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		Design Authority	1	1	FDH Prod. Dir. 8/27/98 A3-93
		Design Agent			
1	1	Cog.Eng. R. J. Parazin 8/27/98 - B3-97			
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		QA			
		Safety	1	1	DOE PROJECT MANAGER T.R. HEBERTHORN 8/28/98
		Env.			

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R. J. Parazin 8/27/98 Signature of EDT Originator Date	R. W. Root 8/27/98 Authorized Representative for Receiving Organization Date	P. A. Haine 8/27/98 ~~Design Authority~~/ ~~Cognizant Manager~~ P.M. Date	[ ] Approved [ ] Approved w/comments [ ] Disapproved w/comments

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Tank Waste Remediation System Privatization Phase 1 Infrastructure, Project W-519, Project Execution Plan

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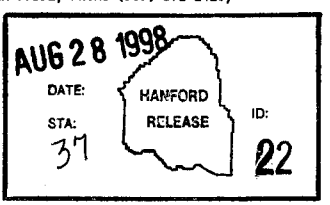
Abstract: This Project Execution Plan (PEP) defines the overall strategy, objectives, and contractor management requirements for the execution phase of Project W-519 (98-D403), "Privatization Phase 1 Infrastructure Support," whose mission is to effect the required Hanford site infrastructure physical changes to accommodate the Privatization Contractor facilities. This plan provides the project scope, project objectives and method of performing the work scope and achieving objectives. The plan establishes the work definitions, the cost goals, schedule constraints and roles and responsibilities for project execution. The plan also defines how the project will be controlled and documented.



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TANK WASTE REMEDIATION SYSTEM PRIVATIZATION PHASE 1 INFRASTRUCTURE, PROJECT W-519, PROJECT EXECUTION PLAN

August 1998

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Prepared for
U.S. Department of Energy
Richland, Washington

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EXECUTIVE SUMMARY

Purpose and Scope of Project Execution Plan

This Project Execution Plan (PEP) defines the overall strategy, objectives, and contractor management requirements for the execution phase of Project W-519 (98-D403), "Privatization Phase I Infrastructure Support," whose mission is to effect the required Hanford site infrastructure physical changes to accommodate the Privatization Contractor (PC) facilities. The PEP was developed using guidance contained in GPG-FM-010, Project Execution and Engineering Management Planning. In addition, the PEP meets the intent of applicable U.S. Department of Energy (DOE) Good Practices Guides, U.S. Department of Energy, Richland Operations Office (RL) Implementing Directives, and Hanford Site Management Directives and Implementing Procedures. The PEP is a contractor and RL approved plan detailing the project management requirements and approach.

This plan provides the project scope, project objectives, and method of performing the work scope and achieving objectives. The plan establishes the work definitions, the cost goals, schedule constraints, and roles and responsibilities for project execution. The plan also defines how the project will be controlled and documented. The project management system described in this PEP is based on graded application of effective management practices suitable for the size and complexity of the project, and the new DOE contract administration approach. The PEP will be reviewed yearly for changes and updates to execution approach or project data.

Background

In 1992, DOE created the Tank Waste Remediation Systems (TWRS) program to provide focus on final disposition of all the tank waste. The TWRS mission is to store, treat, and immobilize tank waste in an environmentally sound, safe, and cost-effective manner. The TWRS program activities include receiving, storing, monitoring, retrieving, treating, and immobilizing tank waste. The TWRS program is also responsible for permanent disposal of low-activity waste and interim storage of high-activity waste material.

In 1995, DOE developed an approach for acquiring new TWRS facilities with acquisition to occur in two phases. Phase 1 is the demonstration phase and Phase 2 is the production phase. Phase 1 would treat only 6 percent to 13 percent of the waste and Phase 2 would treat the remainder. The approach also involves contracting with the private sector for treatment and immobilization services. A PC would finance, design, build, and operate the new facilities. The PC maintains ownership of the facilities and provides a waste treatment service (delivered product) to DOE. DOE provides the land for the PC to build on and the ties into Hanford's infrastructure. At this point DOE plans to have one PC providing Phase 1 services located close to the AP tank farm in the 200 East Area. Even though Phase 1 is called a demonstration phase, the facilities will be operating up to 11 years and are considered permanent facilities.

As part of the contract with the PC, DOE will provide electricity, raw water, sanitary water, roads, and a building site. In addition DOE will accept, within limits, potentially radioactive/dangerous liquid effluents and non-radioactive/non-dangerous liquid effluents. This project will design and construct the electrical, water, roads, and liquid effluent systems required including modifications to existing site systems. This project will also prepare the site for the PC. The specific allocation of power, water flow, and liquid effluent capacity has been established in design requirements documents, interface documents, and the PC contract.

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CONTENTS

LIST OF FIGURES

LIST OF TABLES

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LIST OF TERMS

AE-CM	Architect engineer-construction management contractor
AIP	Acceptance Inspection Plan
ATP	Acceptance Test Procedure
BHI	Bechtel Hanford Inc.
BPA	Bonneville Power Administration
CD	Critical Decision
DESH	DE&S Hanford, Inc.
DOE	U.S. Department of Energy
DRD	Design Requirement Documents
DYN	DynCorp
ECN	Engineering Change Notice
ERC	Environmental Restoration Contractor
ETF	Effluent Treatment Facility
FDH	Fluor Daniel Hanford
FDNW	Fluor Daniel Northwest
FM	Office of Field Management
HQ	U.S. Department of Energy-Headquarters
HPT	Health Physics Technician
IPT	Integrated Product/Process Teams
IC	Infrastructure Contractor
ICD	Interface Control Document
LERF	Liquid Effluent Retention Facility
LMSI	Lockheed Martin Services, Inc.
MAR	Mission analysis report
MC	Managing Contractor
MYWP	Multi-Year Work Plan
NCR	Nonconformance reports
NEPA	*National Environmental Policy Act of 1969*
NHC	Numatec Hanford Corporation
OAC	Official Acceptance of Completion
OC	Operations Contractor
OPC	Other project cost
PC	Privatization Contractor
PEP	Project Execution Plan
PHMC	Project Hanford Management Contract
PM	Project Manager
PO	Project Office
QAPP	Quality Assurance Program Plan
QC	Quality Control
RAM	Reliability, availability, and maintainability
RL	U.S. Department of Energy-Richland Operations Office

LIST OF TERMS (CONTINUED)

SAC	Safety Analysis Contractor
SOW	Statement of Work
S/RIDS	Standards/Requirements Identification Documents
TEC	Total estimated cost
TEDF	Treated Effluent Disposal Facility
TPC	Total project cost
USQ	Unreviewed Safety Question
TWRS	Tank Waste Remediation System
WBS	Work Breakdown Structure
WIT	Waste Integration Team
WMC	Waste Management Contractor
WMH	Waste Management Federal Services of Hanford Inc.

TANK WASTE REMEDIATION SYSTEM PRIVATIZATION PHASE 1 INFRASTRUCTURE, PROJECT W-519, PROJECT EXECUTION PLAN

1.0 PROJECT OBJECTIVES

1.1 PROJECT PURPOSE

This project executes the design, procurement, construction, startup, and turnover activities for infrastructure supporting the Tank Waste Remediation System (TWRS) Phase 1 privatization project. The infrastructure includes new and modified facilities conceptualized and reported in the following documents:

- *Summary Conceptual Design report for Tank Waste Remediation System Privatization Phase I Infrastructure Support, Project W-519*, HNF-1938 (Singh and Fort 1997)
- *Electrical Power System, Conceptual Design Report*, HNF-SD-W503-CDR-001 (Singh 1997a)
- *Raw and Potable Water, Conceptual Design Report*, HNF-SD-W504-CDR-001 (Singh 1997b)
- *Site Development and Roads, Conceptual Design Report*, HNF-SD-W505-CDR-001 (Singh 1997c)
- *Liquid Effluent Transfer System, Conceptual Design Report*, HNF-SD-W506-CDR-001 (Singh 1997d).

1.2 TECHNICAL OBJECTIVES

The technical objectives have been developed through a series of engineering studies that utilized interface control requirements established by contract for the privatization contractor. These engineering analyses documented the project's technical baseline in the form of Design Requirement Documents (DRDs). In addition, these DRDs reflect the decomposition of the TWRS Functions and Requirements document, the U.S. Department of Energy-Richland Operations Office (RL)/Privatization Contractor (PC) contract DE-AC06-96RL13308, and an Inter-project Interface Control Document (ICD) associated with other related TWRS projects. Noted below are the DRDs and the ICDs that form the current technical basis for performing the design. Further change of this technical basis is expected as a result of amendment/modification to the noted RL/PC contract and/or guidance from RL through a directed change or the Multi-Year Work Plan (MYWP) process.

Design Requirement Documents

- *Design Requirement Document for Phase I, Privatization Electrical Power Systems*, WHC-SD-WM-DRD-011, Rev. 1 (Singh et al. 1996)
- *Design Requirement Document for Phase I, Privatization Site Development*, WHC-SD-WM-DRD-013, Rev. 0 (Shord 1997)
- *Design Requirement Document for Phase I, Privatization Liquid Effluent System*, WHC-SD-WM-DRD-014, Rev. 0 (Parazin 1996a)
- *Design Requirement Document for Phase I, Privatization Raw and Potable Water Supply System*, WHC-SD-WM-DRD-015 Rev. 0 (Parazin 1996b)

Interface Control Documents

- *Interface Control Document for Tank Waste Remediation System Privatization Phase I Infrastructure Support Project W-519*, HNF-2588, Rev. 0 (Parazin and Fort 1998)
- *Interface Control Document Between DOE and the PHMC, Phase I Privatization - Raw Water, ICD-01*, HNF-SP-1208 (LMHC 1997a)
- *Interface Control Document Between DOE and PHMC, Phase I Privatization - Potable Water, ICD-02,* HNF-SP-1209 (LMHC 1997b)
- *Interface Control Document Between DOE and the PHMC, Non-Radioactive, Non-Dangerous Liquid Effluent for Phase I Privatization, ICD-05*, HNF-SP-1211 (LMHC 1997c)
- *Interface Control Document Between DOE and the PHMC, Radioactive Dangerous Liquid Effluents, ICD-06*, HNF-SP-1212 (LMHC 1997d)
- *Interface Control Document Between DOE and the PHMC, Land for Siting Part A Privatization, ICD-09,* HNF-SP-1213 (LMHC 1997e)
- *Interface Control Document Between DOE and the PHMC, Electricity, ICD-11,* HNF-SP-1215 (LMHC 1997f)
- *Interface Control Document Between DOE and the PHMC, Phase I Privatization Roads and Rails, ICD 12,* HNF-SP-1216 (LMHC 1997g)

- *Interface Control Document Between DOE and the PHMC, Phase I Waste Feed Tank Support Systems Low-Activity Waste Product, ICD-21,* HNF-SP-1221 (LMHC 1997h).

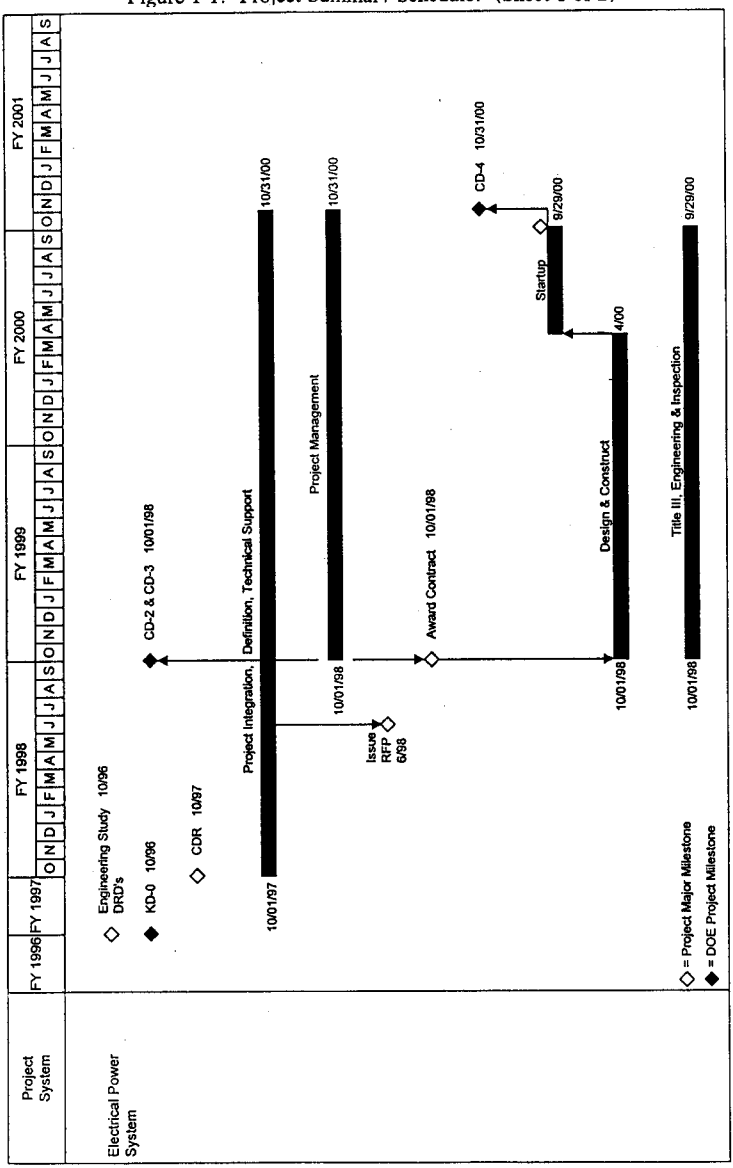
1.3 SCHEDULE OBJECTIVES AND BASELINE

The schedule objectives are depicted on Figure 1-1, project summary schedule. This schedule depicts the major activities at Level 6 of the work breakdown structure (WBS) which corresponds to Level 0 of the Project Summary WBS. Also referenced on the schedule are the Key Decision 0 and the subsequent Critical Decisions (CDs) for the project. The major milestones are the design start and system completion for the electrical power system, site development and roads, water systems, and liquid effluent system. System completions are defined as submission of Section I of the Official Acceptance of Completion (OAC-1) to RL for approval in accordance with Project Hanford Management Contract (PHMC) procedure *Project Acceptance and Closeout*, HNF-PRO-572 (FDH 1998). Additional major milestones are the issuance of Request for Proposal for the Electrical Power System, turnover of site to the PC, and start and completion of the Habitat Mitigation activities. The detailed baseline schedule was developed during the conceptual design and is summarized in this section.

