OCT 2 5 1995 **ENGINEERING DATA TRANSMITTAL**

Page 1 of 1

1. EDT № 611968

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
Project Baseline Control	Project Baseline Control	N/A
5. Proj./Prog./Dept./Div.:	**6. Cog. Engr.:**	**7. Purchase Order No.:**
SNF Project	B. J. Fuquay	N/A
8. Originator Remarks: Project Management Plan transmitted for approval/release.		**9. Equip./Component No.:** N/A
		10. System/Bldg./Facility: N/A
11. Receiver Remarks:		**12. Major Assm. Dwg. No.:** N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: N/A

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	WHC-SD-SNF-PMP-011		0	Spent Nuclear Fuel Project, Project Management Plan	N/A	1/2	1	1

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 4. Review 2. Release 5. Post-Review 3. Information 6. Dist. (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name (K) Signature (L) Date (M) MSIN	(J) Name (K) Signature (L) Date (M) MSIN	(G) Reason	(H) Disp.
1	1	Cog.Eng. BJ Fuquay 10-25-95 R3-11			
1	1	Cog. Mgr. JL Denning 10-25-95 R3-11			
		QA - N/A			
		Safety- N/A			
		Env. - N/A			
1	1	DOE-RL GR Schroeder S7-41			

18.	19.	20.	21. DOE APPROVAL (if required)
BJ Fuquay 10-25-95 Signature of EDT Originator Date	BJ Fuquay 10-25-95 Authorized Representative for Receiving Organization Date	JL Denning 10-25-95 Cognizant Manager Date	Ctrl. No. [] Approved [] Approved w/comments [] Disapproved w/comments

BD-7400-172-2 (04/94) GEF097

BD-7400-172-1

THIS PAGE INTENTIONALLY
LEFT BLANK

RELEASE AUTHORIZATION

Document Number:	WHC-SD-SNF-PMP-011, REV 0
Document Title:	Spent Nuclear Fuel Project, Project Management Plan
Release Date:	10/25/95

This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Kara Broz 10/25/95

THIS PAGE INTENTIONALLY
LEFT BLANK

SUPPORTING DOCUMENT

1. Total Pages 91 92 29 10/26/95

2. Title	3. Number	4. Rev No.
Spent Nuclear Fuel Project, Project Management Plan	WHC-SD-SNF-PMP-011	0

5. Key Words	6. Author
SNF, Project Management Plan, PMP	Name: B. J. Fuquay Signature Organization/Charge Code 2B000/LA006

7. Abstract

The Hanford Spent Nuclear Fuel Project has been established to safely store spent nuclear fuel at the Hanford Site. This Project Management Plan sets forth the management basis for the Spent Nuclear Fuel Project. The plan applies to all fabrication and construction projects, operation of the Spent Nuclear Fuel Project facilities, and necessary engineering and management functions within the scope of the project.

8. RELEASE STAMP

OFFICIAL RELEASE
BY WHC
DATE OCT 2 5 1995
Sta 4

THIS PAGE INTENTIONALLY
LEFT BLANK

Spent Nuclear Fuel Project Division
U.S. Department of Energy
Richland Operations Office

Spent Nuclear Fuel Project
Project Management Plan

APPROVALS:

10-16-95

J. C. Fulton, Director,
Spent Nuclear Fuel Project
Westinghouse Hanford Company

Date

10/16/95

E. D. Sellers, Director,
Spent Nuclear Fuel Project Division
U.S. Department of Energy
Richland Operations Office

Date

THIS PAGE INTENTIONALLY
LEFT BLANK

TABLE OF CONTENTS

ACRONYMS iii

1.0 INTRODUCTION 1
1.1 PROJECT SCOPE DEFINITION 2
1.1.1 Subproject definition 3
1.2 SNF PROJECT MANAGEMENT ARCHITECTURE 4
1.2.1 Justification of Mission Need 4
1.2.2 Project Plan 4
1.2.3 Project Management Plan 4
1.2.4 Multi-Year Program Plan 4
1.2.5 Project Cross-cut Management Plans 5
1.2.6 Sub-Tier Management Plans 5
1.3 MANAGEMENT INNOVATIONS 5
1.4 RISK MANAGEMENT 5
1.5 AS LOW AS REASONABLY ACHIEVABLE (ALARA) STRATEGY 6
1.6 SYSTEMS ENGINEERING 6

2.0 OBJECTIVES 8
2.1 TECHNICAL OBJECTIVES 8
2.1.1 Technical Basis 8
2.2 SCHEDULE OBJECTIVES 10
2.3 COST OBJECTIVES 10

3.0 MANAGEMENT ORGANIZATION AND RESPONSIBILITIES 16
3.1 ORGANIZATION 16
3.2 RESPONSIBILITIES 16
3.2.1 Project Team 16
3.2.2 U.S. Department of Energy - Headquarters 16
3.2.2.1 DOE-HQ, Assistant Secretary for Environment, Safety, and Health 16
3.2.2.2 DOE-HQ, Assistant Secretary for Environmental Management 16
3.2.2.3 DOE-HQ, Office of the Associate Deputy Secretary for Field Management 19
3.2.3 DOE - RL 19
3.2.4 DOE SFD 19
3.2.5 WHC 22

4.0 PROJECT CONTROLS 25
4.1 BASELINE MANAGEMENT 25
4.1.1 Technical Baseline Control 25
4.1.2 Schedule Baseline Control 26
4.1.3 Cost Baseline Control 27
4.1.4 Funds Management 29
4.1.5 Project Work Authorization 29
4.1.6 Project Performance and Control, Project Status, Management Reporting, and Management Reviews 29
4.2 PROJECT TOPICAL PLANS 30
4.3 OTHER DOCUMENTATION 34
4.4 MEETINGS/REVIEWS 34

TABLE OF CONTENTS (Continued)

5.0 QUALITY ASSURANCE 36

6.0 REGULATORY STRATEGY 37
6.1 REGULATORY POLICY 37
6.2 THE SNF PROJECT INDEPENDENT REVIEW PANEL 37
6.3 REGULATORY REQUIREMENTS TEAM 38
6.4 RL SAFETY ANALYSIS REVIEW AND SAFETY EVALUATION REPORT TEAM . 38
6.5 COMPLIANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL ENVIRONMENTAL LAWS AND REGULATIONS 39
6.6 CONSULTATION WITH NATIVE AMERICAN TRIBES AND NATIONS 40

7.0 REFERENCES 41

APPENDIX A - Memorandum of Understanding for 100K Area Landlord Responsibilities A-1

APPENDIX B - Documentation supporting Justification of Mission Need B-1

APPENDIX C - Delegation letters C-1

ACRONYMS

AAAP	Advanced Acquisition or Assistance Plan
AAB	Acquisition Advisory Board
ADS	Activity Data Sheet
AMW	Assistant Manager of Waste Management (RL)
BA	Budget Authority
BCSR	BCS Richland, Inc.
BO	Budget Outlay
CCB	Change Control Board
CFR	Code of Federal Regulations
CMP	Configuration Management Plan
CPI	Cost Performance Index
CR	Change Request
CWBS	Contractor Work Breakdown Structure
CSB	Canister Storage Building
D&D	Decontamination and Decommissioning
DNFSB	Defense Nuclear Facility Safety Board
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy - Headquarters
DOR	Division of Responsibility
EIS	Environmental Impact Statement
EM	Environmental Management
ES&H	Environmental, Safety, and Health
ESAAB	Energy System Acquisition Advisory Board
ESQ	Emergency, Safety, and Quality
ETC	Estimate to Completion
F&R	Functions and Requirements
FFTF	Fast Flux Test Facility
FY	Fiscal Year
GPP	General Plant Project
IC	Integrating Contractor
ICP	Interface Control Plan
ICF KH	ICF Kaiser Hanford Company
ICWG	Interface Control Working Group
IRM	Information Resources Management
IRP	Independent Review Panel
ITA	Independent Technical Assessment
MCO	Multi-Canister Overpack
MR	Management Reserve
MRM	Management Review Meeting
MSA	Major System Acquisition
MYPP	Multi-Year Program Plan
NEPA	National Environmental Policy Act
NRC	U.S. Nuclear Regulatory Commission
OPC	Other Project Cost
ORR	Operational Readiness Review
PCS	Project Control System
PFP	Plutonium Finishing Plant
PMM	Procurement and Materials Management
PMP	Project Management Plan

ACRONYMS (Continued)

PNL	Pacific Northwest Laboratory
PP	Project Plan
PSWBS	Project Summary Work Breakdown Structure
PTS	Project Tracking System
PUREX	Plutonium Uranium Extraction Facility
QA	Quality Assurance
QAPP	Quality Assurance Program Plan
QARD	Quality Assurance Requirements and Description
QSH	Quality, Safety, and Health
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RL	U.S. Department of Energy - Richland Operations Office
RW	Office of Civilian Radioactive Waste Management
SAR	Safety Analysis Report
SEMP	Systems Engineering Management Plan
SER	Safety Evaluation Report
SNF	Spent Nuclear Fuel
SOW	Statement of Work
SFD	SNF Project Division
SMS	Site Management System
SRM	Status Review Meeting
SRID	Standard Requirement Identification Document(s)
TEC	Total Estimated Cost
TPA	Tri-Party Agreement
TPC	Total Project Cost
WAES	Waste, Analytical, and Environmental Services
WBS	Work Breakdown Structure
WHC	Westinghouse Hanford Company

1.0 INTRODUCTION

The Hanford Spent Nuclear Fuel (SNF) Project has been established to safely store spent nuclear fuel at the Hanford Site. This Project Management Plan (PMP) sets forth the management basis for the SNF Project. The plan applies to all design, fabrication, and construction conducted on the Project, operation of the SNF Project facilities, and necessary engineering and management functions within the scope of the project.

The SNF Project supports the Hanford Mission to clean up the Site by managing and reducing hazards associated with the Hanford spent nuclear fuel inventory, and by managing the effort as a project.

The scope of the SNF Project covers the maintenance and preparation of the K Basins for safe storage and removal of all spent nuclear fuel, debris, and sludge; constructing, as necessary, new systems and facilities to condition and store the fuel prior to final disposition; relocating K Basins spent nuclear fuel to the interim storage facility; and accepting stewardship of spent nuclear fuel from other Hanford locations.

The overall responsibility for management of spent nuclear fuel at the Hanford Site is with the U.S. Department of Energy - Richland Operations Office (RL). Westinghouse Hanford Company (WHC) is the integrating contractor. Other key project participants are ICF Kaiser Hanford Company (ICF KH), Pacific Northwest Laboratory (PNL), and BCS Richland, Inc. (BCSR).

In August 1993, DOE performed a comprehensive baseline assessment of the environmental, safety, and health (ES&H) vulnerabilities associated with the current storage of spent nuclear fuel. The following ten individual fuel storage facilities at the Hanford Site were assessed in this effort:

- 105-K East Basin
- 105-K West Basin
- PNL Building 324
- PNL Building 325
- PNL Building 327
- Fast Flux Test Facility (FFTF)
- 308 Building Annex
- T-Plant
- Plutonium Uranium Extraction Facility (PUREX)
- 200 West Burial Grounds

The Plutonium Finishing Plant (PFP) also contains spent fuel. Some of this fuel may require repackaging by the SNF Project.

The fuel on site is stored in both wet and dry configurations with differing conditions and levels of vulnerability. The fuel in wet storage at the K Basins is of more critical environmental concern than the other spent fuel. Therefore, concerns voiced by the Hanford Advisory Board, regional Tribal Nations, the Defense Nuclear Facility Safety Board (DNFSB), and others, makes this a primary concern of the SNF Project. The fuel will continue to

corrode and degrade while it remains wet, and wet storage is more costly to maintain than dry storage. The risk associated with the spent fuel at the other facilities will be mitigated in accordance with the project objectives.

1.1 PROJECT SCOPE DEFINITION

Though the management of the Hanford Site's spent nuclear fuel has been traditionally administered as a program, this effort is being managed as a project, and as such, has a distinct beginning and end. The boundaries of the SNF Project are defined as follows:

- Stewardship of the 100K Area that is defined in the memorandum of understanding between the K Basins Operations organization and the decontamination and decommissioning organization, dated June 30, 1994 (Appendix A), until all of the spent nuclear fuel, debris, and sludge, has been removed from the K Basins pools. The SNF Project customer for these areas is the facility deactivation program organization. Any equipment installed for the operation of the K Basins or for removal of the spent nuclear fuel, debris, and sludge will not be removed for disposal by the Project. Turn-over will occur when the criteria, as described in the K Basins End Point Criteria, are met. Some of the activities in these areas will be managed as subprojects.

- Characterization of the K Basins spent nuclear fuel and sludge.

- Retrieval of all K Basins spent nuclear fuel for packaging, and transportation to interim storage. These activities will be managed as subprojects.

- Removal and disposition of K Basins sludge and debris. The extent to which this will be done will be defined in the K Basins End Point Criteria Document. These efforts will be managed as subprojects.

- Treatment of the K Basins water, until the spent nuclear fuel, debris, and sludge is removed. Water treatment will continue following this point, but not as part of the SNF Project scope. The SNF Project will not be responsible for removing the water from the K Basins.

- Acquisition of an interim storage facility, which includes receiving and storage facilities, the perimeter fence, the rail spur from the existing rail line, associated roadways, and the extension of site utilities. This will be managed as a subproject.

- Operation of the interim storage facility until the spent nuclear fuel from the K Basins is stored in a dry configuration. The SNF Project customer associated with these areas is a spent nuclear fuels "operations" organization. The operation of the interim storage facility after the spent nuclear fuel from the K Basins is in a dry configuration is not included in the scope of the SNF Project. Turn-over will occur when the criteria, as described in the facility specific end point criteria, are met.

- Acquisition of a conditioning system, which includes the processing systems, and the extension of site utilities. This will be managed as a subproject.

- Operation of the conditioning system until the K Basins spent nuclear fuel is stored in a dry configuration, or until the system is no longer needed to support the interim storage facility while the interim storage facility is included in the scope of the project. Should this system include a stand alone facility, the SNF Project customer for these areas is a facility deactivation program organization, and turn-over will occur when the criteria, as described in the facility specific end point criteria (which may be contained in the subproject project management plan), are met. If the system consists of nothing more than equipment, the Project will disposition that equipment.

- Accepting stewardship of spent nuclear fuels from locations on the Hanford Site other than the K Basins as defined by acceptance criteria or memorandums of understanding between the other facilities possessing spent nuclear fuel and the SNF Project. Custody of this fuel will be transferred to a spent nuclear fuel "operations" organization when routine operational activities are all that is required while the fuel is in interim storage awaiting final disposition. Once this point is achieved the stewardship of the fuel is beyond the scope of the SNF Project. The facilities, other than the K Basins, where spent nuclear fuel is, or potentially is stored are:

  - PNL Building 324
  - PNL Building 325
  - PNL Building 327
  - Fast Flux Test Facility (FFTF)
  - Building 308 Annex
  - T Plant
  - Plutonium Uranium Extraction (PUREX) Facility
  - 200 West Burial Grounds
  - Plutonium Finishing Plant (PFP)
  - N Reactor Basins

- Activities that facilitate deactivation at no additional cost to the SNF Project.

- Not included in the scope of the SNF Project, are deactivation activities, unless specifically cited in this section.

1.1.1 Subproject definition

The SNF Project work scope will be organized into manageable pieces. This organization will define the subprojects.

1.2 SNF PROJECT MANAGEMENT ARCHITECTURE

1.2.1 Justification of Mission Need

The Hanford Spent Nuclear Fuel (SNF) Project System Engineering Recommended Path Forward Document (WHC 1994a), its approval memoranda, and subsequent supporting documentation provide the necessary function of a Justification of Mission Need for the SNF Project (see Appendix B). The goals set forth in these documents and the memorandum, 95-AMW-003, between WHC and RL providing DOE guidance on the Path Forward set the initial technical approach for the project.

1.2.2 Project Plan

The SNF Project Plan outlines the Project, defines management relationships, and lays the framework for the Energy System Acquisition Advisory Board (ESAAB) function on the SNF Project (to be referred to as the Acquisition Advisory Board - AAB).

1.2.3 Project Management Plan

The PMP identifies the plans, organizations, management systems, defines the Project boundaries; technical, schedule, and cost objectives and baselines; Project reports, and controls to be utilized on the SNF Project. It is an overarching document for all the SNF Project subprojects. Individual subprojects will draft their own Project Management Plan or Work Plan, and will add detail and establish requirements appropriate for the particular subproject. It is a controlled document and will be reviewed for updating annually, at a minimum. In order to meet the schedule constraints directed by the Justification of Mission Need, some exceptions to DOE Orders may be requested as needed. It is the policy of RL that the intent of all applicable DOE Orders will be met.

1.2.4 Multi-Year Program Plan (MYPP)

With the "projectization" of the Hanford spent nuclear fuel management effort, documentation associated with both program and project management are being utilized. It is the policy of RL to minimize duplication of the document functions.

The MYPP is a program management validation and authorization tool. On the SNF Project, the MYPP will continue to serve those purposes. Individual subproject validations may be required in conjunction with the capital funding budgeting process. Individual subproject authorization will be accomplished through the authorization letter that follows the MYPP approval. Limitations on the expenditure of funds will be identified in this document.

The MYPP is the baseline document for the Project cost and schedule. It will be developed in accordance with the General Guidance issued annually by DOE-RL. The basis for these baselines is summarized in the MYPP SNF Project Work Breakdown Structure Dictionaries.

1.2.5 Project Cross-cut Management Plans

This project will utilize topical plans for activities occurring throughout the project. These documents and plans are described in Section 4.0, Project Controls, of this PMP.

1.2.6 Sub-Tier Management Plans

Work scope for the SNF Project has been organized into subprojects consistent with the Work Breakdown Structure. These subprojects will establish management plans that are consistent with each subproject's scope. The sub-tier PMPs will rely on the Cross-cut Management Plans for management of activities as outlined in Section 4.2, Project Topical Plans. Therefore, the requirement for subproject specific plans are fulfilled by one plan, and will be supplemented with information unique to the subproject in its own PMP.

1.3 MANAGEMENT INNOVATIONS

Though the management of the Hanford Site's spent nuclear fuel has been traditionally administered as a program, this effort is being managed as a project and as such, the management team is employing the intent of the DOE Order 4700.1 guidance for Major Systems Acquisitions. Any waivers to, or notations concerning how the project team meets the intent of, any applicable DOE Order requirement will be considered on an individual basis.

RL has the authority to manage and execute Project activities within the established delegations that have been acquired from HQ. These include the delegation of the Acquisition Executive Authority to the Manager of RL, as well as the authority for approval of all Safety Analysis Reports for the Project (See Appendix C). This charge is paramount to obtaining timely decisions. The SNF Project has established an Independent Review Panel to provide advice to the RL Manager and outside high level oversight of the implementation of the Project's Regulatory Policy (see Section 7.2).

Teaming between all participants on the SNF Project is vital to maintaining the pace of the Project. RL will promote close working relationships with contractor participants. This will foster efficient communications and expedite decisions.

1.4 RISK MANAGEMENT

The WHC SNF Project Office will adopt a methodology to minimize the overall SNF Project risk through timely, documented and defensible project decisions. All major SNF Project decisions, as documented in a decision log, will be tied to the Project critical path and will include an assessment (qualitative or quantitative) of the project risk associated with each proposed alternative solution. Project risk assessments will consider the cost, schedule and technology risk associated with the proposed alternative solutions, and will require WHC SNF Project decisions in a timely manner to support the Project

critical path schedule, and thus minimize the overall risk to downstream Project activities.

As a guiding principle, and to minimize overall project risk, the SNF Project will favor low cost, commercially available or tried and proven design solutions over technically unproven options requiring research and development, specialty design and fabrication. This is consistent with earlier SNF project guidance in the Technical Baseline Document.

1.5 AS LOW AS REASONABLY ACHIEVABLE (ALARA) STRATEGY

Implementation of the SNF Project Path Forward and K Basins infrastructure enhancements requires a significant amount of work in radiation zones. Minimization of exposure to workers and radiological safety is a fundamental precept of the SNF Project.

The current ALARA program for the K Basins supports ongoing surveillance and maintenance activities. K Basins ALARA oversight is provided by the ALARA Committee. An improved ALARA planning process will be developed to support the Project. ALARA consideration is a primary requirement when designing K Basins processes and equipment. ALARA planning will drive process/equipment selection to optimize cost/benefit, personnel exposure, and radiological safety. The basis for the Project's ALARA strategy is Title 10 - Code of Federal Regulations - 835, Radiation Protection Plan Program, Revision 1, WHC-SP-1145, and the WHC Occupational ALARA Program, WHC-IP-1043.

