised to HLW Division organization; signed/ready for publication

  20 QA in process of being revised to RW0214/HLWD organization

  6 Administrative procedures are being revised

QUALITY ASSURANCE ACTIVITY STATUS

DWPF OPERATIONS, SRL GLASS TECH. GROUP, AND QUALITY ASSURANCE ORGANIZATIONS

QAPD SW4-1.8, PARTS 1, 2, & 3

- QAPD is updated to RW-0214, Rev 2.
- QAPD is being Reviewed by DOE HLWD and DOE QMAD.
- Expected completion of review is May 1, 1990.

IMPLEMENTING PROCEDURES

- Current Procedures are in compliance with the applicable sections of OGR/B-14 and the WSRC QA Manual which was in effect prior to April 1,1990.
- Check lists are now being prepared for the review and update of implementing procedures to ensure their compliance with the new WSRC QA Manual and the revised QAPD.

TYPICAL WASTE ACCEPTANCE ACTIVITIES NOW IN PROGRESS BY WSRC

By SRL Glass Technology Group (in accordance with OGR/B-14)

- Qualification of Existing Data ---- NUREG 1298
- Developing improved glass and compositional control tests.
- Developing the product control details.
- Continuing effort to improve the glass quality.

By the DWPF Operations and Technical Organization

- Preparing for the Operational Readiness Reviews (ORR)
- Finalizing the Waste Compliance Plan (WCP)
- Preparing the Waste Qualification Reports as data becomes available from SRL.
- Developing the Production Records format.
- Preparing for the Qualification runs.

TYPICAL QUALITY ASSURANCE OVERSIGHT ACTIVITIES NOW IN PROGRESS BY WSRC

By WSRC Site Quality Department:

- Audits of SRL and DWPF QA Programs and Activities.
- Qualification of suppliers and contractors.

By SRL Quality Section:

- Review of SRL Task Plans and final documentation.
- Surveillance of Glass Technology Group QA Program and activities.
- Surveillances of subtier supplier activities.

By Waste Management Programs Quality Department:

- Review of startup preparations and procedures.
- Review of SRL oversight activities.

DWPF QUALITY ASSURANCE PROGRAM

IN COMPLIANCE WITH:

- DOE Order 5700.6B, "Quality Assurance Program"
- DOE/RW0214, Revision 2, "OCWRM QA Requirements Document"
- ANSI/ASME NQA-1, 1989 edition, "QA Program Requirements for Nuclear Facilities"
- SR Site Quality Assurance Program