1.4 COST OBJECTIVES AND BASELINE

The conceptual design developed the project's total project cost (TPC) estimate. The architect engineer-construction management contractor (AE-CM) developed the total estimated cost (TEC) using a bottoms-up estimate based on the design media and outline specifications produced in conceptual design. The Project Office (PO) provided the other project costs (OPC) that are required to support the project execution. Table 1-1 contains the engineering, procurement/construction, project management, OPC and contingencies for each major system and the entire project. These cost objectives have been subjected to an independent cost evaluation and have been validated as a capital line item project budget.

Figure 1-1. Project Summary Schedule. (Sheet 1 of 2)



DRD's = Design Requirements Documents
RFP = Request for Proposal
KD-0 = Key Decision 0, Approval for Performing Conceptual Design (CD-1)
CD-2 = Critical Decision 2, Approval for Definitive Design
CD-3 = Critical Decision 3, Approval for Construction
CD-4 = Critical Decision 4, Approval for Operations

Figure 1-1. Project Summary Schedule. (Sheet 2 of 2)

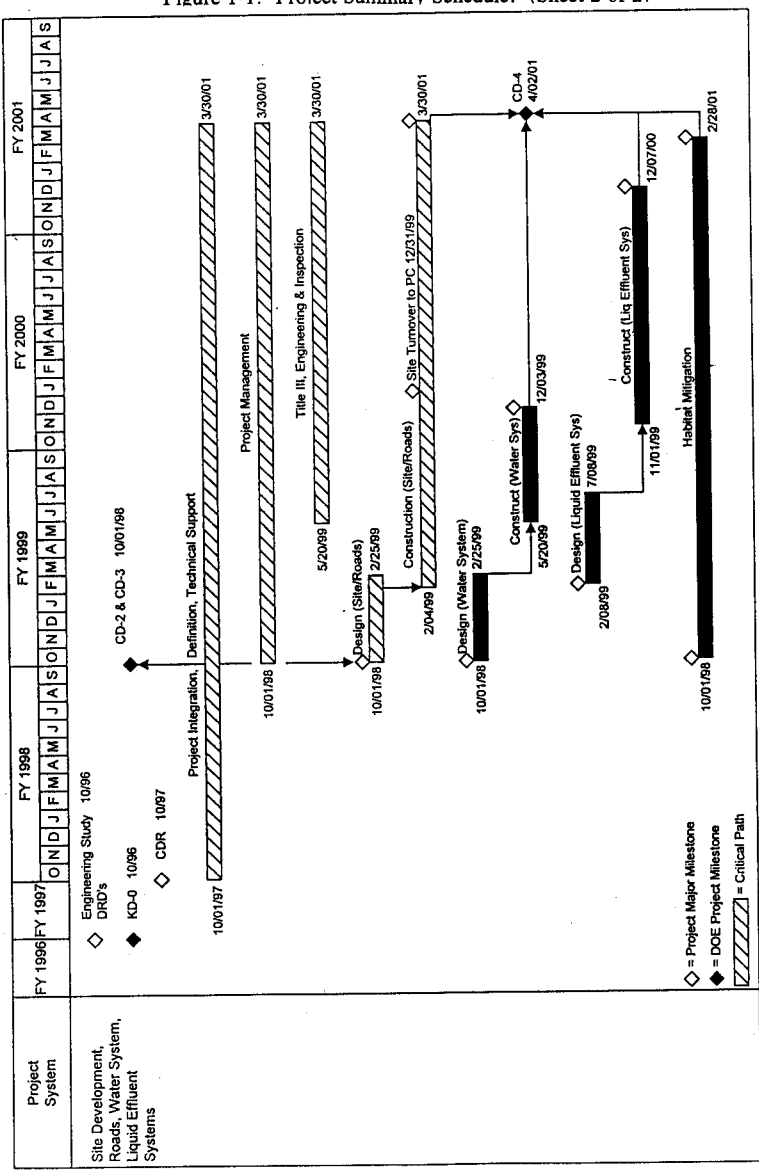


Table 1-1. Project Cost Objectives.

Activity	WBS No. 1.1.3.8.1	Expense or capital funds	Prior years 1996 and 1997	FY 1998	FY 1999	FY 2000	FY 2001	Total
Prior Years								
--Project Management Technical Support	30.1	EXP	2702					2702
--Definition	32.1.1							
--Conceptual Design	32.1.2, 34.1.2							
Electrical Power Systems								
--Project Integration, Definition, Technical Support	32.1, 32.5	EXP		605	106	282		993
--Design/Build/Startup	32.3	CAP			8415	8651		17066
--Title III Engineering/Inspection	32.1.3	CAP			230	344		574
--Project Management	32.4	CAP			233	153		386
--Contingency	32.4	CAP			1876	1228		3104
Site Development/Roads, Water System Liquid Effluent System								
--Project Integration, Definition, Technical Support	34.1, 34.5	EXP		1721	334	466	172	2693
--Project Management	34.4	CAP			375	318	55	748
--Title III Engineering & Inspection	34.2.4	CAP			297	496		793
--Design, Site Dev. & Roads	34.2.2	CAP			338			338
--Design, Water Systems	34.2.1	CAP			214			214
--Design, Liquid Effluent Systems	34.2.3	CAP			247			247
--Construct, Site Dev.& Roads	34.3.2	CAP			1062	1460	81	2603
--Construct, Water Systems	34.3.1	CAP			890			890
--Construct, Liquid Effluent Systems	34.3.3	CAP				2178	183	2361
--Habitat Mitigation	34.5.2	EXP			580	1122	30	1732
--Contingency	34.4	CAP			623	872	61	1556
Total Estimated Cost (CAP)					14800	15700	380	30880
Other Project Cost (EXP)			2702	2326	1020	1870	202	8120
Total Project Cost (CAP + EXP)			2702	2326	15820	17570	582	39000

2.0 PROJECT DESCRIPTION AND JUSTIFICATION

2.1 PROJECT DESCRIPTION

The project is broken up into four main systems; electrical power systems, site development and roads, water systems and liquid effluent systems. The general description of each system is summarized below and reflects the most current baseline guidance which may be in variance with that described in the Conceptual Design Report. Engineering evaluations will be performed where such guidance may challenge the basis of preferred alternatives; i.e., Liquid Effluent Retention Facility (LERF) transfer system extension.

2.1.1 Electrical Power System

The project will install the necessary electrical infrastructure to provide up to 33 MW of power to the Phase I PC site. This system will provide two adjacent transmission lines to extend existing 230 kV transmission loop with approximately 11 km (7mi) of new transmission line to the new 230kV substation A-6. The substation will be located near the PC facilities, within the former grout disposal compound on the eastern boundary of the 200 East Area, and will transform 230kV to 13.8kV electrical power. A switchgear building for the 13.8kV system switchgear and the control/monitoring equipment will be installed inside the substation. Underground feeders from the 13.8kV switchgear will deliver power to the PC site interface. The project will also fund modification of the ASHE substation by the Bonneville Power Administration (BPA), to upgrade the 230kV line protection relay system to accommodate the additional capacity.

2.1.2 Site Development and Roads

The project will provide for the site development and road improvements to and within the former grout disposal compound.

Site development and road improvements include identifying up to 22 hectares (55 acres) of land for the PC, performing ungrades to three street intersections, widening and asphalt overlays of over 2 300 m (7,546 ft) of existing roads and removal of existing facilities, utilities, and physical features for installations within new utility corridors, the relocation of an existing soil pile of approximately 170 000 m^3 (6,003,493 ft^3), earth work during the construction of new roads, and the remediation of 35 hectares (87 acres) of natural habitat destroyed by the privatization activities. The extension of temporary power from 200 East Area to the PC site boundaries for the construction of PC facilities is also included. Additional services are expected to be added to this task through an RL directed change. These are associated with the turnover of 241-AP-106 tank to the PC. These requested services include up to 1 MW of power, additional environmentally characterized acreage and raw water along the East perimeter of AP Tank Farm.

2.1.3 Raw and Potable Water System

The extension of the 200 East Area raw and potable water distribution system will provide raw and potable water for the operation of PC facilities. The raw water will serve the fire suppression and untreated process water requirements for the PC. The work will include the installation of almost 3 400 m (11,200 ft) of raw water pipe and 2 200 m (7,300 ft) of potable water pipe.

2.1.4 Liquid Effluent Transfer Systems

The construction of two liquid effluent transfer systems will provide the piping systems for the routing of liquid effluents from the privatization site to existing waste lines leading to storage, treatment, and disposal facilities in the 200 East Area. One system will convey potentially radioactive, dangerous liquid effluent in two pipe-in-pipe lines and the other system will convey non-radioactive, non-dangerous liquid effluents, suitable for disposal, in a single walled pipeline. The two systems will run parallel pipelines, using the same trench, for a distance of 1 100 m (3,600 ft) from the western boundaries of the PC sites to a point just east of Canton Avenue. At this point the system that conveys the non-radioactive, non-dangerous waste will tie into the existing 10-in. line that leads to the Treated Effluent Disposal Facility (TEDF). At the TEDF, treated effluents are collected and released to disposal ponds. The system that will transfer potentially radioactive, dangerous waste will then turn north, and for 1 500 m (5,000 ft) run parallel with an existing line that leads from the 242-A Evaporator Facility to the LERF and the Effluent Treatment Facility (ETF).

2.2 PROJECT JUSTIFICATION

A mission needs analysis was performed by RL in 1997 for this Phase 1 Privatization Infrastructure project. A report was issued verifying the need for this project. The report was accepted by the U.S. Department of Energy-Headquarters (HQ) Acquisition Executive. The mission analysis report (MAR) focused on three major elements. First, the Phase 1 privatized facilities were required to meet TWRS cleanup schedules (project previously justified to HQ as essential in meeting Milestones M-50, M-51 and M-60 of the *Hanford Federal Facility Agreement and Consent Order* [Tri-Party Agreement] [Ecology et al. 1996]). Secondly, RL contracts with the PCs require Hanford systems and site be modified and infrastructure developed to accept and support the new privatized facilities. Lastly, Project W-519 is the most cost effective and timely method of supporting the Phase 1 effort. A recent RL decision to proceed with only one PC contract in no way reduces RL's obligation to provide site support for the new privatized facilities, which remains the project's mission.

2.3 OVERALL PROJECT EXECUTION PLAN

The project will be executed as a U.S. Department of Energy (DOE) capital line item

project following the guidance of DOE Order 430.1, *Life Cycle Asset Management*. The Order's Good Practice Guides will be used to the extent practical in completing the project. As noted above the project received Key Decision 0 from HQ based on the previous DOE order 4700.1, *Project Management System* guidelines. Key Decision 0, allowed for the development of a conceptual design report and project baselines. RL will now seek three CDs in Fiscal Year (FY) 1999 and two CDs in FY 2001. CD 2 allows proceeding with all definitive design using capital funding. CD 3A allows the start of construction of the electrical power systems.

It is planned that CD 2 and CD 3A will be given at the same time to facilitate the turn-key contract. CD 4A, approval to operate the electrical power system will be given first in FY2001. CD 3B, approval to start construction of the site, road, water and liquid effluent systems will be given in FY99. CD 4B approval to operate the site, roads, water, and liquid effluent systems will be given in FY 2001. HQ has delegated that critical decision responsibility to RL. Local budget validations were successfully accomplished in FY 1997 and FY 1998.

Project activities performed by the PHMC Managing Contractor (MC) and its major subcontractors will be performed and documented according to procedures issued by the MC, Fluor Daniel Hanford, Inc. (FDH). The applicable procedures are identified in Sections 4.0 and 5.0 of this plan. The project will follow requirements defined in PHMC procedures *Construction Program Overview*, HNF-PRO-1997 (FDH 1998b); *Construction Program*, HNF-PRO-551 (FDH 1998c); and *Project Control*, HNF-PRO-552 (FDH 1998d). These specific procedures in turn reference additional applicable procedures.

Work performed by MC subcontractors will be in accordance with the PHMC procedures. However, those companies contracted to the MCs subcontractors will, for the most part, not perform in accordance with PHMC procedures. These companies, including the electrical power system design/build contractor and the AE-CM will use their own internal procedures for work performance. There may be some exceptions to this approach. These exceptions will be described in the individual Statement of Work (SOW) or contract special conditions. Deliverables, such as drawings and vendor information data that must be released into the PHMC document system will be provided in a site compatible format. These documentation requirements will be included in the SOW or contract special conditions.

Facility acquisitions and modifications will be accomplished through a combination of contracting mechanisms. The current baseline is to use a design and build contractor to provide the electrical power system and use the AE-CM to provide the other systems.

The electrical power system contract will be issued by the contract administrator with PO approval. Approval by the Operations Contractor (OC), MC, and RL may be required if the contract value is $10 million or more. The contract administrator provides support to the PO during contract performance. The contract administration may be performed by the PO or CM.

For the other systems, site, roads, water and liquid effluents, the AE-CM will prepare the detail design media, issue construction contracts, and perform the role of construction manager. Consideration will be given to obtaining a single general contractor to construct these systems. Another alternate contracting method for these systems is to use a design and build contractor similar to the approach used for the electrical system. This alternative will be evaluated and a decision made prior to definitive design start. Alternative evaluations must consider, not only the potential cost savings, but the schedule impacts, baseline documentation changes and support tasks required.

3.0 PROJECT ORGANIZATION

This section describes the responsibilities, approval authorities and actions required of each participating organization through the project duration. The project organization will include numerous companies that are contracted to RL either directly or through subcontracts. These companies and their roles and responsibilities are described below. In addition, there are four governmental organizations involved in executing this project. The government organizations are HQ, RL, the BPA, and the State of Washington.

Tasks performed by the involved companies are accomplished through addendum to existing contracts, new contracts or Agreements in Principal. In addition to the formal contract mechanisms, it became necessary for several Hanford subcontractors to prepare agreements relative to working relationships, division of responsibility and support activities required for successful TWRS privatization project execution.