An ALARA support team is being developed to provide assistance to the K Basins Alara Committee in ALARA planning. The team will provide assistance to the committee by reviewing concepts and detailed design exposure estimates. They will develop options to minimize worker exposure and provide ALARA recommendations on the concept or design.

In addition to radiological application, ALARA principles will be applied to all exposure of personnel to hazards in the work place.

1.6 SYSTEMS ENGINEERING

The SNF Project, by it very nature, has several critical interfaces between its subprojects. To assure that these interfaces are compatible, the SNF Project will implement Systems Engineering as an extension of good engineering and management practices. The implementation of Systems Engineering on the SNF Project is the sole responsibility of WHC. DOE will review WHC designs of systems and sub-systems as necessary to ensure that overall project objectives of cost, schedule and technical performance are achieved.

The basic DOE requirements for implementation of Systems Engineering on the SNF Project include:

- Clearly Identified Systems - The system to be developed will be fully defined based on DOE requirements. The system definition will be clear, and all necessary interfaces and relationships to other systems will be identified, maintained, and implemented. The system user/customers will be defined.

- Clearly Identified Management Authority - Clear lines of authority for SNF Project decisions will be established within the contractor as well as throughout the Project.

- Clearly Identified Design Authority - The approval of critical SNF Project documents by the Design Authority signifies that established Project level functions and requirements are being implemented and maintained through the sub-project level. This certification will ensure that technical requirements and interfaces are being assigned and executed. Assurance will also be given that applicable design criteria are being met throughout the Project. The criteria will be traceable to the structure, systems and components within the Project design.

- Clearly Identified Decision Methodology - A clearly defined SNF Project decision methodology, which includes attributes of worker safety, public safety, technical risk, project schedule, project cost, waste minimization, and overall facility life cycle cost, will be established and implemented to ensure defensible Project decisions which support the established critical path schedule. This methodology will be documented in the System Engineering Management Plan. Design decisions will be influenced by the above attributes as well as top level DOE requirements to employ passively safe systems and utilize commercially available technologies to ensure low life cycle cost to solve interim spent nuclear fuel storage problems at Hanford.

- Timely Decision Making - WHC will utilize its defined decision methodology to make timely Project decisions which support the Project critical path schedule and minimizes or eliminates risks to overall Project success.

- Documented and Maintained Baseline - The SNF Project baseline is defined herein and consists of technical, schedule and cost elements, which are all interrelated. Tradeoffs used by WHC to develop the technical baseline will be clearly identified along with the documented basis for the selected path. The SNF Project baseline will be maintained under configuration control. All technical documents necessary to fully describe the technical baseline will also be maintained under configuration control. These additional documents include, system performance specifications, design documents, fabrication drawings/details, and operating procedures. The Project baseline documentation will be kept in a state which supports project validation needs.

- Demonstration of Product Performance - WHC will ensure that all systems, sub-systems, and other end products, will perform technically as required, and that all necessary functions and requirements have been achieved through a combination of engineering reports, direct measurements, start-up tests or first/third party inspection reports/certifications.

2.0 OBJECTIVES

2.1 TECHNICAL OBJECTIVES

The technical objectives of the SNF Project are:

- To provide safe, economic, and environmentally sound interim storage for all of the Hanford Site's spent nuclear fuel prior to final disposition of the material.

- To rapidly remove the spent nuclear fuel, debris, and sludge from the K Basins pools and relocate them away from the Columbia River in a configuration that will allow safe, economic, and environmentally sound long term interim storage. For the spent nuclear fuel and, potentially, some of the sludge, this is obtained through dry storage. The technical process includes fuel containerization, on-site transportation, temporary staging, conditioning, and dry storage concepts. The debris and remaining sludge may be handled as waste.

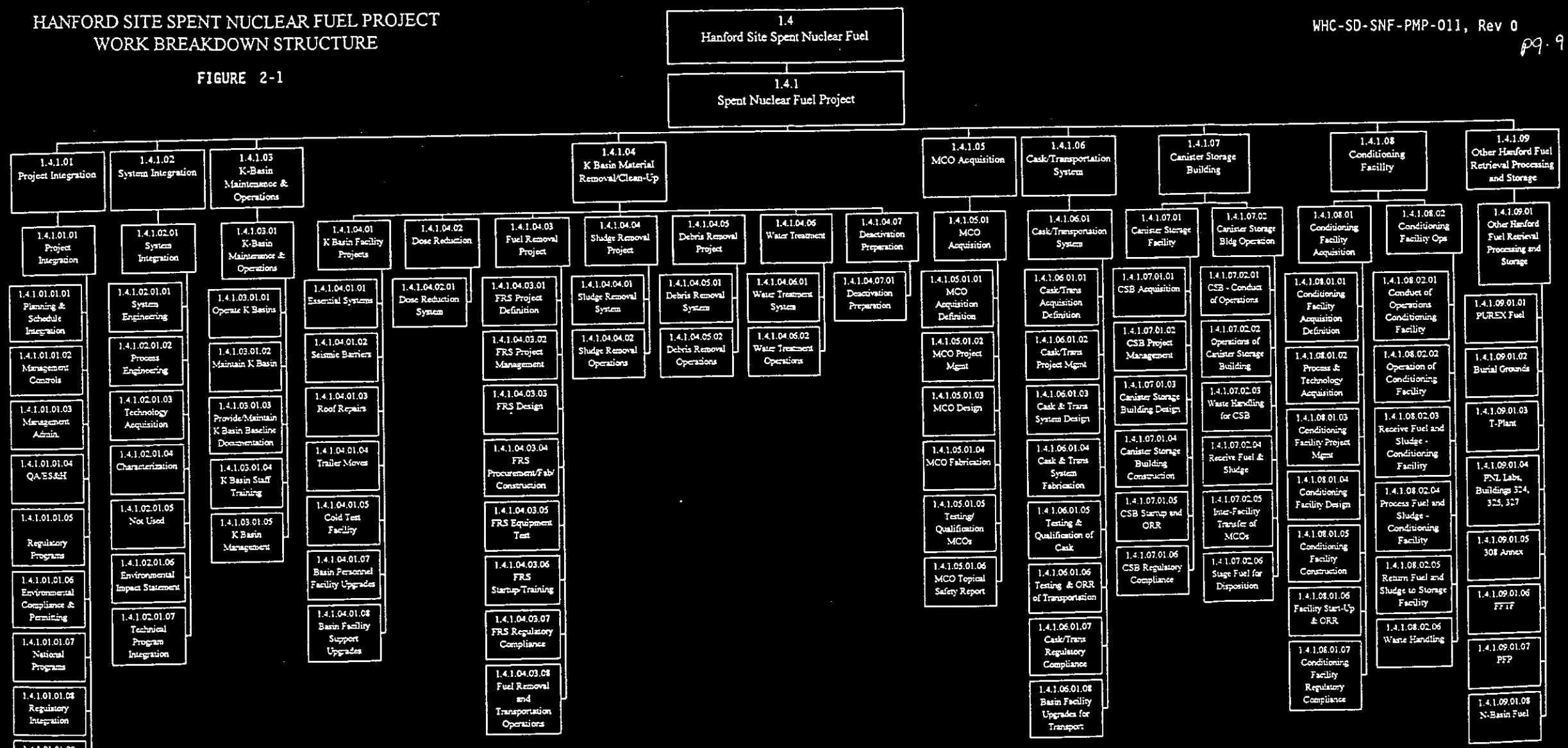
2.1.1 Technical Basis

The technical basis for SNF Project is the approved technical baseline for the SNF Project. It consists of the following documents:

- The Project Management Plan (PMP) (see section 1.2, SNF Project Management Architecture)
- Systems Engineering Baseline Document for the scope defined in the PMP.
- Process Strategy Documents - This document is a product of System Engineering methodology, Independent Technical Assessment (ITA) Group evaluations, and other studies.
- Work Breakdown Structure (WBS) (see Figure 2-1), WBS Dictionaries, and Index (included in the Multi-Year Program Plan)
- End Point Criteria are facility specific agreements, between the current caretaker of a facility and the future caretaker of the facility, regarding the configuration and condition of the facility at the point of turn-over.
- Acceptance Criteria and Memorandums of Agreement/Understanding are agreements, between the SNF Project and organizations outside of the Project, regarding the transfer of material from one organization to the other, or other agreements/understandings regarding the split of responsibilities.
- Functions and Requirements documentation for each SNF Project subproject.

HANFORD SITE SPENT NUCLEAR FUEL PROJECT
WORK BREAKDOWN STRUCTURE

FIGURE 2-1



THIS PAGE INTENTIONALLY
LEFT BLANK

2.2 SCHEDULE OBJECTIVES

The schedule objectives for the SNF Project are reflected on the Project summary schedule (Figure 2-2). These are objectives, and revisions will reflect changes to the baseline. The Justification for Mission Need establishes a schedule constraint of December 1997 for commencement of fuel removal from the K Basins and December 1999 for completion of fuel removal. The Project will be complete by the end of fiscal year 2003. The baseline schedule is found in the Multi-Year Program Plan. The facilities constructed as part of the SNF Project will be managed as subprojects and will comply with the Key Decision process as intended by DOE Order 4700.1. An Acquisition Advisory Board has been formed at RL to provide recommendations to the RL Manager for each Key Decision. Key Decisions and milestones for the Project will be documented here in the next revision, when established. Key Decisions zero, one, and two (Approval of Mission Need, Approval of New Start, and Approval to Commence Title II, or Final/Detailed Design, respectively) for the interim storage facility (known as the Canister Storage Building) have been granted by the Acquisition Executive.

2.3 COST OBJECTIVES

The Total Project Cost estimate for the SNF Project is $737.1M. The cost baseline is the estimate found in the Multi-Year Program Plan. The budget spread by fiscal year and activity is shown in Figure 2-3. These are objectives, and revisions will reflect changes to the baseline.

	EARLY START	EARLY FINISH
1.4.1 Spent Nuclear Fuel		
M/S Start Basin Fuel Removal	1JAN98	30DEC97
M/S Complete Basin Fuel Removal	3JAN00	~~30DEC99~~ 31DEC99
M/S Basin Fuel in Dry Storage	5JUL00	30JUN00
~~M/S Complete SNF K Basin Project~~	~~1DEC00~~	~~30NOV00~~
1.4.1.01 Project Integration		
Planning and Schedule Integration	20CT95	30NOV00
Management Controls	20CT95	30NOV00
M/S Issue FY 1998 ADS	30APR96	29APR96
M/S Issue the Final Program Plan (FY 97)	3SEP96	2SEP96
M/S Issue FY 1999 ADS	28APR97	25APR97
M/S Issue the Final Program Plan (FY 98)	3SEP97	2SEP97
M/S Issue FY 2000 ADS	27APR98	24APR98
M/S Issue the Final Program Plan (FY 99)	3SEP98	2SEP98
M/S Issue FY 2001 ADS	26APR99	23APR99
M/S Issue the Final Program Plan (FY 00)	3SEP99	2SEP99
M/S Issue FY 2002 ADS	1MAY00	28APR00
M/S Issue the Final Program Plan (FY 01)	4SEP00	1SEP00
M/S Sbmt MNC Aprvd BL Chng Rqst Incrp IPS into	16JAN96	15JAN96
Management Administration	20CT95	30NOV00
QA/ES&H	20CT95	30NOV00
Regulatory Programs	20CT95	30SEP99
Environmental Compliance & Permitting	20CT95	30NOV00
National Programs	20CT95	29SEP00
Regulatory Integration	3JAN95A	30NOV00
Public Involvement	20CT95	30NOV00
1.4.1.02 System Integration		
System Engineering	20CT95	30JUN00
M/S Issue FY 96 Tech Baseline	16NOV95	15NOV95
M/S Complete Conduct SNFP Systems Rqrmnts Rvw	31JAN96	30JAN96
Process Engineering	20CT95	30JUN00
M/S Issue SNF Process Flow Diagram	1APR96	31MAR96
Technology Acquisition	20CT95	30NOV00
Characterization	20CT95	31MAR99
M/S Complete Determine KE Sludge Composition	18DEC95	15DEC95
M/S Issue Drying Data Report for Process Def	1JUL96	28JUN96
M/S Complete Shipment of KE Fuel to Hot Cells	2JUL96	1JUL96
Environmental Impact Statment	20CT95	29DEC95
Technical Program Integration	20CT95	30JUN00
1.4.1.03 K-Basin Maintenance & Operations		
Operate K Basins	20CT95	30NOV00
Maintain K Basins	20CT95	30NOV00
M/S Update K Basins Maint Implementation Plan	27MAR96	26MAR96
Provide/Maintain K Basin Baseline Documentation	20CT95	30NOV00
M/S Cmplt K Basins Essential Dwgs & Sys Design	1APR96	29MAR96
K Basin Staff Training	20CT95	30NOV00
M/S Complete K Basin TIN Resolution	1JAN96	29DEC95

FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02

Plot Date 26SEP95
Data Date 20CT95
Project Start 1OCT92
Project Finish 30SEP11

(c) Primavera Systems, Inc.

Summary Bar/Early Dates
Critical Designator
Progress Bar
Milestone/Flag Activity

OFFL

Sheet 1 of 1

Westinghouse Hanford Company
Spent Nuclear Fuel Project
Program Master Baseline Schedule

FY-96 MYPP (9/21/95)

Date	Revision	Checked	Approved

SPENT NUCLEAR FUEL PROJECT
WBS 1.4.1
WHC-SD-SNF-PMP-011, Rev 0
Figure 2-2

Figure 2-2

	EARLY START	EARLY FINISH
1.4.1.03 K-Basin Maintenance & Operations		
K Basin Management	2OCT95	30NOV00
1.4.1.04 K-Basin Mat'l. Rmvl/Clean-Up		
Essential Systems	2OCT95	30APR97
Roof Repairs	2OCT95	30OCT95
Trailer Moves	2JAN96	20SEP96
Cold Test Facility	2OCT95	29SEP00
Basin Personnel Facility Upgrades	2OCT95	26JUN97
Basin Facility Support Upgrades	2OCT95	30JUL97
Dose Reduction System	2OCT95	29SEP00
FRS Project Definition	2OCT95	27FEB98
FRS Project Management	2OCT95	30SEP98
FRS Design	16OCT95	30DEC96
M/S Complete Fuel Removal System Design	30AUG96	29AUG96
M/S Complete Fuel Removal System Mods Design	1JAN97	30DEC96
FRS Procure/Fab/Construction	17JUN96	1OCT97
M/S Complete Fuel Removal System Equip Install	18AUG97	15AUG97
FRS Startup/Training	1MAY97	1DEC97
M/S Cmplt Fuel Removal Sys Ready for Operation	2DEC97	1DEC97
FRS Regulatory Compliance	2OCT95	28APR97
FRS Removal & Transportation Operations	2DEC97	30NOV99
Sludge Removal System	1JUN95A	11AUG98
M/S Obtn Sgntr-Sludge MOU-TWRS WHC SNFP SNF-RL	1MAR96	29FEB96
M/S Estblsh KE Floor Sludge Tanks Acceptabilit	1JUL96	28JUN96
M/S Estblsh KE Canister Sludge Tank Acceptabil	1APR97	31MAR97
M/S Complete Readiness Assessment	3NOV97	31OCT97
M/S Estblsh KW Floor Sludge Tanks Acceptabilit	1APR98	31MAR98
Sludge Removal Operations	1DEC97	31OCT00
M/S Begin Sludge Transfer to TWRS	3NOV97	31OCT97
M/S Begin KE Floor Sludge Retreival	12AUG98	11AUG98
M/S Complete Sludge Removal	1NOV00	31OCT00
Debris Removal System	2OCT95	2OCT00
Debris Removal Operations	17NOV95	28SEP00
M/S Start Clean Debris at South Loadout Pit	12DEC95	11DEC95
M/S Complete South Loadout Pit Cleanup	11MAR96	8MAR96
M/S Complete Basin Debris Removal	3OCT00	2OCT00
Water Treatment System	2OCT95A	29SEP00
M/S Complete K East Basin Filtration Upgrades	18NOV96	15NOV96
M/S EPA Approve NOC	27DEC95	22DEC95
M/S Complete 105-KW BWFS - Ready for Operation	8FEB96	7FEB96
M/S Complete Water System Upgrade	1OCT97	30SEP97
M/S WHC Submit SARP to RL	29FEB96	29FEB96
Water Treatment Operations	2OCT95	29SEP00
Deactivation Preparation	3JUN96	30SEP96
1.4.1.05 MCO Acquisition		
MCO Acquisition Definition	2OCT95	6MAY96
M/S Complete MCO Testing	7MAY96	6MAY96

Timescale: FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02

Plot Date 26SEP95
Data Date 2OCT95
Project Start 1OCT92
Project Finish 30SEP11

(c) Primavera Systems, Inc.

Legend: Summary Bar/Early Dates; Critical Designator; Progress Bar; Milestone/Flag Activity

Sheet 2 of 4

Westinghouse Hanford Company
Spent Nuclear Fuel Project
Program Master Baseline Schedule

FY-96 MYPP (9/21/95)

Date	Revision	Checked	Approved

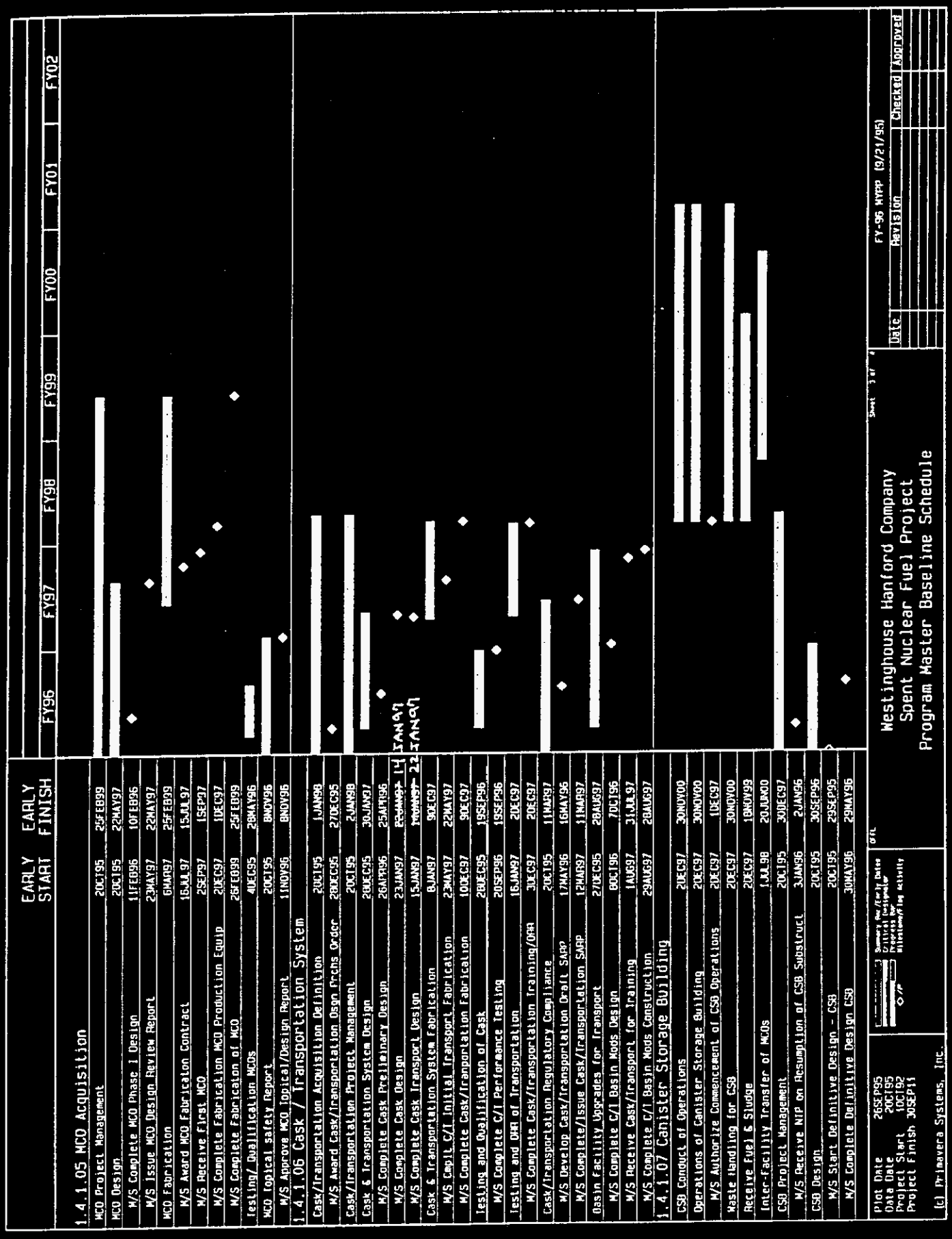
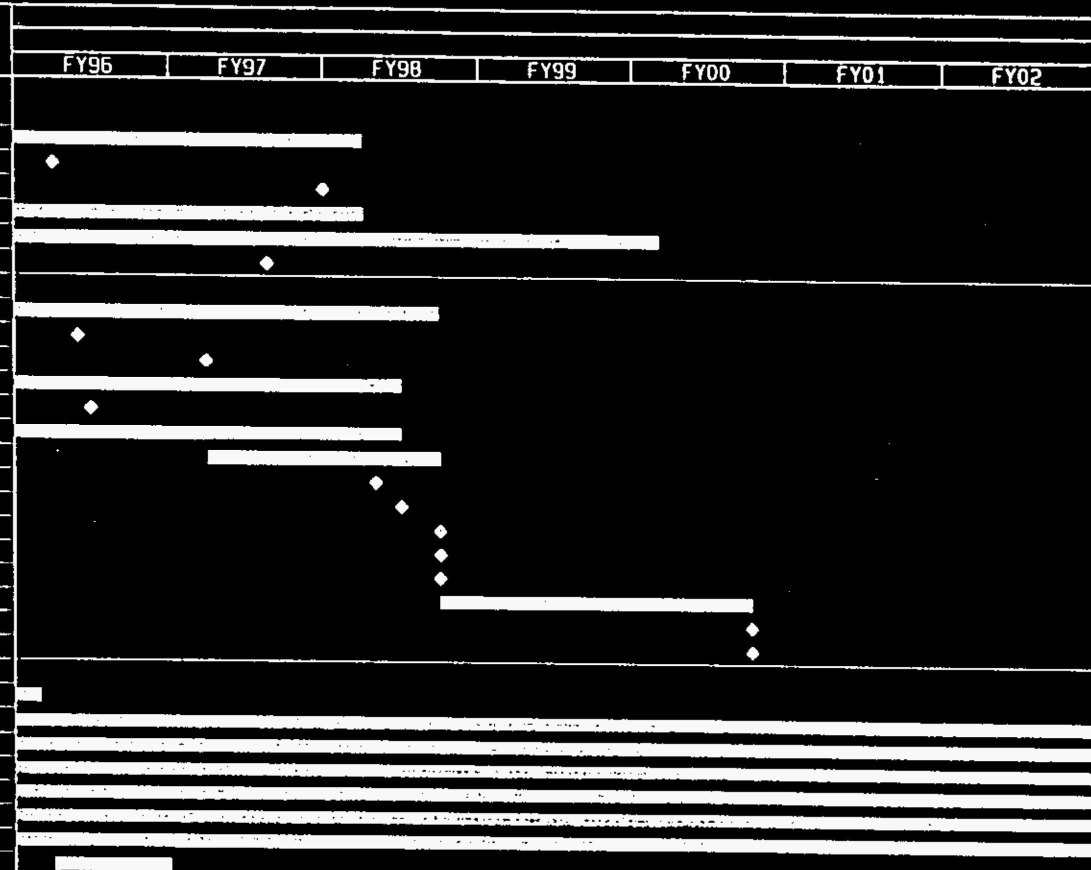

