

# **Site Systems Engineering Fiscal Year 1999 Multi-Year Work Plan (MYWP) Update for WBS 1.8.2.2**

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Assistant Secretary for Environmental Restoration

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Richland, Washington

Hanford Management and Integration Contractor for the  
U.S. Department of Energy under Contract DE-AC06-96RL13200

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Work Plan (MYWP) Update for WBS 1.8.2.2

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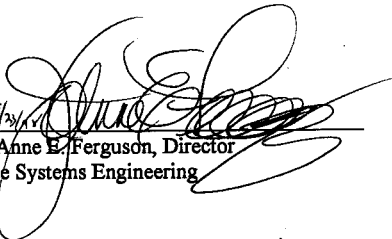
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Systems Engineering  
WBS 1.8.2.2


Approval Page

  
69/29/11  
JoAnne E. Ferguson, Director  
Site Systems Engineering

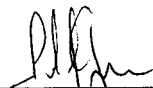
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## TABLE OF CONTENTS

<b>I. SUMMARY SECTION .....</b>	<b>I-1</b>
1.0 TECHNICAL BASELINE .....	I-1
1.1 MISSION STATEMENT .....	I-1
1.2 BOUNDARY DIAGRAM WITH MAJOR FACILITY .....	I-1
1.3 FACILITY RESPONSIBILITY ASSIGNMENT MATRIX .....	I-1
1.4 PLANNING ASSUMPTIONS .....	I-1
1.5 RISK MANAGEMENT .....	I-1
1.6 TECHNICAL ISSUES MANAGEMENT LIST (TIML) .....	I-1
2.0 PROJECT HANFORD BREAKDOWN STRUCTURE .....	I-2
3.0 SCHEDULE BASELINE .....	I-3
4.0 COST BASELINE .....	I-5
4.1 ESTIMATE BASIS .....	I-5
4.2 SUMMARY OF LIFE CYCLE COSTS BASELINE (BCWS) BY PROJECT .....	I-5
4.3 SUMMARY OF LIFE CYCLE BUDGET AUTHORITY (B/A) BY PROJECT .....	I-5
4.4 COST BASELINE (BCWS) FOR EXECUTION YEAR BY MONTH BY FUND TYPE .....	I-5
4.5 COST BASELINE (BCWS) FOR EXECUTION BY MONTH BY RESOURCE TYPE .....	I-5
<b>II. PROJECT BASELINE SUMMARIES (PBS) LEVEL .....</b>	<b>II-1</b>
1.0 TECHNICAL BASELINE .....	II-1
1.1 PROJECT MISSION STATEMENT .....	II-1
1.2 PROJECT END POINT TARGETS .....	II-1
1.3 MAJOR FACILITIES .....	II-1
1.4 DRIVERS .....	II-1
2.0 WORK BREAKDOWN STRUCTURE (WBS) .....	II-2
2.1 WBS HIERARCHY .....	II-2
2.2 WBS DICTIONARY .....	II-4
2.3 RESPONSIBILITY ASSIGNMENT MATRIX (RAM) .....	II-10
3.0 SCHEDULE BASELINE .....	II-11
3.1 PROJECT MASTER BASELINE SCHEDULE (PMBS) BY PBS .....	II-11
3.2 EXECUTION YEAR PMBS .....	II-11
3.3 MILESTONE LIST (DOE-HQ, RLFO) .....	II-11
3.4 MILESTONE DESCRIPTION SHEETS (MDS) .....	II-11
4.0 COST BASELINE .....	II-17
4.1 LIFE CYCLE COST BASELINE (BCWS) BY PBS .....	II-17
4.2 LIFE CYCLE BUDGET AUTHORITY (B/A) BY PBS .....	II-17
4.3 EXECUTION YEAR COST BASELINE BY MONTH BY PBS BY FUND TYPE .....	II-17
<b>III. ADDITIONAL REQUIREMENTS .....</b>	<b>III-1</b>
1.0 SPECIAL TPA REPORT .....	III-1
2.0 PROJECT PRIORITY LIST .....	III-1
3.0 PERFORMANCE ENHANCEMENTS .....	III-1
4.0 PERFORMANCE OBJECTIVES AND MEASURES .....	III-1
5.0 MYWP UPDATE SUMMARY .....	III-1

## **I. SUMMARY SECTION**

### **1.0 TECHNICAL BASELINE**

#### **1.1 MISSION STATEMENT**

Manage the Site Systems Engineering process to provide a traceable, integrated, requirements-driven, and technically defensible baseline. Through the Site Integration Group(SIG), Systems Engineering ensures integration of technical activities across all site projects. Systems Engineering's primary interfaces are with the RL Project Managers, the Project Direction Office and with the Project Major Subcontractors, as well as with the Site Planning organization. Systems Implementation:

- Develops, maintains, and controls the site integrated technical baseline, ensures the Systems Engineering interfaces between projects are documented, and maintain the Site Environmental Management Specification.
- Develops and uses dynamic simulation models for verification of the baseline and analysis of alternatives.
- Performs and documents functional and requirements analyses
- Works with projects, technology management, and the SIG to identify and resolve technical issues
- Supports technical baseline information for the planning and budgeting of the Accelerated Cleanup Plan, Multi-Year Work Plans, Project Baseline Summaries as well as performance measure reporting.
- Works with projects to ensure the quality of data in the technical baseline.
- Develops, maintains and implements the site configuration management system.

#### **1.2 BOUNDARY DIAGRAM WITH MAJOR FACILITY**

This site-prescribed section of the Multi-Year Work Plan does not apply to this project.

#### **1.3 FACILITY RESPONSIBILITY ASSIGNMENT MATRIX**

This site-prescribed section of the Multi-Year Work Plan does not apply to this project.

#### **1.4 PLANNING ASSUMPTIONS**

- RDD-100 will be deployed site wide and used as the standard for the technical baseline.