The assigned responsibilities for each participating project organization reflect the contractual requirements and agreements established. These responsibilities are described in the following sections. Table 3-1 summarizes the roles and responsibilities of the major participating organizations, fashioned in a matrix with project deliverables.

3.1 U.S. DEPARTMENT OF ENERGY, HEADQUARTERS

The Secretary of Energy is the Acquisition Executive for TWRS, with responsibility for critical decisions and other decisions that require major resource commitments.

The DOE-HQ Office of Waste Management (EM-30) is assigned responsibility for TWRS program management. The EM-30 role is to establish policy, allocate resources, provide programmatic direction, and oversee execution and evaluate performance of the TWRS project. EM-30 is supported by the Office of Hanford Operations (EM-38) in performing these activities.

The Office of Field Management (FM) supports EM-30 and RL by providing business management guidance, coordinating resolution of DOE-wide field issues, and conducting independent cost estimate assessments and budget validations of TWRS projects.

HQ has given approval for starting this project, W-519, through the Key Decision 0 (now CD 1). HQ has delegated future CDs, budget validations and design/construction procurement decisions to RL. HQ will provide representation for yearly budget validations conducted at RL.

Table 3-1. Project Roles and Responsibility Matrix.

Document or activity organization	Project execution plan	Acquisition plan (PEP ANNEX)	Technical baseline document (DRD)	Technical baseline document (ICD)	Conceptual design	Design authority	ICD drawing	Detail design	Safety reviews	Procurement design/build contract for electrical power	Construction management (sub-contracts)	Construction tie-in/ excavation permits
DOE-RL	A	A	A	A	A	-	-	-	-	A	-	-
Fluor Daniel Hanford. Co. (MC)	A	A	A	A	A	-	-	-	-	A	-	-
Lockheed Martin Hanford Co. (OC)	A	A	P	P	A	-	-	-	-	A	-	I
Numatec Hanford Co. (PO)	P	P	P	A	A	-	R	A	A	A	A	I
DynCorp (IC)	I, R	R	I, R, A	I, A	A	P(3)	A(3)	A(3)	A(3)	-	-	A(3)
Waste Management Federal Services of Hanford Co. (WMC)	I, R	R	I, R, A	I, A	A	P(2)	A(2)	A(2)	P(2)	-	-	A(2)
AE-TBD CM-Fluor Daniel Northwest	I, R	I, R	-	I	P	-	P	P(1)	I	I(10)	P(1)	P(1)
Lockheed Martin Services, Inc. (ISC)	-	-	-	-	P(9)	P(9)	-	P(9)	-	-	-	-
DE&S Hanford, Inc. (Safety) (SAC)	-	-	-	-	R	-	-	R	P(3)	-	-	-
Electrical Sys. Contractor (TBD)	-	-	-	-	-	-	I	P(8)	I	-	P(8)	P(8)

Table 3-1. Project Roles and Responsibility Matrix.

Document or activity organization	Document and records management	Design document record management (4)	Change control $ > TEC/TPC	Change control $ > 25% contingency	Change control $ > FDNW contract limit	Change control DRD	Change control ICD	Change control milestones (6)	Change control schedule CHG > 180 days	Change control schedule CHG > 90 days	Change control schedule CHG < 90 days
DOE-RL	-	-	A	-	-	A(7)	A	A	A	-	-
Fluor Daniel Hanford. Co. (MC)	-	-	A	A	-	A(7)	A	A	A	A	-
Lockheed Martin Hanford Co. (OC)	I	-	A	A	-	A(7)	P	A	A	A	-
Numatec Hanford Co. (PO)	I	I	P	P	A	P	A	P	P	P	A
DYNCORP (IC)I	I	-	-	-	A(3)	A(3)	I		-	-	
Waste Management Federal Services of Hanford Co. (WMC)	I	I	-	-	-	A(2)	A(2)	I	-	-	-
AE-TBD CM-Fluor Daniel Northwest	I	P(1)	I, R	I, R	P(1)	I, R	I, R	I	I	I	P
Lockheed Martin Services, Inc. (ISC)	P	-	-	-	-	-	-	-	-	-	-
DE&S Hanford, Inc. (SAC)	I	I	-	-	-	-	-	-	-	-	-
Electrical Sys. Contractor (TBD)	I	P(8)	I, R	I, R	P(8)	I, R	I, R	I	I	I	P

Table 3-1. Project Roles and Responsibility Matrix.

Document or activity organization	Project file	Field inspection (sub-contracts)	Title III acceptance inspection plan	Title III acceptance inspection	Acceptance test procedures	Startup procedures	As-built drawings	Construction complete and cost close	Official acceptance of construction	Operating and maintenance procedures	Training
DOE-RL	-	-	A	A	-	-	-	R	A	-	-
Fluor Daniel Hanford. Co. (MC)-	-	P	P	-	-	-	R	A	-	-	-
Lockheed Martin Hanford Co. (OC)	-	-	I, R	I, R	-	-	-	R	A	-	-
Numatec Hanford Co. (PO)	P	-	I, R	I, R	A	A	R	P	P	-	-
DYNCORP (IC)	I	-	I	I	I, A(3)	I, R, A	R	I	A(3)	P(3)	P(3)
Waste Management Federal Services of Hanford Co. (WMC)	I	-	I	I	I, A(2)	-	R	I	A(2)	P(2)	P(2)
AE-TBD CM-Fluor Daniel Northwest	I	P(1)	I	I	P(1)	P(1)	P(1)	I	I	I	-
Lockheed Martin Services, Inc. (ISC)	P(5)	-	-	-	P(9)	-	-	-	I(9)	-	-
DE&S Hanford, Inc. (SAC)	I	-	-	-	-	-	-	-	-	-	-
Electrical Sys. Contractor (TBD)	I	P(8)	I	I	P(8)	P(8)	P(8)	I	I	I	-

Table 3-1. Project Roles and Responsibility Matrix.

Acronyms:

A = Approve After Review
AE = Architect Engineer
CM = Construction Manager
DRD = Design Requirement Document
I = Provide Input and/or Support
IC = Infrastructure Contractor
ICD = Interface Control Document
ISC = Information Services Contractor
MC = Managing Contractor
OC = TWRS Operating Contractor
P = Prepare or Perform and Approve
PEP = Project Execution Plan
PO = Project Office
R = Review/Comment
SAC = Safety Analysis Contractor
TBD = To Be Determined
WMC = Waste Management Contractor

Definitions:

A = Approval--Verifying that the purpose, conclusions, or deliverables of the document/activity correspond to overall goals of the project and are consistent with procedural requirements. There may be several layers of approvals consistent with contract requirements/obligations.

R = Review/Comment--Verifying the accuracy of the information contained in the document/activity consistent with the knowledge base of the reviewing organization and project requirements.

P = Prepare or Perform and Approve--Responsibility to prepare/execute the document/activity charged to the identified organization and carries primarily responsibility for its quality.

I = Provide Input and/or Support--Responsibility to provide information, resources, and other input as required to support the document/activity..

Matrix Notation:

(1) Site, Water, Liquid Effluents
(2) Liquid Effluent Systems
(3) Electrical, Site, Water
(4) Drawings, Specifications and Analyses Prior to Project Turnover
(5) Receive at Project Closeout
(6) System Complete Milestone (Site, Electrical, Water, Liquid Effluents)
(7) Only if Dollar Limits are Exceeded on Changes
(8) Electrical Power System
(9) Communication System for Substation
(10) Specification Prep, Contract Admin, and Construction Liaison.

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3.2 U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE

Overall management and execution of projects are the responsibilities of a designated RL project organization. Project management within the RL coordinates with other RL divisions and staff as necessary. Project activities will be authorized and funded to the MC by the RL project office.

The RL project office is the single point-of-contact (formal) with the MC during design and construction. This office reviews, approves, or coordinates approval of key documents like the following, as appropriate for the project.

- DRDs
- Project Execution Plan (PEP)
- Acceptance Inspection Plan(s)
- Engineering Change Notices, for DRDs as required
- Official Acceptance of Construction
- Baseline Change Requests for changes exceeding threshold limits.

The RL project office:

1. Makes CD in accordance with DOE Order 430.1.

2. Reviews project TEC and TPC cost estimates, including supporting materials, provided by the PHMC before initiation of design, procurement, or construction through the budget validation process.

3. Approves and issues authorization for performance of work by the MC and provides funds.

4. Conducts the monthly management review meetings.

5. Provides advice and assistance in accordance with assigned functional responsibilities during project development, authorization, and execution.

6. Provides surveillance and audits of project execution to ensure compliance with DOE Directives and Orders.

7. Ensures that construction projects are executed in a manner consistent with applicable DOE-approved policies, directives, requirements and standards.

8. Reviews, approves and transmits the construction reports required by the DOE.

9. Transmits to the HQ, as required, copies of the project documentation, including appropriate backup information.

10. Approves all changes to the DRDs and ICDs that would impact interfaces with the PC and/or would result in changes that exceed the established control thresholds for schedules, costs, and funds.

11. Approves all changes to the schedules, costs, and funds that exceed established threshold values.

12. Provides the interface between the project and the BPA for support required to change and upgrade the high voltage electrical power system. The interface responsibility includes establishing a working relationship conveying actions required of BPA and ensuring timely completion of BPA support tasks. If required, identify the mechanism for providing funding to BPA.

13. Negotiates with BPA to establish terms and conditions for providing electricity to the PC.

14. Approves subcontracts (e.g., electrical design and build) that are $10 million or greater.

15. Provides the interface between the project and other federal and state agencies and sovereign nations; i.e. multiple State of Washington agencies, U.S. Fish and Wildlife Service, U.S. Department of Ecology, etc.

16. Direct project funded compensatory site mitigation as described in the W-519 Mitigation Action Plan.

3.3 BONNEVILLE POWER ADMINISTRATION

The BPA is responsible for modifications required at the ASHE substation. The BPA will review the design modifications to the 230 kV system as well as the design of the new sub-station A6. The BPA will provide data and perform studies to support development of the system requirements and specification.

Tie-in to the A22 switch status and required outages must be coordinated by the project manager, the site integration contractor, the electrical power system contractor and the BPA. Relay coordination is another task requiring interaction between project participants. The PO will provide the lead in interfacing between the project participants, RL and the BPA. Formal communication and agreements with the BPA will be executed by RL.

3.4 MANAGING CONTRACTOR--FLUOR DANIEL HANFORD INC.

The MC provides the interface between RL and the performing organizations. The performing organizations include the TWRS Operations Contractor (OC), Lockheed-Martin

Hanford Company and the PO, Numatec Hanford Corporation. The MC performs a number of activities related to project execution including:

1. Obtains program direction from RL relative to support requirements for TWRS privatization project and passes on the requirements to the performing organizations.

2. Requests funding and changes to project authorizations by submittal of a request for modifications to the RL.

3. Reviews, approves and submits project documentation prepared by the performing organization for RL approval or acceptance.

4. Provides monthly project reports to RL and participates in monthly and quarterly project management review meetings.

5. Exercises control over the established technical, cost, and schedule baseline through the MC change control board.

6. Through subcontracts assigns technical and daily project management responsibilities to the OC and PO, the performing organizations. This assignment includes development of project specific technical requirements, planning, scheduling, estimating, design coordination and control, procurement, construction and testing.

7. Provides project funding, received from RL, to the OC and PO by way of operations directives. Funding includes the capital, required expense and contingency dollars.

8. Prepares acceptance inspection plans and performs Acceptance Inspection of the project for RL.

9. Supports project construction activities with Health Physics Technicians (HPTs) through the major site contractors.

10. Approves subcontracts valued at $10 million or greater.

3.5 TANK WASTE REMEDIATION SYSTEM OPERATION CONTRACTOR--LOCKHEED-MARTIN HANFORD COMPANY

The OC provides the interface between the MC and other performing contractors. The OC performs a number of activities related to project execution including:

1. Obtains program direction from MC relative to support requirements for TWRS privatization project and interfaces through the MC with RL to develop specific project tasks. These support task requirements are passed on to the PO.

2. Requests capital and expense funding from the MC for the line item project based on detailed scope, cost estimates and schedules developed by the PO. Issues funds to PO through Operations Directives.

3. Reviews, approves and submits selected project documentation prepared by the PO for approval by the MC.

4. Participates in monthly and quarterly project management review meetings.

5. Exercises control over the established technical cost and schedule baseline through the joint OC and PO change control board.

6. Working through the RL TWRS privatization Waste Integration Team (WIT), the OC provides interface information and coordinates resolution of interface issues between the PC and the Infrastructure project organization.

7. Provides project support for financial analysis, quality assurance, industrial safety, fire protection and environmental permitting.

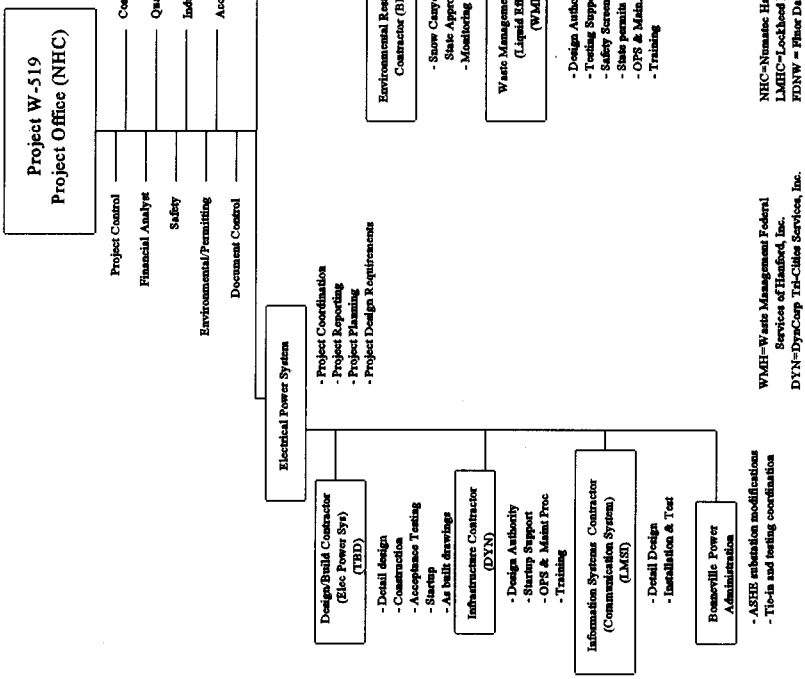
3.6 PROJECT OFFICE--NUMATEC HANFORD CORPORATION

The Project Office (PO) is responsible for the technical direction and management of the project and for ensuring that the project is completed in accordance with the approved project baseline. The PO coordinates project activities with the user organizations (infrastructure and waste management) and assures that the project is in compliance with technical, quality, safety, safeguards, security and environmental requirements. The PO, Project Manager (PM), has the responsibility for project execution according to this plan. The PM may adjust project execution through discretionary judgment without issuing a formal change to this document. The PM will notify impacted parties formally when changes are planned. If major changes are mandated through the TWRS project, the PM may elect to update the PEP in a timely manner following the changes. The PO organizational structure is shown in Figure 3-1. The PO performs a number of activities including:

1. Provides technical and daily project management for coordination and control of design, procurement and construction activities. This includes planning, scheduling, estimating, engineering, construction, inspection and testing services.