EARLY START
EARLY FINISH
FY96
FY97
FY98
FY99
FY00
FY01
FY02
1.4.1.05 MCO Acquisition
MCO Project Management 20OCT95 25FEB99
MCO Design 20OCT95 22MAY97
M/S Complete MCO Phase 1 Design 11FEB96 10FEB96
M/S Issue MCO Design Review Report 23MAY97 22MAY97
MCO Fabrication 6MAR97 25FEB99
M/S Award MCO Fabrication Contract 16JUL97 15JUL97
M/S Receive First MCO 25SEP97 15SEP97
M/S Complete Fabrication MCO Production Equip 21DEC97 10DEC97
M/S Complete Fabrication of MCO 26FEB99 25FEB99
Testing/ Qualification MCOs 4DEC95 28MAY96
MCO Topical Safety Report 20OCT95 8NOV96
M/S Approve MCO Topical/Design Report 11NOV96 8NOV96
1.4.1.06 Cask / Transportation System
Cask/Transportation Acquisition Definition 20OCT95 1JAN98
M/S Award Cask/Transportation Dsgn Prchs Order 28DEC95 27DEC95
Cask/Transportation Project Management 20OCT95 2JAN98
Cask & Transportation System Design 20DEC95 30JAN97
M/S Complete Cask Preliminary Design 26MAY96 25MAY96
M/S Complete Cask Design 23JAN97 22JAN97
M/S Complete Cask Transport Design 15JAN97 14JAN97
Cask & Transportation System Fabrication 8JAN97 90EC97
M/S Compl C/I Initial Transport Fabrication 23MAY97 22MAY97
M/S Complete Cask/Transportation Fabrication 10DEC97 90EC97
Testing and Qualification of Cask 28DEC95 19SEP96
M/S Complete C/I Performance Testing 20SEP96 19SEP96
Testing and OMA of Transportation 16JAN97 20EC97
M/S Complete Cask/Transportation Training/OMA 30EC97 20EC97
Cask/Transportation Regulatory Compliance 20OCT95 11MAR97
M/S Develop Cask/Transportation Draft SARP 17MAY96 16MAY96
M/S Complete/Issue Cask/Transportation SARP 12MAR97 11MAR97
Basin Facility Upgrades for Transport 27DEC95 28AUG97
M/S Complete C/I Basin Mods Design 80CT96 70CT96
M/S Receive Cask/Transport for Training 1AUG97 31JUL97
M/S Complete C/I Basin Mods Construction 29AUG97 28AUG97
1.4.1.07 Canister Storage Building
CSB Conduct of Operations 20DEC97 30NOV00
Operations of Canister Storage Building 20DEC97 30NOV00
M/S Authorize Commencement of CSB Operations 20DEC97 1DEC97
Waste Handling for CSB 20DEC97 30NOV00
Receive Fuel & Sludge 20DEC97 19NOV99
Inter-Facility Transfer of MCOs 1JUL98 20JUN00
CSB Project Management 20OCT95 30DEC97
M/S Receive NIP on Resumption of CSB Substruct 3JAN96 2JAN96
CSB Design 20OCT95 30SEP96
M/S Start Definitive Design - CSB 20OCT95 29SEP95
M/S Complete Definitive Design CSB 30MAY96 29MAY96
Plot Date 26SEP95
Data Date 20OCT95
Project Start 10CT92
Project Finish 30SEP11
Summary for Early Dates
Critical Remaining Activity
Progress Bar
Milestone/Key Activity
(c) Primavera Systems, Inc.
Sheet 1 of 1
Westinghouse Hanford Company
Spent Nuclear Fuel Project
Program Master Baseline Schedule
Date
Revision
Checked
Approved
FY-96 HYPP (9/21/95)

Figure 2-2

	EARLY START	EARLY FINISH
1.4.1.07 Canister Storage Building		
CSB Construction	2OCT95	30DEC97
M/S Award First Govt Furn Equip Prcrmnt Cntrct	2JAN96	1JAN96
M/S Accept Completed Work - CSB	1OCT97	30SEP97
CSB Startup and ORR/ Initial Operations	2OCT95	1JAN98
CSB Regulatory Compliance	2OCT95	30NOV99
M/S Receive Approval of CSB SAR by DOE-RL	21MAY97	20MAY97
1.4.1.08 Conditioning Facility		
Conditioning Facility Acquisition Definition	2OCT95	26JUN98
M/S Submit Final Product Criteria	29FEB96	28FEB96
M/S Submit Rev 0 F&R Document	30DEC96	27DEC96
Process and Technology Development	2OCT95	30MAR98
M/S Provide Input to Tech Rqmnts for Design CF	29MAR96	28MAR96
Conditioning Facility PM/Design/Const	2OCT95	30MAR98
Facility Startup and ORR	1JAN97	30JUN98
M/S Cmplt Conditioning Facility Startup Proced	2FEB98	30JAN98
M/S Cmplt Conditioning Facility Startup Traini	1APR98	31MAR98
M/S Cmplt Conditioning Facility Startup Testin	1JUL98	30JUN98
M/S Cmplt Conditioning Facility ORR	1JUL98	30JUN98
M/S Avlbl for Fuel Transfer Conditioning Fclty	1JUL98	30JUN98
Operation of Conditioning Facility	1JUL98	5JUL00
M/S Complete CF Operations	6JUL00	5JUL00
M/S Turnover CF to Transition Projects	6JUL00	5JUL00
1.4.1.09 Other Hanford Fuel Rtrv'l/Process/Stor		
Purex Fuel Transfer	2OCT95	30NOV95
Burial Grounds	2OCT95	29SEP06
T-Plant	2OCT95	30SEP05
PNL Labs, Bldg 324, 325, 237	2OCT95	31JAN05
308 Annex	2OCT95	31MAR05
FFTF	2OCT95	30SEP11
PFP	2OCT95	1JUN09
N Reactor Fuel Transfer	1JAN96	1OCT96



Plot Date 26SEP95
Data Date 2OCT95
Project Start 1OCT92
Project Finish 30SEP11

Summary Bar/Early Dates
Critical Designator
Progress Bar
Milestone/Flag Activity

OFIL — Sheet 4 of 4

Westinghouse Hanford Company
Spent Nuclear Fuel Project
Program Master Baseline Schedule

FY-96 MYPP (9/21/95)

Date	Revision	Checked	Approved

BUDGET PROFILE
FIGURE 2-3

Activity		$ in Millions								
		FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03-12	Total
Project Integration	Expense	$9,255	10,500	10,046	9,764	8,030	4,414			$52,009
	Capital									0
	Total	9,255	10,500	10,046	9,764	8,030	4,414	0	0	52,009
System Integration	Expense	15,185	11,075	8,724	2,555	1,527	8			39,074
	Capital									0
	Total	15,185	11,075	8,724	2,555	1,527	8	0	0	39,074
K Basin Mat. Rem./Clean-up	Expense	25,246	28,578	16,371	19,226	20,534	588			110,543
	Capital									0
	Total	25,246	28,578	16,371	19,226	20,534	588	0	0	110,543
MCO Acquisition	Expense	2,724	6,221	28,270	10,816					48,031
	Capital									0
	Total	2,724	6,221	28,270	10,816	0	0	0	0	48,031
Cask Trans. System	Expense	1,446	1,587	459						3,492
	Capital	5,905	13,184	1,262						20,351
	Total	7,351	14,771	1,721	0	0	0	0	0	23,843
Canister Storage Build.	Expense	1,702	5,611	8,907	9,412	5,657	716			32,005
	Capital	38,744	39,066	1,673						79,483
	Total	40,446	44,677	10,580	9,412	5,657	716	0	0	111,488
Conditioning Facility	Expense	1,830	2,428	6,321	19,084	12,618				42,281
	Capital	3,101	26,739	11,000						40,840
	Total	4,931	29,167	17,321	19,084	12,618	0	0	0	83,121
Subtotal for K Basin Spent Nuclear Fuel Path Forward	**Expense**	**57,388**	**66,000**	**79,098**	**70,857**	**48,366**	**5,726**	**0**	**0**	**327,435**
	Capital	**47,750**	**78,989**	**13,935**	**0**	**0**	**0**	**0**	**0**	**140,674**
	Total	**105,138**	**144,989**	**93,033**	**70,857**	**48,366**	**5,726**	**0**	**0**	**468,109**
K Basin Operations	Expense	29,553	29,685	29,671	29,529	30,662	5,250			154,350
	Capital									0
	Total	29,553	29,685	29,671	29,529	30,662	5,250	0	0	154,350
Subtotal Including K Basins Operations	**Expense**	**86,941**	**95,685**	**108,769**	**100,386**	**79,028**	**10,976**	**0**	**0**	**481,785**
	Capital	**47,750**	**78,989**	**13,935**	**0**	**0**	**0**	**0**	**0**	**140,674**
	Total	**134,691**	**174,674**	**122,704**	**100,386**	**79,028**	**10,976**	**0**	**0**	**622,459**
Other Spent Fuel	Expense	1,312	323	274	3,366	3,094	4,789	1,980	15,200	30,338
	Capital									0
	Total	1,312	323	274	3,366	3,094	4,789	1,980	15,200	30,338
Total Including Spent Fuel	**Expense**	**88,253**	**96,008**	**109,043**	**103,752**	**82,122**	**15,765**	**1,980**	**15,200**	**512,123**
	Capital	**47,750**	**78,989**	**13,935**	**0**	**0**	**0**	**0**	**0**	**140,674**
	Total	**$136,003**	**174,997**	**122,978**	**103,752**	**82,122**	**15,765**	**1,980**	**15,200**	**$652,797**

3.0 MANAGEMENT ORGANIZATION AND RESPONSIBILITIES

3.1 ORGANIZATION

The SNF Project team consists of the DOE Spent Nuclear Fuel Project Division (SFD), WHC SNF Project, and other subcontractors. The organizational relationship of the SNF Project is shown in Figure 3-1. References to project participants include the full project team. References to contractor participants include the project participants except DOE SFD.

3.2 RESPONSIBILITIES

3.2.1 Project Team

Project team responsibilities have been established to provide full definition of responsibility, authority, and accountability. Project participant responsibilities are described below.

3.2.2 U.S. Department of Energy - Headquarters (DOE-HQ)

The DOE-HQ organization that interfaces with the SNF Project is reflected in Figure 3-2. On June 5, 1995 the Secretary of Energy delegated the Acquisition Executive authority to the Manager of RL for the SNF Project (see appendix A in the SNF Project Plan). The HQ general responsibility is to provide funding and direction as required for the project.

3.2.2.1 DOE-HQ, Assistant Secretary for Environment, Safety, and Health (EH)

- Provides technical support and independent oversight
- Provides support for the National Environmental Policy Act documentation
- Participates in the Project regulatory requirements team for developing the Project regulatory strategy and Safety Analysis Report
- Provides administrative support to the Independent Review Panel

3.2.2.2 DOE-HQ, Assistant Secretary for Environmental Management (EM)

- Establishes overall mission objectives and top level functional requirements
- Provides Program oversight guidance and coordination with other DOE HQ organizations
- Provides liaison with the National Spent Nuclear Fuel Program

Figure 3-1 SNF Project Organizational Relationship

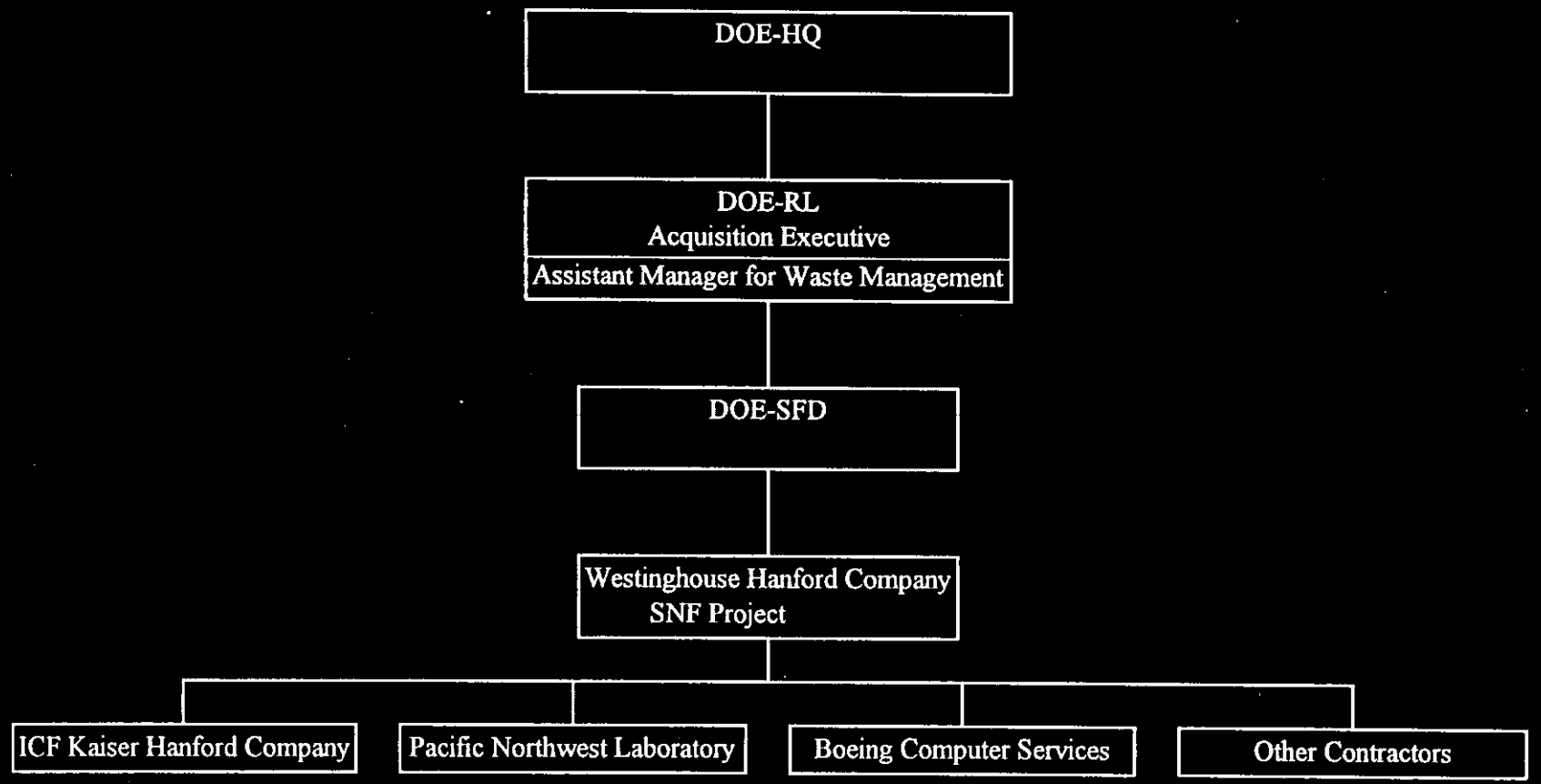


Figure 3-2 SNF Project Headquarters Organizational Interfaces

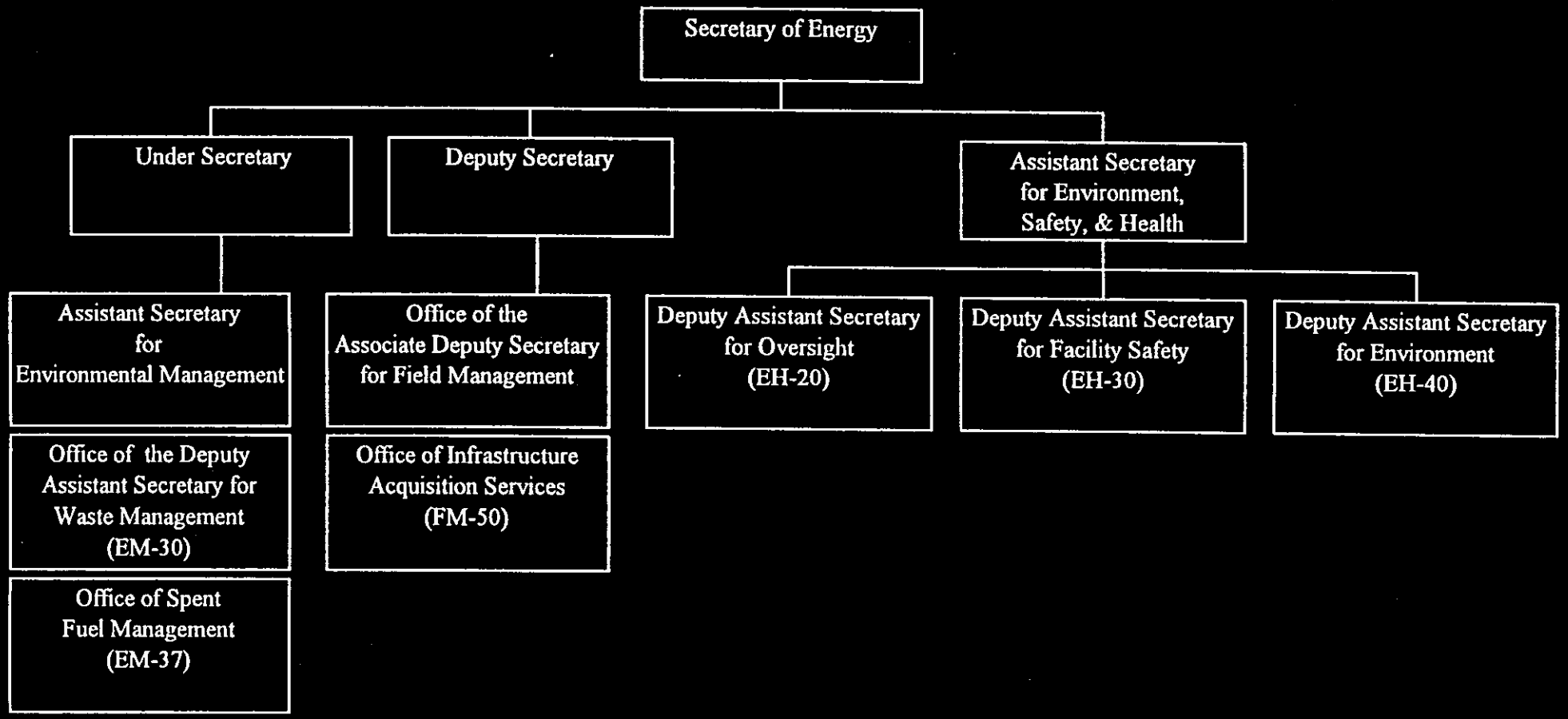


Fig3-2.RNW

07/26/95

- Provides liaison with the Office of Civilian Radioactive Waste Management (RW) Program

- Participates as a member of the Regulatory Requirements Team

3.2.2.3 DOE-HQ, Office of the Associate Deputy Secretary for Field Management

- Conducts independent cost estimates for the Project as appropriate

- Participates in the validation of the Project as part of the funding process

3.2.3 DOE - RL

The Acquisition Executive authority has been delegated to the Manager of RL with restrictions outlined in a memo from the Secretary of Energy to the Assistant Secretary for Environmental Management, dated June 5, 1995 (see Appendix A of the SNF Project Plan).