#### **1.5 RISK MANAGEMENT**

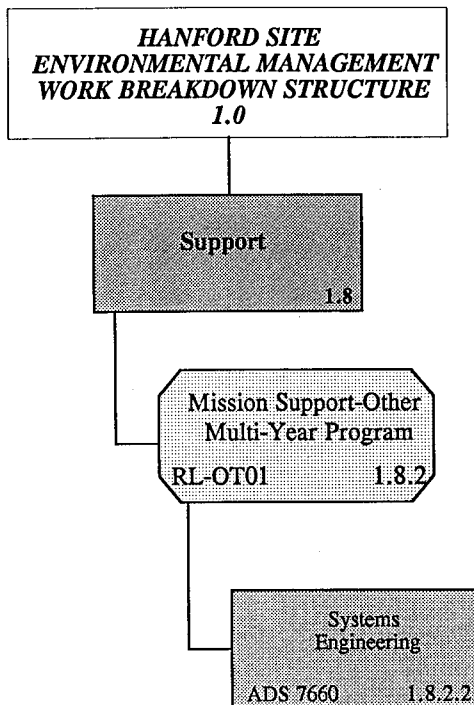
This site-prescribed section of the Multi-Year Work Plan does not apply to this project.

#### **1.6 TECHNICAL ISSUES MANAGEMENT LIST (TIML)**

This site-prescribed section of the Multi-Year Work Plan does not apply to this project.

2.0 PROJECT HANFORD BREAKDOWN STRUCTURE

**FY 1999**  
**EM PROJECT HANFORD BREAKDOWN STRUCTURE**



### **3.0 SCHEDULE BASELINE**

See next page.

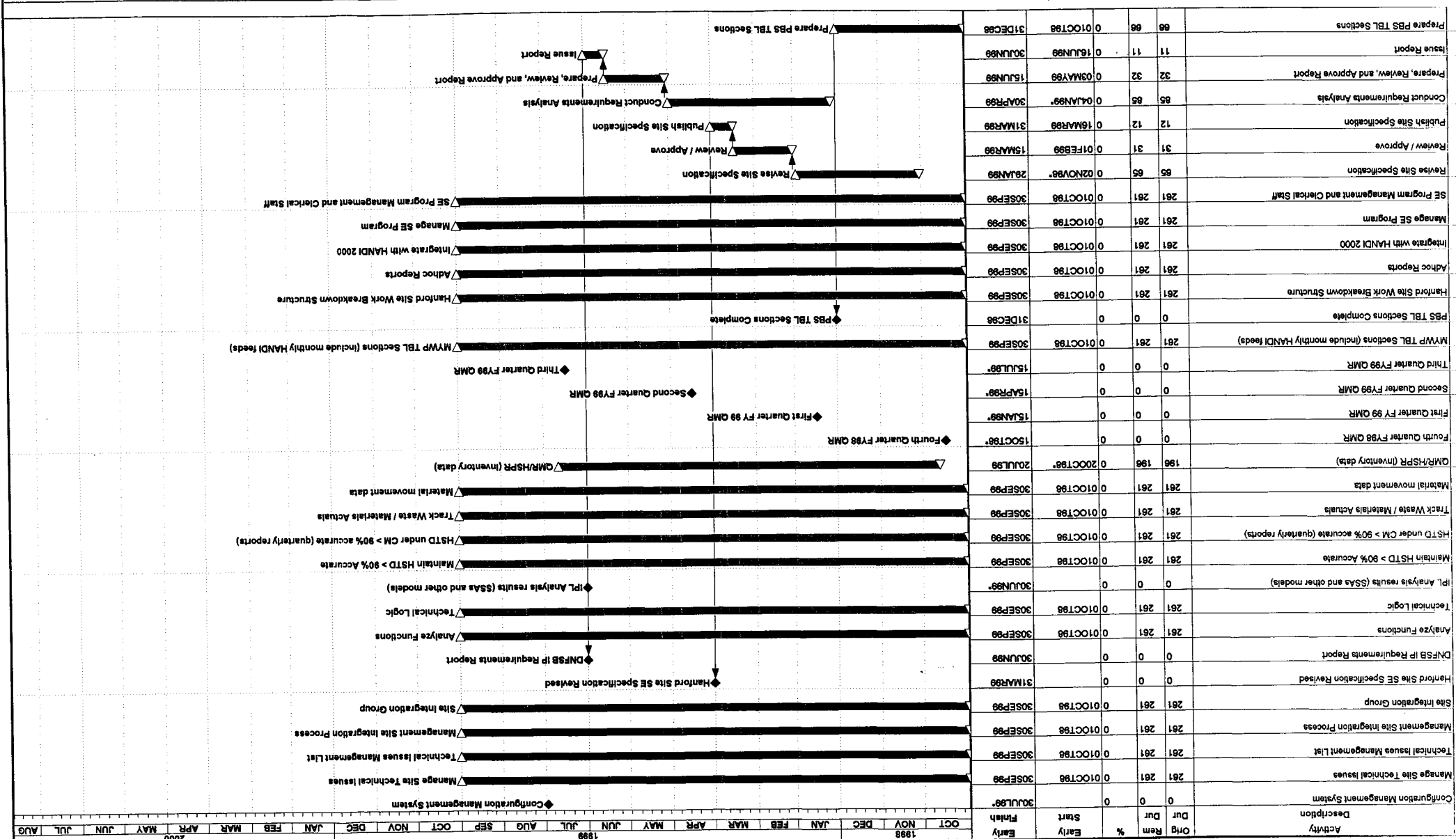


MOS

System Engineering  
Produced for Mike Gryiel  
Revision 1

Sheet 1 of 1

Date  
Revision  
Checked/Approved



#### **4.0 COST BASELINE**

##### **4.1 ESTIMATE BASIS**

The basis of estimate for this project was arrived at using the principles of Activity Based Costing (ABC) in which the project was segmented into discrete supporting activities. Costs were assigned to specific cost elements based on historical use patterns (trends), published rate tables, and escalation rate of 2.2 percent that are consistent with those developed by the FDH Chief Financial Officer and approved by the DOE-RL.

Cost estimates for FY 1999 were prepared at the task level or lower. Cost estimates for FY 2000 were prepared at the cost account level using the escalation rate of 2.1 percent and for the out years were prepared at the cost account level using the escalation rate of 2.2 percent compounded.

##### **4.2 SUMMARY OF LIFE CYCLE COSTS BASELINE (BCWS) BY PROJECT**

See Exhibit 1.

##### **4.3 SUMMARY OF LIFE CYCLE BUDGET AUTHORITY (B/A) BY PROJECT**

See Exhibit 4.

##### **4.4 COST BASELINE (BCWS) FOR EXECUTION YEAR BY MONTH BY FUND TYPE**

To be provided at a later date.