2. Provides for the development and submittal of all required project documents including plans, files and reports.

Figure 3-1. Project Office Organizational Structure.



3. Prepares the DRDs and ICD drawings based on PC support requirements provided by RL through the MC and OC.

4. Requests funding and changes to project authorization by submittal of a request for modification to the OC and MC.

5. Approves definitive design for compliance with the functional requirements and project baseline. Evaluates design relative to safety, operability and cost effectiveness. The evaluation involves environmental, safety, operations and quality assurance organizations; the IC and the WMC.

6. Supports administration of baseline change control with the OC.

7. Acts as a focal point for coordination of project activities with other contractor organizations involved in the project.

8. Approves design and construction schedules from the design and build contractor and AE/CM for consistency with project requirements.

9. Ensures optimum design in terms of cost, safety, reliability, maintainability, accuracy and compliance with applicable codes, standards, requirements, regulations and DOE Directives.

10. Supports development of official project files and notifies other organizations of record turnover requirements.

11. Obtains program direction from the OC.

12. Prepares monthly and quarterly reports for the OC, MC, and RL and reports at the monthly project management review meetings.

13. Provides all site construction related permits. These permits include excavation, tie-in, coredrill, power deactivation, etc.

14. Accomplishes work through other site performing organization using contract modifications.

15. Approves all subcontracts that are $1 million or greater.

3.7 HANFORD INFRASTRUCTURE CONTRACTOR--DYNCORP TRI CITIES SERVICES, INC.

The site Infrastructure Contractor (IC) is responsible for providing inputs to, reviewing and approving the project's infrastructure design requirements and design media. The

infrastructure involved is the electrical power, water and road systems. The IC is the Design Authority for these systems. The IC will provide support to effect tie-in and start up of these systems. The IC will accept, operate and maintain these new facilities that support TWRS privatization contractor operations. The IC will develop the operating and maintenance procedures and provide historical data regarding system operations. Subsequent modifications of these systems will be coordinated with and approved by the OC.

3.8 WASTE MANAGEMENT CONTRACTOR, WASTE MANAGEMENT FEDERAL SERVICES OF HANFORD INC.

The Waste Management Contractor (WMC) is responsible for providing inputs to, reviewing and approving the project's liquid effluent system design requirements and design media. The WMC is the Design Authority for the liquid effluent systems. The WMC will provide support to effect tie-in and startup of these systems. The WMC will prepare modifications to existing environmental permits in order to incorporate these new systems. The WMC will operate and maintain these new systems that support TWRS privatization contractor operations. The WMC will perform safety screening of the system modifications to ensure the changes are within the facilities' authorization basis.

3.9 ARCHITECT-ENGINEER/CONSTRUCTION MANAGER CONTRACTOR

The AE-CM has responsibilities in two areas of the project. The AE-CM provides contract support to the electrical power system design and build contract and performs detail design and construction management for the remaining project systems. The AE-CM prepared the conceptual design, capital cost estimate and design/construction schedule for the project.

Support to the electrical power system contract includes the following:

1. Contract Administration.

2. Construction management support for design/build/startup contract.

3. Documentation review coordination.

4. As-build changes to the existing site electrical design media impacted by the new electrical system modifications.

5. Prepares design/build/startup specification,

The AE-CM primary responsibility is the preparation of detail design for the site, roads, water and liquid effluent systems. In addition, the AE-CM has responsibility for construction management of these four systems. Listed below are the AE-CM's specific responsibilities:

1. Provides design services to ensure that established project quality objectives and requirements delineated in the DRDs are satisfied. This includes applicable codes, standard, requirements, regulations, and DOE Directives.

2. Provides project scheduling, estimating and cost-control services during design and construction.

3. Schedules and conducts the design and construction kickoff meetings and progress meetings. Participates in the design review process and management review meetings.

4. Reports progress, accumulated cost, and estimate to complete for all services including design and construction.

5. Reviews and approves vendor data submittals. Provides vendor data to the PO based on the SOW requirements.

6. Maintains a system for design, cost, and schedule baseline change control documentation for their work scope. Provides change documentation that impacts baselines established with the PO.

7. Provides field engineering services such as inputs to nonconformance reports (NCRs), PO Engineering Change Notices (ECNs), internal changes, industrial safety oversight and field reporting.

8. Provides accurate incorporation of ECNs into as-built design and field verification of essential drawings on completed construction.

9. Prepares the Acceptance Test Procedures (ATPs) and performs or oversees acceptance tests.

10. Maintains complete project design files in accordance with their approved procedures.

11. Provides onsite construction management services including quality assurance, safety review, and environmental compliance.

12. Administers all construction contracts.

13. Provides orientation to and supervision of construction subcontractors.

14. Performs internal reviews of design for constructability, cost effectiveness, and integration into the total construction work package.

15. Maintains complete files relative to construction procedures and construction schedules.

16. Provides construction site safety inspections and surveillances

17. Obtains Site support (HPTs, services, etc.) at the construction site.

18. Completes technical review and turnover of project records to the ISC.

19. Provides input to IC and WMH for operating and maintenance procedures.

20. Perform site survey, layout and monument installation.

3.10 DESIGN/BUILD CONTRACTOR - TBD

The design/build contractor will design and construct the electrical power system facilities and systems. This sub-tier contractor will provide the facilities and systems in accordance with a design/build specification issued by the AE-CM with the PO approval. The sub-tier contractor will essentially carry out the same roles and have the same responsibility as the AE-CM described in Section 3.8 except as noted here. For the electrical power system the sub-tier contractor will also perform the startup tasks.

3.11 HANFORD INFORMATION SYSTEM CONTRACTOR LOCKHEED-MARTIN SERVICES, INC.

The information system contractor (ISC) is responsible for delivering existing documents and maintaining document control and records management systems for the project. Prior to turnover of project documentation prepared and maintained by the design agents, the ISC maintains project DRDs and ICDs within the Document Control and Records Management system established for the PHMC. Upon project construction completion, the AE-CM will turn over project documentation to the ISC for incorporation into the PHMC system. This documentation includes as-built drawings, calculations, field verified essential drawings, specifications, test procedures and vendor information. The PO will also turn over project files to the ISC for archiving.

In addition to document control and records management responsibilities, the ISC will provide design and construction support for the telecommunication systems joining the privatization contractors and the electrical power system to the existing Hanford systems. These communication systems are external to the privatization contractor complex.

3.12 SAFETY ANALYSIS CONTRACTOR, DE&S HANFORD, INC.

The Safety Analysis Contractor (SAC) provides safety screening of the systems with focus on determining if there are unresolved safety questions. This review focuses on the potential impacts to the TWRS authorization basis.

3.13 ENVIRONMENTAL RESTORATION CONTRACTOR, BECHTEL HANFORD INC.

The Environmental Restoration Contractor (ERC) performs several tasks related to this project. A major task is the ground water monitoring well decommissioning and replacement at the site to be occupied by the PC. The ERC will also obtain the Washington State Department of Ecology support for the project road and utilities to cross an inactive hazardous waste disposal unit. This unit is identified as the 216-A-29 ditch (Snow's Canyon). The unit is under the control of the ERC.

4.0 PROJECT MANAGEMENT SYSTEMS AND CONTROLS

4.1 WORK BREAKDOWN STRUCTURE

The Work Breakdown Structure (WBS) is shown in Figure 4-1. This WBS depicts the level at which the project will report on to the OC and MC. The scope for each of these activities is contained in the WBS dictionary, Appendix A of this plan, and reflects the FY 1998 MYWP.

4.2 BASELINE DEFINITION AND CHANGE CONTROL

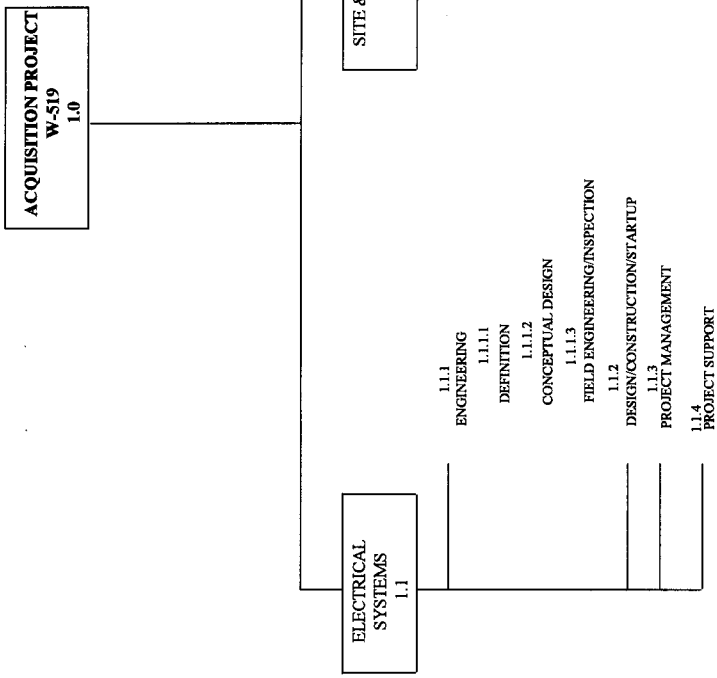
4.2.1 Baseline Definition

The technical, cost and schedule baselines were established through the systematic process of functional analyses, conceptual designs, activity planning analyses and cost estimating. The effort was initiated by RL developing the requirements needed to support privatization contractor facilities onsite. These requirements were translated into Interface Control Documents (Phase 1A) identified in Section 1.2. The PO performed functional analyses through a series of engineering studies that led to preparation of the DRDs, see Section 1.2 for the DRD list. These DRDs were the technical requirements baseline used in performing a conceptual design.

The conceptual design effort resulted in the development of a technical work scope baseline, a schedule baseline and cost baseline that would support the privatization facility requirements relative to infrastructure. The technical requirements baseline, the technical work scope baseline, the schedule baseline and cost baseline provide the baseline definition required to perform definitive design. The performance of the definitive design effort takes the baseline definition to the next level and forms the basis for construction. The iterative process of increasing technical baseline definition follows the typical process of systems engineering to the end of the project execution phase.

Thus further evolution of the baseline is expected as a result of RL/PC contract modifications (Phase 1B1) and refinement of the ICDs. For this project, RL defined what was needed and when through guidance based on the Phase 1A contract, further refinement is expected through guidance based on subsequent contract modifications; i.e., Phase 1B1, 1B2, etc. For this project, RL defined what is needed and when to support the PC and the PO translates this guidance into design requirements, work scope, schedules and cost estimates.

Figure 4-1. Work Breakdown Structure.



4.2.2 Baseline Change Control

Changes to the baselines described above are effected through several PHMC procedures. The primary procedures are *Baseline Change Control,* HNF-PRO-569 (FDH 1998e); *Change Control,* HNF-PRO-533 (FDH 1998f); *Reviews and Approval of Documents*, HNF-PRO-233 (FDH 1998g); *Engineering -Document Change Control Requirements,* HNF-PRO-440 (FDH 1998h); and *Project Control*, HNF-PRO-552 (FDH 1998d). These procedures define the process, the documentation requirements, the document preparers, the reviewers and approvers. These procedures also identify the threshold levels for changes as they relate to project participant roles, responsibilities and authorities. Section 3 and matrix Table 3-1 summarize the project participant roles in the change control process.

4.2.2.1 Technical Change Control and Change Approval. Changes to the technical baselines will follow the PHMC procedures identified above. For technical requirement changes, the key control documentation are the DRDs, the ICDs, the definitive design media (including specifications), and operational procedures. Key documents are identified in Table 3.1 with attendant responsibilities/approvals noted. During project execution, the PO has the responsibility for assuring change control procedures are followed.

Changes to these documents typically require approvals by all effected parties as defined in the PHMC Contract Administration Plan. The MC also approves because of contractual and oversight responsibilities. ICD drawings are generated by the PO to describe the physical interface for the function defined in the ICDs. When finalized, the ICD drawings will become part of the appropriate ICD and subject to the same control as the ICD. These are maintained by the OC through project turnover. The AE-CM or design/build contractor produces the definitive design media. Control of this documentation is maintained by the AE-CM or design/build contractor up to project turnover.

Changes to the definitive design media during construction and startup are controlled by the AE-CM and the design/build contractor. Definitive design media changes impacting the ICDs and DRDs require approval by the other project participants as required. Changes impacting cost and schedule threshold limits must be approved, as a minimum, by the PO guided by threshold values identified in section 4.2.2.2. and summarized in Table 3-1. Changes to operational procedures will be prepared and approved by either the IC or WMC depending on the system.

Technical work baseline is developed through the planning process and is summarized in the WBS and multi-year planning documents. The PO has the responsibility for control over changes to the task definition. Tasks are assigned to individual organizations for development of detail task definition, cost and schedule. Changes to these tasks require approval by the performing organization and as a minimum, the PO. Cost and schedule thresholds identified may require additional approval levels. Section 4.2.2.2 identifies the approval requirements for cost and schedule changes.