The SNF Project Independent Review Panel is responsible to the RL Manager to provide an independent recommendation of the adequacy of the Project safety basis for the design, construction, start-up, and operation of the fuel storage and conditioning systems, as well as the processes for the removal and handling of the spent nuclear fuel.

3.2.4 DOE SFD

Responsibilities for the management of the SNF Project are assigned through the Assistant Manager for Waste Management to SFD. The Director of the SFD is the Project Manager and will conduct the Project as intended in DOE Order 4700.1A.

The SFD organization is consistent with a projectized organization, having approximately two thirds of the staff matrixed from line organizations. Figure 3-3 displays the SFD organization. The DOE SFD is responsible for the overall management, administration, performance, and operations and maintenance activities on the SNF Project. The DOE SFD will ensure that the required levels of quality, safety, and environmental compliance are achieved within established technical, schedule, and cost baselines as defined in the PMP. Specific responsibilities and authorities include, but are not limited to, the following activities:

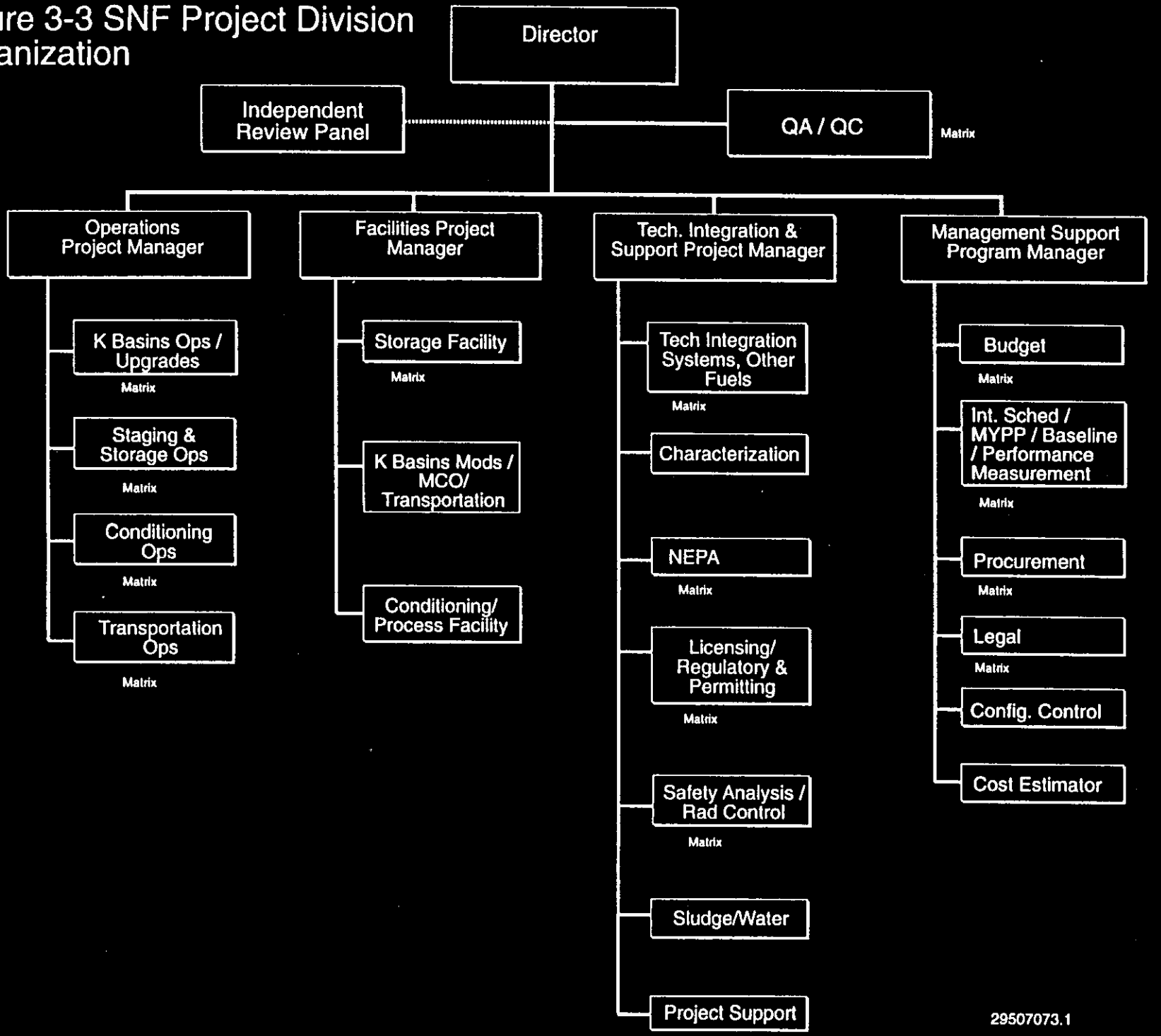
- Provide review and approval of SNF Project baseline documents

- Assume overall responsibility for design, construction, start-up, and operation of systems and facilities within the scope of the SNF Project through direction to the contractor participants

- Monitor and maintain overview of project activities, cost and schedule status, and technical baseline compliance to ensure project performance expectations, quality, cost, and schedule objectives are met

- Provide DOE interface with the DOE EM-30 SNF National Program
- Provide and coordinate review and approval of required environmental and safety documentation
- Assure quality, safety, and environmental requirements are applied
- Review and submit budget documents in accordance with the DOE budget cycle
- Interfacing with stakeholders
- The SFD and the SNF Project (WHC) is advised by a Technical Advisory Group (comprised of approximately seven primary members) consisting of experts with specialized skills and experience in matters vital to the success of the project. They will assist in solving problems on a real time basis and support Project contractors.

Figure 3-3 SNF Project Division Organization



3.2.5 WHC

WHC is responsible for Project Management, QA, regulatory compliance, design, construction, start-up and operations functions, and SNF Project integration. Other responsibilities include maintenance and operations of SNF Project systems and facilities. Matrix organizational support is provided to WHC by: (1) Environmental Emergency, Safety, and Quality Services (ESQ), (2) BCSR, (3) Waste, Analytical and Environmental Services (WAES), and (4) Procurement and Materials Management (PMM). Specific activities in the support and accomplishment of these major project functions include, but are not limited by, the following:

- Manage all contractor activities within the SNF Project scope. Coordinate matrixed support and other contractor activities as required.

- Project integration

  - Provide coordination and integration of subcontractors.

  - Identify system requirements that meet the SNF Project objectives. WHC is the design authority responsible for developing and documenting the spent nuclear fuel Functions and Requirements, and criteria for all systems. Seek SFD approval of baseline documentation.

  - Ensure that systems are designed, constructed/fabricated, tested, and operated to fully achieve the SNF Project objectives and functional requirements.

  - Develop, coordinate, and maintain the overall SNF Project cost estimate and schedule. Coordinate all SNF Project budget and financial planning activity. Prepare and submit budget planning documents consistent with the DOE budget cycle.

  - Develop a quality assurance plan and oversee its implementation.

  - Prepare Statements of Work (SOW) for non-DOE project participants including subcontractors.

  - Prepare routine and non-routine project related reports. Keep the DOE SFD informed of technical, schedule, and cost status and problems.

  - Serve as the Buyer's Technical Representative for facility and systems contracts and provide contractual direction to contractor participants.

  - Develop procurement strategy for sub-tier projects to optimize cost and schedule performance.

- Regulatory compliance
  - With input from contractors as required, prepare the Environmental Test Plan, Environmental Permitting Plan, Environmental Monitoring Plan, Air Quality, and Resource Conservation and Recovery Act permit applications.
  - Prepare safety analysis reports.
  - Meet all requirements and milestones set forth in the Tri-Party Agreement (TPA).
- Systems Engineering
  - Ensure the system to be developed will be fully defined based on DOE requirements.
  - Act as the Project Design Authority and will approve all critical SNF Project documents.
  - Establish and implement a clearly defined SNF Project decision methodology.
- Design and construction functions
  - Maintain overall responsibility for process and system designs meeting functional and interface requirements.
  - Be responsible for development of hardware and system design specifications and interface requirements.
  - Conduct design reviews. Maintain overview of design optimization efforts from the standpoint of cost, safety, reliability, maintainability, accuracy, and compliance with applicable codes, standards, and regulations. Provide approvals as required by subcontracts.
  - Plan, Manage and oversee design, construction, and testing activities for the SNF Project.
  - Coordinate construction projects with necessary ongoing operations of facilities.
  - Manage hardware and system interfaces during the project.
- Start-up and operations
  - New facility operations staff will participate in facility design reviews and develop training plans, start-up plans, procedures, and develop resource estimates for out year planning.
  - Conduct acceptance testing and Operational Readiness Reviews (ORR).

- Operate and maintain new facilities.

- Continue to operate K Basins, support fuel and sludge packaging and transportation, and develop resource estimates for out year planning.

• Matrix organizational support

- The WHC Emergency, Safety and Quality Services provides independent review of safety, safeguards and security, emergency preparedness, computer security, and QA for all WHC SNF Project activities.

- BCSR provides planning and integration support in the areas of computing, telecommunications, information systems, and records management/document control services for all SNF Project activities.

- PNL provides technology acquisition services and technology support services including characterization hot cell operation as defined by the SNF Project.

- ICF KH provides general engineering support and project management services for assigned construction projects. Consistent with needs and organizational capabilities, ICF KH assists in development of cost estimates and design studies.

- The WHC Controller organization provides matrix support to the WHC SNF Project in maintaining consolidated project accounting records.

- The WHC PMM organization is responsible for all procurement and contract administration of major projects and major system acquisitions for the SNF Project.

- Other WHC matrix support as required.

4.0 PROJECT CONTROLS

The primary goal of SNF Project controls is to ensure resources are allocated and utilized efficiently to achieve the management of the spent nuclear fuel at Hanford within the defined scope, schedule, and budget. This goal will be accomplished through the development of sound technical, schedule, and cost baselines and a formal work authorization and control system. This approach includes timely and accurate status accounting of work performance, with appropriate management reports, reviews, and actions, to maintain the integrity of the baselines.

Project control encompasses the development of required project management planning documentation, establishment of the project technical, schedule, and cost baselines, and definition of work priorities and funding requirements. Project Evaluation defines project reporting, review, and commitment tracking requirements. Project Execution covers the implementation of the project control system through work authorization, baseline status accounting, and baseline change control.

4.1 BASELINE MANAGEMENT

A total SNF Project baseline will be established for all activities to the completion of the project. All of these activities are reflected in the SNF Project Work Breakdown Structure (WBS) (Figure 2-1). The technical baseline is defined in Section 2.1.1, and is the basis for the schedule and cost baselines which are reflected in the MYPP. Effective control of the project baseline is essential and changes to the baseline will be managed in a disciplined fashion. The SNF Project approach to managing project changes is based on maintaining an accurate description of the project baseline, methodically evaluating proposals to alter it, and maintaining configuration to the technical baseline. This will be done through the establishment of change class levels (level of approval authority) and a Project Change Control Board (CCB) for the evaluation of class 1, 1A, and 0 changes (see Figure 4-1). CCB members will consist of the cognizant technical staff responsible for the change (contractor and DOE), project management staff (contractor and DOE), and the DOE SFD Project Manager. Contractors shall convene similar boards for changes classified lower than class 1.

Changes to the controlled baseline documents will be through submittal of change requests that justify the proposed changes. Specific baseline change control requirements will be managed in accordance with Hanford Site change control procedures and established thresholds (Figure 4-1).

4.1.1 Technical Baseline Control

WHC is responsible for the overall development, implementation, and maintenance of the baseline documentation. WHC will ensure that configuration management activities and systems engineering activities are performed while better defining and controlling the project baseline and associated documentation. These activities will be applied to all systems and subsystems

necessary to achieve all functional requirements and deliver all products to satisfy the integrated technical baseline and overall Project objectives. At all times during the life of the Project, current configuration of the Project will be maintained in orderly and auditable Project files. These Project records/files will include, but not be limited to system descriptions, system specifications, conceptual and definitive system designs, system and material inspection reports, test reports, operating/surveillance procedures and vendor documentation.

Figure 4-1 defines the approval authority for changes to the defined technical baseline.

4.1.2 Schedule Baseline Control

The SNF Project baseline schedule is reflected in the MYPP and summarized in Section 2.2, Schedule Objectives.

For each WBS element identified in the Project Summary WBS (the third level of the WBS), a separate subproject schedule will be prepared which identifies the activities necessary to successfully complete that phase of the project work scope. Each subproject schedule will identify the logic ties and interfaces necessary to coordinate the completion of that phase of the work scope with the other elements of the project summary schedule, and will contain sufficient detail to allow integration of all subproject schedules into the project summary schedule.

All subproject schedules will be resource loaded with staff hours associated with the particular skills mix that is identified for each activity and other direct costs. Schedule control of this project will be implemented through critical path schedule analyses (resulting in the identification of schedule float), the establishment of milestones, and corrective actions for schedule variances (determined by Earned Value methodology). Contractors will analyze schedule variances and evaluate trends on schedule performance using acceptable methodologies on their WHC approved contractor master schedule. Performance reporting and variance analyses will be reported to the SFD cognizant Project Manager as specified in Section 4.1.6. When variance analyses reveal problems, WHC will ensure that appropriate corrective actions are taken by the affected participants. Changes to the project schedule baseline will be processed through change control in accordance with established thresholds.

Tri-Party Agreement milestone schedule slips are to be formally documented with a change request 120 days prior to the milestone in order to allow for negotiations with stakeholders.

Figure 4-1 defines the approval authority for changes to the defined schedule baseline.

4.1.3 Cost Baseline Control

The Project cost baseline is the Project cost estimate and is established and controlled in the MYPP. The cost estimate level of detail is specified in the general guidance for the preparation of program plans issued annually by DOE-RL Plans for Construction Line Item Projects will include contingency. The BA requirement will consider the requirements of contract commitments and phase funding allowances. Carryover of expense funds to support the BA/BO profile will be required.

Cost control will be implemented by WHC through corrective action in response to cost variances reflected in the routine Earned Value analysis of the established cost performance baseline. Cost control is based on a Project scale, not on an annual scale. WHC will prepare estimates to complete (ETC) the Project and subprojects, taking into account the Cost Performance Index. WHC and other project contractors will prepare, and seek appropriate approval for, documentation of corrective action for any cost estimate change impact that exceed established thresholds (Figure 4-1).

WHC has the primary responsibility for preparing and reporting cost performance data to SFD as specified in Section 4.1.8. Significant variances, corresponding variance analyses and recommended corrective action will be included in the reporting to the DOE SFD. The ETCs for each PSWBS element will be prepared by WHC based on the status of the work element and the CPI, and reported monthly in the Status Review Meeting (SRM). The ETCs will be based on the latest performance data, current assessment conditions, current and projected pricing factors and rates, and knowledgeable forecasts of projected conditions.

Changes to the project cost baseline will be processed through change control in accordance with established thresholds (Figure 4-1). WHC will ensure that all project cost estimates and revised estimates are based on current schedules and that the basis for cost estimates is consistent with the documented project scope baseline.

Figure 4-1 Change Classification Thresholds

Change Class	Approval Authority	Technical	Schedule	Cost
0	DOE-HQ	Project Objectives as defined in Section 2.1	Any change to HQ milestones	Any change to the Total Project Cost or change impacts > $100M
IA	RL Acquisition Advisory Board	Project Objectives as defined in Section 2.1	Any change to level 1A milestones	Change impacts > $50M to $100M
I	SFD	RL approved documents as defined in Figure 4.2	Any change to RL milestones	Change impacts > $0.5M to $50M
II	WHC	WHC approved and controlled baseline documentation	Any change to WHC milestones	Change impacts > $50K to $0.5M
III	WHC Subcontractors	baseline documentation controlled below WHC	Any change to level 3 milestones	< $50K

4.1.4 Funds Management

Control of fiscal year (FY) cost ceilings and appropriations will be accomplished in accordance with DOE-HQ-approved funding plan requirements and existing DOE RL funds control policies and procedures. Funding authorizations to WHC will be through the MYPP and modifications thereto. Project funding that is authorized but not spent (i.e., carry-over) within any FY will remain with SNF Project for use in the next FY in accordance with the project's cost, schedule, and scope baselines. Funds associated with incomplete work will be carried over as planned BO. Uncosted commitments will be carried over either as BO if costed in the next FY, or as planned BA if costed beyond the next FY.

Activity Data Sheets (ADS) are utilized as the primary budget and status document for DOE Environmental Management Program funding activities. There is one ADS for the SNF Project (number 4110).

Cost, commitment, and fund authority information will be provided by WHC in the Status Review Meeting, as requested by DOE SFD. This information will be used to keep DOE SFD and management advised of current cost and commitment levels and potential funding impacts. Controls will be established to ensure costs and commitments do not exceed available funding.

4.1.5 Project Work Authorization

Specific authority to proceed with project work will be provided from the DOE SFD to WHC, and from WHC to project participants. This authority will be provided from DOE SFD to WHC based on a multi-year technical, schedule, and cost baseline. The approval of the Multi-Year Program Plan will serve as this authorization to proceed with planned work. The MYPP will incorporate the intent of work authorization specified in DOE Order 4700.1, pages V-8 through 11.

4.1.6 Project Performance and Control, Project Status, Management Reporting, and Management Reviews

The technical, cost and schedule baseline will be maintained by WHC, in conjunction with other contractors, through Earned Value performance measurement and control techniques as established herein. Since the SNF Project consists of many subprojects, the cognizant DOE SFD subproject manager may require greater detail than the DOE SFD Project Manager (Division Director). Data to the WBS level three (PSWBS level) will be sufficient for the DOE SFD Project Manager, and data to the cost account level (WBS level six) will be sufficient for the subproject managers within the DOE SFD, unless specified differently by the particular project manager.

The SNF Project will utilize established Hanford Site reporting systems to meet the intent of reporting requirements in DOE Order 4700.1. These systems are the Site Management System (SMS) and the Progress Tracking System (PTS) (which is the DOE complex reporting system).

4.2 PROJECT TOPICAL PLANS

This project will utilize topical plans for activities common to all subprojects. This section describes the topical plans and documents required for the successful execution of the SNF Project. The plans will be revised as required. Requirements for individual subproject plans will be fulfilled by these topical plans. Only subproject specific data will be required which can be included in subproject PMPs or work plans. Approval authority of these and other Project documents are reflected in the SFD Document Review and Approval Matrix (Figure 4-2). In each case, WHC will submit to RL a WHC approved document.

The SNF Project Quality Assurance Program Plan (WHC-SD-SNF-QAP-004) addresses how the SNF Project applies the WHC Quality Assurance Program and Implementation Plan. QA Plans will be developed for the construction and operation of each SNF Project nuclear facility and can be included in the facility specific PMP. These plans will be consistent with the requirements of the WHC QA Program and Implementation Plan as identified in the SNF Project Quality Assurance Program Plan. QA requirements, in addition to those identified in the WHC QA Program and Implementation Plan, will be addressed in the applicable QA plan.

