S

ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 643257

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.	4. USQ Required?	5. Date
Supplemental ○ Direct Revision ◉ Change ECN ○ Temporary ○ Standby ○ Supersedure ○ Cancel/Void ○	CA Rieck, 83200, S2-48, 372-2913	○ Yes ◉ No	8/31/99
	6. Project Title/No./Work Order No. Initital Tank Retrieval Systems/W-211	7. Bldg./Sys./Fac. No. Tank Farms	8. Approval Designator D
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.) HNF-3333, Rev 0	10. Related ECN No(s). N/A	11. Related PO No. N/A

12a. Modification Work	12b. Work Package No.	12c. Modification Work Completed	12d. Restored to Original Condition (Temp. or Standby ECNs only)
○ Yes (fill out Blk. 12b) ◉ No (NA Blks. 12b, 12c, 12d)	N/A	N/A Design Authority/Cog. Engineer Signature & Date	N/A Design Authority/Cog. Engineer Signature & Date

13a. Description of Change

13b. Design Baseline Document? ○ Yes ◉ No

The W-211 PMP is revised to:
- Address administrative changes occurring since August 1997.
- Update the WBS, schedule, and estimate for consistency with the FY1999 MYWP and change request TWR-99-012 to reflect the current selection and sequence of retrieval systems supporting waste feed delivery to the BNFL vitrification plant.
- Restructure the baseline estimate in accordance with the April 1999 TEC confirmation estimate.

14a. Justification (mark one)	14b. Justification Details
Criteria Change ◉ Design Improvement ○ Environmental ○ Facility Deactivation ○ As-Found ○ *Facilitate Const.* ○ Const. Error/Omission ○ Design Error/Omission ○	Incorporate changes to the PMP occuring since the last revision in August 1997.

15. Distribution (include name, MSIN, and no. of copies)

Project Files	R1-29	1
JE Van Beek	S2-48	1
JJ Davis	H6-60	1
CB Bryan	R2-58	1
T Choho	R3-86	1
DJ Ashley	A3-03	1

RELEASE STAMP

DATE: SEP 02 1999
STA: 4
HANFORD RELEASE
ID: 2

ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1): 643257

16. Design Verification Required	17. Cost Impact		18. Schedule Impact (days)
	ENGINEERING	CONSTRUCTION	
○ Yes	Additional ○ $ N/A	Additional ○ $ N/A	Improvement ○ N/A
◉ No	Savings ○ $	Savings ○ $	Delay ○

19. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 13. Enter the affected document number in Block 20.

SDD/DD	☐	Seismic/Stress Analysis	☐	Tank Calibration Manual	☐
Functional Design Criteria	☐	Stress/Design Report	☐	Health Physics Procedure	☐
Operating Specification	☐	Interface Control Drawing	☐	Spares Multiple Unit Listing	☐
Criticality Specification	☐	Calibration Procedure	☐	Test Procedures/Specification	☐
Conceptual Design Report	☐	Installation Procedure	☐	Component Index	☐
Equipment Spec.	☐	Maintenance Procedure	☐	ASME Coded Item	☐
Const. Spec.	☐	Engineering Procedure	☐	Human Factor Consideration	☐
Procurement Spec.	☐	Operating Instruction	☐	Computer Software	☐
Vendor Information	☐	Operating Procedure	☐	Electric Circuit Schedule	☐
OM Manual	☐	Operational Safety Requirement	☐	ICRS Procedure	☐
FSAR/SAR	☐	IEFD Drawing	☐	Process Control Manual/Plan	☐
Safety Equipment List	☐	Cell Arrangement Drawing	☐	Process Flow Chart	☐
Radiation Work Permit	☐	Essential Material Specification	☐	Purchase Requisition	☐
Environmental Impact Statement	☐	Fac. Proc. Samp. Schedule	☐	Tickler File	☐
Environmental Report	☐	Inspection Plan	☐	_____	☐
Environmental Permit	☐	Inventory Adjustment Request	☐	_____	☐

20. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number/Revision
N/A		

21. Approvals

	Signature	Date		Signature	Date
Design Authority			Design Agent		
Cog. Eng. CA Rieck		8/31/99	PE		
Cog. Mgr. JE Van Beek		8/31/99	QA		
QA			Safety		
Safety			Design		
Environ.			Environ.		
Other			Other		

DEPARTMENT OF ENERGY

Signature or a Control Number that tracks the Approval Signature

Letter 9955979 and see page 1

ADDITIONAL

Project Management Plan for Initial Tank Retrieval Systems, Project W-211

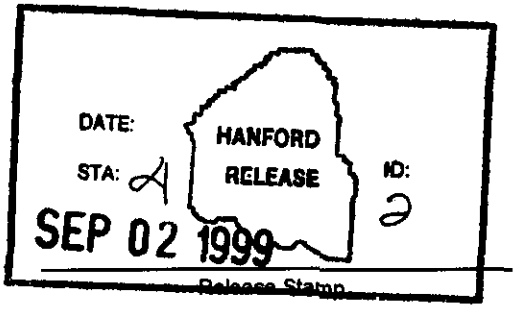
J. E. Van Beek
Numatec Hanford Corporation, Richland, WA 99352
Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 643257 UC: 2030
Org Code: 83200 Charge Code: 102070
B&R Code: 39EW02J10 Total Pages: 27

Key Words:
Project Management Plan, Project W-211, Initial Tank Retrieval Systems

Abstract:
This Project Management Plan documents the methodology for managing Project W-211. The plan delineates organizational responsibilities and identifies change control, design verification, systems engineering, and human factors engineering requirements.

9/2/99
Release Approval Date



Approved For Public Release

RECORD OF REVISION

(1) Document Number: HNF-3333, Rev. 1

(2) Title: Project Management Plan for Initial Tank Retrieval Systems, Project W-211

Change Control Record

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
		(5) Cog. Engr.	(6) Cog. Mgr. Date
1 RS	(7) The W-211 PMP revision is incorported in	C. A. Rieck	J. E. Van Beek 8/31/99
	ECN 643257		

PROJECT MANAGEMENT PLAN

for

INITIAL TANK RETRIEVAL SYSTEMS

PROJECT W-211

Revision 4

Approvals:

J E Van Beek
Project Manager, Numatec Hanford Corporation

Project Direction, Fluor Daniel Hanford

D Bryson
U.S. Department of Energy, Office of River Protection

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INTRODUCTION

Project W-211, Initial Tank Retrieval Systems (ITRS), is a fiscal year 1994 Major Systems Acquisition that will provide systems for retrieval of radioactive wastes from selected double-shell tanks (DST). The contents of these tanks are a combination of supernatant liquids and settled solids. To retrieve waste from the tanks, it is first necessary to mix the liquid and solids prior to transferring the slurry to alternative storage or treatment facilities. The ITRS will provide systems to mobilize the settled solids and transfer the wastes out of the tanks. In so doing, ITRS provides feed for future processing plants, allows for consolidation of tank solids to manage space within existing DST storage capacity, and supports continued safe storage of tank waste.