4.2.2.2 Cost and Schedule Change Control and Change Approval. Changes to the cost and schedule baselines will follow the PHMC procedures identified above. The project's cost baseline is shown in Table 1-1 and the schedule baseline is shown in Figure 1-1 both are derived from the Conceptual Design Report. The PO has the responsibility to control these two project baselines. Unless directed by RL through the MC and OC, the PO will control project cost to within the TPC identified, including the project contingency. Threshold limits identified in the change control procedure define approvals for changes effecting cost. The PO may not exceed the TEC/TPC without approval of the OC, MC and RL. The PO must obtain OC and MC approval of any change that exceeds 25 percent of the total dollar contingency. The AE-CM or design/build contractor may not exceed the contract dollar limit without PO approval.

The PO also assures that schedule commitments are maintained. Proposed schedule changes will be assessed by the PO to verify system completion changes will not impact the PC activities. All changes that impact the PC activities must be approved by the OC, MC, and RL. Within certain schedule constraints, schedule changes are at the discretion of the PO. Design and construction schedule changes greater than 180 days must be approved by the PO, OC, MC, and RL. Changes greater than 90 days must be approved by PO, OC, and MC. Schedule changes less that 90 days that do not affect milestones are approved by the PO. Any changes to the system construction completion milestones must be approved by the PO, OC, MC, and RL.

If changes have been made to the conceptual design report scope, the PO will evaluate the cost estimate and schedule at the start of definitive design. The cost estimate and schedule will be reviewed again at the end of definitive design. A final cost estimate will be prepared at the end of definitive design. This final estimate establishes the construction and AI budget.

4.2.2.3 Contractor Change Control Information. Through the SOW both the AE-CM and design/build contractor will be required to maintain a change control log for changes related to scope, cost and schedule baselines. These change control logs and the change documentation will be available for review by the PO. The monthly progress reports will include a summary of change information.

4.2.4 Funds Management

Project funds are authorized by RL for the approved baseline budget shown in Table 1-1. Following favorable CD 2 and CD 3, RL will authorize funding for those activities included in the decision process typically on a year by year basis via Budget Validation and the MYWP process. Included in this process is the annual revision of the Construction Project Data Sheet and Project Baseline Summary submitted to Congress. This funding is provided to the MC, who in turns authorizes funds to the OC with the Operations Directives. The OC issues an Operations Directive authorizing funds to the PO. The PO manages these funds through the project duration of design, construction, startup and turnover. Budget provided to the PO includes expense, capital and contingency. If yearly budget requirements are not provided or are changed by RL, MC, or OC direction, the PO will initiate a change request identifying impacts to work scope, schedules and costs.

4.2.5 Contingency Management

As noted above, the PO will receive full budget requirements according to the yearly schedule shown in Table 1-1. This table identifies the specific contingency that will be managed by the PO. Contingency budget is not intended to be used for changes in scope. To utilize contingency for scope changes requires approval by the OC, MC, and RL. Use of contingency is at the discretion of the PO. Contingency is to be used for unplanned events (weather, labor problems, etc.) or estimate deficiencies. The contingency will be loaded in the yearly plans in the last month of the fiscal year. The contingency would cover only those activities within that specific fiscal year. Drawing from their contingency budget requires a change request approved by the PO. The change would take the required contingency budget and move it from the last month to the month needed. At the end of the fiscal year, unused contingency will be distributed to future years through the yearly planning process. The only PO constraint on moving funds from contingency to budget is that a single transfer (change request) does not exceed 25 percent of the total project contingency.

The PO must also notify the OC, MC, and RL when 50 percent, 75 percent, and 90 percent of the project's total contingency has been used. This notification requirement is based on the PHMC procedure *Change Control*, HNF-PRO-533 (FDH 1998f).

4.2.6 Risk Management

Risk Management actions for the project include risk identification, risk quantification, and risk handling action generation. To improve the return-on-investment of the handling actions, risk analyses have been included as a part of these actions. The methodology used is compliant with *Tank Waste Administration*, HNF-IP-0842, Volume IV, Section 2.6, Risk Management procedure (LMHC 1997j). The risk analyses used the risk quantification information to aid in determining success confidence. No critical risks were identified. The type of facilities and systems provided by this project are essentially commercial standard

technology. Thus, technical, cost, and schedule risks were expected to be minimal, consistent with the private commercial sector projects. Specific findings derived from risk management actions can be found in the W-519 Systems Engineering Implementation Plan (Schaus et al. 1998a).

The only potentially significant risks appear to be programmatic. RL decisions relative to TWRS' privatization path forward can critically impact plans established for this project. As RL programmatic direction changes, risk management methodology will be applied as required to assure continued procedure compliance.

4.3 PERFORMANCE MONITORING, REPORTING AND FORECASTING

The PO will monitor project performance and will evaluate performance on a monthly basis. The PO will provide a monthly report to the OC, MC, and RL that complies with the PHMC procedure *Monthly and Quarterly Progress Reports*, HNF-PRO-567 (FDH 1998i). This same information will be discussed at the monthly review meetings. The PO will provide reports to all the project participants and keep them informed on all issues and progress toward major milestones. The PO report will incorporate timely inputs from the major performing organizations such as the AE-CM, design/build contractor and BPA.

Table 1-1, Project Cost Objectives, and Figure 1-1, Project Summary Schedule, identify the activity level that will be reported on. The multi-year project plan provides the monthly budgeted cost of work planned based on the Table 1-1 cost objectives. Using the site's earned value method analyses, performance is analyzed on a monthly basis. Contract flow down requirements dictate that the AE-CM, design/build contractor and the BPA evaluate performance and report the same information to the PO. Each monthly report will have an estimate to complete included.

4.4 PROJECT MEETINGS AND COMMUNICATIONS

The PO office will take the lead in establishing formal meetings and communications requirements.

4.4.1 Project Meetings

There are three types of formal meetings that will be conducted on this project. They are design meetings, construction meetings and management review meetings. The PO is responsible for establishing the design meeting schedule in concert with the design agent. These design meetings include design progress, design review kickoff and design review comment resolution. Notification, coordination, and documentation of these meetings will be by the PO. Frequency of the design progress meetings is monthly. Design review meetings are planned to be at the 30 percent and 90 percent design complete intervals.

Construction project meetings will be scheduled jointly by the PO and the construction manager. These meetings will be conducted by the PO and documented by the construction manager. Attendees will include not only the PO and construction manager but also organizations having operational responsibilities for systems under construction. Meeting frequency will be monthly.

Management review meetings will be held monthly. Attending these meetings will be the PO, OC, MC and others as required. Management review meetings will be conducted and documented by the PO. The PO prepares and issues project reports and narratives for review at the meetings, for presentation of project status, and for resolution of action items.

4.4.2 Communications

Project decisions, direction, status, report transmittals and technical information transmittals must be documented with formal letters on preparer's company letterhead. Distributions of the documentation will be determined by the PO. A copy of all formal communications must be included in the project file maintained by the ISC. This does not include communications internal to the other participating organizations. Each company must maintain a file of all internal communications relative to project execution. Teleconferences will be documented if they provided information critical to project execution. Distribution of teleconference notes will also be established by the PO.

Formal communications can only occur between individuals authorized to represent contracting parties. For RL this includes the RL Manager, Contracting Officers, and their designated Representative(s). Formal direction from RL flows only through the MC though simultaneous communication (for information only) can occur with PHMC subcontractors, enterprise companies, etc.

Informal communication can occur between any RL employee and any contractor or subcontractor employee. Such communication is non-binding and does not constitute contract direction.

4.5 CONFIGURATION MANAGEMENT

Configuration management of project documents, and project-generated and modified data is performed in accordance with *TWRS Privatization Infrastructure Project Configuration Management Implementation Plan*, HNF-3046, Rev. 0 (Schaus et al. 1998b), which is in accordance with requirements imposed by DOE, RL, the PHMC, and the TWRS Program. This plan will be updated as required to reflect the configuration management requirements applicable for the project.

Specifically, configuration management for the project focuses on the technical baseline products developed during the preconceptual stage, the conceptual design phase, the

design/build phase, startup phase and project turnover. The final facility configurations turned over to the operations contractor is a product developed progressively from functions and requirements (ICDs), design criteria (DRDs), design definition (detail design and specifications), construction (vendor technical information), final testing (procedures and reports) and turnover of completed operational facilities (as-built configurations). Control of these products leading to the final configuration is the purpose of the project's configuration management activities. Before turnover of as-built drawings, specifications and procedures to operations, configuration management responsibilities are split between the sites performing organizations (OC, PO, IC, WMC) and the design and construction contractors (AE-CM and design/build contractor).

4.5.1 Requirements Document Control

Requirement documents include ICDs and DRDs. These documents are controlled using the PHMC procedures and this PEP. The procedures include the following:

- *Interface Control Requirements*, HNF-PRO-243 (FDH 1998j)
- *Engineering Document Identification*, HNF-PRO-227 (FDH 1998k)
- *Engineering Document Approval and Release Requirements*, HNF-PRO-317 (FDH 1998m)
- *Engineering Document Change Control Requirements*, HNF-PRO-440 (FDH 1998n)
- *Engineering Drawing Requirements*, HNF-PRO-242 (FDH 1998o)
- *Engineering Data Transmittal Requirements*, HNF-PRO-244 (FDH 1998p)
- *Design Verification Requirements*, HNF-PRO-445 (FDH 1998q).

The PO will also use these procedures to control any ICDs developed or revised during definitive design.

4.5.2 Design Media Control

Design documents include detail design drawings, specifications and vendor technical information. These documents are controlled by the design agents using their internal procedures. The SOW will require a design control system be implemented by the design agent. The PO responsibility is to ensure that such a system exists and that it would be adequate. The initial detail design is approved by the PO, IC, or WMC using the PHMC procedure HNF-PRO-317 and HNF-PRO-445 noted above. The approval indicates the design

meets the design requirements. The project turns over configuration management responsibility to the IC or WMC by releasing the as-built design media into the PHMC/TWRS document control system. The PO uses PHMC/TWRS procedures to accomplish this. The two key procedures utilized will be HNF-PRO-244 and HNF-PRO-317. Prior to turnover and early in the definitive design the IC and WMC will define which design media will be considered "essential" per HNF-PRO-242.

4.6 AUDITS, SURVEILLANCES AND ASSESSMENTS

The project will be subjected to independent oversight including audits, surveillances and assessments. Internally the project will perform surveillances of the contractors performing work on the project. These surveillances would occur during the design and construction/startup phases. The PO will also perform independent management assessments of the project. Management assessments will occur at least once a year. The frequency is the decision of the PO director.

The MC Facility Evaluation Board may also conduct an audit of this project. RL may also conduct audits or surveillance of the project. This RL oversight focuses on compliance to DOE Directives and Orders. This is achieved through a variety of mechanisms including independent design review, independent cost estimate review, budget validation review and the Critical Decision process.

The applicable PHMC procedures the project will follow relative to oversight are *Cooperating With Outside Audits, Inspections and Investigations*, HNF-PRO-1837 (FDH 1998r), and *Responding to Internal Audits*, HNF-PRO-333 (FDH 1998s).

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5.0 PLANNING

5.1 QUALITY ASSURANCE PLAN

A project specific quality assurance plan will not be prepared for this project. Work performed by the MC, OC, PO, IC, WMC, and SAC will be covered by the quality assurance program plan (QAPP) developed for projects by the PO. This plan, *Quality Assurance Program Plan for TWRS Projects*, NHC-QAPP-018 (NHC 1998), reflects the quality requirements established for the PHMC. The development of this plan precluded the need for a separate project specific QAPP as called for in the CDR.

The sub-tier contractors will either use a PHMC contractor approved QAPP or develop a project specific QAPP for approval by the PO. Currently the AE-CM has a PO approved QAPP. The Electrical Power System design/build contractor must develop a QAPP and submit it to the PO for approval. PHMC quality assurance requirements will flow down to the sub-tier contractors.

Implementation of the PO QAPP for this project will follow a graded approach. The nature of the facilities and systems being developed on this project are categorized as General Services. These facilities and system pose only minor radiological and no real hazardous material threats to the workers or the environment. The failure of the facilities and systems installed by this project will not result in unsafe operation or shutdown of facilities they support or interact with. Assuring quality on this project focuses on meeting cost and schedule objectives and continuity of operation. Quality work performance and products are essential to this project.

This Project Execution Plan identifies the PHMC procedures that will be required to execute the project with the appropriate level of control. Not all the PHMC procedures listed in NHC-QAPP-018 will be used on this project. These procedures only apply to work being performed by the MC and major subcontractors (OC, PO, IC, WMC, SAC). The sub-tier contractors will use their own procedures. Several procedural requirements, however, will be included in the sub-tier contractors SOW or contracts. These include, but are not limited to, drawing formats, vendor information documentation and the control of suspect/counterfeit items.

The nature of the facilities and systems also precludes the need to develop Standards/Requirements Identification Documents (S/RIDS). The facilities and systems being provided by the project are not classified as Hazard Categories 1, 2 or 3 not are they considered non-reactor nuclear facilities. The requirements established with ICDs, DRD and design/build specification are of sufficient detail and will not require additional interpretation. Most all the design requirements have been based on well understood national consensus codes with historical interpretations. Sufficient oversight will exist during design, procurement, construction and startup activities to eliminate the need to generate extensive project-specific processes to confirm requirements have been met. PHMC procedures for design verification

will be used. Quality control procedures by the sub-tier contractors will ensure proper inspection of fabricated parts and construction processes. Inspection, witnessing and record reviews will occur during all phases of the project through startup.

5.2 ENGINEERING

The engineering process used on this project complies with the procedure, *PHMC Engineering Requirements*, HNF-PRO-1819 (FDH 1998). The engineering activities, however, focus on the POs and OCs responsibility for requirements definition, ICDs, technical support tasks and the document reviews. Design is performed by external design agents that follow their own engineering procedures. Specific PHMC procedures relative to drawing format may be imposed on the design agent. This requirement affects media that will be released into the PHMC system.

5.2.1 Requirements Definition

The requirements documents, ICDs, and DRDs are identified in Section 1.2. These documents were developed from analyses performed by RL relative to expected requirements of the PC (Phase 1A) and capabilities of the site to support these requirements. As the PC completes design tasks (Phase 1B1), there may be a need to change requirements established in the ICDs and DRDs. The evolution of these changes will occur under the formal change control process defined in Section 4.2.