The Spent Nuclear Fuel Systems Engineering Management Plan (Womack 1995b) describes the process used to ensure that the technical requirements and basic design criteria of Project sub-elements are clearly defined throughout design, acquisition, construction, and operation, including those imposed on all Project participants and subcontractors.

The Technical Baseline Document (Womack 1995a), shall be the foundation for Project functions and requirements. All activities within each project must be traceable to the Technical Baseline.

The SNF Project Configuration Management Plan (Reilly 1995a) describes the controls used for technical requirements and basic design criteria of project sub-elements throughout design, acquisition, construction, and operations. This plan also addresses the administrative requirements imposed on SNF Project participants and subcontractors. Included are the systems to ensure changes to the Project Baselines are reviewed and approved by appropriate levels of management according to established thresholds.

The Project Acquisition Plan describes the project's acquisition strategy. The Project Acquisition Plan provides the policy, guidance, and request for services, facilities, and systems acquired by the SNF Project. The Project Acquisition Plan will incorporate all DOE Order 4700.1 requirements for the acquisition plan. This document will help the facilitator reconcile user requirements and funding allocations and prioritize efforts.

The Public Involvement Plan describes how the SNF Project will address public coordination and involvement as required by National Environmental Policy Act (NEPA), the TPA, and DOE guidance.

The Test and Evaluation Plan will ensure that the completed facility and all installed systems meet the established safety basis and Functions & Requirements. Detailed test plans and/or specifications and procedures will be prepared, approved, controlled, and maintained. These test plans or specifications and procedures will address testing requirements for all plant systems, subsystems, and individual pieces of equipment. The test planning and scheduling will coordinate development testing with design, and plant testing with plans for construction completion, turnover, and plant start-up. Training requirements for the above activities are also covered.

The Permitting Plan identifies all pre-construction, pre-operation, and operation regulatory requirements to the extent known. A strategy to obtain all required permits will be developed consistent with SNF Project requirements. The appropriate documentation and schedules to comply with the requirements will be included.

The SNF Project Interface Control Plan (Reilly 1995b) addresses the physical interfaces and controls required between Project sub-elements. An important aspect of maintaining configuration is effective interface control. The SNF Project will establish an interface control process coordinated by an Interface Control Working Group (ICWG). The ICWG will manage all internal interfaces and coordinate with the Site ICWG for resolution of external interfaces.

The Characterization Program Management Plan defines the scope and objectives of K Basins fuel and sludge characterization, the program management organizations, areas of responsibility, communication, reporting, and schedule requirements.

The Characterization Plan describes the program to provide consolidated characterization of fuel, sludge, and debris as required to meet Project objectives. The plan will describe tasks and resource requirements to establish data requirements, acquire and ship samples, provide hot cell and analytical services, and analyze data.

The Technology Acquisition Plan describes how technology acquisition services and technology support services will be managed. Included will be designated process technology application and laboratory testing, equipment adaptation and verification testing, Waste Form Qualification model and data development.

The SNF Project ALARA Plan will stipulate the ALARA policy of the Project.

The SNF Project NEPA integration plan will include the impacts and interfaces of NEPA compliance related to all Hanford spent nuclear fuel and their reviews.

Other germane SNF Project documentation will be submitted to SFD for concurrence.

The Environmental, Safety, and Health Compliance Plan will stipulate the ES&H requirements that will be met in the SNF Project. The intent of the project is to apply the appropriate DOE rules, orders, and/or NRC technical requirements to the various subprojects. This will be done with DOE's concurrence. Additionally, the project will comply with the TPA. A voluntary protection program is being implemented as a best management practice. These requirements and best management practices protect workers, the public, and the environment, and will be applied using a graded approach. The Project's ES&H Programs include environmental protection, occupational safety, fire protection, industrial hygiene, radiological control, nuclear safety, emergency preparedness, and radioactive and hazardous waste management.

During operation of the K Basins, and during planning, construction, start-up or operation of other facilities or activities supporting the SNF Project, the WHC Emergency, Safety and Quality Services independent oversight organizations will monitor compliance with the requirements. These organizations, as well as workers in the workforce of the facilities, are authorized to stop work if an imminent safety, health, or environmental hazard is observed.

Other plans will be formally requested by RL from WHC as the need arises. The plans will be submitted to RL as directed in the request. An example of this is demonstrated in the letter from C. A. Hansen, RL AMW, to A. L. Trego, President WHC, Approval of Spent Nuclear Fuel (SNF) Path Forward Recommendation, letter number 95-SFD-132, dated July 31, 1995.

Figure 4-2 SFD Document Review and Approval Matrix

Document	RL
Spent Nuclear Fuel Quality Assurance Program Plan, WHC-SD-SNF-QAP-004, 1995	Approval
Sub-project QA Program Plan (if applicable)	Approval
Spent Nuclear Fuel Systems Engineering Management Plan	Review
Technical Baseline Documents	
- SNF Project Management Plan	Approval
- Systems Engineering Baseline Document	Approval
- Process Strategy Document	Approval
- Work Breakdown Structure Dictionaries and Index (included in the MYPP)	Approval
- End Point Criteria	Approval
- Acceptance Criteria and Memorandums of Understanding/Agreements	Approval
- Functions and Requirements Documents or Functional Design Criteria (FDC)	Approval
- Subproject Management Plans or Work Plans	Approval
SNF Project Configuration Management Plan	Review
Project Acquisition Plan	Review
Multi-Year Program Plan (cost and schedule baseline)	Approval
Public Involvement Plan	Approval
Test and Evaluation Plan	Review
Regulatory Strategy	Approval
Permitting Plan	Review
SNF Project Interface Control Plan, WHC-SD-SNF-CM-003	Review
Characterization Plan	Review
Technology Acquisition Plan	Review
Environmental, Safety, and Health Compliance Plan	Review
Drawing release for construction	
Specification release for bid	
Request for bid documents (w/o specifications)	Review
Safety Analysis Report and NEPA Documentation	Concur for submittal to RL Manager
SNF Project ALARA Plan	Review
Conceptual Design Reports	Approval
SNF Project Plan	Approval
Characterization Program Management Plan	Review
SNF Facility Start-up Plans	Approval
Training Implementation Matrix	Review
SRID	Approval

4.3 OTHER DOCUMENTATION

Other management systems and product documents will be developed, as appropriate. These documents include the following:

- A PMP, or Work Plan, for each sub-tier SNF Project will be developed by the assigned project team. Each plan will document the implementation, controls, and management methods used by the key participants to execute their respective scopes of work relative to the overall SNF Project.

- The Project WBS Dictionary lists and defines the WBS elements. This information is documented in the SNF Project MYPP. This document shall be revised to reflect changes and maintained throughout the life of the project.

4.4 MEETINGS/REVIEWS

Weekly status (Plan of the Week) meetings will be held by WHC, and attended by a limited number of representatives from RL and others.

Status Review Meetings (SRM) will be held monthly with appropriate personnel from project participants. WHC will be responsible for preparing and issuing the agenda and recording action items, agreements, and commitments resulting from the meeting. Monthly reviews will focus on immediate decisions, near-term critical issues, cost and schedule variances and assessments, corrective actions, and general status of work in progress as of the last complete month that data is available. Status data from the monthly status report should be used as much as possible. The review is intended to be exception oriented and focused on major significant issues that require management decisions.

A formal Project Management Review Meeting (MRM) will be held quarterly with appropriate personnel from DOE, WHC, and others in attendance. A SRM is not needed when a quarterly meeting is held. WHC will be responsible for preparing and issuing the agenda and recording action items, agreements, and commitments resulting from the meeting. Quarterly reviews will focus on significant accomplishments that occurred since the previous meeting, expected major accomplishments for the next quarter, major problems/issues facing the project, and current summary technical, schedule, and cost status (utilizing Earned Value methodology).

Other Project meetings will include:

- Quarterly meetings with stakeholders and tribes

- Monthly meetings with regulators

- Weekly Project Senior Management Meetings (between RL and WHC)

- Annual project validations for capital funded projects
- Sub-project reviews, as necessary
- Monthly Change Control Board meetings (prior to or following the monthly status review meetings as described above or ad hoc if urgent)
- Independent cost estimates, when necessary

5.0 QUALITY ASSURANCE

Public safety, on-site worker safety, and protection of the environment are overriding considerations for the SNF Project. The commitment to safety by the DOE management dictates management and verification activities to ensure safety and environmental considerations are reflected in the design, procurement, construction, and operation of the SNF Project. For purposes of this document, quality assurance is all of those planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service.

The SNF Project QA program will meet the applicable requirements of Title 10 Code of Federal Regulations, Part 830.120 (10 CFR 830.120), "Quality Assurance," as delineated in the DOE Approved WHC Quality Assurance Program, WHC-SP-1131, Westinghouse Hanford Company Quality Assurance Program and Implementation Plan. The SNF Project will provide input to update the WHC QA Program and Implementation Plan, as necessary. Assessments will be conducted to verify that these quality requirements are being met.

The SNF Project Quality Assurance Program Plan (WHC-SD-SNF-QAP-004) addresses how the SNF Project implements the WHC QA Program. QA plans are required for the design, construction, and operation of each SNF Project nuclear facility. These plans will be consistent with the requirements of WHC-SP-1131 as described further in the SNF Project Quality Assurance Program Plan. QA requirements, in addition to those identified in WHC-SP-1131, will be addressed in the applicable QA Plan. Examples of potential additional requirement documents are: 10 CFR Part 72, DOE/RW-0333P, and the Washington Administrative Code.

SNF Project contractor participants, including subcontractors, and vendors will be required to implement QA programs commensurate with the contract document requirements. If work is to be performed by contractors already having DOE approved QA programs, the Project QA requirements will be defined in a letter of instruction, or similar document, which may result in the contractor developing a project specific QA plan. Subcontractors and vendors will be required to submit their QA Plans to WHC upon request for review and approval.

DOE SFD will implement the RL QA Policy Description, dated March 18, 1993, and will supplement it as necessary to meet Project specific requirements.

6.0 REGULATORY STRATEGY

6.1 REGULATORY POLICY

The SNF Project path forward is subject to the completion of NEPA requirements. The K Basins SNF EIS addresses the movement of fuel from the Basins as well as the disposition of the sludge, debris, and water.

RL has established a special regulatory approach to resolve safety concerns associated with the spent nuclear fuel presently stored in the K Basins and its movement to the 200 East Area. The RL regulatory policy has been approved by DOE-HQ which will be applied to matters of nuclear safety (including radiological control issues) for new SNF Project facilities. It is RL and HQ policy that the K Basins SNF Project will achieve nuclear safety equivalence to comparable NRC licensed facilities. This will be accomplished by applying technical requirements based on those applied by the NRC to comparable licensed facilities and by adopting appropriate features of the NRC licensing process, in addition to applicable DOE Orders and requirements. The policy's primary focus is on design and construction issues, and preparation for operations. The policy does not apply to environmental, OSHA, chemical accident safety, and other non-nuclear safety issues; these will be covered elsewhere by DOE Orders and statutory requirements. Similarly, the kinds of life-of-facility oversight (e.g., operator training, performance assessment) applied by the NRC to their licensed facilities are not covered by this policy.

DOE has established this policy for two primary reasons:

- To achieve in the design and construction of new SNF Project facilities a level of nuclear safety comparable to that of NRC licensed commercial nuclear facilities.

- To enhance public understanding and confidence in the safety of the new facilities by following an enhanced regulatory strategy.

6.2 THE SNF PROJECT INDEPENDENT REVIEW PANEL

The Regulatory Policy for the SNF Project delineates RL's policy for achieving nuclear safety equivalence for the design, construction, start-up, and operation of new facilities, and the new processes for removal, handling, and conditioning of the spent nuclear fuel for transfer to the interim storage facility. The policy provides for an Independent Review Panel (IRP) to provide high level external oversight of the implementation of the Regulatory Policy.

An IRP has been established, reporting to the Office of the Manager of RL, to provide advice and high level oversight of the implementation of the Regulatory Policy. In order to accomplish this function the IRP will conduct interviews, review documents, and attend presentations conducted by SNF

Project to reach conclusions relative to the adequacy of implementation of the Regulatory Policy.

Specifically the IRP will:

- Review and comment on the SNF Project Regulatory Strategy
- Evaluate and concur with the Regulatory Requirements Document established by the project
- Evaluate and concur with the Safety Analysis Report (SAR) and Safety Evaluation Report (SER)
- Concur with the safety basis for final approval to operate the SNF Project facilities

The IRP consist of three members from outside the DOE complex, with broad technical background, selected for their stature, technical capability and experience applicable to the SNF Project. The IRP will conduct their oversight as a concurrent activity to the regulatory process. Periodic meetings of the IRP will be conducted to enable the panel to keep abreast of SNF Project activities. From time to time DOE may identify further activities or areas that the IRP may be requested to review. The IRP conclusions with respect to each of the chartered responsibilities is expected to be made within the time allotted by the SNF Project schedule.

In interfacing with the SNF Project, the IRP principal point of contact is RL's Division Director for the SNF Project Division and/or the Senior Technical Advisor to the Assistant Manager for Waste Management.

6.3 REGULATORY REQUIREMENTS TEAM

A portion of the SNF Project path forward regulatory strategy calls for the establishment of a DOE/WHC *Regulatory Requirements Team* with responsibility to identify, concur, and/or adapt the requirements to be applied and to obtain timely DOE/WHC approval. The Team is lead by the leader for Regulatory Licensing and Permitting of SFD.

6.4 RL SAFETY ANALYSIS REVIEW AND SAFETY EVALUATION REPORT TEAM

The SNF Project path forward requires approval of several key documents by RL prior to the contractor initiating operation of the new facilities referenced in the regulatory policy. Principal documents include the Safety Analysis Reports (SAR) that will be prepared for the Canister Storage Building (CSB), and the spent fuel Conditioning Building (CB). The Multi-Canister Overpack (MCO) will be discussed in other SARs. A SARP will be prepared for the shipping casks. Fuel handling activities at the K Basins will be handled by modifications to the existing K Basins SAR.

DOE SFD and Quality, Safety, and Health Division (QSH) will collaborate to support the review and approval of key documents, prepared by the contractor, which are essential to the SNF Project path forward. The Division Director for QSH will function as chairman of the SER Team. The leader of Regulatory, Licensing, and Permitting for SFD will function as Executive Director of the SER Team. Current schedules contain review and approval activities through Fiscal Year 1998. In addition to approving the SARs and issuance of the Safety Evaluation Reports (SER), QSH and SFD will interact on a regular basis with the Independent Review Panel to resolve technical issues in the SARs as they pertain to the implementation of the new regulatory policy. The RL SAR Review Team and the IRP will jointly assess the effectiveness of the SFD in implementing the Regulatory Policy and DOE Orders that direct quality, safety, and health requirements which will be utilized for the project. QSH will also provide technical support to the SNF Project Regulatory Requirements Team. The Regulatory Strategy Document (WHC-SD-SNF-SP-001) contains the schedule for performing the SAR reviews.

6.5 COMPLIANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL ENVIRONMENTAL LAWS AND REGULATIONS

The SNF Project must comply with a number of Federal, state, and local environmental protection laws and regulations. The U.S. Environmental Protection Agency (EPA) is the lead environmental regulatory agency on the Hanford Site for assuring compliance with requirements promulgated pursuant to the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). The State of Washington Department of Ecology (Ecology) is the authorized regulatory agency for compliance with the Resource Conservation and Recovery Act (RCRA) and the State of Washington Dangerous Waste Regulations; the Washington Administrative Code (WAC 173-303). The preponderance of applicable compliance requirements imposed by these agencies are documented as major, interim and target milestones in a document titled, *"The Hanford Federal Facility Agreement and Consent Order."* This document is more commonly referred to as the Tri-Party Agreement. To facilitate interactions with these agencies and to attain compliance with established milestones and requirements, the SFD has designated a unit manager to conduct on-going dialogue with the regulators on specific issues. Meetings are held on a monthly basis and are called Unit Manager meetings. More frequent meetings may be held with the respective regulatory authorities on an as needed basis. Special conferences are held to discuss issues that may not fall within the purview of the Tri-Party Agreement but are within the scope of the applicable regulations.

The SNF Project also regularly interacts with the State of Washington Department of Health (Health). Health has regulatory authority over radiological air emissions on the Hanford Site and must approve any new construction or operational activities undertaken by the SNF Project that may pose the potential for increasing radiological exposure to workers and the public. Additionally, permitting authority for septic tank systems and potable water supplies fall within the authority of Health. At a minimum, monthly meetings are held with Health. More frequent meetings are held on an as needed basis.

6.6 CONSULTATION WITH NATIVE AMERICAN TRIBES AND NATIONS

Consistent with the policy issued by the Secretary of Energy, the SNF Project is committed to a consultation relationship with Native Americans having treaty rights on the Hanford Site. The nations and/or tribes include the Yakama Indian Nation, the Confederated Tribes of the Umatilla Nation and the Nez Perce Tribe. In an attempt to keep the Native Americans apprised of all significant actions being undertaken by the SNF Project, briefing meetings will be held with representatives from each tribe and/or nation. Regularly scheduled meetings with the tribes/nations have not been instituted. However, documents and strategies containing key decisional information will be submitted to the tribes for review and comment concurrent with the decision making process at RL. The intent of this activity is to ensure that appropriate dialogue is held with the Native Americans and that their concerns are adequately resolved during the decision making process as the SNF Project proceeds towards its conclusion.

7.0 REFERENCES

10 CFR 830.120, Title 10 Code of Federal Regulations, Part 830.120 "Quality Assurance."

DOE, 1994a, "Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Draft Environmental Impact Statement," DOE/EIS-0203-D, June 1994.

DOE, 1994b, "SNF Program Requirements Document," SNF-RD-PM-001, October 1994.

DOE-HQ, 1994, Memorandum, J. E. Lytle, to T. P. Grumbly, "Approval of Path Forward for N-Reactor Spent Nuclear Fuel Interim Storage," November 9, 1994.

Reilly, 1995a, "Spent Nuclear Fuel Project Configuration Management Plan," WHC-SD-SNF-CM-001, Draft, Westinghouse Hanford Company.

Reilly, 1995b, "Spent Nuclear Fuel Project Interface Control Plan," WHC-SD-SNF-CM-003, Draft, Westinghouse Hanford Company.

Squires, K. G., 1995, "Spent Nuclear Fuel Project Integrated Schedule Plan," WHC-SD-SNF-PD-009, Westinghouse Hanford Company, March 6, 1995.

WHC, 1994a, "Hanford Spent Nuclear Fuel Project Recommended Path Forward," WHC-EP-0830, Westinghouse Hanford Company, Richland, Washington.

WHC, 1994b, "Multi-Year Program Plan for the Spent Nuclear Fuel Project," WHC-SP-1104, Westinghouse Hanford Company, Richland, Washington.

WHC, 1995, "Spent Nuclear Fuel Project Quality Assurance Program Plan", WHC-SD-SNF-QAP-004, Draft, Westinghouse Hanford Company.

WHC, 1995, "WHC Quality Assurance Program and Implementation Plan," WHC-SP-1131, Draft, Westinghouse Hanford Company.

Womack, J. C., 1995a, "Spent Nuclear Fuel Project Technical Baseline Document," WHC-SD-SNF-SD-003, Westinghouse Hanford Company.

Womack, J. C. 1995b, "Spent Nuclear Fuel Systems Engineering Management Plan," WHC-SD-SNF-SEMP-001, Westinghouse Hanford Company.

APPENDIX A

Memorandum of Understanding for 100K Area Landlord Responsibilities

THIS PAGE INTENTIONALLY
LEFT BLANK

Westinghouse Hanford Company

APPENDIX A

Internal Memo

From: K Basins/100 Area Projects
Phone: 373-3322 - X3-71 / 373-1184 X5-55
Date: June 30, 1994
Subject: 100K AREA LANDLORD RESPONSIBILITIES

To: Distribution

Reference,:(1) Priority Message, "Environmental Restoration Transition,"dated March 10, 1994.

(2) Internal Memo M. C. Hughes and H. L. Debban to G. L. Bennett, et al., "Redesignation of 100 Area Landlord Responsibilities," dated February 19, 1993.

(3) Internal Memo W. G. Ruff to H. A. Crisp, et al., "Clarification of 100 Area Landlord Responsibilities," dated November 21 1989.