The ITRS scope has been revised to include waste retrieval systems for tanks AP-102, AP-104, AP-108, AN-103, AN-104, AN-105, AY-102, AZ-102, and SY-102. This current tank selection and sequence provides retrieval systems supporting the Privatized waste processing plant and sustains the ability to provide final remediation of several watch list DSTs via treatment. The ITRS is configured to support changing program needs, as constrained by available budget, by maintaining the flexibility for exchanging tanks requiring mixer pump-based retrieval systems and shifting the retrieval sequence. Preliminary design was configured such that an adequate basis exists for initiating Title II design of a mixer pump-based retrieval system for any DST.

This Project Management Plan (PMP) documents the methodology for managing the ITRS, formalizes organizational responsibilities and interfaces, and identifies project requirements such as change control, design verification, systems engineering, and human factors engineering.

1.0 PROJECT DESCRIPTION

The ITRS scope of work includes the design, procurement, and installation of the following items for tanks AP-102, AP-104, AP-108, AN-103, AN-104, AN-105, AY-102, AZ-102, and SY-102:

- Mixer pumps for sludge mobilization
- Pump for transferring the waste out of the tanks
- Operator station that include functions to monitor, alarm, and control the retrieval system
- Instrumentation required to support operation of the retrieval system, including instrumentation that must be replaced to withstand the mixer pump forces
- Interface with existing instrumentation that is critical to the mixing or transfer process
- Equipment and containers for removal and eventual burial of existing in-tank components
- Utilities for retrieval operations (electrical power, water, telecommunications, etc.)

- Site preparation and tank modifications for the installation of equipment
- In-line or in-tank dilution capability to bring the waste properties into compliance with transfer line specifications
- Flush capability to both the transfer pump and transfer piping
- A camera system to monitor the retrieval operation

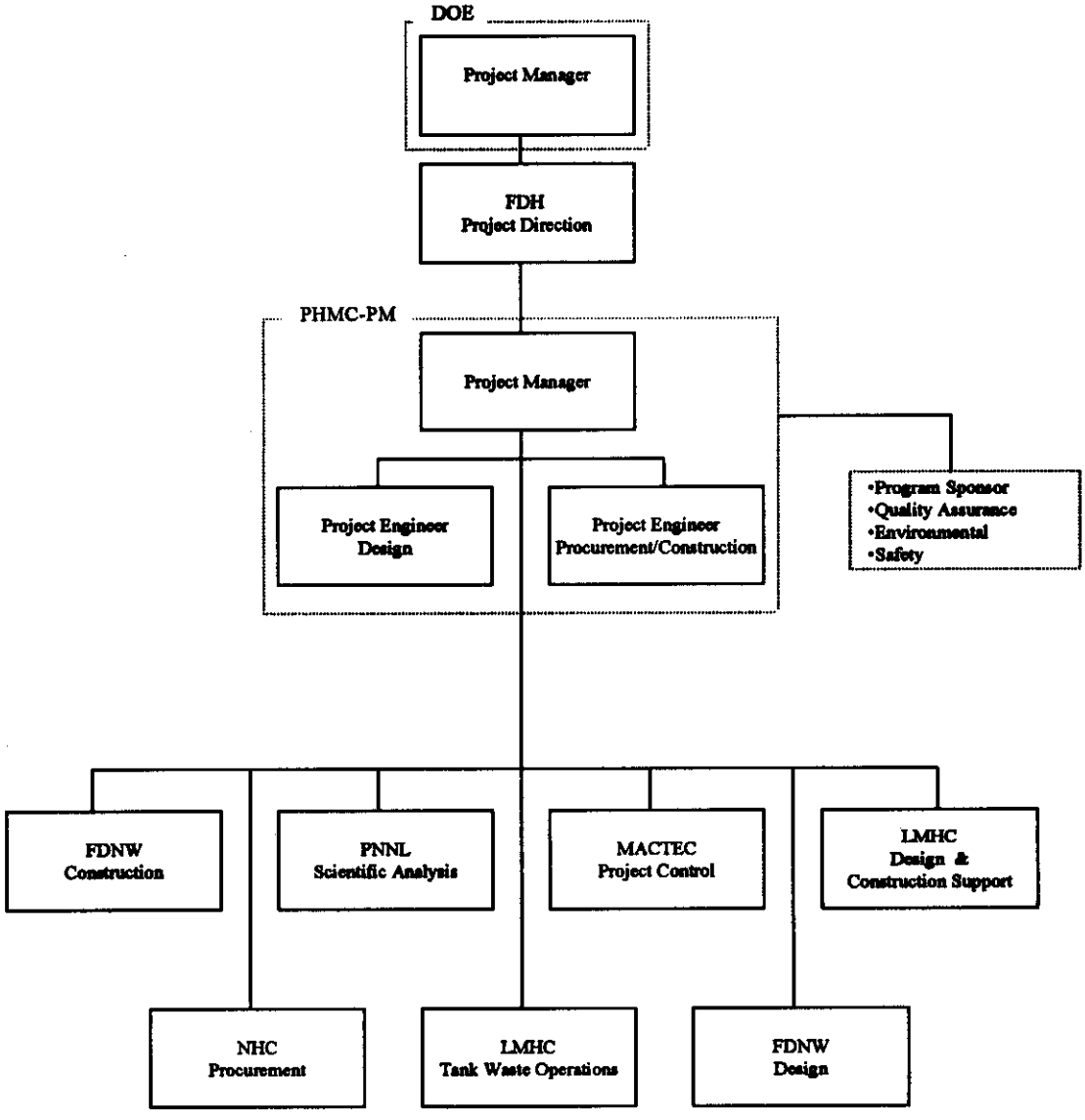
2.0 PROJECT ORGANIZATION

This section of the PMP focuses on defining the ITRS project organization, and participant roles and responsibilities. Major participants in the ITRS project include the U.S. Department of Energy (DOE), Office of River Protection (ORP), Project Hanford Management Contractor (PHMC) team, and other on and offsite contractors. The PHMC team is comprised of a number of companies, of which Fluor Daniel Hanford, Incorporated (FDH) is the prime, hereby referred to as the Managing Contractor (MC).