The PO has overall responsibility for coordinating the efforts required to maintain requirements definition up to date. The applicable PHMC procedure, in addition to HNF-PRO-1819, is *Functional Design Criteria*, HNF-PRO-561 (FDH 1998). The project requirements defined in the DRDs have been entered into the Hanford Site Technical Database. This provides the vertical incorporation of requirements into the Hanford Document hierarchy.

5.2.2 Interface Control

The nature of this project is that interfaces are crucial. The project's primary function is to provide a site for the TWRS PC and link the PC facilities to the 200 Area electrical, water and liquid effluent systems. In addition to these primary interfaces, the project must interface with other construction projects related to the TWRS privatization project. These functional interfaces have been defined by ICDs and have been identified in section 1.2 under Technical Objectives.

In addition to these functional ICDs, these will be a number of interface control drawings generated by the PO as physical interfaces are established during the definitive design process. These will be integrated into the functional ICDs.

The current ICDs were developed by RL's, Waste Integration Team (WIT) based on predictive analyses that were later conditionally confirmed by the PC at the end of the TWRS Phase IA effort. During Phase IBI additional design, analyses and testing will be performed by the PC. These activities may result in modifications of the requirements contained in the ICDs and the initial interface control drawings. The vehicle leading to these modifications will be negotiations conducted by Integrated Product/Process Teams, (IPTs) formed to monitor, maintain and control specific interfaces. IPTs will carry representation from the PC, WIT, MC, OC and the PO, IC, WMC and/or other PHMC subcontractors as appropriate. All such modifications will be directed via formal communication to the PO.

Control and maintenance of these interface documents are the responsibility of the OC with PO support. The functional ICDs are the responsibility of the OC. The physical interface control drawings and the construction project interface document (Parazin and Fort 1998) will be the responsibility of the PO. Preparation and revision of these ICDs involves interaction with the PC, RL, seven companies under separate contracts, and the BPA. The contracting complexity and the importance the documents to project definition requires that the PO take the lead in coordinating the processing of these documents. The preparation and maintenance of the interface documents/drawings will be in accordance with PHMC procedure *Interface Control Requirements*, HNF-PRO-243 (FDH 1998j).

5.2.3 Supporting Technical Analyses

There are several supporting technical analyses planned for the project. These analyses address the concepts of reliability, availability and maintainability, waste minimization and pollution control. Specific analyses associated with energy conservation will not be performed for this project because of the nature of the facilities and systems being installed. This decision was made prior to conceptual design with concurrence of RL.

5.2.3.1 Reliability, Availability, and Maintainability Analyses. Reliability, Availability and Maintainability (RAM) Analyses or certain elements of RAM analyses will be performed on the water, electrical and liquid effluent systems. The water systems analyses will be performed by the IC, the electrical system will be performed by the design/build contractor and the liquid effluent systems analyses will be performed by the WMC.

- **Water Systems**. A comprehensive water balance model of the 200 East Area raw water distribution system will be developed to validate the systems capability in delivering water to the PCs. Field validation of the model will be performed before detail design is complete. An existing model for the potable water system will be modified for the project's parameters and a validation will be performed similar to the raw water system. The information developed above will form the basis of a RAM analyses.

- **Electrical System**. RAM analysis requirements have been incorporated into the design/build specification for the electrical system. The design/build contractor

will perform analyses only on the new systems added to the 200 East distribution systems. These analyses will be performed prior to detail design completion.

- **Liquid Effluent Systems**. A RAM analysis of the Treated Effluent Disposal Facility (TEDF), the Liquid Effluent Retention Facility, the Effluent Treatment Facility and all the new piping systems to ensure the systems can reliably accommodate the PCs. These analyses will be complete before detail design is complete.

5.2.3.2 Waste Minimization and Pollution Control. This project will comply with the requirements of PHMC procedure *Pollution Prevention*, HNF-PRO-462 (FDH 1998v). This procedure includes requirements related to pollution control and waste minimization.

Prior to conceptual design, through the use of a microcomputer program P2-Edge, P2/WMin opportunities lists were prepared for each of the four sub-projects which were combined to form Project W-519. The lists identify those PS/WMin opportunities that are to be implemented and/or considered for further evaluation throughout the design and construction process.

During conceptual design, a P2/WMin Design Checklist was developed, for each of the sub-projects, that documented the evaluation of the items identified in the P2/WMin opportunity lists as being applicable to the project. Items to be implemented in the design, or to be considered for further evaluation during later stages in the project, were noted in the checklists.

The P2/WMin Design Checklists will be used to further document the evaluation of pertinent opportunities as the design develops. A final checklist will be developed by the design agents and placed in the project documentation files at the completion of definitive design.

5.2.4 Systems Engineering

The Project has developed the *TWRS Privatization Phase 1 Infrastructure Systems Engineering Implementation Plan* (Schaus et al. 1998a) to document the project's graded approach to the application of systems engineering. The selected approach is consistent with the *DOE-RL Tank Waste Remediation System Systems Engineering Policy* (Kinzer 1997), the *Tank Waste Remediation System Systems Engineering Management Plan* (Peck 1998) and the TWRS systems engineering procedures.

The plan describes the processes, products, and organizational responsibilities implemented by Project W-519 to further define how the project's mission, defined initially by the *Tank Waste Remediation System Phase 1 Privatization Infrastructure Project W-503 Mission Analysis Report* (Hoertkorn 1997), will be accomplished. Included in the document is the planning for moving from the mission to an executable integrated baseline incorporating

the cost, schedule, and technical baselines and the management processes used to ensure successful completion of this integrated baseline.

5.2.5 Document Reviews

Study reports, DRDs, Conceptual Design, ICDs, ICD Drawings, and Detail Design media have been or will be subjected to both peer review and customer review. PHMC procedures, *Design Verification Requirements*, HNF-PRO-445 (FDH 1998q); *Review and Approval of Documents*, HNF-PRO-233 (FDH 1998g); and *Engineering Release and Approval Requirements*, HNF-PRO-317 (FDH 1998m), will be used for controlling the document reviews, document approvals and release of documents into the PHMC document control systems. Design verification will consists of informal reviews that will be documented.

Interface documents and changes to these documents affecting the interfaces will be reviewed by the impacted parties, whether the PC or other TWRS construction projects.

Design Authorities for the IC and WMC will review and approve documentation that defines the facilities and system they will be operating. Changes to approved design media during construction will be subject to review if the changes effect the design requirements.

5.3 ENVIRONMENTAL COMPLIANCE

Environmental compliance has and will occur in several areas of the project. The project is evaluated relative to the *National Environmental Policy Act of 1969* (NEPA) documentation. The project will also review existing state and local permits for impacts caused by the new facilities or systems. The PHMC procedures *NEPA, SEPA, Cultural and Natural Resources*, HNF-PRO-452 (FDH 1998ac), and *Environmental Documentation*, HNF-PRO-569 (FDH 1998e), have and will be used in evaluating project compliance with NEPA.

5.3.1 *National Environmental Policy Act of 1969* (NEPA)

Environmental evaluations performed during the project's preconceptual and conceptual design phases indicated the existing TWRS Environmental Impact Statement (EIS) Record of Decision (ROD)sufficiently covers this project's actions. The findings of these early evaluations were further validated though a Supplement Analysis to the ROD approved and issued in May 1998. To assure continuity through definitive design, the OC will prepare an environmental checklist to verify the continued adequacy of NEPA documentation.

Elements of the TWRS-EIS ROD address suitable habitat mitigation of areas disturbed through TWRS activities. To this end, the project scope includes mitigation activities which have been satisfactorily negotiated with site stakeholders and codified in the W-519 Mitigation Action Plan. These activities, their related scope, organizational roles and responsibilities are

identified in the Privatization Infrastructure Project, W-519 Mitigation Implementation Plan and reflected in the project's baseline.

5.3.2 Water Distribution System Expansion

Prior to initiating construction of a major modification to a public water source (i.e., the 200 East Area raw water and potable water distribution systems) approval of the final design must first be obtained from the Washington State department of Health (reference WAC 246-290). During construction bid package preparation, the Hanford Site (IC) water purveyor will submit the definitive design drawings and construction specifications of the distribution system expansion to the State of Washington to obtain approval prior to bid award.

5.3.3 Liquid Effluent Systems

The WMC will identify the permits affected; develop and implement a plan/schedule to modify the permits for the TEDF and LERF/ETF to support construction of the transfer lines. The WMC will also prepare and submit the Notice of Construction for these lines and coordinate with all related regulators. These activities are not part of the project's scope and are not funded through the project. They are part of broader activities not part of project scope to be performed by the WMC related to not only the construction, but also the operation of these systems as a service to the PC.

The WMC will provide oversight/design authority support to the PO during design and construction of the transfer lines. This support is part of the project baseline.

5.3.4 Site Environmental Baseline and Characterization

In compliance with regulations an environmental characterization baseline was established for the site to be occupied by the PC. Soil analyses were performed by independent laboratories and documented in the *TWRS Phase 1 Privatization Site Environmental Baseline and Characterization Report*. This report and the plan used in its development was provided to the PC as part of the RL/PC Contract.

5.4 SAFETY

Safety evaluations of the project have been performed during the preconceptual and conceptual design phases. Safety evaluations were performed according to PHMC procedure *Identifying and Resolving Unreviewed Safety Questions*, HNF-PRO-062. This process was implemented to determine if any unreviewed safety questions (USQ) existed. The USQ screening process did not reveal any safety issues that preclude categorizing the project's facilities and systems as general services. The USQ screenings were performed by the SAC.

During the definitive design the USQ screening will be repeated to ensure no changes in the hazards associated with the project. There are no changes anticipated since most of the facilities and systems will be designed and built to commercial standards and national consensus codes. Typical commercial industry safety practices will apply. A Safety Plan had been identified as a deliverable in the CDR. However, for the aforementioned reasons, it has been determined that a project specific plan is not necessary.

5.5 PROCUREMENT

Only one major procurement activity will occur on this project. All other procurements will occur as part of the construction subcontracting activities. The major procurement activity is the solicitation of the design/build contractor for the electrical power system. This procurement is conducted by the PO with approval of the PO. The contract administrator will use a design/build specification and SOW to obtain the services. This procurement is discussed in more detail in the appended Acquisition Plan.

5.6 CONSTRUCTION

The construction activities are outlined in the appended Acquisition Plan. The AE-CM will provide construction management services for the project's site work, roads, water distribution systems and liquid effluent systems. This approach assumes that the AE-CM will issue fixed price construction contracts utilizing the detail design media generated by the AE-CM. The AE-CM will also provide CM support to the design and build electrical contractor during the construction phase. Consideration will be given to implementing a major subcontract to use a general contractor to perform all the construction activities. Alternatives will be evaluated before definitive design is initiated, following RL FY 99 Guidance (presumably preceding Phase1B1's Authorization To Proceed), to consider using a design/build contractor for the site, roads, water and liquid effluent systems or combinations of AE-CM design/FP construction and design/build. The evaluation will consider possible cost benefits and impacts to the schedules, project documentation and cost estimate modifications.

5.7 TESTING AND EVALUATION

Testing and evaluation of the project consists of design verification, inspections and testing. Design verification will be conducted by the PO during definitive design. This verification will determine whether the detail design media complies with the design requirements. After the design has been approved, the design agent and PO will maintain control over the design change process to ensure compliance with design requirements is not compromised. Control of the change process has been discussed in Sections 4.2.2 and 5.2.5.

The design/build contractor and the construction subcontractors will establish quality

control programs that will include in-process inspection of the components, systems and facilities being built. This quality control (QC) program will be reviewed, approved and monitored by the AE-CM. The intent of the QC program is to verify that what is being fabricated, constructed, installed and tested complies with the detail design, specifications and ATP. The AE-CM produces the design, specifications, and ATPs for the site, roads, water and liquid effluent systems. The electrical power system design/build contractor will produce the design, specifications, ATPs and startup procedures for that system. In house inspection will be used by the design/build contractor.

On behalf of RL, the MC will provide Acceptance Inspection for all the project systems per HNF PRO 1997. The independent AI role includes preparation of a detailed Acceptance Inspection Plan (AIP), witnessing key attributes in accordance with the AIP, specification reviews, validation of as-built drawings, structural integrity assessments, and electrical code compliance inspections. A detailed Acceptance Inspection plan will be developed and approved by RL. This task has also been described as Title III Inspections.

Summarized below are the major elements of testing and inspection for the project's systems.

5.7.1 Raw Water Distribution System Extension

Flushing and hydrostatic testing of raw water pipelines will be performed and documented by the fixed price contractor and witnessed by MC AI as appropriate. Once backfill placement is complete and appropriate valving devices in place and properly positioned, the distribution system extension may be placed into service by the onsite IC.

5.7.2 Potable Water Distribution System Extension

Flushing, hydrostatic testing, and disinfecting of the potable water pipelines will be performed and documented by the fixed price contractor and witnessed by MC Acceptance Inspection as appropriate. Once backfill placement is complete and appropriate valving devices in place and properly positioned, the distribution system extension will be filled. The IC (water purveyor) will sample the filled pipeline and forward the sample to the county health department lab. Pending a satisfactory report from the health department, the IC will direct the line be placed into service.

5.7.3 Non-Radioactive, Non-Dangerous Effluent Collection Pipeline Extension

Flushing, hydrostatic testing and leak detection of the non-radioactive, non-dangerous effluent pipeline will be performed and documented by the fixed price contractor and witnessed by MC Acceptance Inspection as appropriate. The project will also test the integrity of the instrumentation conductors installed by the project. The tie-in points for the extension of the effluent pipeline into the PC facilities will be capped or blind flanged for future extension by the PC.

5.7.4 Radioactive Dangerous Effluent Collection Pipeline Extension

Flushing, hydrostatic testing and leak detection of the radioactive dangerous effluent pipelines will be performed and documented by the fixed price contractor and witnessed by MC and AI per WAC 173-303. The project will also test the integrity of the instrumentation conductors installed by the project. An ATP developed by the design agent for the leak detection system will be performed by the fixed price contractor. The tie-in points for the extension of the effluent pipeline into the privatization contractor facilities will be capped for future connection by the privatization contractor.