The purpose of this letter is to confirm the assignment of responsibilities for the facilities that are co-owned or occupied by K Basins Organization Westinghouse Hanford Company (WHC) and Bechtel 100 Area Projects (1AP) in the 100K Area. This letter is intended to describe the understanding between the two contractors which will permit shared activities of buildings or rooms and their utilities while preserving each organizations responsibility, authority and jurisdiction for Conduct of Operations.

Attachment I contains a listing of the cooperational activities that require agreement between the 1AP and K Basins Organization. Attachment II is a list of the primary K Area facilities with the corresponding responsible organization and management. Attachment III, as provided by 100 Area Projects, is a list of the remaining structures and waste sites expected to be transferred to Bechtel Hanford effective July 1, 1994.

An alternative approach to this shared arrangement is for WHC to assume responsibility for the 100K Area during the time period that fuel will be stored in the 105 KE/KW Storage Basins. WHC, working with Bechtel, will pursue this alternative by investigating the applicability to the long term solution and the requirements of DOE order 5420 chapter 5.

6/30/94

John E. Truax, Director
K Basins

Michael C. Hughes, Manager
100 Area Projects

attachments 3

APPENDIX A

Cooperative Activities

Key Control: It is the intention of both parties to key the entrance and exits of their individual assigned facilities and maintain key control through a key custodian within each organization. The K Basins Shift Manager will be issued an access key for 100 Area Projects areas for use in emergency situations and for routine patrols that are approved by 1AP and comply with the following 1AP access control policy.

Access Control at 100K: Personnel seeking non emergency access to 1AP areas must have or be escorted by an individual who has completed training in Building Specific Hazards Identification and 100 Area Deactivated Facility Orientation. Permission will be granted at the time of entrance or be pre approved by 1AP. Access to perform previously approved routine patrols within 1AP areas may be approved by the K Basin Shift Manager providing the individuals or an escort meet 1AP access training requirements and follow approved routes.

Access to 105KW Womens Change Room: Personnel seeking access to the womens change room at the 105KW building are not required to wear a hard hat. The front corridor hall is exempt from the general requirements for a hard hat area.

Emergency preparedness: K Basins will maintain the site Emergency Preparedness. 1AP will obtain written permission from K Basins prior to staging additional hazards or personnel within the 100K Area that would impact the effectiveness of emergency plans.

Lock and Tag Controls: Each organization will maintain control and accountability of the Lock and Tag Program within their areas of responsibility at 100K Area. Electrical lock outs involving 13.8 KV or greater will be administered by the Electrical Utilities Organization.

Confined Space Controls: Each organization will maintain control and accountability for the Confined Spaces within their areas of responsibility.

Work Control: K Basins will maintain the necessary K Basin utilities such as Compressed Air, Water systems, and Electrical systems within the 1AP area. K Basins will maintain a listing of K Basin utility equipment within 1AP areas with 1AP preapproval that permits routine access for corrective and preventive maintenance. All modifications to equipment will be approved by 1AP and the K Basins Shift Manager on the controlling work document.

Spare Parts Retrieval: Retrieval of spare parts within 1AP areas by the K Basins Organization will require prior authorization from 1AP.

Material Storage: K Basins will obtain written permission from 1AP prior to storing materials in 1AP areas of responsibility. K Basins will be responsible for managing all equipment located in the front face work area of the 105KW Reactor Building.

Hazardous Waste Control: K Basins and 1AP will maintain independent Hazardous Waste Programs. Each organization will treat, store, and dispose of their generated wastes.

Occurrence Reporting: 1AP and K Basins will independently categorize and report occurrences that occur within their respective facilities or areas of responsibility. K Basins will assume responsibility for occurrences triggered by utilities (air, water,and elect) that originate in or transfer through 1AP areas providing the utilities function is maintained primarily for K Basins Operations.

Attachment II Responsibilities by Building or Area

K Area: General area or grounds as a rule will be the responsibility of 1AP providing the area is not activity being utilized by K Basins. Examples of K Basin active areas are Waste Storage Pads, parking lots, trailer/office areas, laydown yards, and active transformer pads.

Mobile Offices: All mobile offices currently located at K Area (M0102, 205, 214, 907 and 402) are the responsibility of K Basins. Several additional mobile offices are scheduled to added to the K Area complex, (1117, 1111, 1123, 1124,1133,1134) they will also be the responsibility of K Basins. The abandoned 1720K office and telephone exchange will remain as a K Basins facility.

100 K West Area

	FACILITY	OWNER ORG	MANAGING ORG
181KW	River Pump House	1AP	1AP/Hughes
107KW	Retention Basin	1AP	1AP/Hughes
105KW	Reactor facility	1AP	1AP/Hughes
	Water Tunnels	1AP	K Basins/Truax
	Basin and Transfer Area	1AP	K Basins/Truax
165KW	Power Control Bldg	1AP	1AP/Hughes
	Elect switch gear,Control rm	1AP	K Basins/Truax
190KW	Main Pump House	1AP	1AP/Hughes
183KW	Clearwells	1AP	1AP/Hughes
	Filters	1AP	1AP/Hughes
	Sedimentation Basins	1AP	1AP/Hughes
	Headhouse	1AP	1AP/Hughes
	Chlorine Vault	1AP	K Basins/Truax
119KW	Exh Air Sample Bldg	1AP	K Basins/Truax
166KW	Oil Storage Vault	1AP	1AP/Hughes
1713KW	Warehouse/Shop	1AP	K Basins/Truax
1714KW	Oil/Paint Storage	1AP	K Basins/Truax

Attachment III is a list of the remaining K West facilities that 1AP has agreed to accept as of July 1 1994. If these facilities or components are actively operating to support the mission of Fuel Storage then the K Basins Organization will be responsible for their Maintenance and compliance to applicable requirements.

Attachment II Responsibilities by Building or Area

100K East Area

	FACILITY	OWNER ORG	MANAGING ORG
181KE	River Pump House	K Basins	K Basins/Truax
107KW	Retention Basin	1AP	1AP/Hughes
105KE	Reactor Facility	1AP	1AP/Hughes
	Water Tunnels	1AP	K Basins/Truax
	Basin and Transfer Area	1AP	K Basins/Truax
165KE	Power Control Bldg	K Basins	K Basins/Truax
	Elect switch gear,Control rm	K Basins	K Basins/Truax
190KE	Main Pump House	K Basins	K Basins/Truax
183KE	Clearwells	K Basins	K Basins/Truax
	Filters	K Basins	K Basins/Truax
	Sedimentation Basins	K Basins	K Basins/Truax
	Headhouse	K Basins	K Basins/Truax
	Chlorine Vault	K Basins	K Basins/Truax
119KE	Exh Air Sample Bldg	K Basins	K Basins/Truax
166KE	Oil Storage Vault	1AP	1AP/Hughes
166AKE	Material Storage Bldg	1AP	K Basins/Truax
161KE	Environ Monitor Station	K Basins	K Basins/Truax
1705KE	Eff.Water Trtmnt.	K Basins	K Basins/Truax
1713KE	Shop Bldg	K Basins	K Basins/Truax
1713KER	Warehouse	1AP	1AP/Hughes
1714KE	Oil & Paint Storage	K Basins	K Basins/Truax
1717KE	Maintenance Shop	K Basins	K Basins/Truax
1717AKE	Fan House by 1717	K Basins	K Basins/Truax

UNDERGROUND LINES

167K	Cross Tie Tunnel Bldg	1AP	1AP/Hughes
183K	Pipe Tunnels	1AP	1AP/Hughes
1900K	Underground Lines General	1AP	1AP/Hughes
1900KE	Underground Lines General	1AP	1AP/Hughes
1901K	Water Lines General	1AP	1AP/Hughes
1903K	Sanitary Sewers - General	1AP	K Basins/Truax
1904K	Process Sewer - General	1AP	1AP/Hughes
1904K	Outfall Inst Bldg	K Basins	K Basins/Truax
1905K	Underground Drainage,Sewer	1AP	1AP/Hughes
1905KE	Underground Drainage,Sewer	1AP	1AP/Hughes
1908K	Outfall Structure	1AP	1AP/Hughes
1908KE	Effluent Water Monitoring,St	K Basins	K Basins/Truax
182K	Water Pump House	1AP	1AP/Hughes

LABORATORIES

1706KE	Water Study Semiworks Facl	HAS	HAS/Emory
1706KEL	Development Lab	HAS	HAS/Emory
1706KER	Water Study. Recirculation,	HAS	HAS/Emory

Attachment III is a list of the remaining K EAST and K Area general facilities IAP has agreed to accept as of July 1 1994 If an individual facility or component is being operated to support fuel storage activities then the K Basins Organization will be responsible for their Maintenance and Compliance to applicable requirements.

11-N	Change Room
13-N	Storage Room
100-B/C	Riverlines
100-D/DR	Riverlines
100-F	Riverlines
100-H	Riverlines
100-KE/KW	Riverlines
103-B	Unirrad Fuel Storage-Riggers Loft
103-D	Unirrad Fuel Element (Fresh Metal) Stor
104-B-1	Tritium Vault
104-B-2	Tritium Laboratory
105-B	Reactor & Fuel Storage Basin
105-B	Water Tunnels
105-C	Reactor & Fuel Storage Basin
105-C	Water Tunnels
105-D	Reactor & Fuel Storage Basin
105-D	Water Tunnels
105-DR	Reactor & Fuel Storage Basin
105-DR	Water Tunnels
105-F	Reactor & Fuel Storage Basin
105-H	Reactor & Fuel Storage Basin
105-H	Reactor Basin Fill Removal
105-KE	Reactor
105-KE	Water Tunnels
105-KW	Water Tunnels
105-KW	Reactor
105-N	Reactor Facility
105-N	Fuel Storage Basin
105-NA	Emergency Diesel Building
105-NB	Mechanical Shop Addition
107-N	Recirculation Cooling Building
108-F	Biology Laboratory
108-N	Chemical Unloading Facility
109-N	Heat Exchanger Building
109-NA	Steam & Flow Instrument Building
109-NB	Hydro Power Unit Building
110-KE	Gas Storage Facility
110-KW	Gas Storage Facility
115-KE	Gas Recirculation Bldg
115-KW	Gas Recirculation Bldg

116-B	Exhaust Air Stack
116-B-1	107-B Liquid Waste Disposal Trench
116-B-2	105-B Storage Basin Trench
116-B-3	105-B Pluto Crib
116-B-4	105-B Dummy Decontamination French Drain
116-B-5	108-B Crib
116-B-6A	111-B Crib #1
116-B-6B	111-B Crib #2
116-B-9	104-B-2 French Drain
116-B-10	108-B Dry Well, Quench Tank
116-C-1	107-C Liquid Waste Disposal Trench
116-C-2A	105-C Pluto Crib
116-C-2B	105-C Pluto Crib Pump Station
116-C-2C	105-C Pluto Crib Sandfilter
116-C-3	105-C Chemical Waste Tanks
116-D	Exhaust Air
116-D-1A	105-D Storage Basin Trench #1
116-D-1B	105-D Storage Basin Trench #2
116-D-2	105-D Pluto Crib
116-D-3	108-D Crib #1
116-D-4	108-D Crib #2
116-D-6	105-D Cushion Corridor French Drain
116-D-8	100-D Cask Storage Pad
116-DR	Exhaust Air Stack
116-DR-1	107-DR Liquid Waste Disposal Trench #1
116-DR-2	107-DR Liquid Waste Disposal Trench #2
116-DR-3	105-DR Storage Basin Trench
116-DR-4	105-DR Pluto Crib
116-DR-6	1608-DR Liquid Waste Disposal Trench
116-DR-7	105-DR Inkwell Crib
116-DR-8	117-DR Crib
116-F-1	Lewis Canal
116-F-2	107-F Liquid Waste Disposal Trench
116-F-3	105-F Storage Basin Trench
116-F-4	105-F Pluto Crib
116-F-5	Ball Washer Crib
116-F-6	1608-F Liquid Waste Disposal Trench
116-F-7	117-F Crib
116-F-9	Animal Waste Leaching
116-F-10	105-F Dummy Decontamination French Drain
116-F-11	105-F Cushion Corridor French Drain
116-F-12	148-F French Drain
116-F-13	1705-F Experimental Garden French Drain
116-H-1	107-H Liquid Waste Disposal Trench
116-H-2	1608-H Liquid Waste Disposal Trench
116-H-3	105-H Dummy Decontamination French Drain
116-H-4	105-H Pluto Crib
116-K-1	100-K Emergency Crib
116-K-2	100-K Mile Long Trench

116-KE	Exhaust Air Stack
116-KE-1	115-KE Condensate Crib
116-KE-2	1706-KER Waste Crib
116-KE-3	105-KE Storage Basin French Drain
116-KW	Exhaust Air Stack
116-KW-1	115-KW Condensate Crib
116-KW-2	105-KW Storage Basin French Drain
116-N	Air Stack
117-B	117-B Crib
117-C	117-C Crib
117-D	117-D Crib
117-DR	Exhaust Air Filter Bldg
117-KE	Exhaust Air Filter Bldg
117-KW	Exhaust Air Filter Bldg
117-H	117-H Crib
117-N	Air Filter Bldg Confinement
117-NVH	Valve Control House
118-B-1	105-B Burial Ground
118-B-2	100-B Construction Burial Ground No. 1
118-B-3	100-B Construction Burial Ground No. 2
118-B-4	105-B Spacer Burial Ground
118-B-5	105-B Ball 3X Burial Ground
118-B-6	108-B Solid Waste Burial Ground
118-B-7	111-B Solid Waste Burial Ground
118-C-1	105-C Burial Ground
118-C-2	105-C Ball Storage Tank
118-C-3	105-C Rod Tip Caves
118-D-1	100-D Burial Ground No. 1
118-D-2	100-D Burial Ground No. 2
118-D-3	100-D Burial Ground No. 3
118-D-4	100-D Construction Burial Ground
118-D-5	105-D Ball 3X Burial Ground
118-DR-1	105-DR Gas Loop Burial Ground
118-F-1	100-F Solid Waste Burial Ground No. 1
118-F-2	100-F Solid Waste Burial Ground No. 2
118-F-3	100-F Solid Waste Burial Ground No. 3
118-F-4	115-F Solid Waste Burial Pit
118-F-5	PNL Sawdust Repository
118-F-6	PNL Solid Waste Burial Ground
118-F-7	100-F Miscellaneous Hardware Storage Vault
118-H-1	100-H Solid Waste Burial Ground No. 1
118-H-2	100-H Solid Waste Burial Ground No. 2
118-H-3	100-H Construction Burial Ground
118-H-4	105-H Ball 3X Burial Ground
118-H-5	105-H Thimble Pit
118-K-1	100-K Solid Waste Burial Ground

118-KE-2	105-KE Rod Tip Cave
118-KW-2	105-KW Rod Tip Cave
119-DR	Exhaust Air Sampling Bldg
119-KW	Waste Management
119-N	Air Sampling Monitor
119-NA	Air Sampling Monitor Annex
120-B-1	105-B Battery Acid Sump
120-KE-1	183-KE Filter Water Facility Dry Well
120-KE-2	183-KE Filter Water Facility French Drain
120-KE-3	183-KE Filter Water Facility Trench
120-KE-4	183-KE1 Sulfuric Acid Storage Tank
120-KE-5	183-KE2 Sulfuric Acid Storage Tank
120-KW-1	183-KW Filter Water Facility Dry Well
120-KW-2	183-KW Filter Water Facility French Drain
120-KW-3	183-KW1 Sulfuric Acid Storage Tank
120-KW-4	183-KW2 Sulfuric Acid Storage Tank
124-B-1	Sanitary Waste Site (1607-B1 for 1701-B)
124-B-2	Sanitary Waste Site (1607-B2 for 105-B)
124-C-3	Sanitary Waste Site (1607-B9 for 105-C)
124-D-1	Sanitary Waste Site (1607-D1 for 1701/1709-D)
124-D-4	Sanitary Waste Site (1607-D4 for 115-D)
124-DR-3	Sanitary Waste Site (1607-DR3 for 105-DR)
124-F-1	Sanitary Waste Site (1607-F1 for 1701/1709/1720F)
124-F-2	Sanitary Waste Site (1607-F2 for 105-F/108-F)
124-F-3	Sanitary Waste Site (1607-F3 for 151/182/183-F)
124-F-4	Sanitary Waste Site (1607-F4 for 115-F)
124-F-5	Sanitary Waste Site (1607-F5 for 181-F)
124-F-6	Sanitary Waste Site (1607-F6 for 141B/141C/141F)
124-F-7	Sanitary Waste Site (1607-F7 for 145-FR/1705F)
124-H-1	Sanitary Waste Site (1607-H1 for 105-H/151-H)
124-H-2	Sanitary Waste Site (1607-H2 for 182H/183H/190H)
124-H-3	Sanitary Waste Site (1607-H3 for 184H)
124-H-4	Sanitary Waste Site (1607-H4 for 1701/1709/1720H)
124-K-2	Sanitary Waste Site (1607-K4 for 1717-K)
124-KW-1	Sanitary Waste Site (1607-K6 for 105/115/165-KW)
124-KW-2	Sanitary Waste Site (for 183-KW)
126-B-1	188-B Ash Disposal Area
126-B-2	183-B Clearwells
126-B-3	184-B Coal Pit
126-D-1	188-D Ash Disposal Pit
126-F-1	188-F Ash Disposal Area
126-F-2	183-F Clearwells

126-H-1	188-H Ash Disposal Area
126-H-2	183-H Clearwells
126-K-1	100-K Gravel Pit

128-D-1	100-D/DR Burning Pit
128-F-1	100-F Burning Pit #1
128-F-2	100-F Burning Pit #2
128-H-1	100-H Burning Pit
128-K-1	100-K Burning Pit
130-D-1	1716-D Gasoline Storage Tank
130-K-1	1717-K Gasoline Storage Tank
130-K-2	1717-K Waste Oil Storage Tank
130-K-3	182-K Emergency Diesel Oil Storage Tank
130-KE-1	105-KE Emergency Diesel Oil Storage Tank
130-KE-2	166-KE Oil Storage Tank
130-KW-1	105-KW Emergency Diesel Oil Storage Tank
130-KW-2	166-KW Oil Storage Tank
151-N	230-KV Electrical Substation
153-N	Switch Gear Bldg
163-N	Demineralization Plant Building
163-NA	Waste Pad
165-KW	Power Control Bldg
166-AKE	Waste Management
166-N	Fuel Oil Storage Tank Pumphouse
167-K	Cross Tie Tunnel Bldg
181-N	River Water Pump House
181-NA	Pump House Guard Tower
181-NB	#3 Diesel Enclosure
182-K	Emerg Water Resvr/Pumphouse
182-N	High Lift Pmp House Bldg
183-C	Filter Plant
183-N	Water Filter Plant Building
183-NB	Clear Well Overflow
183-NC	Filter Back Wash Sump
184-N	Plant Service Boiler House
184-NA	Aux. Power Annex Bldg
184-NB	Airhandler Main Bldg
184-NC	Airhandler Annex Bldg
184-ND	Oil Day Tanks

185-D	Development Laboratory
187-C-1	105-C High Tanks
189-D	Mechanical Development Lab
190-C	Pump House
190-D	Main Process Pump House
190-DA	Main Process Pumphouse Annex
190-DR	Main Pumphouse w/N&S Annex
195-D	Vertical Safety Rod Test Tower
202-S	Canyon Bldg (REDOX)
205-A	Silica Gel Facility
207-S	Retention Basin
211-S	Tank Farms
212-N	Storage Bldg
212-P	Storage Bldg
212-R	Storage Bldg
215-C	Gas Preparation Structure
216-B-5	241-B-361 Reverse Well
216-B-7 A&B	241-B-1 Crib
216-B-12	216-ER-Crib
216-S-1&2	216-S-5 Crib
216-S-5	216-S-5 Cavern #1
216-S-6	216-S-6 Cavern #2
216-T-3	241-T-361-A Dry Well
216-T-18	Test Crib for 221 T Building
216-U-8	216-WR-1, 2, 3 Cribs
216-U-10	231 Swamp
216-Z-1 & 2	234-5 No. 1 Crib
216-Z-1A	216-Z-1A Tile Field
216-Z-3	216-Z-3 Culvert
216-Z-7	231-W Crib
216-Z-8	234-5 Recuplex French Drain
216-Z-12	216-Z-12
216-Z-18	216-Z-18
216-A-524	Weir