Contractual relationships and responsibilities established between DOE and the MC are identified in the U.S. Department of Energy Contract DE-AC106-96RL13200. The DOE approach for administering this contract is specified in the Contract Administration Plan, Project Hanford Management Contract. This contract administration style entails partnering with the MC and its subcontractors to achieve mutually beneficial results.

The key organizational relationships for ITRS are shown in the organization chart on the following page. Only primary members of the project team are depicted in the organization chart, although additional management levels are discussed in the sections 2.1 through 2.4. Responsibilities are summarized for the major project organizations. The methods of performance for ITRS products are identified in Table 1.

FUNCTIONAL ORGANIZATION CHART
PROJECT W-211
INITIAL TANK RETRIEVAL SYSTEMS



2.1 U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION

The ORP Manager (or designee) is responsible for the definition, oversight, and acceptance of the work performed by the PHMC and its subcontractors. The ORP Manager has the authority to stop any work activity, add work, and/or withdraw work from the PHMC contract. In general terms, the role of ORP with regard to administering the PHMC contract is to:

- Define success criteria/values
- Establish boundaries for integration
- Set priorities
- Establish strategic performance measures
- Define outcomes/deliverables
- Establish minimum site standards/evaluate results

Authority for contractual direction to the MC is limited to the DOE Contracting Officer (CO) and designated Contracting Officer Representatives (COR). The Operations Program Division (OPD) Director is assigned COR responsibilities for OPD sponsored projects, including the ITRS project.

CORs are empowered to act as an authorized representative of the CO for specified functions. The CO/COR shall be fully responsible for providing technical and/or administrative direction to the MC, relative to their project or area of responsibility. In addition, the CO/COR shall be responsible for the following items:

A. Provide technical oversight to ensure the products and services for which the CO/COR is responsible are delivered in accordance with the contract terms and conditions. Through oversight, DOE should ensure the work is being conducted consistent with the established contract and plans, and that applicable requirements (e.g., statutes, laws, DOE Orders, and policies) are being met. Oversight does not include controlling the way the contractor is doing the work, except where significant environmental, safety, or health hazards have been identified. Oversight is conducted through various means, and the methods used depend on the information needed. Much of the information needed to monitor the contractor performance is available through regular reporting mechanisms. Confirmation of this data can be made through periodic meetings and reviews, site visits, one-on-one discussions, observations, appraisals, audits, and walk-throughs.

B. The CO, or duly designated representative, shall accept work completed under the PHMC.

C. Review invoices, as required.

D. Provide approval of multi-year work plan documentation.

E. Conduct periodic reviews, audits, surveillances, and DOE independent assessments, of the MC and its subcontractors to ensure compliance with the terms of the contract, and that the MC's administration of its subcontractors is effective. These reviews, audits, surveillances, and assessments shall be performed against established criteria to determine contractor progress and to identify any factors that may delay performance or adversely affect environmental protection or protection of worker health and safety. Surveillances may include formal reviews or informal observation and review of work activities.

The CO/CORs are assisted in carrying out their duties by the Waste Projects Manager and the ITRS Project Manager. Primary oversight responsibility for the ITRS project has been delegated by the Assistant Manager for Tank Waste Storage & Retrieval (AMSR) and Operations Program Division (OPD) CORs to the ITRS Project Manager. In interactions with the MC's subcontractors, this oversight is generally limited to information exchange, with formal communication being directed through the MC.

DOE-HQ, the regulators, and the Defense Nuclear Facility Safety Board may provide additional oversight. The oversight performed by these organizations will be done in coordination with the cognizant ORP organization.

The ITRS Project Manager reports to the Waste Projects Manager within OPD. The Waste Projects Manager reports to the OPD Director who reports directly to the AMSR.

2.2 PROJECT HANFORD MANAGEMENT CONTRACTOR

The PHMC is a team comprised of thirteen companies: a prime contractor/MC, six major subcontractors, and six "enterprise companies."

As the MC, FDH has overall responsibility for integrating and directing the work of the other team members. Subcontractor members of the PHMC team with significant involvement in ITRS include: Lockheed Martin Hanford Corporation (LMHC); and Numatec Hanford Corporation (NHC). The PHMC enterprise company with significant involvement in ITRS is Fluor Daniel Northwest (FDNW).

2.2.1 FLUOR DANIEL HANFORD, INCORPORATED

As the MC, FDH is responsible and accountable for management of all activities associated with the ITRS project. FDH's role focuses on allocating resources, management, and integration of the work (how and whom), while its subcontractors are responsible for operations (doing the work). The MC role includes defining the work necessary to accomplish the objectives established by ORP and working with ORP to establish specific Performance Agreements tied to PHMC award fee objectives.

FDH's responsibilities include serving as the prime interface with ORP. All contractual requirements and formal communications concerning this project between the PHMC team and ORP shall be coordinated through the office of the FDH ORP Project Director.

The FDH ORP Project Director is responsible for integrating horizontally across major project boundaries and vertically to DOE and the major subcontractors (e.g., LMHC). This approach will

ensure vertical definition of interfaces and requirements from FDH down through the major subcontractors, and will also provide horizontal integration of interfaces and requirements among major subcontractors.

The FDH ORP Project Director is supported in managing the ITRS work by the Project Manager, Disposal.

Specific FDH responsibilities associated with the ITRS project include the following:

A. Allocation of resources

B. Setting operational standards for subcontractors (minimum standards)

C. Establishing tactical measures

D. Integrating project activities sitewide

E. Evaluating effectiveness of subcontractors

2.2.2 LOCKHEED MARTIN HANFORD CORPORATION/NUMATEC HANFORD CORPORATION

Programmatic, operational, and construction project responsibilities for ITRS have been assigned by FDH to LMHC. Programmatic sponsorship of the ITRS project is provided by the Tank Waste Retrieval & Disposal (TWRD) organization. This sponsoring organization provides programmatic direction defining projects and programmatic-related operational needs to the Life Cycle Projects (LCP) and Tank Waste Operations (TWO) organizations. The Director, LCP, is responsible for the ITRS project life cycle and has delegated project responsibility to the W-211 Project Manager (PM), including: conceptual, Title I, and Title II designs; equipment procurement; construction; Title III engineering; and construction testing. Tank Waste Operations is responsible for system readiness activities and operation of the ITRS-supplied retrieval systems. The TWRD, TWO, and LCP Directors report to the LMHC President and General Manager.

Numatec Hanford Corporation provides matrixed project management personnel to LMHC in support of the ITRS project. The PM, who reports to LCP Director, has direct responsibility and accountability for day-to-day management of the ITRS project. Key personnel for the ITRS project are identified in RPP-4852, "Project W-211 Organization Chart."

Specific project management and programmatic/operational responsibilities associated with the ITRS project include the following:

<u>Project Management Responsibilities</u>

A. Provide a dedicated project manager empowered to authorize and direct all work scope associated with project execution by supporting subcontractors, manage authorized project funds/resources, and approve project cost/schedule baselines.

B. Develop project planning and baseline documents.

C. Provide contractual direction to the A/E and construction management subcontractors for the performance of design, procurement, and construction. Provide the project technical baseline and safety basis for design.

D. Ensure definitive design media is compliant with the project baseline considering safety, quality, operability, maintainability, environmental compliance, and cost effectiveness factors, and provide approval of the design. Involve Chief Engineer, Design Authority, Tank Waste Operations, Safety, Quality Assurance, Environmental Compliance, Radiological Engineering, etc., in project design reviews, as appropriate, and ensure documented closeout of Design Review Team comments.

E. Provide the administration of overall project baseline change control to assure appropriate management of scope, cost, and schedule commitments through the change control process as stipulated in Section 4.0 of this PMP. Approve baseline changes.

F. Act as a focal point for coordination and integration among participating sub-contractors for the project activities, and provide appropriate direction to assure compliance with the project technical baseline and other technical design criteria.

G. Develop project design and construction schedules.

H. Provide project direction to optimize the design in terms of quality, safety, cost, reliability, maintainability, environmental requirements, and accuracy. Assure compliance with applicable codes, standards, criteria, regulations, and DOE Orders. Assure that design/construction complies with applicable NEPA/safety documentation/permits.

I. Provide design and construction reports as required.

J. Ensure that quality affecting records providing objective evidence that ITRS design, procurement, and construction activities comply with governing requirements are maintained, and that documentation/records providing a traceable project history are properly dispositioned for archive at project completion.

K. Assure the preparation, coordination, and approval (as applicable) of all local, state, and federal environmental documents/permits required for the project.

L. Provide copies of project associated correspondence, reports, drawings, specifications, nonconformance reports, plans and schedules, cost estimates, QA records, audits, subcontracts, meeting minutes, test procedures, photographs, etc., to other PHMC team members.

M. Provide timely notification of meetings, scheduled acceptance tests, and final inspections to participants and other appropriate parties.

N. Prepare project reviews and reports, and data for budgetary exercises.

O. Assure preparation of fair cost estimates, as required.

P. Provide appropriate level of oversight for work performed by other contractors.

Q. Coordinate construction activities with Operations personnel (Operations Liaison, PIC, Health Physics, Industrial Safety, etc.) and perform oversight of construction contractor safety programs. Provide immediate notification of accidents, incidents, significant problems, and work stoppages

R. Assure as-built drawings are prepared.

S. Support construction turnover activities performed in preparation of operational readiness.

T. Provide technical support for reviews of the project documentation by off-site agencies to assure prompt and cost-effective resolution of identified issues.

U. Procure long-lead equipment.

V. Participate in the LMHC corrective action management program to comply with HNF-PRO-052, "Corrective Action Management," for project activities.

W. Coordinate development of safety analyses, Authorization Basis amendments, NEPA documentation, and other related documentation in support of the ITRS project.

Programmatic/Operational Responsibilities

A. Provide the technical baseline. Function as the Facility Design Authority for the project.

B. Provide expense funding for project related activities.

C. Provide operations liaison between user/sponsor and ITRS project personnel to minimize interface problems, promote integration, and facilitate project execution. Operations liaison personnel will represent TFO interests as they relate to ITRS during project reviews, meetings, and other activities. Operations responsibilities also include acceptance of the project's Acceptance for Beneficial Use (ABU) documentation.

D. Provide programmatic, operations, safety, environmental, quality, and health physics support for ITRS design, construction, and testing.

E. Ensure timely exchange of information, data, records, and guidelines for special conditions/requirements that may impact project cost (e.g., radiation levels, security, safety, and escort requirements, etc.) to the PM.

F. Issue excavation and/or core drilling and/or tie-in permits and welding and/or cutting permits as needed to support construction. Prepare and/or approve radiation work procedures required for project construction.

G. Participate and concur with final inspection and acceptance testing, perform operational testing, and accept completed facilities for operation.

H. Develop operator procedures and training of operations personnel for the ITRS systems.

I. Perform readiness reviews and startup for completed ITRS systems and obtain approvals to operate those systems.

2.2.3 FLUOR DANIEL NORTHWEST

Fluor Daniel Northwest (FDNW) is assigned the role of Design Agent for the ITRS project, with overall responsibility for providing project design. In addition, FDNW provides fixed price construction management and in-Farm construction services.

Primary FDNW responsibilities are as follows:

A. Provide day-to-day management of project design, construction, and inspection. Provide engineering studies, definitive design, alternative generation and analysis documents, cost estimates, and scheduling services for all phases of project activities described in Letters of Instruction and/or Statements of Work provided by the PM. Ensure that established project quality objectives and technical requirements are mutually understood and can be satisfied.

B. Assure that design meets the applicable laws, standards, regulations, and the ITRS technical baseline.

C. Conduct design status meetings, and issue meeting minutes. Participate in the design review and approval process, construction kickoff, and construction progress meetings.

D. Provide onsite construction, and construction management for work by offsite construction contractors, as directed by the PM.

E. Develop cost estimates and schedules for ITRS design and construction, and prepare updates to these products as required.

F. Provide welding procedures and welder qualification services.

G. Assure appropriate management of scope, cost, and schedule commitments through the change control process.

H. Review and approve vendor data submittals, and maintain and distribute record of status.

I. Perform inspection of construction in accordance with the inspection plan.

J. Process Engineering Change Notices and Nonconformance Reports, as necessary. Provide supporting documentation and tracking status.

K. Assure industrial safety and security requirements are implemented at the construction site.

L. Establish and implement a Quality Assurance (QA) program and assure that design and construction activities are performed consistent with this program. Perform management and independent assessments to assess QA program implementation. Implement a corrective action management program. Ensure that quality affecting records providing objective evidence that design and construction activities comply with governing requirements are maintained, and that documentation/records providing a traceable project history are properly turned over to the designated PHMC Project Files depository for archive at project completion.

M. Manage an effective cost and schedule control system for design and construction activities. Provide construction work progress and cost information to the PM on a routine basis in project status reports.

N. Provide construction site safety inspections and surveillances.

O. Prepare as-built drawings.

P. Purchase material required for construction, with the exception of long-lead equipment, including inspection of in-process and/or completed products to assure compliance with project requirements.

2.3 RESEARCH AND DEVELOPMENT CONTRACTOR

Pacific Northwest National Laboratory, as the R&D Contractor, provides technical support to ITRS by evaluating instrument requirements and capabilities, developing computer modeling capabilities for waste mixing and transport, assessing waste dilution and heating affects, resolving gas issues, and assessing the potential for criticality.

2.4 OFFSITE CONTRACTORS

Offsite contractors provide fabrication of long-lead equipment, and construction of the instrument buildings and caustic supply systems. Offsite contractor responsibilities are as defined in the respective contracts.

2.5 METHODS OF PERFORMANCE

Table 1 on the following page summarizes the above discussion by providing a listing of the organizations responsible for the major elements of the ITRS WBS.

TABLE 1 - ITRS METHOD OF PERFORMANCE

WBS ELEMENT	METHOD OF PERFORMANCE
1.1.1 Project Management	LMHC/NHC
1.1.2 Value Engineering	FDNW
1.2.1 CAA Permits	LMHC
1.2.2 RCRA Permits	LMHC
1.2.3 Safety Assessment	Complete
1.2.4 HPT Support	LMHC
1.3.1 Project Definition	Complete
1.3.2 Design and Construction Support	LMHC
1.3.3 Configuration Verification	Complete
1.3.4 Site Characterization	Complete
1.3.5 Equipment Development	Complete
1.3.6 PSE	Complete
1.3.7 Permitting Plan	Complete
1.3.8 EIS	Complete
1.3.9 Conceptual Design	Complete
1.4.1 Title I Design	Complete
1.5.A.1 through 1.5.J.1 Retrieval Systems Title II Design	FDNW
1.5.A.2 through 1.5.J.2 Retrieval Systems Title III Design	FDNW
1.5.A.3 through 1.5.J.3 Retrieval Systems Advance Procurement	Offsite Contractors via NHC Procurement
1.5.A.4.1 through 1.5.J.4.1 Retrieval Systems Construction - In-Farm Construction	FDNW
1.5.A.4.2 through 1.5.J.4.2 Retrieval Systems Construction - ICE Building & Utilities	Offsite Contractors
1.5.A.4.3 through 1.5.J.4.3 Retrieval Systems Construction - Caustic Supply System	Offsite Contractors
1.5.A.4.4 through 1.5.J.4.4 Retrieval Systems Construction - Burial	LMHC
1.6.A through 1.6.J Startup	LMHC

3.0 PROJECT BASELINES

The ITRS baselines identified in the following sections are reflective of the completed Title I design; Title II designs for SY-102, AP-102, AP-104, and AN-105; and the latest tank selection and retrieval sequence. Baselines are maintained as described in Section 4.0.

3.1 TECHNICAL BASELINE

Functional Design Criteria (FDC) HNF-SD-W211-FDC-001 provides the ITRS technical baseline. The technical baseline established by the FDC has been enhanced by the Title I design report, WHC-SD-W211-TDR-001, Revision 0, Title I Supplement 1, WHC-SD-W211-TDR-001, Revision 0A, and Title I Supplement 2, WHC-SD-W211-TDR-001, Revision 0B. Collectively, these Title I documents define the ITRS preliminary design basis, including analysis of generic features sufficient to provide an adequate technical basis for starting Title II design of a mixer pump-based retrieval system for any DST.

3.2 SCHEDULE BASELINE

Attachment A includes the upper-level schedule for providing retrieval systems for the tanks within the project scope. Consistent with the Attachment A schedule, milestones established via Performance Agreement and FDH/DOE milestones included in the Multi-Year Work Plan, provide the ITRS schedule baseline.

3.3 COST BASELINE

The cost baseline for ITRS is shown in Table 2 and is based on the latest tank selection and retrieval sequence, and the April 1999 project estimate reflecting completion of Title II designs for SY-102, AP-102, AP-104, and AN-105 retrieval systems.

3.4 WORK BREAKDOW STRUCTURE

The Project Summary Work Breakdown Structure (PSWBS) is provided in Attachment B.

4.0 BASELINE CHANGE CONTROL

Changes to ITRS baselines are authorized by approval of a change request (CR) in accordance with HNF-PRO-533, "Change Control." The following changes are processed by LMHC/NHC and do not require action by FDH/DOE change control boards:

- Cost increase for in-scope work that requires less than 10% of the original total capital contingency
- Cost increase of less than $50,000 to the fiscal year expense budget
- Schedule change to FDH/DOE designated milestone of less than 45 days
- Technical change that does not adversely impact another project
- Change within constraints of the W-211 Functional Design Criteria

TABLE 2 - COST BASELINE
($ X 1000)

WBS ELEMENT	Escalated Cost	Contingency	Total
1.1.1 Project Management	13,660		13,660
1.1.2 Value Engineering	490		490
1.2.1 Air Permits	120		120
1.2.2 RCRA Permits	10		10
1.2.3 Safety Assessment	2,570		2,570
1.2.4 Radiation Protection	4,230		4,230
1.4 Title I Design	1,600		1,600
1.5.A Tank SY-102	22,700		22,700
1.5.B Tanks AP-102/104	28,680		28,680
1.5.D Tank AN-105	20,180		20,180
1.5.E Tank AN-104	18,250		18,250
1.5.F Tank AZ-102	18,060		18,060
1.5.H Tank AN-103	18,280		18,280
1.5.I Tank AP-108	15,020		15,020
1.5.J Tank AY-102	22,250		22,250
TEC	186,100	15,900	202,000
1.3.1 Project Definition	1,595		1,595
1.3.2 Design and Construction Support	13,001		13,001
1.3.3 Configuration Verification	35		35
1.3.5 Equipment Development	938		938
1.3.6 Preliminary Safety Evaluation	329		329
1.3.7 Permitting Plan	29		29
1.3.8 EIS	13		13
1.3.9 Conceptual Design	1,713		1,713
1.6 Startup	9,447		9,447
OPC	27,100		27,100
TPC	213,200	15,900	229,100

5.0 PERFORMANCE MONITORING AND REPORTING

Project performance will be monitored against the baseline and reported in accordance with ORP requirements. Routine reports prepared by ITRS include monthly variance analysis reports, and monthly ORP Management Review Meeting reports, and HQ Quarterly reports.

Project planning and performance reporting is accomplished by a combination of the PM, various performing organizations, and Project Controls Specialist (PCS) efforts. The PM has overall responsibility for planning and reporting. FDNW, PNNL, and offsite contractors provide monthly status, via the PM, for work in progress.

During schedule development, each performing organization prepares a detailed plan for producing project products. Agreement is reached with the PM on the schedule and the associated resources. The PCS develops task descriptions, durations, and logic based on detailed information from the performing organizations. The PCS is responsible for constructing the schedule from the supplied data.

Each month the performing organizations report progress to the PCS, who reviews the reports and forwards them and earned value data to the PM. Reports are forwarded to ORP in the form of Project Status Reports, Management Review Meeting reports, and Progress Tracking System reports.

6.0 CONFIGURATION MANAGEMENT

The configuration management system described in HNF-3310, "Systems Engineering Management and Implementation Plan for W-211," is used for ITRS configuration control and serves as the project-specific configuration management plan for ITRS.

7.0 DESIGN VERIFICATION

Design verification via independent review will be performed by the Design Agent for all design media and subsequent changes. In addition, Title II designs will be reviewed at the "Issue for Review" stage by a team comprised of operations, safety, quality assurance, environmental, engineering, program, and project representatives.

8.0 SYSTEMS ENGINEERING

The ITRS Systems Engineering program is described in HNF-3310, "Systems Engineering Management and Implementation Plan for W-211."

9.0 QUALITY ASSURANCE

ITRS quality assurance requirements are described in the HNF-SD-W211-QAPP-001, "Project Specific Quality Assurance Plan, Project W-211, Initial Tank Retrieval Systems."

10.0 ENVIRONMENTAL ASSURANCE

Environmental statutes applicable to ITRS include the Clean Air Act, the Resource Conservation and Recovery Act (RCRA), and the National Environmental Policy Act (NEPA). The following sections describe the ITRS environmental compliance actions.

10.1 AIR PERMITS

Approvals from the Washington State Department of Health, Washington State Department of Ecology, and the U.S. Environmental Protection Agency, via Notice of Construction letters, will be obtained before construction of the retrieval systems.

10.2 RCRA AND DANGEROUS WASTE REGULATIONS

The current DST Part A Dangerous Waste Permit Application does not require any revision for ITRS. ITRS activities before 2000 are covered under Interim Status. ITRS will be included in the DST Part B Permit scheduled for issuance in 2000.

10.3 NATIONAL ENVIRONMENTAL POLICY ACT

Mixer pump-based retrieval of waste from DSTs is covered in the Hanford Defense Waste - Environmental Impact Statement (HDW-EIS). DST waste retrieval is additionally covered in the TWRS-EIS and the related Record of Decision dated February 20, 1997.

11.0 SAFETY DOCUMENTATION

A Preliminary Safety Evaluation (PSE) was prepared for the ITRS during the conceptual phase of the project. The PSE identified and evaluated the risks and hazards associated with retrieval of DST waste and provided the safety basis for development of Title I and Title II designs.

HNF-SD-W211-PSAD-001, "Safety Assessment for Initial Tank Retrieval Systems, Project W-211," was accepted by DOE on April 2, 1998 as a basis for proceeding with ITRS construction. The Unreviewed Safety Question (USQ) process will be followed prior to construction to verify ITRS construction activities can be conducted within the existing tank farms authorization basis (AB).

Prior to operation of ITRS systems, an AB amendment package will be prepared by the Waste Feed Delivery Program for the overall waste feed delivery system and receive DOE approval.

12.0 PROCUREMENT PLAN

Commercial and industrial sources will be used to the extent possible for providing the retrieval system components or sub-systems. Advance procurement for the retrieval systems includes, but is not limited to, the following equipment and systems:

- Mixer pumps, transfer pumps, and other miscellaneous pumps
- Control systems
- Boilers for heating dilution fluid
- Burial containers and equipment
- Component removal equipment
- Closed circuit television and thermocouple assemblies

NHC will provide procurement services for the above equipment and systems. Other materials and equipment required for construction will be procured by FDNW.

13.0 TEST AND EVALUATION PLAN

Acceptance testing is required to demonstrate that installed equipment will operate satisfactorily and safely in accordance with the drawings and specifications. Acceptance test procedures will be developed by the Design Agent to ensure the system is installed as designed. Operational test procedures will be prepared by LMHC to verify the operability of the system and ensure that functional requirements have been met.

14.0 HUMAN FACTORS ENGINEERING PROGRAM PLAN

An evaluation of the integration of human factors engineering into the design of the ITRS is provided in PNNL-11442, "Human Factors Engineering Evaluation, Project W-211, Initial Tank Retrieval Systems (ITRS), DST 241-SY-102." Findings of this evaluation are applied to each Title II design.

15.0 RISK MANAGEMENT

The ITRS Risk Management program is described in HNF-3310, "Systems Engineering Management and Implementation Plan for W-211."

16.0 TRAINING

The "Project W-211 Qualification and Training Plan," requires that all Project W-211 personnel meet specific qualification requirements, are trained to applicable procedures, and that records of training and qualification are maintained.

17.0 REFERENCES.

1. WHC-SD-W211-TDR-001, "Title I Design Summary Report, Initial Tank Retrieval Systems, Project W-211"

2. HNF-SD-W211-FDC-001, "Functional Design Criteria, Project W-211, Initial Tank Retrieval Systems"

3. HNF-SD-W-211-QAPP-001, "Quality Assurance Program Plan for Project W-211, Initial Tank Retrieval Systems"

4. HNF-SD-W211-PSAD-001, "Safety Assessment for Initial Tank Retrieval Systems, Project W-211"

5. HNF-1507, "Interface Document, Project W-211, Initial Tank Retrieval Systems"

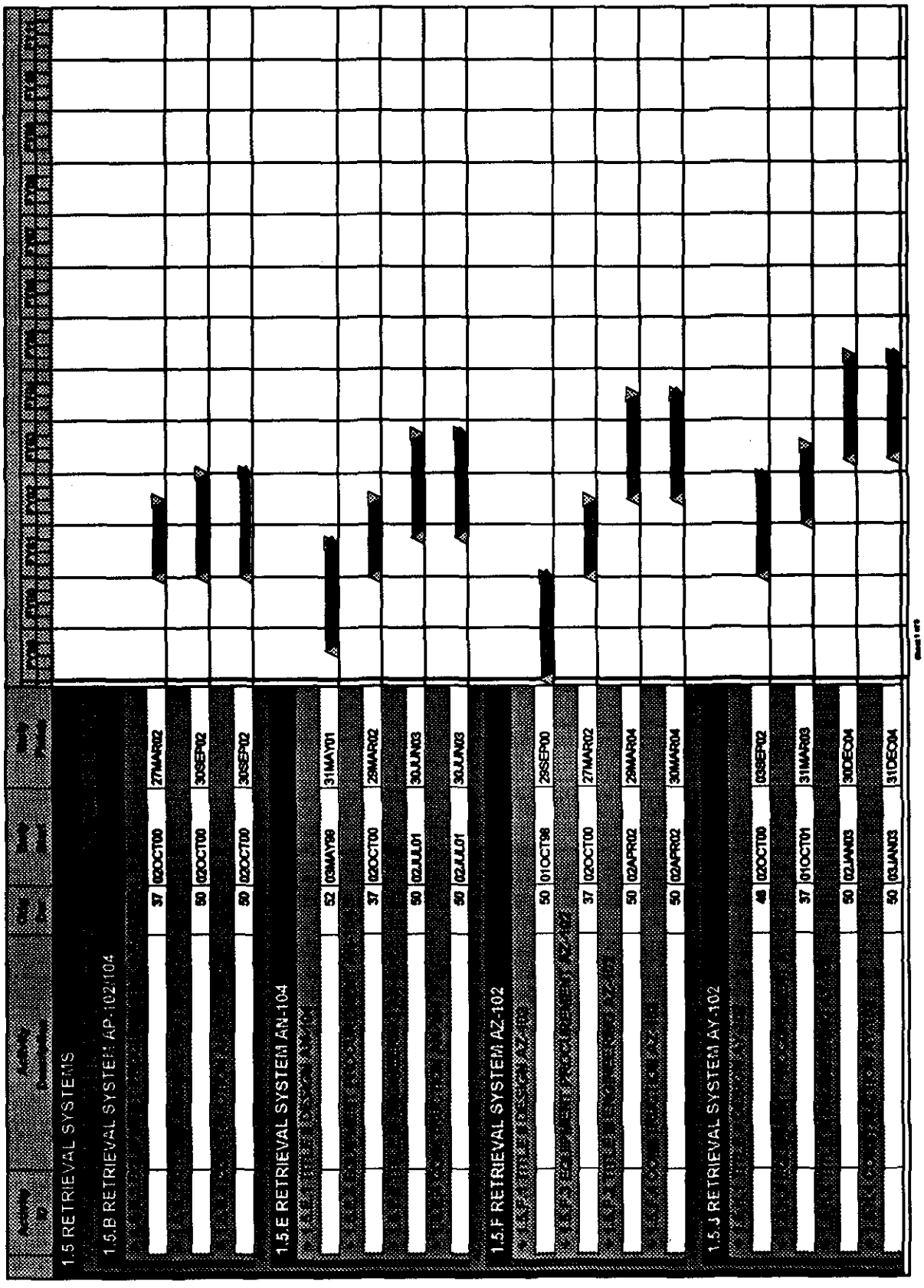
6. HNF-3310, "Systems Engineering Management and Implementation Plan For Project W-211, Initial Tank Retrieval Systems"

7. RPP-4852, "Project W-211 Organization Chart"

8. RPP-4855, "Project W-211 Test and Evaluation Plan"

Attachment A

Baseline Schedule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50 02OCT00 30SEP02
1.5.E RETRIEVAL SYSTEM AN-104
52 03MAY99 31MAY01
37 02OCT00 28MAR02
50 02JUL01 30JUN03
50 02JUL01 30JUN03
1.5.F RETRIEVAL SYSTEM AZ-102
50 01OCT98 29SEP00
37 02OCT00 27MAR02
50 02APR02 28MAR04
50 02APR02 30MAR04
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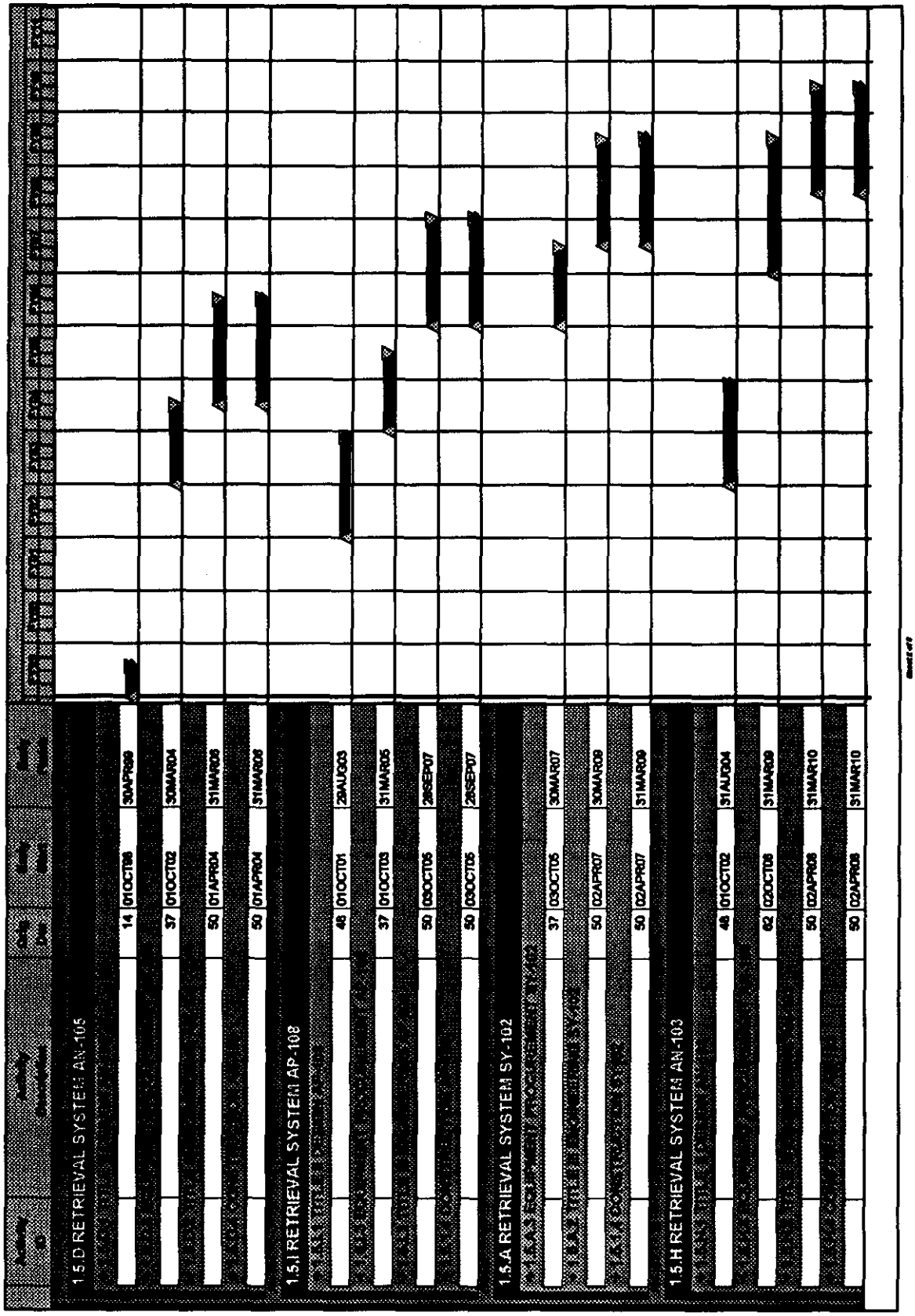
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37 01OCT03 31MAR05
50 03OCT05 28SEP07
50 03OCT05 28SEP07
1.5.A RETRIEVAL SYSTEM SY-102
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50 02APR07 30MAR09
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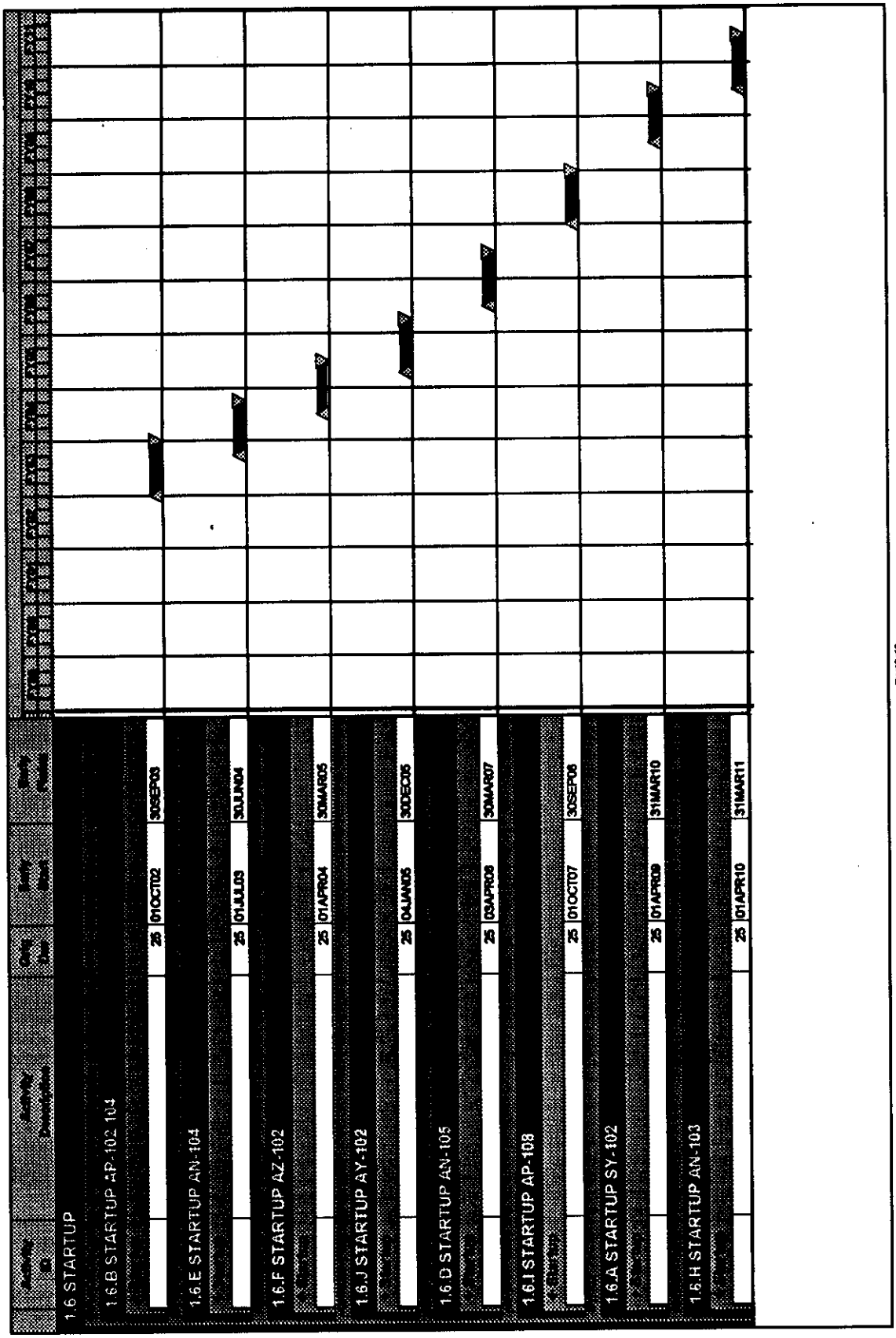
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25 01JUL03 30JUN04
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25 01APR04 30MAR05
1.6.J STARTUP AY-102
25 04JAN05 30DEC05
1.6.D STARTUP AN-105
25 03APR06 30MAR07
1.6.I STARTUP AP-108
25 01OCT07 30SEP08
1.6.A STARTUP SY-102
25 01APR09 31MAR10
1.6.H STARTUP AN-103
25 01APR10 31MAR11

Attachment B

Work Breakdown Structure

PROJECT SUMMARY WORK BREAKDOWN STRUCTURE

4/29/99