5.7.5 Road Improvements

Compaction tests of the road base, and asphaltic concrete pavement will be performed and documented by the fixed price contractor and witnessed by MC AI as appropriate. Upon completion of acceptance compaction activities the road may be placed into limited service. Once appropriate safety markings have been completed the road may be placed into full service.

5.7.6 Electrical System

Testing and evaluation will include construction inspections, acceptance testing, and independent Acceptance Inspection to ensure compliance to the project requirements. Project requirements for the testing and evaluation will be passed on to the construction contractor via a SOW, or specification.

Acceptance testing for the major equipment will be in accordance with industry standards and codes and the requirements in the procurement specifications. The equipment will be tested in the factory in accordance with the manufacturer's procedures to demonstrate compliance to the requirements. Test results will be reviewed by the design agent and the design authority. Certain factory tests may be witnessed by the design authority/design agent.

Acceptance testing of the systems and subsystem will be performed in field to demonstrate that all the components function to meet the intent of the design. ATPs will be

developed by the design agent and approved by the design authority, projects, and MC. The construction contractor will perform ATP's and prepare ATP reports. The ATP reports will be approved by the design agent, design authority and MC. Certain pre-energization electrical tests including high voltage test, test of power cable insulation, Dobble test of transformers and switchgear insulation, oil sampling, transformer turn ratio, etc. will be performed by the IC.

An Acceptance Inspection will be prepared by the MC quality assurance organization concurrent with detailed design review. The plan will be reviewed by the PO and IC design authority, and approved by RL. The detailed construction inspection will be in accordance with the construction contractor's quality assurance program.

5.8 PROJECT TURNOVER

The project turnover task will be executed by the PO with support from AE-CM, design/build contractor, the IC, the WMC, and the MC. The PHMC procedure HNF-PRO-572, Project Acceptance and Closeout will be used to accept the new and modified systems for beneficial use and closeout the project. The roles and responsibility, Table 3-1, identifies organization involvement in as-built drawings, construction complete and cost close (4Cs) documentation, official acceptance of construction (OAC) and training. Construction is considered complete when Section I of the OAC is signed by the IC or WMC and MC (Acceptance Inspection) and formally transmitted to RL. The IC or WMC with RL approvals on Sections I and II of the OAC constitutes authorization to place the facilities/systems into service.

Prior to project turnover, the IC and WMC will develop operating procedures and train personnel in the operation and maintenance of new systems. The AE-CM and design/build contractor will provide support and inputs during these transition activities.

The PO will ensure that all AI items are satisfactorily resolved and the final punch list items are being worked.

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APPENDIX A

WORK BREAKDOWN STRUCTURE DICTIONARY

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TANK WASTE REMEDIATION SYSTEM
WORK BREAKDOWN STRUCTURE DICTIONARY

1. PROGRAM/TITLE PARTICIPANT		
1.1 Tank Waste Remediation System 1.1.3 TWRS Waste Disposal 1.1.3.8 Privatization Infrastructure 1.1.3.8.1 Phase I Infrastructure		
2. WBS ELEMENT CODE/LEVEL 1.1.3.8.1.3/Level VI	3. WBS ELEMENT TITLE Project W-519	
4. CURRENT REV. 0	5. EFFECTIVE REV DATE October 1, 1997	6. APPROVED CHANGES

1.1.3.08.01.03 Acquisition Project W-519

Phase I Infrastructure project provides the required facilities and systems that assures the waste disposal Privatization Contractors are integrated into the Hanford Site infrastructure. This includes defining capital project requirements, executing the capital project, and establishing interface control with Privatization Contractors. For Phase I the systems required are electrical, water, site/roads, and liquid effluents. Two cost accounts have been established under this activity to parallel the acquisition strategy established for this FY 99 line item capital project.

1.1.3.8.1.3.1 Electrical Systems

The Project W-519 work scope related to the electrical systems will be executed as a fixed priced design/construct/start-up turn-key contract. These systems include a new sub-station next to the site of the Privatization Contractor facilities and 7 miles of transmission lines to tie into the existing 230 kV existing power grid and 13.8 kV power distribution system upto the site boundary of the Phase I Privatization Contractors. The control, protective relaying , monitoring, alarms and communication circuits for the new electrical system will be integrated into the the existing circuitry of A-8 (251W) Substation and the Ashe Substation.

1.1.3.8.1.3.2 Water Systems, Liquid Transfer Effluent Systems, and Site Development and Roads:

The work scope related to water/effluent systems and site development/roads will be executed using an on-site Architect/Engineer to perform definitive design, construction management and field engineering/inspection and a fixed priced construction/start-up contract. The scope is presented here reflects each utility/service as it was developed through respective supporting Conceptual Design Reports, Design Requirements Documents and Engineering

Studies.

Raw and Potable Water

Design, construction and start-up of water systems necessary to support the Privatization Contractors Phase I facilities by providing process, potable and fire suppression water. These systems include piping from the existing raw and Potable water system to the site of the Privatization Contractor facilities.

Site Development and Roads

Design and construction to provide roads to the Privatization Contractor's site to support site access and the transport of required construction/operations materials and equipment to the Privatization Contractor facilities. Site development also includes providing construction power and construction water to the Privatization Contractor site. Leveling of the grout spoils pile, clearing and grubbing in the selected Phase I site is also part of this site development work. Mitigation of the loss of habitat in developing sites is also included. The Privatization Contractor site environmental baseline characterization and ground water monitoring well decommissioning/replacement are also included under this task but are not capital funded.

Liquid Effluent Transfer Systems

Design, construct and provide the liquid effluent transfer systems to provide the pipeline network to transfer liquid effluents from the Privatization Contractor to the PHMC. Separate piping systems will be provided to transfer 1) radioactive and dangerous liquid effluents to LERF and 2) non-radioactive, non-dangerous liquid effluents to TEDF. The Waste Processing project will treat and dispose of liquid radioactive, dangerous (mixed) and non-radioactive, non-dangerous wastes. An advanced conceptual design/engineering evaluation is to be performed under this task prior to finalization of the Statement of Work to direct the definitive design of the transfer systems.

Project W-519 activities also include system definition and integration; the development of interface control documents and drawings; engineering and inspection services; and project management, engineering and technical support.

Milestones: Major-RL (Level 5) milestones are listed below.

- Complete Construction and Start-up Site Development/Roads Phase I, T08-01-131, 09/28/01
- Complete Construction and Start-up Water Systems Phase I, T08-00-133, 09/29/00

- Complete Construction and Start-up of Electrical System Phase I, T08-00-131, 04/19/00

- Complete Construction and Start-up Liquid Effluent System Phase I, T08-01-131, 12/29/00.

TANK WASTE REMEDIATION SYSTEM
WORK BREAKDOWN STRUCTURE DICTIONARY

1. PROGRAM/TITLE PARTICIPANT 1.1.1 Tank Waste Remediation System 1.1.1.3 TWRS Waste Disposal 1.1.1.3.8 Privatization Infrastructure 1.1.1.3.8.1 Phase I Infrastructure 1.1.1.3.8.1.3 Project W-519		
2. WBS ELEMENT CODE/LEVEL 1.1.1.3.8.1.3.1/Level VII	3. WBS ELEMENT TITLE Project W-519, Electrical Power System	
4. CURRENT REV. 0	5. EFFECTIVE REV DATE October 1, 1997	6. APPROVED CHANGES

1.1.3.8.1.3.1 Electrical System

The Project W-519 work scope related to the electrical systems will be executed as a fixed priced design/construct/start-up turn-key contract. These systems include a new sub-station next to the site of the Privatization Contractor facilities and 7 miles of transmission lines to tie into the existing 230 kV existing power grid and 13.8 kV power distribution system up to the site boundary of the Phase I Privatization Contractors. The control, protective relaying , monitoring, alarms and communication circuits for the new electrical system will be integrated into the the existing circuitry of A-8 (251W) Substation and the Ashe Substation.

1.1.3.8.1.3.1.1 Engineering

PHMC will complete conceptual design with the assistance of the performing contractor, FDNW. The definitive design will be completed by a fixed price contractor as part of the turn-key project responsible for design, procurement, construction and startup of the Electrical Power System.

1.1.3.8.1.3.1.1.1 Electrical System Integration

The performance contractor will provide electrical system integration including interface with the Integrated Product Teams (IPTs) and the Waste Integration Team (WIT), and preparation as well as maintenance of interface control documents (ICDs) and the DRD, and input to Functions and Requirements Document.

1.1.3.8.1.3.1.1.2 Electrical System Definition

Project definition includes 230 kV system analysis by the BPA for voltage regulation, load-flow, and system stability. Engineering studies including

selection of power source for the PC facilities and AP-106 and AP-108 Tank operations. Update Electricity ICD-11.

1.1.3.8.1.3.1.2 Engineering and Inspection

FDNW will provide engineering during construction, acceptance inspection, incorporate contractor as-build/vendor submittals into the Hanford system, oversee walkthroughs and preparation of open items and exception lists, and support contract closing documentation.

1.1.3.8.1.3.1.3 Fixed Price Construction

With the exception of the telecommunications system, an offsite design-construct contractor will provide the definitive design, procurement, construction, and acceptance testing for the project. The selected contractor will provide a turn-key type project as defined by the design-construct procurement bid packages. The connections to the existing systems and operational testing will be provided by the onsite utilities contractor. The telecommunications system design and construction will be provided by the PMHC if requested by the off-site design-construct contractor.

The PHMC telecommunications organization will provide services for the design, construction, hookup to the existing system and acceptance testing of the telecommunications system to the Electrical Power System off-site design-construct contractor.

1.1.3.8.1.3.1.4 Project Management/Administration

The performance contractor will be responsible for the development of overall infrastructure project plans, strategy documents, project definition and integration activities, and management of conceptual design, design/construction/startup activities and related PHMC interface activities, and engineering/technical support. The performance contractor will manage and integrate all the scope, cost, and schedule throughout the life of the project. Preparation of inputs to the MYWP, budget and schedule change requests, yearly capital project validations, and the negotiation of performance measures are also part of project management. Also, included is performance reporting as required by DOE and the PHMC.

1.1.3.8.1.3.5 Electrical Project Technical Support

The performance contractor will direct the resources necessary to perform the following expense-funded activities (other project costs) needed to implement Project W-519:

Conceptual Design
The contracted engineer/constructor contractor will prepare a conceptual design report that will provide sufficient details for developing defensible cost estimates and a project schedule.

Project Technical Support
The task includes the following activities:

* Support the conceptual phase of the project which includes the generation of DRD, CDR and other documentation supporting project validation.

* Preparation of engineering evaluations.

* Performance of unreviewed safety question screening.
* Preparation of procurement documentation for design/construction/startup contracting including commerce business daily notices, procurement specification and bid package.

* Provide input for integrated schedule.

* Preparation of project management plan.

* Preparation of quality assurance plan.

* Preparation of the safety and environmental documentation.

* Provide design input and adequate reviews of project design media and other project documentation.

* Change control and records management support.

* Provide utilities support for system testing and startup including final tie-ins, the preparation of procedures, personnel training, operational testing, and readiness assessment.

* Provide telecommunication support for system installation, testing, and startup of all communication work including SCADA, FDAS, HLAN, and telephone system.

* Also, included is performance reporting as required by DOE and the PHMC

TANK WASTE REMEDIATION SYSTEM
WORK BREAKDOWN STRUCTURE DICTIONARY

1. PROGRAM/TITLE PARTICIPANT		
1.1 Tank Waste Remediation System 1.1.3 Waste Disposal 1.1.3.8 Privatization Infrastructure 1.1.3.8.1 Phase I Infrastructure		
2. WBS ELEMENT CODE/LEVEL 1.1.3.8.1.34/Level VI.5	3. WBS ELEMENT TITLE Acquisition Project W-519 Site/Roads/Liquid Effluent Systems	
4. CURRENT REV. O 0	5. EFFECTIVE REV DATE October 1, 1997	6. APPROVED CHANGES

1.1.3.8.1.34 Acquisition Project W-519 Site/Roads/Liquid Effluent Systems

Phase I Infrastructure project provides the required facilities and systems that assure the waste disposal privatization contractors are integrated into the Hanford Site infrastructure. This includes defining capital project requirements, executing the capital project, and providing assistance in establishing interface control with privatization contractors. For Phase I the systems required are electrical, water, site/roads, and liquid effluents. This is one of two cost accounts established to implement the acquisition strategy established for this FY 99 line item capital project.

This project activity will be executed using an on-site Architect/Engineer to perform definitive design, construction management and field engineering/inspection and fixed priced construction/start-up. The scope is presented here reflects each utility/service as it was developed through respective supporting Conceptual Design Reports, Design Requirements Documents and Engineering Studies

Raw and Sanitary Water

Design, construction and start-up of water systems necessary to support the private vendors Phase I facilities by providing process, potable and fire suppression water. These systems include piping from the existing raw and sanitary water system to the site of the private vendor facilities.

Site Development and Roads

Design and construction to provide roads to the privatization contractor's site to support site access and the transport of required construction/operations materials and equipment to the vendors facilities. Site development also includes providing construction power and construction

water to the private vendor site. Leveling of the grout spoils pile, clearing and grubbing in the selected Phase I site is also part of this site development work. The vendor site environmental baseline characterization and ground water monitoring well decommissioning/replacement are also included under this task but are not capital funded.

Liquid Effluent Transfer Systems

Design, construct and provide the liquid effluent transfer systems to provide the pipeline network to transfer liquid effluents from the privatization contractor to the PHMC contractor. Separate piping systems will be provided to transfer 1) radioactive and dangerous liquid effluents to LERF and 2) non-radioactive, non-dangerous liquid effluents to TEDF. The Waste Processing project will treat and dispose of liquid radioactive, dangerous (mixed) and non-radioactive, non-dangerous wastes. An advanced conceptual design/engineering evaluation is to be performed under this task prior to finalization of the Statement of Work to direct the definitive design of the transfer systems.

The above project activities include system definition and integration; the development of interface control documents and drawings; engineering and inspection services; and project management, engineering and technical support.

Milestones: Major-RL (Level 5) milestones are listed below.

- Complete Construction and Start-up Site Development/Roads Phase I, T32-99-070, 09/30/99
- Complete Construction and Start-up Water Systems Phase I, T32-00-070, 03/14/00
- Complete Construction and Start-up Liquid Effluent System Phase I, T32-01-070, 11/30/00.

APPENDIX B

ACQUISITION PLAN

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APPENDIX B

ACQUISITION PLAN

1.0 INTRODUCTION

1.1 PLAN PURPOSE

This acquisition plan supplements the Project Execution Plan by providing the next level of planning definition and planning parameters. This document provides specific planning definition to facilitate detailed planning for project acquisition activities associated with design, construction/startup and acceptance inspection. From the planning parameters contained in this plan, contracting mechanisms and execution plans can be further developed by the performing organizations. Another purpose of this plan is to define the Project Office's (PO) expectations relative to products delivered, activities performed, cost objectives and schedule objectives. These deliverables, activities, cost objectives and schedules objectives will be monitored by the PO.

1.2 PLAN CONTENT

This acquisition plan contains the acquisition strategy, the roles and responsibilities of performing organizations, the contracting subsets or deliverable packages that the PO will monitor performance on and the inspection and testing expected for the delivered items. For each of the deliverable packages the expectation relative to costs and schedule is defined. Flowdown contract requirements will also be addressed in this document.

2.0 CONTRACTING STRATEGY

2.1 BASELINE

The current contracting strategy includes the use of a design and build contractor for the Electrical Power System, use an AE-CM for acquiring site, roads, water and liquid effluents, use the Information System Contractor (LMSI) for acquiring the communication modifications, the Bonneville Power Administration (BPA) to modify the ASHE substation.

The Electrical System contract will be issued and administered by the contract administrator. Under direction from the PO, the AE-CM will provide both technical and administrative support to the design and build contractor and the PO through contract execution. The design and build contractor has the responsibility for detail design,

procurement, construction, in process inspection, acceptance testing and startup of the Electrical Power System. The Acceptance Inspection of the system for RL will be performed independently by Hanford's Managing Contractor (MC).

The existing contract that the AE-CM has with the PO will be modified to include the project activities associated with performing site work, providing roads, modifying water systems and extending liquid effluent systems to the PC site. The contract modification will cover construction management and may include detailed design and systems as-building. The AE-CM construction management responsibility includes subcontracting for construction of the systems. These construction subcontractor will typically be lump sum contracts. As with the electrical system, the MC will perform Acceptance Inspection for RL on those systems provided by the AE-CM.

The PO will contract with the Information Systems Contractor (ISC) to acquire the communications systems that will be the new electrical system substation into the Hanford site communications system. The ISC will do detail design, procurement, construction, installation and testing of the system. Final Acceptance Inspection will also be performed by the MC.

The PO will contract with the BPA through DOE to acquire modifications to the ASHE substation and support during tie-in to the BPA system. The BPA will prepare the modification design, make the changes to the substation, perform necessary testing and inspections.

In addition to contacting the specific systems additions and modifications noted above, the PO will contract with other Hanford organizations for tasks supporting the project execution. These tasks include the following:

- The PO will contract with the Environmental Restoration Contractor (ERC) to decommission and relocate ground water monitoring wells in the area to be occupied by the PC. The ERC will also support obtaining state acknowledgment for crossing the A-29 Ditch (Snow's Canyon).

- The PO will contract with the Infrastructure Contractor (IC) to obtain support for tie-ins into the electrical and water systems and electrical system startup tests. The IC provides design review and approval for the electrical, water, roads and site modifications designs. The PO also funds the IC to prepare operational and maintenance procedures for the systems added or modified.

- The PO will contract with the Waste Management Contractor (WMC) to obtain support for tie-ins into the liquid effluent systems. Modifications of existing systems will be performed by the WMC. The WMC provides design and safety review and approval for all liquid effluent systems modifications and additions. The WMC will also prepare or revise applicable operating and maintenance procedures.

- Quality assurance support, safety evaluations, environmental review, permitting support, industrial safety reviews, and fire protection reviews will be obtained by the PO from the TWRS Operating Contractor (OC) and other site contractors through contract modification.

2.2 ALTERNATIVE CONTRACTING STRATEGIES

Several alternative contracting approaches may be considered in acquiring the site modifications, roads, water systems and liquid effluent systems. The PO will evaluate bidding out all the systems to a single fixed price contractor based on the design developed by the AE-CM.

Another alternative is to develop a design/build specification and bid out to a single fixed price contractor similar to the method used for the electrical power system. This approach could consider a design/build contract for one or all four systems - site, roads, water, liquid effluents.

Decisions to change from the current baseline must consider the following elements:

1. A decision must be made before the planning for Fiscal Year (FY) 1999 has been completed or is close to completion. A reasonable decision target date is July 30, 1998, for early FY 1999 starts.

2. The decision must consider the timing required to produce the planning document revisions and to produce the design and build specifications. Funding for this new task must be available in FY 1998

3. A cost comparison analysis must be performed as part of the make or buy decision.

4. A decision process must include an assessment of risk associated with contractor selection considering potential low bidder qualifications and DOE experience.

If the baseline is not finalized by July 30, the overall acquisition plan will be revisited in light of revised need dates, technical requirements, etc., derived through FY 1999 RL guidance. If there are not significant changes in the baseline, this plan will be implemented as written with considerations to alternatives noted in this section if time constraints allow.

3.0 PROJECT CONTRACTING SUMMARY

Acquiring new facilities and systems and modifying existing systems requires the PO to contract with several companies. Each company is contracted to perform certain pieces of the total project work scope. General assigned responsibilities have been defined in the Project Execution Plan (PEP) Section 3 and summarized in Table 3-1 of the PEP. In this section, the work scope is broken down into four primary systems. These systems are the electrical power system, site and roads, water systems and liquid effluent systems. Tables B-1 through B-4 of this Appendix, summarize the contracting requirements by systems and specific work scope activities. The tables also include references to the appropriate WBS element, the period of performance and the budget assigned to the specific task. NOTE: the dates in these tables reflect the FY 98 MYWP planning and a finalized technical baseline by June 1998 (which has not occurred). These dates will be revised when the technical baseline is finalized through RL guidance as part of the FY 99 MYWP planning process.

The project scope, contracted to the various organizations, is broken down into major elements of work. Detail descriptions of work to be performed will be contained in a Request For Proposal (RFP) or Statement of Work (SOW). The RFP will be used for contracts external to the PHMC contractors and the enterprise companies that have existing contracts. The RFP for example will be used to obtain a design/build contractor for the electrical power system. For the PHMC and enterprise contractors, a SOW will be issued for a cost estimate. When finalized, the SOW becomes the basis for contract or task order modification, creation of a new task order or issuance of a Work Order. The SOWs will be issued in time to support the fiscal year planning if time constraints allow.

Work performed by the PHMC contractors and enterprise companies will be cost reimbursable. Work subcontracted by the AE-CM will be fixed price.

All acquisitions performed under this project will comply with the PHMC acquisition procedures, U.S. Department of Energy acquisition regulations and Federal acquisition regulations. The applicable PHMC procedures include the following:

- *Pre-acquisition Planning, Requirements*, HNF-PRO-183
- *Preparing a Statement of Work for Services*, HNF-PRO-186
- *Assignment and Duties of the Buyers Technical Representative*, HNF-PRO-192
- *Technical Evaluation of Proposals*, HNF-PRO-205
- *PHMC Acquisition System Requirements*, HNF-PRO-706
- *PHMC Acquisition Authority*, HNF-PRO-707.

Table B-1. Project Contracting Summary--Electrical Power System.
(All Dates Based Upon Fiscal Year 1998 Multi-Year Work Plan)

Item No.	Contract item description	Contracting authority	New (N) or modify (M) contract	Contract type	WBS elem 1.1	Performing organization	RFP/SOW issue date	Activity start date	Activity completion date
E01	Design & Build - Elec Pwr Sys	PO	N	Fixed Price	1.1.2	TBD Sub-Tier Contract	06/15/98	10/1/98	10/31/00
E01A	- Design							10/10/98	05/27/99
E01B	- Construct Startup							03/03/98	10/31/00
E02	Contract Support	PO	M	Cost Plus	1.1.2	AE-CM	06/06/98	06/15/98	10/31/00
E02A	- Contract Admin				1.1.2	AE-CM	07/01/98	10/01/98	10/31/00
E02B	- Construct Mgmt				1.1.1.3	AE-CM	07/01/98	02/01/98	10/31/00
E02C	- As-Build					AE-CM	07/01/98	10/31/00	02/01/01
E03	Design & Install Communication System	PO	M	Cost Plus	1.1.2	ISC	07/01/98	05/27/99	12/28/99
E04	Modify ASHE Substation	RL (1)	N	Fixed Price	1.1.2	BPA	07/01/98	03/01/99	03/01/00
E05	Acceptance Inspection	PO	M	Cost Plus	1.1.1.3	MC	07/01/98	11/01/98	10/31/00
E06	Design Approval & Startup Support	PO	M	Cost Plus	1.1.4	IC	07/01/98	10/01/98	10/31/00
E06A	- Reviews						07/01/98	02/01/98	10/31/00
E06B	- Startup						07/01/98	10/31/00	02/01/01
	- Procedures/ Training								

PO = Project Office, Numatec Hanford Corp.
AE-CM = Architect Engineer-TBD; Construction Manager, Fluor Daniel Northwest
ISC = Information Services Contractor, Lockheed Martin Services
MC = Managing Contractor, Fluor Daniel Hanford
BPA = Bonneville Power Administration
IC = Infrastructure Contractor, DynCorp
(1) May be delegated to AC with PO approval.

Table B-2. Project Contracting Summary--Site and Road Work.
(All Dates Based Upon Fiscal Year 1998 Multi-Year Work Plan.)

Item No.	Contract item description	Contracting authority	New (N) or modify (M) contract	Contract type	WBS elem 1.2	Performing organization	RFP/SOW issue date	Activity start date	Activity completion date
S01	Detail Design	PO	M	Cost Plus	1.2.1.3	AE-CM	07/01/98	10/01/98	02/25/99
S01A	- Site Prep							10/01/98	02/04/99
S02	Construction	PO	M	CM -Cost Plus Construction	1.2.3	AE-CM	07/01/98	02/04/99	03/30/01
S02A	- Site Prep			- Fixed Price				02/04/99	12/31/99
S03	Acceptance Inspection	PO	M	Cost Plus	1.2.1.3	MC	07/01/98	01/01/99	03/30/01
S04	Design Approval	PO	M	Cost Plus	1.2.4	IC	07/01/98	01/01/99	02/29/99
S05	Design As Build	PO	M	Cost Plus	1.2.1.3	AE-CM	07/01/98	03/30/01	07/30/01

PO = Project Office, Numatec Hanford Corp.
AE-CM = Architect Engineer-TBD; Construction Manager, Fluor Daniel Northwest
ISC = Information Services Contractor, Lockheed Martin Services
MC = Managing Contractor, Fluor Daniel Hanford
BPA = Bonneville Power Administration
IC = Infrastructure Contractor, DynCorp.
(1) May be delegated to AE with PO approval.

Table B-3. Project Contracting Summary--Raw and Sanitary Water Systems.
(All Dates Based Upon Fiscal Year 1998 Multi-Year Work Plan.)

Item No.	Contract item description	Contracting authority	New (N) or modify (M) contract	Contract type	WBS elem 1.2	Performing organization	RFP/SOW issue date	Activity start date	Activity completion date
W01	Detail Design	PO	M	Cost Plus	1.2.1.3	AE-CM	07/01/98	10/01/98	02/25/99
W02	Construction/ Testing	PO	M N	CM -Cost Plus Construction - Fixed Price	1.22	AE-CM	07/01/98	05/20/99	12/03/99
W03	Acceptance Inspection	PO	M	Cost Plus	1.2.1.3	MC	07/01/98	03/01/99	12/03/99
W04	Design Approval +State Approval	PO	M	Cost Plus	1.2.4	IC	07/01/98	01/01/99	05/20/99
W05	Testing Support/ Procedures	PO	M	Cost Plus	1.2.4	IC	07/01/98	09/16/99	12/03/99
W06	Design As Build	PO	M	Cost Plus	1.2.1.3	AE-CM	07/01/98	12/03/99	04/01/00

PO = Project Office, Numatec Hanford Corp.
AE-CM = Architect Engineer-TBD; Construction Manager, Fluor Daniel Northwest
ISC = Information Services Contractor, Lockheed Martin Services
MC = Managing Contractor, Fluor Daniel Hanford
BPA = Bonneville Power Administration
IC = Infrastructure Contractor, DynCorp
(1) May be delegated to AE with PO approval.

Table B-4. Project Contracting Summary--Liquid Effluent Systems.
(All Dates Based Upon Fiscal Year 1998 Multi-Year Work Plan)

Item No.	Contract item description	Contracting authority	New (N) or modify (M) contract	Contract type	WBS elem 1.2	Performing organization	RFP/SOW issue date	Activity start date	Activity completion date
L01	Detail Design	PO	M	Cost Plus	1.2.1.3	AE-CM	07/01/98	02/08/99	07/08/99
L02	Construction/ Testing	PO	M N	CM -Cost Plus Construction - Fixed Price	1.2.3	AE-CM	07/01/98	11/01/99	12/07/00
L03	Acceptance Inspection	PO	M	Cost Plus	1.2.1.3	MC	07/01/98	10/01/99	12/07/00
L04	Design Approval, Permitting Approval	PO	M	Cost Plus	1.2.4	WMC	07/01/98	04/01/99	11/01/99
L05	Testing Support/ Procedures/ Training	PO	M	Cost Plus	1.2.4	WMC	07/01/98	10/01/00	12/07/00
L06	Design As Build	PO	M	Cost Plus	1.2.1.3	AE-CM	07/01/98	12/07/00	04/30/00

PO = Project Office, Numatec Hanford Corp.
AE-CM = Architect Engineer-TBD; Construction Manager, Fluor Daniel Northwest
ISC = Information Services Contractor, Lockheed Martin Services
MC = Managing Contractor, Fluor Daniel Hanford
BPA = Bonneville Power Administration
IC = Infrastructure Contractor, DynCorp
WMC = Waste Management Contractor, Waste Management Federal Services of Hanford.
(1) With PO Approval.

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