218-E-7	200 East 222-B Vaults
218-W-7	222-S Vault
221-U	Canyon Bldg (U-Plant)
224-B	Plutonium Concen. Bldg (Storage)
232-Z	Waste Incinerator Facility
233-S/SA	Plut. Concentration Facil.
241-A-431	Tank Farm Ventilation Bldg
241-B-361	Settling Tank
241-C-801	Cesium Loadout Facility
241-CX-70	Tank (Semi-works)
241-CX-71	Tank (Semi-works)
241-CX-72	Tank & Vault (Semi-works)
241-SX-401	Condenser Loadout Facility North
241-SX-402	Condenser Loadout Facility (South)
241-T-361	Settling Tank
241-U-361	Tank
241-WR	Vault
241-WR	Vault (Thorium Storage)
244-UR	Waste Disposal Unit
270-E	Condensate Neutralization Tank
270-E	Neutralization Tank
271-U	Office
276-S-141	Solvent Storage Tank
276-S-142	Solvent Storage Tank
276-U	Solvent Hndlg Fclty (Recovery Tanks)
291-S	Exhaust Fan House & Control Stack
291-S-1	Stack
291-U	Fan House & Filter
292-S	Pumphouse
292-U	Stack Monitoring Station
293-S	Offgas Treatment Fac. (Acid Recov/Treat)
296-S-1	Stack
296-S-2	Stack
296-S-4	Stack

296-S-6	Stack
296-S-7	E Stack
296-S-12	Stack
296-U-1	Stack
296-U-6	Stack
296-U-10	Stack
618-11	Burial Ground
1100-N	Office Bldg
1101-N	Administration Bldg
1102-N	Drafting Office Bldg
1112-N	Guard Station
1112-NA	Microwave Tower Annex
1112-NB	Badge House (SEA) Temporary
1120-N	Storage & Training Facility
1143-N	Carpenter Shop
1300-N	Emergency Dump Basin
1301-N	Old Crib
1303-N	Radio Dummy Burial Facility (Silo)
1304-N	Emergency Dump Tank
1310-N	Chemical Waste Storage Facility
1312-N	LERF (H-1-45007, sht 55)
1313-N	Change & Control Bldg
1314-N	Liquid Waste Disposal Station
1315-N	Reactor Eff. Diversion Sy Val House
1316-N	Valve house
1316-NA	Valve Vault Bldg
1316-NB	Valve House Annex
1316-NC	Valve House Annex

1322-N	Waste Treatment Pilot Plant Facil.
1322-NA	Effluent Water Pilot Plant
1322-NB	Sample Pit
1322-NC	Crib Eff. Iodine Mntrg. Facility
1324	Waste Water Pond
1325	New Crib
1327-N	Valve Vault
1608-B	Facility
1701-BA	Exclusion Area Badge House
1701-FA	Badge House
1702-C	Area Badge House
1702-DR	Area Badge House
1702-N	Vehicle Inspection Bldg
1703-D	Technical Office Bldg
1705-N	Instrument & Elect. Facility
1705-NA	Motor Shop
1706-N	Storage Bldg
1706-NA	Old Sewer & Lift Station
1707-N	Patrol Boat House
1712-N	Insulation Shop & Storage Bldg
1713-C	1713/1714-C Solvent Strge Bldg
1713-D	Instrument & Elect. Develp. Lab
1713-H	Warehouse
1713-KER	Warehouse
1713-KW	Warehouse (Oil & Paint Strg Shed)
1714-N	Stores
1714-NA	Rec/Insp Facility
1714-NB	Tool Storage Shed
1715-N	Oil Storage Tanks
1720-HA	Storage Arsenal
1722-D	Equipment Development Lab
1722-N	Decontamination Hot Shop Bldg

1723-N	Warehouse
1723-NX	Laydown Storage Yard
1724-D	Underwater Test Facility
1734-N	Gas Bottle Storage Bldg
1900-N	Water Supply Tanks
1903-N	Old Septic System
1904-D	Process Sewers Discharge Chamber
1904-N	New Sewage Lagoon
1904-NA	Sewage Lift Station #1
1904-NB	Sewage Lift Station #2
1904-NC	Sewage Lift Station #3
1908-N	Seal Well (Outfall)
2706-S	Storage Bldg (Butler)
2710-S	Facility (Nitrogen Storage)
2711-S	Stack Monitoring Station
2715-S	Oil Storage Facility
2718-S	Sand Filter Samplr Montrg. Sta.
2904-S	Sampler Bldg (Cooling Water)
2904-S-160	Weir
2904-S-170	Weir
2904-S-170	Wier Box
2904-S-171	Weir
2904-S-172	Weir

THIS PAGE INTENTIONALLY
LEFT BLANK

APPENDIX B

Documentation supporting Justification of Mission Need

THIS PAGE INTENTIONALLY
LEFT BLANK

APPENDIX B

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

JUN 13 1995

95-NMD-081

Dr. A. L. Trego, President
Westinghouse Hanford Company
Richland, Washington

Dear Dr. Trego:

K BASINS PATH FORWARD APPROVAL OF MISSION NEED

The K Basins contain 2,100 tons of corroding Spent Nuclear Fuel (SNF) in two unlined concrete basins near the Columbia River. The facilities containing the basins do not have high-efficiency particulate air (HEPA) filtration or negative ventilation and are supported by 1950's vintage equipment. Although the installation of Seismic Barriers has significantly improved the safety of these facilities, they still remain unsuitable for a long-term storage mission. It is, therefore, essential to remove this fuel from the K Basins to safe storage away from the Columbia River.

This issue was studied by WHC and a project was proposed to remove and safely store this fuel. This proposal was concurred with by RL. In November 1994, this proposal was presented to Thomas P. Grumbly, Assistant Secretary for Environmental Management (EM-1) and his concurrence was obtained. The proposed project is documented in the SNF Path Forward Report, Volume 1.

This project has progressed to the point where Approval of New Start and Approval to Commence Title II Design, Key Decisions (KD) 1 and 2 respectively, will be required to support the project in July 1995. I have recently been delegated Acquisition Executive Authority for this project and will consider these Key Decisions at that time. The Approval of Mission Need (KD-0) issues were considered and resolved last year during studies and presentations that culminated in Mr. Grumbly's concurrence in November 1994. Further KD-0 presentation and approval is not required.

Energy Systems Acquisition Authority Board (ESAAB) reviews will be performed at Richland. My staff is in the process of issuing a formal ESAAB procedure.

If you have any questions on these issues, please call me or your staff may call Elizabeth D. Sellers, Director of the SNF Project Office, on 376-7465.

Sincerely,

John D. Wagoner
Manager

NMD:DCB

cc: W. D. Gallo, ICF KH
E. W. Gerber, WHC
J. C. Fulton, WHC
T. B. Veneziano, WHC
M. E. Witherspoon, ICF KH

APPENDIX B

February 14, 1995

MEMORANDUM OF AGREEMENT ON PATH FORWARD FOR K BASIN SNF

This memorandum amplifies direction provided by RL to WHC regarding the K Basin SNF path forward which was forwarded by RL letter 95-AMW-003 dated February 14, 1995.

1. K-Basin fuel removal will commence by 12/1/97 and will be complete by December 1999. This depends on timely approval of schedule enablers transmitted to DOE and appropriate budgets.

2. Significant cost reductions for this project will be attempted. Defensible cost estimates will be prepared and DOE will provide funding necessary to complete the actions. Every attempt will be made to operate within the current FY 1995 through FY 1997 budget projections.

3. The Canister Storage Building (CSB) which was partially constructed for the TWRS Program will be given significant attention as a candidate for storage of K Basin SNF Multi-Canister Overpacks (MCO). WHC will evaluate fully the following:

   a. Cost and schedule to modify the existing design of the building for current work. This will include the cost for design work and cost for construction of the facility.

   b. Cost to design a new facility starting with the completed design and partial construction status of the TWRS CSB. Cost and schedule to complete the CSB in this manner should be evaluated.

   c. RL and WHC will keep the CSB project description as close to the original CSB description as possible.

   d. This facility will be designed to be as simple and inexpensive as possible.

   e. Renaming the Staging and Storage Facility the Canister Storage Building.

4. Maximum effort will be made to couple operation of the stabilization facility as closely as possible with removal of fuel from the K Basins. Therefore, WHC is directed to immediately initiate activities to define the stabilization process and to procure the stabilization facility.

5. WHC should not preclude contracting for transportation services and conditioning services on the basis that this work can be provided by other contractors with WHC providing site integration.

6. The conditioning facility must be co-located with the storage facility. Design of the storage facility must consider that the conditioning

facility design will not be completed until after the storage facility construction is started.

7. WHC Spent Nuclear Fuel Project is assigned full control of the characterization program and will ensure that PNL is on board with all actions planned on the K Basin SNF project.

8. DOE is revising the NOI and will issue the EIS to cover taking the SNF all the way to dry storage. DOE will obtain permission to start the storage facility construction prior to obtaining the EIS ROD.

9. WHC and DOE will establish and approve, via a joint regulatory team, functional and regulatory requirements (including appropriate NRC technical requirements) for the storage facility and MCO designs prior to initiation of design. The process for approval of the requirements will also be established. NRC review of the requirements or implementing designs will not be required, however, WHC/DOE will define how the intent of NRC technical requirements (i.e., NRC licensability) will be demonstrated.

10. At the completion of the current WHC/Fluor conceptual evaluation for design changes to the CSB, WHC should terminate evaluation of the alternative to use pool storage in the storage facility; any further actions on this concept should be pursued only after demonstrating to RL that cost and time savings could be achieved or that safety issues arise. RL desires that temporary storage of SNF in MCOs (in the storage facility) be in damp or water filled MCOs rather than immersion in a pool.

11. WHC is directed to engineer and evaluate a desludging system to be installed in the K Basins. Functions and requirements for this system must strive to eliminate bulk sludge removal at the stabilization facility and minimize further contamination of the existing basins. It is recognized that final requirements for particulate loading in dry stored MCOs have yet to be determined and that sludge removal may not be required.

W. C. Fulton WHC

C. A. Hansen DOE-RL

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

9500961 B

95-AMW-003

FEB 14 1995

Dr. A. L. Trego, President
Westinghouse Hanford Company
Richland, Washington

Dear Dr. Trego:

APPROVAL OF SPENT NUCLEAR FUEL (SNF) PATH FORWARD RECOMMENDATION

Reference:

Memorandum from J. E. Lytle, HQ, to T. P. Grumbly, HQ, "Approval of Path Forward for N-Reactor Spent Nuclear Interim Storage," dated November 9, 1994.

The purpose of this letter is to provide DOE guidance and direction to WHC with regard to implementing the path forward for K Basins SNF. This guidance endorses the evolving approach in which WHC and DOE have collaborated over the past several months and does not represent any redirection of work performed by WHC. The direction addresses matters of project policy, technical approach, budgeting, and scheduling at an overview level. As the project proceeds, subsequent direction will address specific tasks or issues.

This direction is based on the course of action recommended by the enclosed, referenced memorandum from Ms. Jill E. Lytle, Deputy Assistant Secretary for Waste Management, dated November 9, 1994, and approved by Mr. Thomas P. Grumbly, Assistant Secretary for Environmental Management, on November 11, 1994. This course of action was based largely, but not exclusively, on the WHC report Hanford Spent Nuclear Fuel Project Recommended Path Forward, published in October 1994. WHC and DOE actions subsequent to Mr. Grumbly's approval, such as recent budget and schedule decisions, are also reflected in this direction.

RL directs WHC to proceed with the implementation of the SNF Project path forward as follows:

Overall Technical Approach

The main technical program elements of the path forward recommended by WHC and approved by Mr. Grumbly remain in place. The K Basins SNF is to be placed in multi-canister overpacks (MCOs), removed from the basins and transported to a new facility where it will be temporarily staged, then dewatered, dried, conditioned, passivated, and then stored for an extended period. Within this overall approach, however, there are numerous technical issues to be resolved, as discussed in succeeding paragraphs.

Program Phases

RL believes that the most safe, timely, and cost-effective path to interim dry storage is to proceed as directly as possible from the point of packaging SNF in MCOs to the point of drying and conditioning. The current path forward approach includes a period of temporary SNF wet staging in MCOs prior to conditioning with the potential that such wet staging could be of several year's duration. This provision for temporary wet staging was agreed upon by DOE on the basis that it would decouple the schedule to remove fuel from the schedule to design, license, and install the conditioning facility. While continuing to endorse the scheduling flexibility afforded by temporary staging, RL wants to ensure that the program proceeds on a path which achieves dry storage as directly as possible. This necessitates the following actions by WHC:

1. ensure that all aspects of the Program Plan are oriented towards a direct-dry objective, including the National Environmental Policy Act strategy, the acquisition strategy, the program schedule, and the program budget;

2. finalize recommendations to DOE on the product specification for conditioned fuel for extended, stable dry storage. Until resolved, this issue has the potential for requiring a very complex, expensive, and time-consuming conditioning process that would force acceptance of protracted wet staging with all its implications. It is presumed that further conditioning, beyond the scope of this program, may be required after the period of interim dry storage in order to meet the acceptance criteria for ultimate repository storage in effect at that time; and

3. define and include program steps to ensure that once MCOs are loaded in the K Basins, they do not need to be reopened prior to conditioning, and that fuel, sludge, and canisters do not have to be removed. This will require in-basin preparation work on some canisters, such as lid removal and drain hole drilling, and may require some level of desludging in the K Basins.

Resolution of Open Technical Issues

WHC is directed to identify which key technical decisions remain and to propose for each a plan and schedule for resolution which supports the project schedule. The approach should be to achieve technical adequacy. RL believes that early resolution of technical trade-offs permit designs to proceed with limited variables or uncertainties thus saving more time and money.

One trade-off which WHC should resolve as soon as possible is the question of wet versus damp MCO transport and staging. RL believes that either approach is manageable, their positive and negative attributes are known, and the decision does not depend on characterization data or data otherwise not available.

Dr. A. L. Trego
95-AMW-003

Project Schedule

Consistent with Mr. Grumbly's direction and with DOE's assessment of schedule acceleration, RL is establishing December 1, 1997, as the target date for start of fuel removal from K Basins. All program activities should be performed in a manner which supports that target date. WHC is directed to advise RL, explicitly and in a timely manner, of any program decision or action which jeopardizes that date. Further, WHC is directed to revise and submit a proposed project master schedule by March 1, 1995. The schedule must reflect both the accelerated start date and the close-coupled staging/conditioning sequence referenced above.

Project Budget

Because of current DOE budgetary constraints, RL is not considering increased funding for the SNF Project. WHC should therefore plan to accomplish the work scope within the existing budget of $89.1M for FY 1995, $136.0M for FY 1996, and $102.0M for FY 1997. Funding relief at this time is not warranted because: (a) the high level of private commercial interest expressed in this program should, with a sound acquisition strategy, yield attractive pricing for major areas of work; and (b) the project cost estimates from WHC are based on preliminary projections used in comparing path forward alternatives and are significantly conservative in RL's judgement.

Acquisition Strategy

The acquisition strategy for the program will be resolved at the meeting scheduled on February 14, 1995, and the resolution will be confirmed by separate correspondence.

Strategy

DOE has primary responsibility for the development and execution of the strategy. The strategy is as previously defined, except that RL will take steps to ensure that the K Basins Environmental Impact Statement is as open and flexible as possible, to permit the accelerated schedule and close-coupled sequence.

Characterization

Characterization activities must be managed in a way which supports the overall program. RL wants to ensure that characterization work strictly satisfies the needs of the SNF Project and not broader research and development objectives outside the program's scope. WHC is directed to ensure that characterization requirements are technically well defined, clearly linked to program needs, and identified in a timely manner. RL will work with WHC to establish a management system for characterization work that focuses on the SNF Project.

United States Government Department of Energy

memorandum

DATE: NOV 09 1994

REPLY TO ATTN OF: EM-36

SUBJECT: Action: Approval of Path Forward for N-Reactor Spent Nuclear Fuel Interim Storage

TO: Thomas P. Grumbly, Assistant Secretary for Environmental Management

ISSUE:

The current fuel storage condition at the K-Basins is not satisfactory. The fuel must be stored in a manner which is safe, protective of the environment, economical to maintain, and stable for an extended period.

BACKGROUND:

About 2100 metric tons of uranium Spent Nuclear Fuel (SNF) (80 percent of the Department of Energy's [DOE's] SNF inventory) are presently stored in the Hanford K-Basins. K-Basins is an old (1950's) facility, vulnerable to seismic damage, and located near the Columbia River. K-East Basin currently may be leaking small quantities of water and has leaked larger quantities in the past. Much of the stored fuel is damaged and continues to degrade. The K-Basins were not intended, and are not suitable, for extended SNF storage. This SNF storage problem has been recognized by DOE, the Defense Nuclear Facilities Safety Board, and the stakeholders as one requiring prompt resolution.

DOE staff and contractors have examined this matter and formulated a recommended path forward. The purpose of this memorandum is to secure endorsement of this path and to identify follow-on actions and decisions needed to implement it.

SENSITIVITIES:

Among the factors to be taken into account in establishing a path forward, the following are particularly important:

- The Tri-Party Agreement (TPA) established a target date of December 2002, to remove the K-Basins fuel and sludge away from their present location. The TPA also requires that a "Change Request" proposing enforceable milestones be submitted by June 1996.
- The recommended course of action assumes that SNF is not a Resource Conservation Recovery Act hazardous waste. This issue is not yet settled. If fuel were later determined to be a hazardous waste, the cost of the proposed action and its alternatives and their scheduled completion would be effected.

FEB 1 4 [illegible]

RL understands that, in the early stages of a program of this magnitude, there is substantial cost, schedule, and technical uncertainty. Nevertheless, RL regards the above direction as clear and as the basis on which WHC is now to proceed. RL appreciates the strong support of WHC and looks forward to a fully successful collaboration on the SNF Project.

If you have any questions about this direction, please contact me on (509) 376-7434, or your staff may contact Mr. Jeet Mehta, of my staff, on (509) 376-9252.

Sincerely,

C. A. Hansen, Assistant Manager
for Waste Management

AMW:JM

Enclosure:
Memorandum from J. E. Lytle, HQ, to T. P. Grumbly, HQ, "Approval of Path Forward for N-Reactor Spent Nuclear Fuel Interim Storage," dated November 9, 1994.

cc w/encl:
J. C. Fulton, WHC

- The period of interim storage would be consistent with decisions resulting from the Idaho National Engineering Laboratory (INEL) Programmatic SNF Environmental Impact Statement (EIS), or until decisions are made regarding SNF ultimate disposition. The recommended path forward would provide decision making flexibility for storage and ultimate disposition that would accommodate the outcome of the INEL Programmatic SNF EIS Record of Decision (ROD) scheduled for issue in June 1995.
- The current cost and schedule projections are rough estimates. They will be refined during the next stage of work.

STAKEHOLDER ASSESSMENT:

Ongoing consultation and dialogue with local and regional Hanford stakeholders, including the Hanford Advisory Board (HAB), regulators, and affected tribes, indicate broad support of expedited removal of fuel and sludge from the K-Basins and away from the Columbia River.

Initial reactions to the proposed path forward have been very positive. The specific recommended approach was discussed with the HAB on November 3, 1994, and meetings with other stakeholders and tribes will be scheduled shortly. Broad public involvement will be afforded through the National Environmental Policy Act (NEPA) process.

OPTIONS:

A full range of options is being considered, including:

- Containerization and storage in K-Basins, followed by conditioning and interim dry storage
- Pre-interim storage in new wet storage facility, followed by conditioning and interim dry storage
- Near term conditioning, then interim dry storage
- British Nuclear Fuels Limited's foreign processing, then interim storage of processed products
- Variations within and among the alternatives

Each option has merit. The comparative evaluation was performed by the Westinghouse Hanford Company, and further reviewed by DOE-RL and DOE-HQ.

PROPOSED OPTION:

The proposed course of action incorporates the best features of the options under consideration. It includes a technical approach, an environmental/regulatory strategy, and a management approach, as follows:

- Technical Approach. The SNF would be placed in overpacks and removed from the K-Basins on an accelerated basis. It would be staged temporarily in the overpacks (either wet or damp inerted), in a new storage facility. It would then be moved to a new conditioning facility, where it would be dewatered, dried, dehydrided, and passivated, and then returned to the same new storage facility for dry storage pending its ultimate disposition.

  The technical basis for conditioning and dry storage would be confirmed via a high priority characterization and test program.

- Environmental/Regulatory Strategy. Packaging, transfer and wet staging of the SNF would be conducted under a K-Basins EIS. Necessary testing, design and procurement of critical path items would be done in parallel. The conditioning and dry storage would be conducted under the Hanford SNF EIS, for which the ROD is scheduled for issue in June 1996. Note that the near-term critical path activities are largely common for the alternatives being considered. Even if an alternative to the proposed action were selected, little effort would be wasted.