##### **4.5 COST BASELINE (BCWS) FOR EXECUTION BY MONTH BY RESOURCE TYPE**

To be provided at a later date.

							MISSION WBS :      1.8					
PBS TITLE	PBS NO	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	SUBTOT FY1997- FY2006
SYSTEMS ENGINEERING	RL-OT01	750	750	709	779	796	814	832	850	869	888	8,036
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TOTAL BCWS/PMB		750	750	709	779	796	814	832	850	869	888	8,036

<sup>1</sup>Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measurement Baseline (PMB); Expense Carryover Is NOT Included.

EXHIBIT 1

**SUPPORT**  
**SUMMARY OF LIFE CYCLE COST BASELINE (BCWS) BY YEAR**  
**BY PROJECT BASELINE SUMMARY (PBS)**  
**FY 1999**  
**(\$000s)**

MISSION WBS :		1.8													TOTAL FY1997- FY2050
PBS TITLE	PBS NO	FY2007	FY2008	FY2009	FY2010	FY2011- FY2015	FY2016- FY2020	FY2021- FY2025	FY2026- FY2030	FY2031- FY2035	FY2036- FY2040	FY2041- FY2045	FY2046- FY2050		
SYSTEMS ENGINEERING	RL-OT01	907	927	948	968	5,171	5,766	6,428	7,167	7,991	8,910	9,934	11,076	74,228	
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<sup>1</sup>Budgeted 1Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measurement Baseline (PMB); Expense Carryover is NOT included.

## EXHIBIT 4

**SUPPORT**  
**SUMMARY OF BUDGET AUTHORITY (B/A) BY YEAR**  
**BY PROJECT BASELINE SUMMARY (PBS)**  
**FY 1999**  
**(\$000s)**

MISSION WBS :		1.8			
			TARGET B/A	CARRYOVER FROM	PRESIDENT'S BUDGET
PBS TITLE	PBS NO	FY1998	FY1998	FY1998	PRESIDENT'S BUDGET PLUS CARRYOVER <sup>1</sup> FY1999
SYSTEMS ENGINEERING	RL-OT01	750	-	709	709
<b>TOTAL B/A</b>		750	-	709	709

<sup>1</sup>Estimated Carryover Is NOT Included In Cost Baseline; Change Request For Actual Carryover Submitted After September 30, 1998.

## II. PROJECT BASELINE SUMMARIES (PBS) LEVEL

### 1.0 TECHNICAL BASELINE

#### 1.1 PROJECT MISSION STATEMENT

See summary in Section I for this information.

#### 1.2 PROJECT END POINT TARGETS

Project end point targets do not apply to this activity.

#### 1.3 MAJOR FACILITIES

The major facility concept does not apply to this activity.

#### 1.4 DRIVERS

Project Management Hanford Contract

PHMC, Section C.2, Management and Integration Workscope

Part A - Site Planning

Part B - Management Systems

Management and Integration Plan (HNF MP-001 Rev. 1)

RLID 430.1, Systems Engineering Criteria Document and Implementing Directive

RLPD 430.1, Hanford Site Systems Engineering Policy

Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)

OMB: Recommend use of systems engineering to resolve integration problems.

DNFSB 92-4 recommended using systems engineering to resolve integration problems.

DOE Standard 1073-93

Hanford Strategic Plan, DOE/RL-96-92

Hanford Site Environmental Management Specification, DOE/RL-97-55 (Revision 1)

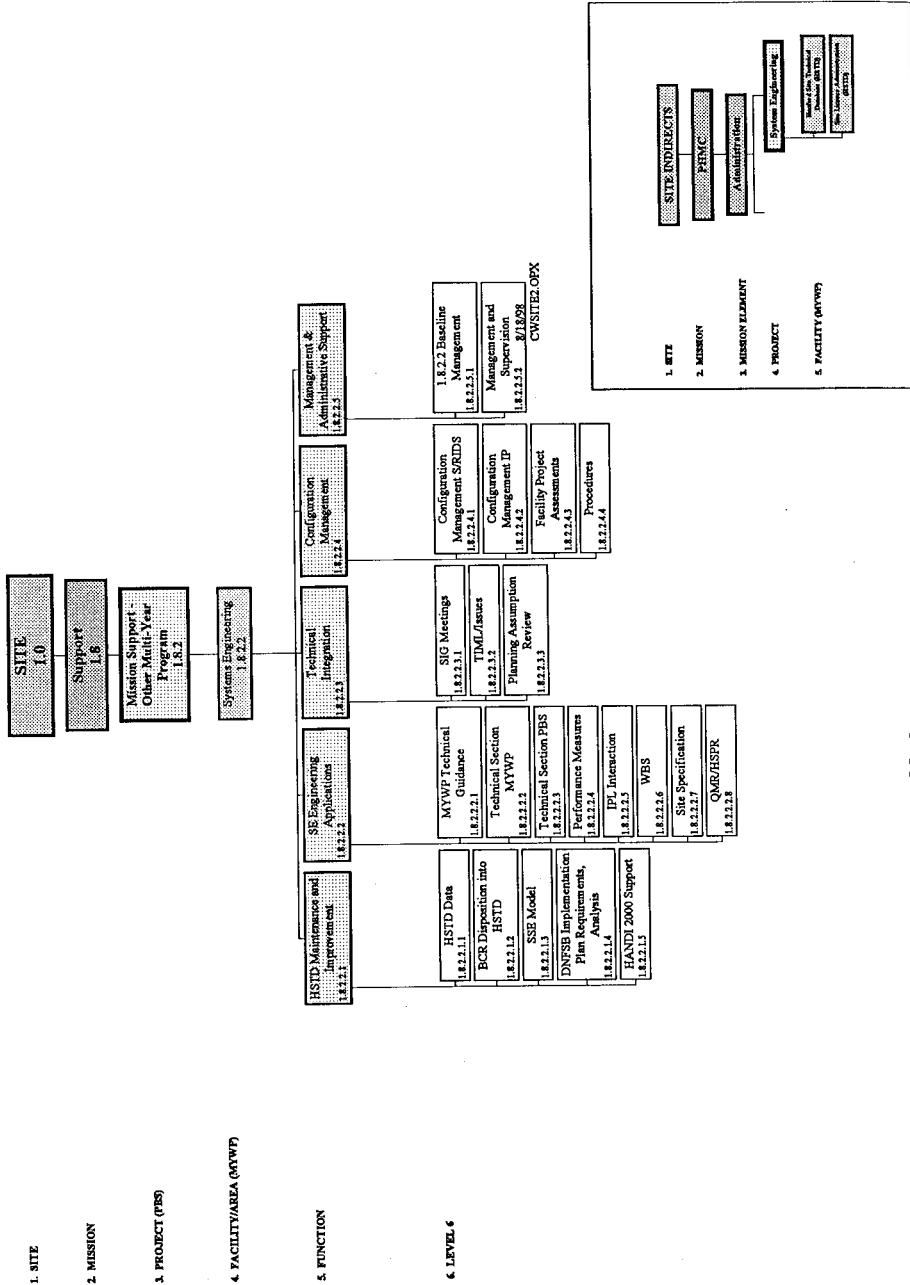
Fluor Daniel Hanford Systems Engineering Management Plan (HNF-MP-007)

## **2.0 WORK BREAKDOWN STRUCTURE (WBS)**

### **2.1 WBS HIERARCHY**

See next page.

FLUOR DANIEL HANFORD SITE PLANNING AND INTEGRATION  
PROPOSED WORK BREAKDOWN STRUCTURE





## 2.2 WBS DICTIONARY

### 2.2.1 HSTD Maintenance and Improvement

1. Dictionary Title: HSTD Maintenance and Improvement	2. Date:	3. PBS Number:	4. Dict Rev:
5. WBS No.: 1.8.2.2.1	6. B&R No.: EW3110010	7. Baseline CR No.:	
8. Organization Name: Site Planning & Integration			
9. Scope of Work:			
<p><b>ELEMENT TASK DESCRIPTION -</b></p> <p>Site Systems Engineering, in accordance with the PHMC, and in accordance with RLID 430.1, is responsible for producing and maintaining a Hanford Site Technical Database (HSTD). This technical data covers the Environmental Management technical work performed on the Hanford Site. It is developed by Site Systems Engineering and the projects, and supported by the tools and methods used by Systems Engineers. Data residing in the HSTD is used to validate the site cleanup system, identify technical issues for resolution where problems exist in the HSTD data, and to drive the projects' work planning process.</p> <p><b>CONTENT/WORK STATEMENT -</b></p> <p><u>709k Level - 4.60 FTE</u></p> <p><u>Maintain and Improve the HSTD</u></p> <ol style="list-style-type: none"> <li>1. Ensure that the FY 1999 data are maintained current in the HSTD. This includes incorporation of TWRS privatization changes when agreed upon. Also includes routine incorporation of changes to the HSTD resulting from approved BCRs.</li> <li>2. Maintain site systems analyses for TWRS, SNF, WM, ER, and FS/ART current to support change request validation. Complete systems analysis models including validation and approval by user organizations for PNNL and Infrastructure by January 30, 1999.</li> <li>3. Conduct a requirements analysis of DNFSB implementation plans for Hanford and integrate with the HSTD by June 30, 1999.</li> <li>4. Provide development support and data to ensure that HANDI 2000 is compatible with the HSTD data structure and processes.</li> <li>5. Maintain HSTD quality above 90% using quantitative metrics similar to those used in 1998.</li> </ol>			

**2.2.2 Systems Engineering Applications**

<b>1. Dictionary Title:</b> Systems Engineering Applications	<b>2. Date:</b>	<b>3. PBS Number:</b>	<b>4. Dict Rev:</b>
<b>5. WBS No.:</b> 1.8.2.2.2	<b>6. B&amp;R No.:</b> EW3110010	<b>7. Baseline CR No.:</b>	
<b>8. Organization Name:</b> Site Planning & Integration			
<b>9. Scope of Work:</b>			

**ELEMENT TASK DESCRIPTION -**

Site Systems Engineering, in accordance with the PHMC, and in accordance with RLID 430.1, is responsible for providing the technical basis for the integrated site baseline and its associated planning and reporting products. The technical baseline which provides this basis is housed in the Hanford Site Technical Database (HSTD). The data is used to produce the products and provide the support described below.

**CONTENT/WORK STATEMENT -**

**709k Level - 1.4 FTE**

**SE Applications**

1. Support planning products for management of FY 1999 activities and development of FY 2000 ISB.

Maintenance of Hanford Site EM Specification  
Guidance for preparation of FY 2000 MYWP technical sections  
Technical sections of FY 2000 MYWPs  
Support IPL development  
Technical sections of PBSs  
Strategic planning analyses  
Ad hoc support requests for data/reports  
Align performance metrics in MYWP, PBS, and QMR. HSPR consistent with HSTD  
QMR/HSPR performance metrics

2.2.3 Technical Integration

1. Dictionary Title: Technical Integration	2. Date:	3. PBS Number:	4. Dict Rev:
5. WBS No.: 1.8.2.2.3	6. B&R No.: EW3110010	7. Baseline CR No.:	
8. Organization Name: Site Planning & Integration			
9. Scope of Work: <b>ELEMENT TASK DESCRIPTION -</b>  Site Systems Engineering, in accordance with the PHMC, and in accordance with RLID 430.1, provides the forum for discussion and approval of integration related activities, products, and issues. This forum is the Site Integration Group (SIG). The SIG is attended by DOE and contractor representatives from the EM mission activities at Hanford. One of the key areas addressed by the SIG is technical integration issues which are contained in the Technical Issues Management List (TIML).  <b>CONTENT/WORK STATEMENT -</b>  <b><u>709k Level - 0.50 FTE</u></b>  <b><u>Technical Integration</u></b>  1. Conduct Site Integration Group (SIG) meetings.  2. Maintain the Technical Issues Management List (TIML) and coordinate actions of ad hoc teams. Issue a quarterly status report on TIML including issues closed, new issues added, issues being actively worked, and issues with no activity during the reporting period.  3. Issue TIML monthly when changes occur.  4. Ensure issues arising from the SSAs are assigned and addressed appropriately.  5. Review and approve planning assumptions in the Site EM Specification.			

**2.2.4 Systems Engineering Configuration Management**

1. Dictionary Title: Systems Engineering Configuration Mgmt.	2. Date:	3. PBS Number:	4. Dict Rev:
5. WBS No.: 1.8.2.2.4	6. B&R No.: EW3110010	7. Baseline CR No.:	
8. Organization Name: Site Planning & Integration			
9. Scope of Work:			
<p><b>ELEMENT TASK DESCRIPTION -</b></p> <p>Per the PHMC, the contractor shall "establish a configuration management system based on industry consensus standards, which is integrated with other management tools, such as change control, and assures a sound technical basis of the Integrated Site Baseline." Site Systems Engineering will continue to implement, improve and integrate the PHMC configuration management system through out the PHMC contractor team.</p> <p><b>CONTENT/WORK STATEMENT -</b></p> <p><b><u>709k Level - 0 FTE (Anticipated Funding is at 0.75 FTE Level)</u></b></p> <p>The focus of activities for FY99 will build on the implementation activities of FY97 (PHMC CM Plan) and FY98 (Major Project CM Implementation Plans and Essential Drawing metrics). For this year, the focus will be to evaluate CM implementation through out the PHMC team. Combined project reviews will be held to evaluate CM implementation in the major projects and to share best practices. CM training practices will be determined and evaluated. Essential drawing metrics that were baselined in FY98 will continue to be reported and improvements will be made. Procedures, relevant to CM, will be updated as necessary to improve integration of CM activities.</p> <p><b>Deliverables:</b></p> <ol style="list-style-type: none"> <li>1. Reports on combined project reviews that evaluate how CM requirements are implemented in the major projects. Evaluation of how the CM training is conducted and configuration identification will be included.</li> <li>2. For the essential drawing metrics, established in FY98, improvement targets will be determined and the metrics will be tracked.</li> <li>3. Updates will be made to the PHMC CMP and CMP.</li> <li>4. Other procedures will be written to connect the PHMC CMP requirements to implementing procedures across the PHMC team.</li> </ol> <p>The following deliverables have less importance and would be added if funding allows.</p> <ol style="list-style-type: none"> <li>5. Configuration status accounting and configuration identification database will be developed.</li> <li>6. Advocate and investigate integration and standardization of CM implementation across FDH and including BHI, BMI, BNFL, JCI and HAMMER.</li> <li>7. Training and travel.</li> </ol>			

**2.2.5 Management and Administration Support**

<b>1. Dictionary Title:</b> Management and Administration Support	<b>2. Date:</b>	<b>3. PBS Number:</b>	<b>4. Dict Rev:</b>
<b>5. WBS No.:</b> 1.8.2.2.5	<b>6. B&amp;R No.:</b> EW3110010	<b>7. Baseline CR No.:</b>	
<b>8. Organization Name:</b> Site Planning & Integration			
<b>9. Scope of Work:</b>			
<p><b>ELEMENT TASK DESCRIPTION -</b></p> <p>To maximize efficiency and encourage communications across function, the Project Management support function consolidates managerial and administrative functions in a uniform activity. It consolidates management oversight, secretarial support, departmental administrative duties, special projects, and planning.</p> <p><b>CONTENT/WORK STATEMENT -</b></p> <p><b><u>709k Level - 1.00 FTE</u></b></p> <ol style="list-style-type: none"> <li>1. Projects/RL interface - Ongoing dialogue with Project Management as part of SSE's mandate to ensure horizontal integration of baselined workscope, i.e., integration of across projects. This activity also comprises those activities needed to keep RL-PMD and other RL parties apprised of status, issues, and accomplishments.</li> <li>2. Departmental planning and oversight - Provides forward thinking direction necessary to accomplish organizational goal as they support the site mission. RL required deliverable specific to this function such as the MYWP, PBS, monthly spending forecast, PTS report, etc., are performed under Project Management.</li> <li>3. Personnel training and development - Assess current capabilities relative to future needs; develops corresponding personnel development plans to ensure the organization can respond to the demands associated with completing its mission.</li> <li>4. Special Projects - Provides limited resources to respond to anticipated, but yet to be defined, initiative connected with, and necessary to achieve planned work scope.</li> <li>5. Secretarial support - Provides the secretarial/clerical network needed to support departmental functions.</li> </ol>			

<b>Deliverables</b>	<b>Due Date</b>
1. Monthly spending forecast/project status report processing	Seven days following performance
2. PBS	TBD
3. Quarterly RL briefing of project status	11 January 1999 12 April 1999 (mid-year) 12 July 1999 12 October 1999 (year-end)
4. Draft MYWP Section 1(confirm 90% database accuracy)	*30 July 1999
5. Final MYWP Section 1 (confirm 90% database accuracy)	*27 August 1999
6. TIML (except when no changes occur)	Monthly
7. TIML Status Report	Quarterly

### 2.3 RESPONSIBILITY ASSIGNMENT MATRIX (RAM)

See Figure 2.3, Responsibility Assignment Matrix.

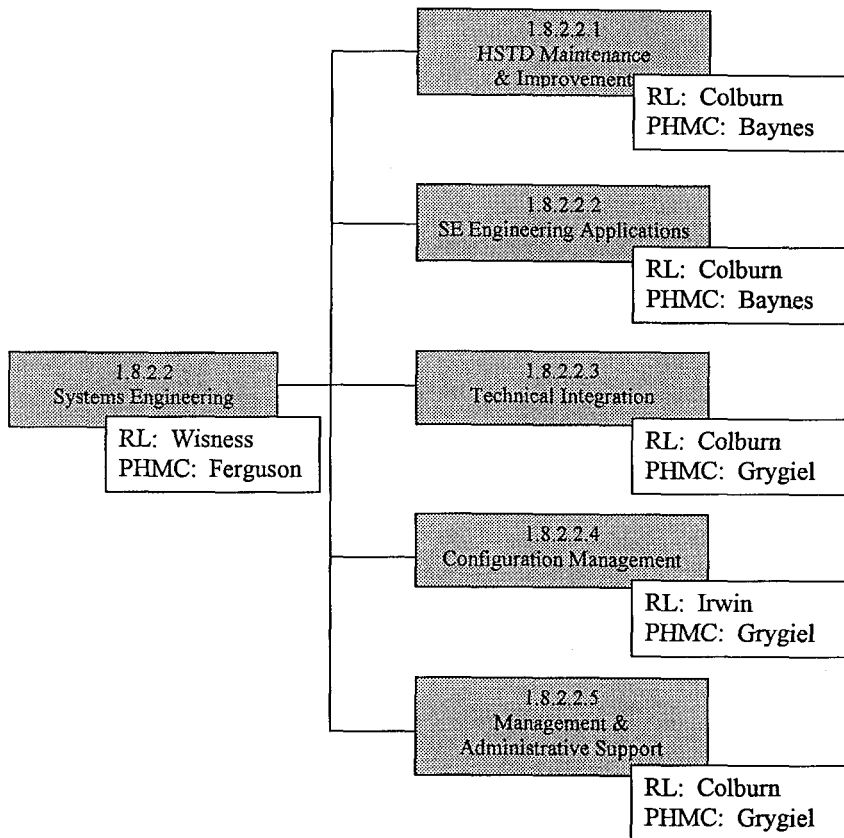


Figure 2.3. Responsibility Assignment Matrix (RAM)

### 3.0 SCHEDULE BASELINE

#### 3.1 PROJECT MASTER BASELINE SCHEDULE (PMBS) BY PBS

See Part I, Section 3.0 for this information.

#### 3.2 EXECUTION YEAR PMBS

See Part I, Section 3.0 for this information.

#### 3.3 MILESTONE LIST (DOE-HQ, RL,FO)

Milestone Control #	MS Level	MS Title	Type	Planned Baseline	TIP	PBS #
HST-99-001	RL	Maintain and Improve the Hanford Site Technical Database	OTH	5/31/99	N	RL-OT01
HST-99-002	RL	Requirements Analysis of DNFSB Implementation Plans	OTH	6/30/99	N	RL-OT01
SEA-99-001	RL	Systems Engineering Application	OTH	7/31/99	N	RL-OT01
CMA-99-001	RL	Configuration Management Consolidated Program Review	OTH	7/31/99	N	RL-OT01
CMA-99-002	RL	Drawing Metrics	OTH	3/31/99	N	RL-OT01

#### 3.4 MILESTONE DESCRIPTION SHEETS (MDS)



# PHMC

## MILESTONE DESCRIPTION SHEET

<b>Title:</b> MAINTAIN AND IMPROVE THE HANFORD SITE TECHNICAL DATABASE				<b>Date:</b> 8/24/98	
<b>Assigned To:</b> P.A. Baynes				<b>CIN:</b>	
<b>Program WBS Designator:</b> 1.8.2.2.1				<b>Due Date:</b> 5/31/99	
<b>PBS No:</b> RL-OT01					
<b>MC #:</b> HST-99-001			<b>TPA No:</b>		<b>Rev:</b>
<b>MILESTONE LEVEL:</b>  DOE-HQ X DOE-RL DOE-FO CONTRACTOR	<b>MILESTONE TYPE:</b>  EA PEG X OTHER TIP	<b>DNFSB STATUS:</b>  DNFSB (Y/N): COMMIT #: RECOMM #:	<b>DELIVERABLE:</b>  Report Letter Drawing(s) X Other (Specify) Appvd FY99 MYWP Section 1	<b>ADDRESS TO:</b>  DOE-HQ X DOE-RL Other (Specify)	
<b>Milestone Description:</b> 1. Develop and load into the HSTD, the FY 1999 data to support site level systems engineering technical products including waste and material forecast data revision to support planning, site and project specifications and interface data.					
<b>Description of what constitutes completion of this milestone:</b> 1. Issue of approved Section 1 of the FY 1999 MYWPs by December 31, 1998.					

# PHMC

## MILESTONE DESCRIPTION SHEET

<b>Title:</b> REQUIREMENTS ANALYSIS OF DNFSB IMPLEMENTATION PLANS (HANFORD)			<b>Date:</b> 8/24/98	
<b>Assigned To:</b> P.A. Baynes			<b>CIN:</b>	
<b>Program WBS Designator:</b> 1.8.2.2.1.4			<b>Due Date:</b> 6/30/99	
<b>PBS No:</b> RL-OT01				
<b>MC #:</b> HST-99-002		<b>TPA No:</b>		<b>Rev:</b>
<b>MILESTONE LEVEL:</b>  DOE-HQ X DOE-RL DOE-FO CONTRACTOR	<b>MILESTONE TYPE:</b>  EA PEG X OTHER TIP	<b>DNFSB STATUS:</b>  DNFSB (Y/N): COMMIT #: RECOMM #:	<b>DELIVERABLE:</b>  Report X Letter Drawing(s) Other (Specify)	<b>ADDRESS TO:</b>  DOE-HQ X DOE-RL Other (Specify)
<b>Milestone Description:</b> 1. Perform requirements analysis of DNFSB Implementation Plans that apply to the Hanford projects.				
<b>Description of what constitutes completion of this milestone:</b> 1. Issue a letter from FDH to DOE/RL documenting the results of the DNFSB implementation plan requirements analysis.				

# PHMC

## MILESTONE DESCRIPTION SHEET

<b>Title:</b> SYSTEMS ENGINEERING APPLICATION			<b>Date:</b> 8/24/98	
<b>Assigned To:</b> P.A. Baynes			<b>CIN:</b>	
<b>Program WBS Designator:</b> 1.8.2.2.2			<b>Due Date:</b> 7/31/99	
<b>PBS No:</b> RL-OT01				
<b>MC #:</b> SEA-99-001		<b>TPA No:</b>		<b>Rev:</b>
<b>MILESTONE LEVEL:</b>  DOE-HQ X DOE-RL DOE-FO CONTRACTOR	<b>MILESTONE TYPE:</b>  EA PEG X OTHER TIP	<b>DNFSB STATUS:</b>  DNFSB (Y/N): COMMIT #: RECOMM #:	<b>DELIVERABLE:</b>  Report Letter Drawing(s) X Other (Specify) Tech Sections- FY2000 PBS, MYWP	<b>ADDRESS TO:</b>  DOE-HQ X DOE-RL Other (Specify)
<b>Milestone Description:</b> 1. Interface with Project Directors, provide support and use existing Site Systems Analysis to support baseline analysis and produce support planning products from the HSTD. Those products are guidance for MYWP preparation, Technical Sections of MYWP and PBS.				
<b>Description of what constitutes completion of this milestone:</b> 1. Issue draft FY 2000 MYWP Section 1 based on Mission Planning Guidance in accordance with agreed upon schedule guidance from DOE/RL. 2. Issue Technical Sections for the FY 2000 Project Breakdown Structure and Multi-Year Work Plans in accordance with schedule guidance from DOE/RL.				

# PHMC

## MILESTONE DESCRIPTION SHEET

<b>Title:</b> CONFIGURATION MANAGEMENT CONSOLIDATED PROGRAM REVIEW				<b>Date:</b> 8/24/98	
<b>Assigned To:</b> M.L. Grygiel				<b>CIN:</b>	
<b>Program WBS Designator:</b> 1.8.2.2.4				<b>Due Date:</b> 7/31/99	
<b>PBS No:</b> RL-OT01					
<b>MC #:</b> CMA-99-001			<b>TPA No:</b>		<b>Rev:</b>
<b>MILESTONE LEVEL:</b>  DOE-HQ X DOE-RL DOE-FO CONTRACTOR	<b>MILESTONE TYPE:</b>  EA PEG X OTHER TIP	<b>DNFSB STATUS:</b>  DNFSB (Y/N): COMMIT #: RECOMM #:	<b>DELIVERABLE:</b>  X Report Letter Drawing(s) Other (Specify)	<b>ADDRESS TO:</b>  DOE-HQ X DOE-RL Other (Specify)	
<b>Milestone Description:</b> FDH will complete the consolidated program review for all five PHMC CM Plan areas (CM System Management, Configuration Identification, Configuration Status Accounting, Change Control, and Assessments) in all major PHMC projects by 6/30 99 and transmit the results to DOE/RL by 7/30/99. The program review on the PHMC CM Plan area, Configuration Identification, will include the review and evaluation of projects configuration item listings.					
<b>Description of what constitutes completion of this milestone:</b> Issue a report from FDH to DOE/RL documenting the results of the program review.					

# PHMC

## MILESTONE DESCRIPTION SHEET

<b>Title:</b> DRAWING METRICS			<b>Date:</b> 8/27/98	
<b>Assigned To:</b> M.L. Grygiel			<b>CIN:</b>	
<b>Program WBS Designator:</b> 1.8.2.2.4			<b>Due Date:</b> 3/31/99	
<b>PBS No:</b> RL-OT01				
<b>MC #:</b> CMA-99-002		<b>TPA No:</b>		<b>Rev:</b>
<b>MILESTONE LEVEL:</b>	<b>MILESTONE TYPE:</b>	<b>DNFSB STATUS:</b>	<b>DELIVERABLE:</b>	<b>ADDRESS TO:</b>
DOE-HQ X DOE-RL DOE-FO CONTRACTOR	EA PEG X OTHER TIP	DNFSB (Y/N): COMMIT #: RECOMM #:	X Report Letter Drawing(s) Other (Specify)	DOE-HQ X DOE-RL Other (Specify)
<p><b>Milestone Description:</b>          Use the established drawing metrics, collected from the HDCS database and reported in the engineering metrics, to improve control and quality of PHMC essential drawings, as follows, by 3/31/98:          -Reduce unassigned essential drawings to less than 1% of the current number of total assigned essential drawings.          -Reduce the total number of essential drawings with temporary engineering change Notices (ECN)s, which are greater than 180 days since installation or since approved extension to less than 10% of the total current number of drawings affected by installed temporary ECNs.          -Reduce the number of essential drawings with ECNs, which have not been incorporated within 30 days, to 5% of the total number of essential drawings.</p>				
<p><b>Description of what constitutes completion of this milestone:</b>          Issue a report from FDH to DOE/RL evaluating the metrics through 3/31/98 to show performance against the milestones.</p>				

**4.0 COST BASELINE**

**4.1 LIFE CYCLE COST BASELINE (BCWS) BY PBS**

See Exhibit 1a.

**4.2 LIFE CYCLE BUDGET AUTHORITY (B/A) BY PBS**

See Exhibit 4a.

**4.3 EXECUTION YEAR COST BASELINE BY MONTH BY PBS BY FUND TYPE**

To be provided at a later date.

EXHIBIT 1a

**SUPPORT**  
**LIFE CYCLE COST BASELINE (BCWS) BY YEAR BY FUND TYPE**  
**BY PROJECT BASELINE SUMMARY (PBS)**  
**FY 1999**  
**(\$000s)**

PROJECT WBS: 1.8.2.2											
PBS NO: RL-OT01											
PBS TITLE: SYSTEMS ENGINEERING											SUBTOT FY1997- FY2006
FUND TYPE	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	
OPERATING EXPENSE	750	750	709	763	763	763	763	763	763	763	7,550
CENRTC	-	-	-	-	-	-	-	-	-	-	-
GENERAL PLANT PROJECT	-	-	-	-	-	-	-	-	-	-	-
LINE ITEM (List Each One)											
0	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-
Subtotal Line Items	-	-	-	-	-	-	-	-	-	-	-
Escalation	-	-	-	16	33	51	69	87	106	125	486
TOTAL BCWS/PMB <sup>1</sup>	750	750	709	779	796	814	832	850	869	888	8,036
MGMT RESERVE <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-
LINE ITEM CONTINGENCY <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-
TRANSFERS <sup>3</sup>	-	-	-	-	-	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-	-	-	-	-	-
Escalation	-	-	-	-	-	-	-	-	-	-	-
TOTAL	750	750	709	779	796	814	832	850	869	888	8,036

<sup>1</sup>Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measurement Baseline (PMB); Expense Carryover Is Not Included<sup>2</sup>Management Reserve and Line Item Contingency Held By RL<sup>3</sup>Funds/Workscope Transferred to Other Sites, Transferred to Hanford from Other Sites, and/or Funds/Workscope Controlled by RL.

**SUPPORT**  
**LIFE CYCLE COST BASELINE (BCWS) BY YEAR BY FUND TYPE**  
**BY PROJECT BASELINE SUMMARY (PBS)**

**FY 1999**  
**(\$000s)**

PROJECT WBS:	1.8.2.2												
PBS NO:	RL-OT01												
PBS TITLE:	SYSTEMS ENGINEERING												
FUND TYPE	FY2007	FY2008	FY2009	FY2010	FY2011- FY2015	FY2016- FY2020	FY2021- FY2025	FY2026- FY2030	FY2031- FY2035	FY2036- FY2040	FY2041- FY2045	FY2046- FY2050	TOTAL FY1997- FY2050
OPERATING EXPENSE	763	763	763	763	3,815	3,815	3,815	3,815	3,815	3,815	3,815	3,815	41,122
CENRTC	-	-	-	-	-	-	-	-	-	-	-	-	-
GENERAL PLANT PROJECT	-	-	-	-	-	-	-	-	-	-	-	-	-
LINE ITEM (List Each One)													
0	-	-	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Line Items	-	-	-	-	-	-	-	-	-	-	-	-	-
Escalation	144	164	185	205	1,358	1,951	2,613	3,352	4,176	5,095	6,119	7,261	33,106
TOTAL BCWS/PMB <sup>1</sup>	907	927	948	968	5,171	5,766	6,428	7,167	7,991	8,910	9,934	11,076	74,228
MGMT RESERVE <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-
LINE ITEM CONTINGENCY <sup>3</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-
TRANSFERS <sup>3</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-	-	-	-	-	-	-	-
Escalation	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	907	927	948	968	5,171	5,766	6,428	7,167	7,991	8,910	9,934	11,076	74,228

<sup>1</sup>Budgeted Cost of Work Scheduled (BCWS) Equals Performance Measurement Baseline (PMB); Expense Carryover Is Not Included

<sup>2</sup>Management Reserve and Line Item Contingency Held By RL

<sup>3</sup>Funds/Workscope Transferred to Other Sites, Transferred to Hanford from Other Sites, and/or Funds/Workscope Controlled by RL



**SUPPORT  
BUDGET AUTHORITY (B/A) BY YEAR BY FUND TYPE  
BY PROJECT BASELINE SUMMARY (PBS)  
FY 1999  
(\$000s)**

PROJECT WBS:		1.8.2.2	
PBS NO:		RL-OT01	
PBS TITLE:		MS ENGINEERING	
	TARGET B/A		PRESIDENT'S BUDGET PLUS CARRYOVER <sup>*</sup> FY1999
FUND TYPE	FY1998		
OPERATING EXPENSE	750		709
CENRTC	-		-
GENERAL PLANT PROJECT	-		-
LINE ITEM (List Each One)			
0	-		-
0	-		-
0	-		-
0	-		-
0	-		-
Subtotal Line Items	-		-
TOTAL NEW B/A	750		709
ESTIMATED FY 1998 CARRYOVER			-
TOTAL NEW B/A+CARRYOVER	750		709

<sup>\*</sup>Estimated Carryover is NOT Included In Cost Baseline; Change Request For Actual Carryover  
Submitted After September 30, 1998.

### III. ADDITIONAL REQUIREMENTS

#### 1.0 SPECIAL TPA REPORT

TPA milestones do not apply to this activity.

#### 2.0 PROJECT PRIORITY LIST

1. HSTD Maintenance and Improvement	1.8.2.2.1	\$448,000
2. Systems Engineering Applications	1.8.2.2.2	\$126,000
3. Technical Integration	1.8.2.2.3	\$ 45,000
4. Management and Administrative Support	1.8.2.2.5	\$ 90,000
5. Configuration Management	1.8.2.2.4	\$ 0
		\$709,000

#### 3.0 PERFORMANCE ENHANCEMENTS

Performance enhancements do not apply to this activity.

#### 4.0 PERFORMANCE OBJECTIVES AND MEASURES

See attachment at the end of Section III.

#### 5.0 MYWP UPDATE SUMMARY

##### Summary of Proposed Updates to the Site Planning and Integration 1.8.2.2 FY 1999 MYWP

**PBS Number and Title** – The following changes have been made from FY 1998 to FY 1999. Configuration management has been deleted from this WBS and is now covered under another PBS area. Effort has been added to cover the technical support provided in the development of the MYWP and PBS packages as well as tracking and providing technical performance data for various reports. Additional effort has been added to technical analysis in support of change control and effort has been covered for continued support of the Site EM Specification.

**Outcomes** – The major impact of these changes involves funding for requested work that was not funded in FY 1998.

**Technical** – No change in technical requirements or scope will result from this work except those resulting from the baseline change control process.

**Schedule** – These changes will not result in changes to the schedule baseline except those resulting from the baseline change control process. No changes to the 1.8.2.1 PBS schedule.

**Cost** – Impact will be the need for additional funding to cover requested work within the 1.8.2.1 PBS element.

**Funding** – Based on available funding, scope will be adjusted by deleting or scaling down requested work. Impact to site life cycle planning will be minimal. The decision support tool and risk profiles will not be taken to the full production level.

**Key Areas of Focused Emphasis:**

- a. **Performance Objectives and Performance Metrics** – As work is agreed upon with DOE based on available funding, objectives and metrics will be finalized.
- b. **Performance enhancements** – None
- c. **TIML** - N/A
- d. **TIPS** – N/A

## Performance Objectives and Measures

## Systems Engineering

HSP Success Indicator/ Critical Success Factor	Strategic Outcome/Goal	Performance Objective	Output/Metric	EM Management	FY 1999	FY 2000	FY 2001	FY 97-06	End Point Target
<b>QT01-SE</b> Manage Hanford to achieve progress	Projectize Hanford for clear management accountability, responsibility and authority	Implement/maintain a high level integrated systems engineering process that maintains Site data under configuration management including requirements, assumptions, waste data, interfaces, material forecasts, infrastructure needs & issues management	Perform requirements analysis of DNFSB implementation plans applicable to Hanford projects	No 06/30/1999					
			Maintain and improve the HSTD; issue approved Section 1 of the MYWPs	No 05/31/1999					
			Complete the consolidated program review for all 5 PHMC configuration management plan areas	No 07/31/1999					
			Support baseline analysis and planning products (MYWP/PBS) from the HSTD	No 07/31/1999					
			Use established drawing metrics to improve control and quality of specified PHMC essential drawings	No 03/31/1999					
	Maintain financial and managerial control	Implement/maintain a high level integrated systems engineering process that maintains Site data under configuration mgmt including requirements, assumptions, waste data, interfaces, material forecasts, infrastructure needs & issues management	Control cost/schedule variance: WBS 1.8.2.2 cost/schedule performance is within established thresholds	No 09/30/1999	-5 CVA/ 7.5%SV	-5 CVA/ 7.5%SV	-5 CVA/ 7.5%SV		

## CORRESPONDENCE DISTRIBUTION COVERSHEET

Author

Addressee

Correspondence No.

M. L. Grygiel

Distribution

Subject: Site Systems Engineering Fiscal Year 1999 Multi-year Work Plan (MYWP)  
Update for WBS 1.8.2.2

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