- Management Approach. While the overall approach is not finalized, the intent would be to utilize commercial experience and marketplace competition to achieve best cost and shortest schedule. Proven, commercially available systems and components would be used to the greatest extent possible.

  Consideration would be given to using competitively awarded design/build contracts for major blocks of work (overpacks, transfer casks, conditioning, and storage facilities), along with more innovative approaches, such as privatization of all or part of the work.

- Preliminary schedule projections would include start of fuel removal from the K-Basins in late 1998; complete fuel removal by November 2000; and begin placing fuel in dry storage in late 2001 and complete in 2006. Rough order magnitude life-cycle cost estimate is $1 billion, which is about $150 million above the previous plan through the year 2000. Efforts would continue to reduce the cost and improve the schedule.

The main attributes of the proposed course of action are:

- Rapid removal of SNF from the K-Basins and away from the river
- Stable and economical dry storage, during the period of interim storage
- High confidence in the safety and stability of the stored fuel, based on conditioning and defense-in-depth packaging
- Expedited NEPA strategy, with parallel critical path work
- Potential for attractive cost and schedule

NEXT STEPS:

Following approval of this approach, high priority actions are as follows:

- A NEPA implementation plan must be developed, building on the strategy outlined herein; the K-Basins EIS must be prepared as soon as possible. A Notice of Intent for the K-Basins EIS will be issued by December 31, 1994.
- Critical path work such as testing, design and procurement could proceed in parallel with NEPA review without prejudicing the consideration of alternatives to the proposed action, and consistent with applicable regulatory requirements.
- The technical aspects of the proposed approach must be refined. Based on that work, technical requirements, application of NRC regulatory guidelines, procurement specifications, and requests for proposal must be prepared and issued, on an expedited basis.
- The management strategy must be evaluated and decided upon. HQ support will be provided to enable innovative approaches, if chosen. Integral to this is an acquisition strategy; WHC will provide a recommendation by December 1, 1994.
- A focused, effective and expedited characterization and testing program must be formulated and executed. Fuel characterization would be initiated by March 30, 1995.
- Based on all the above, an aggressive but achievable program cost and schedule must be formulated, approved, and implemented.
- Immediate Fiscal Year 1995 budget needs must be addressed; a reprogramming proposal within the Hanford Site budget is being developed. A change request will be submitted by December 1, 1994
- Formal stakeholder involvement input on the path forward to implementation will be completed by December 1, 1994.

5

RECOMMENDATIONS:

Approve the proposed path forward, including the technical approach, the environmental/regulatory strategy, and the general management approach to support the high priority actions listed above. In particular, management should endorse critical path work, as described above, to proceed in parallel with the NEPA process.

Jill E. Lytle
Deputy Assistant Secretary
for Waste Management
Environmental Management

APPROVE: ______

DISAPPROVE: ______

DATE: 6/9/94

United States Government Department of Energy

memorandum

DATE: DEC 2 8 1994

REPLY TO ATTN OF: EM-30

SUBJECT: Status on K-Basins Path Forward

TO: Thomas P. Grumbly, Assistant Secretary for Environmental Management

On November 2, 1994, you approved a path forward for the removal, packaging, conditioning, and storage of spent nuclear fuel (SNF) currently in the Hanford K-Basins, as documented in a memorandum dated November 9, 1994. We are now implementing that plan. This memorandum is to advise you of our progress, conclusions, and near-term actions in several important areas, as follows.

Schedule Acceleration

The Westinghouse Hanford Company (WHC) baseline schedule for path forward activities, in the above referenced memorandum, projected start of fuel removal from the K-Basins in December 1998. You directed that we evaluate possible schedule acceleration, with the objective of starting fuel removal by June 1997.

WHC has evaluated the potential for and implications of path forward schedule acceleration, and they presented their conclusions to our Department of Energy (DOE) team on December 12, 1994. In summary, they concluded that further schedule acceleration is possible if, and only if, significant improvements are effected to the process for planning, funding, managing, and implementing this large project, compared with DOE standard practice. A summary list of proposed process improvements is attached.

In WHC's view, even with the suggested process improvements, an 18-month acceleration in the start of fuel removal is unlikely (although possible); shorter but significant schedule improvement, however, is much more likely. In summary, WHC's analysis quantifies the probability of schedule acceleration as follows:

- 18-month improvement - 10 percent probability
- 12-month improvement - 80 percent probability
- 8-month improvement - 95 percent probability

The WHC schedule analysis has just been completed using Monte Carlo probability techniques and has not yet been reviewed in detail by DOE.

Importantly, WHC points out that without significant process improvements, consistent with the urgent nature of the K-Basins problem, even the baseline schedule would be difficult to achieve. WHC will prepare a very specific list of actions needed (e.g., the identification of specifically referenced sections of DOE Orders for which exemptions will be required), on which we will agree, and will then become the basis for action.

Schedule acceleration will require higher costs in the near term, but will be offset in the long term by cost savings from significant reduction of fixed operating costs at the K-Basins. We are working with DOE Richland Operations Office (RL) to refine these cost estimates.

Note also that the examinations to date have focused on the potential for accelerating the start of fuel removal from the K-Basins. An important related evaluation is the potential to achieve downstream schedule improvements. We believe there may be strong potential to improve durations, sequences, or schedule interdependencies, particularly to the staging and conditioning of the SNF, and reach the dry interim storage condition much earlier than the projected 2006 date. We will pursue that schedule issue with WHC, once the front-end schedule is established.

Project Office

Central to achieving the process improvements outlined above, is the establishment of a DOE Project Office in Richland, WA. WHC strongly endorses this approach, and we concur that it is essential to have a dedicated and focused DOE team to manage this project. We have reached agreement in principle with DOE RL management on this point, and will be looking to the affected Headquarters organizations for support in putting such an organization in place.

Acquisition Strategy

WHC was charged with evaluating options and preparing a recommended acquisition strategy by December 1, 1994. They have done so, and we reviewed their recommendations on December 12, 1994. In summary, WHC identified a range of possible options, of which three primary ones were considered by DOE and WHC as deserving further consideration. The first of these, and the one currently favored by WHC, would involve four major contracts (for multi-canister overpacks, transportation system, staging and storage facility, and conditioning facility), with WHC as the integrator/project manager. The other two options would involve two major contracts or one comprehensive contract. These latter two options would also allow the possibility of privatization.

After deliberation, we conclude that further, more specific evaluation is needed before a sound decision can be made on an issue of such importance. On that basis, we have agreed upon the following plan of action.

1. In order to ensure that we can take full advantage of the marketplace, WHC will survey prospective bidders to assess available commercial designs and obtain procurement suggestions for schedule improvement.

2. WHC will further refine the three procurement options. The next key step in this regard will be the rapid development of "skeleton" or outline versions of procurement specifications which would be employed in each case. These skeleton specifications will identify such considerations as scope, performance standards, constraints, deliverables, contract interfaces, prerequisites, etc. These can then be used as a basis for more meaningful assessment of the relative

schedule implications of the three options, both in terms of the time required to prepare and issue Requests for Proposals and the anticipated schedule duration for the contained scope.

Based on (1) and (2) above, we will revisit the acquisition strategy question with WHC and make a final decision.

In parallel with this continued evaluation, WHC will proceed with the engineering work needed to support their recommended acquisition strategy, to ensure that no time is lost on the overall schedule. We believe that this front-end technical work is essentially the same for all three options, and therefore, continued work will neither jeopardize the schedule nor bias the decision.

Subsequent to our meeting with WHC on December 12, 1994, two other possibilities have been identified which may have cost and schedule advantages. These are:

- Utilizing the existing design of the vitrified waste storage facility at Hanford. In addition to the design, the foundation and some underground utilities were installed before the project was halted.

- Utilizing the existing high level waste transport cask design.

WHC has been asked to include these additional possibilities in their evaluation. WHC will complete the evaluation and recommend a procurement strategy by January 16, 1995.

Funding Issues

For Fiscal Year (FY) 1995, a reprogramming action is needed to provide capital funds for the K-Basin procurement that is scheduled in FY 1995. DOE RL is determining the amount required for the K-Basin reprogramming so that it can be included with the DOE reprogramming request now in preparation.

For FY 1996, the accelerated schedule for K-Basins requires approximately $124 million as compared to $63 million previously submitted to the Office of Management and Budget (OMB) and $102 million for the path forward approved in November. DOE RL is adjusting their FY 1996 budget in accordance with the OMB passback and your instructions and will allow for the required $124 million for the K-Basins accelerated schedule. This required amount will be refined. DOE RL is considering moving $6 million of work scope from FY95 to FY96 because of FY95 funding constraints.

If you have any questions or require additional information, I can be reached at 202-586-0370, or contact Mr. Frank Cole, of my staff, at 202-586-2273.

Jill E. Lytle
Deputy Assistant Secretary
for Waste Management
Environmental Management

Attachment

APPENDIX B
Summary List of Process Improvements Needed

- Exemptions from certain requirements associated with DOE Orders (e.g., 4700.1, 5480.23); use of NRC technical requirements and industry standards.
- Innovative and expedited contracting and acquisition strategies including combined engineering and construction contracts, and incentive contracts.
- Project organizational approach.
- Expedited operational readiness review process.
- Safety and environmental documentation, preparations, review, and approvals conducted in a fashion that does not delay design and construction schedules.
- Expedited capital project authorization.

APPENDIX C

Delegation letters

APPENDIX C

EM-60
DALTON

The Secretary of Energy
Washington, DC 20585

June 5, 1995

MEMORANDUM FOR THOMAS P. GRUMBLY
ASSISTANT SECRETARY FOR ENVIRONMENTAL MANAGEMENT

JOHN D. WAGONER
MANAGER, RICHLAND OPERATIONS OFFICE

FROM: HAZEL R. O'LEARY *Hazel R O'Leary*

SUBJECT: DELEGATION OF ACQUISITION EXECUTIVE AUTHORITY FOR THE HANFORD K-BASINS SPENT NUCLEAR FUEL PROJECT

I am delegating Acquisition Executive authority to John D. Wagoner, Manager, Richland Operations Office, for the Hanford K-Basins Spent Nuclear Fuel Project. Mr. Wagoner may not redelegate acquisition authority. The project is comprised of the following systems: multi-canister overpacks; transport system; staging and storage facility; and stabilization facility. Delegation is subject to the following:

1) That the estimated Total Project Cost does not exceed $400 million; and if the Total Project Cost is projected to exceed $400 million, only decisions "Start Detailed Design" and "Start Construction" would continue to be delegated.

2) The Office of Environmental Management will work closely with Richland in the preparation and implementation of the local Energy Systems Acquisition Advisory Board, Change Control Board, and good business practices identified in Department of Energy Order 4700.1. Additionally, waivers to existing project management procedures outlined in Department of Energy Order 4700.1 are not authorized. The Offices of Field Management, Environment, Safety, and Health, and Policy, and other offices will assist.

3) The Office of Environmental Management shall closely monitor the project in the near-term via monthly project reviews. They will be assisted by the Offices of Field Management, Environment, Safety, and Health, and Policy. Mr. Wagoner will brief the Secretarial Energy Systems Acquisition Advisory Board periodically as appropriate.

4) Independent Cost Estimate(s) will be performed at the appropriate time.

cc: Sellers
Bryson
Sullivan
Hanson
File

OPTIONAL FORM 99 (7-90)
FAX TRANSMITTAL # of pages ▸ 1

To BETH SELLERS	From HANK DALTON
Dept./Agency	Phone #
Fax # 372 9837	Fax #

GENERAL SERVICES ADMINISTRATION

DOE F 1325.8 (8-89) EFG (07-90)

United States Government

Department of Energy

memorandum

DATE: July 20, 1995

REPLY TO ATTN OF: EM-36

SUBJECT: Concurrence with K-Basins Spent Nuclear Fuel Project Policy on Nuclear Safety Requirements

TO: Manager, DOE Richland Operations Office

As requested in your subject memorandum dated May 24, 1995, I am concurring with the K-Basins Spent Nuclear Fuel Project Regulatory Policy and its implementation using an Independent Review Panel. This policy has been reviewed and concurred with by the Office of Environment, Safety and Health.

In implementing this policy, the Richland Operations Office must ensure that the processes and requirements are both technically defensible and cost-effective.

If you have any questions, please contact me at 202-586-7710.

Thomas P. Grumbly
Assistant Secretary for
Environmental Management

APPENDIX C

K BASIN SPENT NUCLEAR FUEL PROJECT - REGULATORY POLICY

Introduction

The Department of Energy (DOE) has established a program to move the Spent Nuclear Fuel (SNF) presently stored in K Basins to a new storage facility located in the 200 East Area of the Hanford Site. New facilities will be designed for safe conditioning and interim storage of the fuel.

The purposes of this document are to establish the DOE policy regarding regulatory requirements for the design and construction of the new facilities, to define terms, to identify key roles and responsibilities, and to outline the overall approach to be followed in implementing this regulatory policy.

DOE Policy for Safety of New Facilities

It is DOE's policy that the K Basin Spent Nuclear Fuel Project (SNFP) will achieve nuclear safety equivalence to comparable Nuclear Regulatory Commission (NRC)-licensed facilities. This will be accomplished by applying technical requirements based on those applied by the NRC to comparable licensed facilities and by adopting appropriate features of the NRC licensing process, in addition to applicable DOE Orders and requirements.

Policy Objectives

DOE has established this policy for three primary reasons:

- To achieve a set of requirements that are technically defensible and cost-effective.
- To achieve in the design and construction of new SNFP facilities a level of nuclear safety comparable to that of NRC licensed commercial nuclear facilities.
- To enhance public understanding and confidence in the safety of the new facilities by following an enhanced regulatory strategy.

APPENDIX C

Definitions

1. Safety Equivalence to NRC-Licensed Facilities

For the purpose of this policy, "safety equivalence to NRC-licensed facilities" is established for SNFP facilities by conformance to technical and administrative requirements as follows:

- Technical requirements which meet the nuclear safety objectives of NRC regulations for fuel treatment and storage facilities. These include requirements regarding radiation exposure limits, safety analysis, design and construction.

- Administrative requirements which meet the objectives of the major elements of the NRC licensing process. These include formally documented design and safety analyses, independent technical review, and opportunity for public involvement.

2. NRC Requirements for Comparable Facilities

The term "requirements" means design and construction measures which are specifically mandated by NRC regulations. Regulatory guidance and precedents, which are illustrative of implementation of the regulations, are considered optional rather than mandatory. The term "comparable facilities" in this case means SNF treatment and storage facilities.

APPENDIX C

Responsibilities

Overall DOE safety authority is held by the Secretary of Energy; for the K-Basin SNFP this authority is delegated to the Manager, RL. For implementation of this policy, roles and responsibilities are as outlined in the following table:

REGULATORY FUNCTION	RESPONSIBILITY	VEHICLE
Approval of this Policy	^ RL approve ^ EM, and EH concur	Action Memorandum
Develop Regulatory Requirements	Contractor, with Regulatory Requirements Team (RRT)	Requirements identification process
Approve Regulatory Requirements	^ RL approve ^ EM, and IRP concur ^ EH-O[2]	Regulatory Requirements Document, approved and controlled
Prepare and Issue Safety Analysis Report (SAR) and Technical Safety Requirements (TSRs)	^ Contractor prepare ^ RL-SNFP review and issue	SAR/TSR transmittal
SAR Technical Review	^ RL Technical Review Team[1] ^ EH-O[2] ^ IRP	Report documenting review process, findings, and resolution
SAR Approval	^ RL approve ^ IRP concur	Approval Memorandum
Operational Readiness Review (ORR) and authorization to operate	^ EH-O[2] ^ RL authorize operation	Action Memorandum based on readiness review
Public and Interested Group Reviews	SNFP	SNFP Communication Strategy
Inspection and Enforcement	EH	Inspection plan

[1] *The RL Technical Review team will be convened by RL's Office of Quality, Safety, and Health (RL-QSH) and will include technical specialists in the field of facility nuclear safety, from EH-T and other organizations as appropriate.*

[2] *Within EH, two organizational units serve separate and distinct functions. One of these, designated as EH-T, provides technical support; the other, designated as EH-O, provides independent oversight.*

APPENDIX C

The Process

This policy is to be applied to matters of nuclear safety (including radiological control issues) for new SNFP facilities. Its primary focus is on design and construction issues, and preparation for operations. The policy does not apply to environmental, OSHA, chemical accident safety, and other non-nuclear safety issues. (These are covered elsewhere by DOE Orders and statutory requirements.) Similarly, the kinds of life-of-facility oversight (e.g., operator training, performance assessment) applied by the NRC to their licensed facilities are not covered by this policy.

The major elements of the process are as follows:

- Proposed regulatory requirements will be developed by the contractor with the help of a Regulatory Requirements Team (RRT) comprised of individuals thoroughly familiar with the NRC and DOE regulatory requirements. DOE-RL will approve the requirements, with EM, EH, and IRP concurrence.

  The requirements development process will include high level screening of NRC regulations (10 CFR parts 0-199) to select those applicable to the SNF facilities, comparison with DOE requirements to identify significant areas of difference, and compilation of the composite set of requirements to be applied to the SNFP. NRC regulatory guidance will be used as needed to clarify the intent of those regulations and to provide insight into suitable methods of implementation. Engineering analysis will be utilized where necessary to develop new (or modified) requirements in areas where neither NRC or DOE requirements explicitly address K Basin SNFP technical issues.

- A Safety Analysis Report (SAR) and Technical Safety Requirements (TSRs) will be developed, formally documenting the proposed SNFP design implementation of the established requirements. The SAR and TSRs will be submitted by Contractor to the RL Technical Review Team and the IRP for review and comment.

- DOE independent oversight of this process will be provided by EH Oversight (EH-0). EH-0 will perform the responsibilities outlined in DOE Order 5480.23 (Safety Analysis Report) and DOE 5480.31 (Start up and Restart of Nuclear Facilities).

- EH technical support (EH-T) will provide technical support resources to supplement the resources of DOE-RL and EM in the development and review or safety documentation and technical requirements.

- Based on successful results, DOE-RL will authorize construction (KD-3), and then operation (KD-4), of the facilities, in accordance with DOE Order 4700.1.

DOE requirements are not set aside or superseded by this process; rather, along with applicable NRC regulations, they comprise the basis for SNFP facility design and construction.

Independent Review Panel

Beyond the independent oversight afforded by the DOE-EH involvement in the project as outlined above, an Independent Review Panel (IRP) will be convened by DOE to provide high level, external oversight of the implementation of this policy.

It is anticipated that this IRP will comprise three members selected for their stature, technical capability and experience applicable to the SNFP, and supported by staff as required. The IRP charter will include:

- evaluation and concurrence with the SNFP regulatory approach and methodology.
- evaluation and concurrence with the technical requirements established by the project.
- evaluation and concurrence with the SAR
- advice to DOE-RL, with respect to final approval to operate the SNFP facilities.

The IRP's input must be considered and formally resolved by the Manager, RL, as a prerequisite to finalization of requirements, approval of the SAR, and authorization to operate facilities.

Conclusion

The intended outcome of this policy is to ensure that SNFP designs meet the nuclear safety objectives of the applicable NRC requirements. Rugged, conservative designs, with clear capability to accommodate postulated accidents, will provide the best confidence that the SNFP designs are equivalent to NRC licensed ones, from a nuclear safety standpoint.

United States Government Department of Energy

memorandum

DATE: September 7, 1995

REPLY TO ATTN OF: Office of NEPA Policy and Assistance:Lichtman:6-4600

SUBJECT: Delegation to the Richland Operations Office of Approval Authority for Two Environmental Impact Statements (EISs)

TO:

Thomas P.Grumbly
Assistant Secretary
Environmental Management

In accordance with your request (per your memorandum to me of September 1, 1995), and after consulting the Office of General Counsel, I hereby delegate approval authority for the Plutonium Finishing Plant Stabilization at the Hanford Site EIS and the Management of Spent Nuclear Fuel from the K-Basins at the Hanford Site EIS to the Manager of the Richland Operations Office. These decisions were influenced by your expressed confidence in Richland's ability to properly manage execution of these EISs and your assurance that Environmental Management will be meaningfully involved. For the K-Basins EIS, we also concluded that delegation of EIS approval authority was appropriate in light of the Secretary's delegation of Acquisition Executive authority to Richland.

Finally, I note that Environment, Safety and Health staff have provided substantial support to the preparation of these EISs to date. We intend to continue such assistance as Richland may request, consistent with our other priorities.

Tara O'Toole M.D., M.P.H
Assistant Secretary
Environment, Safety and Health

cc: W. Dennison, GC-61

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ▸

To Ben Burton From Hitesh Nigam

Dept./Agency Phone #

Fax # 509-373-4274 Fax #

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION