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Tank Waste Remediation System Retrieval and Disposal Mission Readiness-to-Proceed Responses to Internal Independent Assessment

P.S. Schaus

Lockheed Martin Hanford Company, Richland, WA 99352
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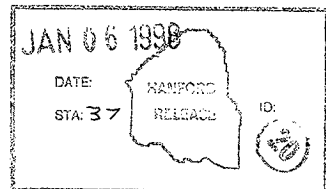
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Abstract: As part of the LMHC assessment of the Tank Waste Retrieval (TWR) Readiness-To-Proceed (RTP), an independent review of their process and products was required by the RL letter of August 8, 1997. This report presents the results of the independent review.

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Tank Waste Remediation System Retrieval and Disposal Mission Readiness-to-Proceed Responses to Internal Independent Assessment

P. S. Schaus

Lockheed Martin Hanford Corporation

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Prepared for the U.S. Department of Energy



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Hanford Management and Integration Contractor for the
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LIST OF TERMS

CMP	Configuration Management Implementation Plan
COCS	Common Occupational Code System
CRA	Criteria and Review Approach
DOE	U.S. Department of Energy
DQO	data quality objective
DST	double-shell tank
ESH&QA	Environmental, Safety and Health, and Quality Assurance
FDH	Fluor Daniel Hanford, Inc.
FTE	full-time equivalent
HLW	high-level waste
ICD	Interface Control Document
IHLW	immobilized high-level waste
ILAW	immobilized low-activity waste
ISMS	Integrated Safety Management System
LAW	low-activity waste
LMHC	Lockheed Martin Hanford Corporation
M&I	management and integration
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
OUP	Operation and Utilization Plan
PHMC	Project Hanford Management Contract
QA	Quality Assurance
QAPD	Quality Assurance Program Description
QAPP	Quality Assurance Program Plan
RL	U.S. Department of Energy, Richland Operations Office
RTP	Readiness-To-Proceed
SEMP	Systems Engineering Management Plan
SSC	systems, structures, and components
SST	single-shell tank
TBR	Technical Basis Review
TEC	total estimated cost
TLCC	total life cycle cost
TPC	total project cost
TWRS	Tank Waste Remediation System
USQ	Unreviewed Safety Question

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ATTACHMENTS

ATTACHMENT A	TANK WASTE RETRIEVAL READINESS-TO-PROCEED INDEPENDENT REVIEW TEAM FINAL REPORT
ATTACHMENT B	FINAL REPORT OF READINESS TO PROCEED INTERNAL ASSESSMENT

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) is planning to make critical decisions during fiscal year (FY) 1998 regarding privatization contracts for the treatment of Hanford tank waste. Specifically, DOE, Richland Operations Office (RL), will make decisions related to proceeding with Phase 1 Privatization. In support of these decisions, the management and integration (M&I) contractor must be able to meet the requirements to support the Phase 1 privatization contractors.

As part of the assessment of the Tank Waste Retrieval (TWR) Readiness-To-Proceed (RTP), an independent review of their process and products was required by the RL letter of August 8, 1997. The Independent Review Team reviewed the adequacy of the planning that has been done by the M&I contractor to validate that, if the plans are carried out, there is reasonable assurance of success. Overall, the RTP Independent Review Team concluded that, if the planning by the M&I contractor team is carried out with adequate funding, there is reasonable assurance that the M&I contractor will be able to deliver waste to the privatization contractor for the duration of Phase 1. This conclusion was based on addressing the recommendations contained in the Independent Review Team's Final Report and in the individual Criteria and Review Approach (CRA) forms completed during the assessment.

The purpose of this report is to formally document the independent assessment and the RTP team responses to the Independent Review Team recommendations. It also provides closure logics for selected recommendations from a Lockheed Martin Hanford Corporation (LMHC) internal assessment of the Technical Basis Review (TBR) packages.

This report contains the RTP recommendation closure process (Section 2.0); the closure tables (Section 3.0) which provide traceability between each review team recommendation and its corresponding Project Hanford Management Contract (PHMC) closure logic; and two attachments that formally document the Independent Review Team Final Report and the Internal Assessment Final Report.

2.0 CLOSURE PROCESS

The independent review used a structured process to assess the M&I contractor's preparations on RTP. Selected requirements from References 1, 2, and 3 were mapped into CRAs for each RTP document as appropriate.

The RTP Independent Review Team reviewed available M&I RTP documentation against these requirements. This was a review of work-in-progress and, as such, the documentation to be reviewed had not been finalized. Document authors and RTP team members were also interviewed, as appropriate, to assess their understanding of the plans and requirements necessary to support Phase 1 Privatization.

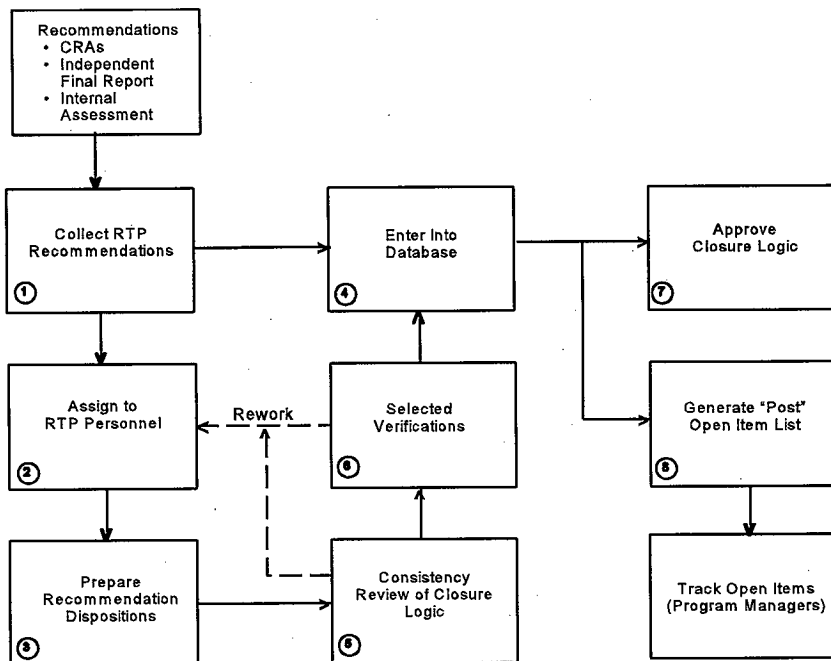
Individual CRAs were used to assess the RTP products and document the results. The CRAs were then summarized and the conclusions and results are documented in the Independent Review Team Final Report, Attachment 1 of this document.

A separate LMHC internal review of selected TBR packages was performed by a M&I team led by J. H. Wicks. The Independent Review Team reviewed the results of this internal assessment which was documented in an Interoffice Memo, J. H. Wicks to R. D. Wojtasek entitled "Final Report of Readiness to Proceed Internal Assessment" 70600-71-001, December 12, 1997, and is included as Attachment 2 of this document.

Recommendations from these three sources: the CRA forms, Attachment 1, and Attachment 2 were processed through the following closure process. Figure 2-1 is a flow chart of the process used to track and close recommendations. The eight step process is briefly discussed below:

1. The recommendations from the CRAs and Attachment 1 were collected for entry into a database and non-redundant recommendations from Attachment 2 were also identified.
2. Recommendations were assigned to product authors and key personnel of the LMHC RTP team.
3. Assigned personnel reviewed the recommendations. These were factored into their final RTP products. Dispositions were prepared for entry into a database to maintain closure traceability.
4. The recommendation tracking database was prepared. It identified the source of recommendations and then recorded them verbatim. The duplicate recommendations from the Independent Review Team were cross referenced. Recommendation dispositions were entered into the closure logic field after steps 5 and 6 (see Figure 2-1) were completed.
5. Recommendation dispositions (closure logics) were reviewed for adequacy and consistency.
6. Selected closure logics were verified by reviewing final RTP documents to ensure appropriate changes/enhancements were completed.
7. The completed database, with one-to-one traceability between recommendations and closure logics, was reviewed and approved by RTP personnel.
8. An open item list was generated for tracking actions required after January 12, 1998, by the project/program leads.

Figure 2-1. Recommendation Closure Flowchart.

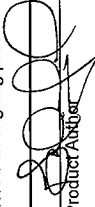


3.0 CLOSURE TABLES

The following tables are the database output complete with concurrence signatures:

- Table 3.1 provides the closure logic for the Independent Review Team CRA recommendations. Record copies of the original CRAs have been placed in project files.
- Table 3.2 provides the closure logic for the Independent Review Team's Final Report recommendations. The Independent Review Team Final Report is included as Attachment 1 of this document.
- Table 3.3 provides the closure logic for selected Internal Assessment recommendations. The Internal Assessment Final Report is Attachment 2 of this document.

Table 3-1. Independent Review Team CRA Recommendations.

RTP Product	CRA #	CONCLUSION			
18	1-18-CR4	None ☐ Pre ☐ Post	Closure Logic: no action required	N/A Product Author Date N/A Review Concurrence Date	
18	1-18-CR17	1. The process to define requirements to support a readiness decision should be considered an ongoing process. The set of requirements should be periodically examined to determine its adequacy.			
		☐ Pre ☒ Post	Closure Logic: The RML and enabling assumptions provide an ongoing evaluation process for changes to requirements.	 Product Author 12/30/97 Date  Review Concurrence 12/31/97 Date	
18	1-18-CR17	2. This independent review assessed the likelihood that the contractor can support delivery of feed to waste treatment facilities in 2002. Since startup activities will continue for the next four plus years, it is recommended that periodic formal assessments be made at reasonable intervals throughout this process to help ensure success.			
		☐ Pre ☒ Post	Closure Logic: Annual reviews of readiness to proceed and of the scope required will be completed during the FY planning cycle. It is expected that at selected times formal and/or independent assessments will be conducted.	 Product Author 12/30/97 Date  Review Concurrence 12/31/97 Date	
18	1-18-CH4.2.6	None			
		☐ Pre ☐ Post	Closure Logic: no action required	N/A Product Author Date N/A Review Concurrence Date	
19	1-19-CH36	None			

RTP Product	CRA #	CONCLUSION			N/A	
		☐ Pre ☐ Post	Closure Logic: no action required		Product Author	Date
2	2-2-LCAM2.2.9	☒ Pre ☐ Post	1. Figure 5.2 (WBS) shows project W-503 as being an Infrastructure Project while Page 2-2 shows W-519 as the Infrastructure Project. W-503 should be changed to W-519.		N/A	Date
			Closure Logic: Incorporate comment, 503 should be 519.		<i>W. Freeman</i> Product Author	<i>12/30/97</i> Date
					<i>Steve Schum</i> Review Concurrence	<i>12/31/97</i> Date
2	2-2-LCAM2.2.9	☒ Pre ☐ Post	2. Section 8.0, "Master Plan" is inadequate for review at this time and needs close review before it is submitted to DOE			
			Closure Logic: Accept, master plan section has been prepared and included in the senior management review.		<i>W. Freeman</i> Product Author	<i>12/30/97</i> Date
					<i>Steve Schum</i> Review Concurrence	<i>12/31/97</i> Date
2	2-2-LCAM2.2.9	☒ Pre ☐ Post	3. In Section 6.0, "Organization," the responsibility for preparing operating and maintenance procedures was not found in the list of organizational responsibilities. This appears to be an oversight and should be added.			
			Closure Logic: Accept, procedure responsibilities have been added.		<i>W. Freeman</i> Product Author	<i>12/30/97</i> Date
					<i>Steve Schum</i> Review Concurrence	<i>12/31/97</i> Date
2	2-2-LCAM2.2.9	☒ Pre ☐ Post	4. This plan should include a section that describes the PNNL Waste Integration Team and it's responsibilities			

RTP Product	CRA #	CONCLUSION		Product Author	Date
		☒ Pre ☐ Post	Closure Logic: The waste integration team has been added to the plan.	<u>W. Freeman</u> Product Author	<u>12/30/97</u> Date
				<u>Steve Schum</u> Review Concurrence	<u>12/31/97</u> Date
2	2-2-LCAM2.3.9	☒ Pre ☐ Post	Insure that the programmatic risk and schedule risk efforts are continued. Insure that the final copies of the referenced documents still retain the requirements shown in the draft documents.	<u>W. Freeman</u> Product Author	<u>12/30/97</u> Date
				<u>Steve Schum</u> Review Concurrence	<u>12/31/97</u> Date
2	2-2-LCAM2.4.9	☒ Pre ☐ Post	Insure that the programmatic risk and schedule risk efforts are continued. Insure that the final copies of the referenced documents still retain the requirements shown in the draft documents.	<u>W. Freeman</u> Product Author	<u>12/30/97</u> Date
				<u>Steve Schum</u> Review Concurrence	<u>12/31/97</u> Date
2	2-2-LCAM2.5.9	☐ Pre ☐ Post	1. The CRA nomenclature should be revised to note that the TWR-CMIP (HNF-1900) is the CM "Program Plan" and that the TWRS-CMPP (CM-13) is the "Master Plan".	<u>W. Freeman</u> Product Author	<u>12/30/97</u> Date
				<u>Steve Schum</u> Review Concurrence	<u>12/31/97</u> Date
2	2-2-LCAM2.5.9	☐ Pre ☐ Post	2. Validation of the as-built status for essential drawings should include physical walk down of the systems. Status reports should be scheduled for all existing systems which will interface directly with the TWR Program activities. The requirement for physical validation should be included in the TWR CMIP Schedules to capture the potential schedule impact of this activity.	<u>W. Freeman</u> Product Author	<u>12/30/97</u> Date
				<u>Steve Schum</u> Review Concurrence	<u>12/31/97</u> Date

RTP Product	CRA #	CONCLUSION		Product Author	Date
		☒ Pre ☐ Post	Closure Logic: Field validation is integral to the as building program. The program plan recognizes the Configuration Plan and the responsibilities to control/maintain the technical baseline. As building is included in the technical bases reports.	<u>WJ Freeman</u> Product Author	<u>12/30/97</u> Date
				<u>Steve Schum</u> Review Concurrence	<u>12/31/97</u> Date
2	2-2-CH12	☐ Pre ☐ Post	CRA Eliminated Closure Logic: no action required	<u>[Signature]</u> Product Author	<u>12/30/97</u> Date
				<u>Steve Schum</u> Review Concurrence	<u>12/31/97</u> Date
2	2-2-CH30	☒ Pre ☐ Post	The System Plan needs to be completed and reviewed to include the annual task plans, two-year resource forecasts, and optimization opportunities list. Also, references or summary sections should be included to establish the reporting and correction action systems.	<u>WJ Freeman</u> Product Author	<u>12/30/97</u> Date
				<u>Steve Schum</u> Review Concurrence	<u>12/31/97</u> Date
2	2-2-CH31	☒ Pre ☐ Post	A more comprehensive list of facility requirements and the scope of Project W-519 need to be specified or referenced.	<u>WJ Freeman</u> Product Author	<u>12/30/97</u> Date
				<u>Steve Schum</u> Review Concurrence	<u>12/31/97</u> Date
2	2-2-CH34	☒ Pre ☐ Post	1. Add a section in the Configuration Management Implementation Plan which discusses this subject such that the specifics of the roles and responsibilities associated with this task are clearly detailed.		
		☒ Pre ☐ Post	Closure Logic: The management system tools (e. g. record management) have been identified at the appropriate level in the program plan.	<u>WJ Freeman</u> Product Author	<u>12/30/97</u> Date
				<u>Steve Schum</u> Review Concurrence	<u>12/31/97</u> Date

RTP Product	CRA #	CONCLUSION
2	2-2-CH34	2. Include this new section in the table of contents of both the Configuration Management Implementation Plan and the Program Plan. ☒ Pre ☐ Post Closure Logic: Production team will ensure TOC current and correct. Records Management is mentioned as an integrated element of Configuration Management and will not be given it's own section in the Program Plan.
		 Product Author 12/30/97 Date  Review Concurrence 12/31/97 Date
3	2-3-LCAM2.2.8	This requirement, LCAM2.2.8 is not needed in the TWRS Program Plan and should be deleted.
		 Product Author 12/30/97 Date  Review Concurrence 12/31/97 Date
3	2-3-LCAM2.2.9	Comments related to the "Review Approach" described above can be found in CRA 2-3-CH8 since the "Review Approach" is identical to this one.
		☒ Pre ☐ Post Closure Logic: See CRA 2-3-CH8 for closure logic
		 Product Author 12/30/97 Date  Review Concurrence 12/31/97 Date
3	2-3-LCAM2.2.10	A TWRS Public Participation Plan which meets the above requirements should be developed, approved, and issued as soon as can reasonably be done.
		☒ Pre ☐ Post Closure Logic: Public participation planning has been included in the program plan. Public involvement is the responsibility of RL and will be controlled by HNF-MP-012, "Integrated Hanford Communications Plan" submitted to DOE by FDH. Reference to this plan has been included in the TWRS Program Plan.
		 Product Author 12/30/97 Date  Review Concurrence 12/31/97 Date
3	2-3-LCAM2.3.8	This requirement, LCAM2.3.8 is not needed in the TWRS Program Plan and should be deleted.

RTP Product	CRA #	CONCLUSION	
	☒ Pre ☐ Post	Closure Logic: Accept, discussion on subcontracting planning are not needed in this plan. This is covered by FDH procurement and no further action is required. No RTP Team action required.	Product Author: <u>[Signature]</u> 12/31/97 Date Review Concurrence: <u>[Signature]</u> 12/31/97 Date
3	2-3-LCAM2.3.9	The System Plan needs to be completed and reviewed to include the annual task plans, two-year resource forecast and annual optimization opportunities list. Also, references or summary sections should be included to establish the reporting and correction action systems.	
	☒ Pre ☐ Post	Closure Logic: The the annual task plans, two-year resource forecast and annual optimization opportunities list have been removed from the System Plans. The Site Technology Coordinating Group will evaluate technology development opportunities for TWRS. It is now located in the TWRS Extremal & Disposal Division initial related baseline. (HNF-0016)	Product Author: <u>[Signature]</u> 12/31/97 Date Review Concurrence: <u>[Signature]</u> 12/31/97 Date
3	2-3-LCAM2.3.10	A TWRS Public Participation Plan which meets the above requirements should be developed, approved and issued as soon as can reasonably be done.	
	☒ Pre ☐ Post	Closure Logic: Public participation planning has been included in the program plan. Public involvement is the responsibility of RL and will be controlled by HNF-MP-012, "Integrated Hanford Communications Plan" submitted to DOE by FDH. Reference to this plan has been included in the TWRS Program Plan.	Product Author: <u>[Signature]</u> 12/31/97 Date Review Concurrence: <u>[Signature]</u> 12/31/97 Date
3	2-3-LCAM2.4.3	1. The specific process or procedure to develop TPMs needs to be prepared and the resulting TPMs need to be incorporated into the appropriate documents.	
	☒ Pre ☐ Post	Closure Logic: TWRS Systems Engineering Management Plan (HNF-SD-WM-SEMP-002) and other systems engineering procedures establish methods for developing Technical Performance Measures (TPMs); TPMs integrate into appropriate baselines, contracts, and interface documents.	Product Author: <u>[Signature]</u> 12/98 Date Review Concurrence: <u>[Signature]</u> 1-2-98 Date
3	2-3-LCAM2.4.3	2. The development of the TPM process and resulting TPMs need to be incorporated into the Level 1 logic diagrams.	

RTP Product	CRA #	CONCLUSION	Product Author	Date	Review Concurrence	Date
		☒ Pre ☐ Post Closure Logic: TWRS Systems Engineering Management Plan (HNF-SD-WM-SEMP-002) and other systems engineering procedures establish methods for developing Technical Performance Measures (TPMs); TPMs integrate into appropriate baselines, contracts, and interface documents.	<i>[Signature]</i>	12/2/98		
3	2-3-LCAM2.4.8	This requirement, LCAM 2.4.8 is not needed in the TWRS Program Plan and should be removed.	<i>[Signature]</i>	12/31/97		
		☒ Pre ☐ Post Closure Logic: Accept, discussion on subcontracting planning are not needed in this plan. This is covered by FDH procurement and no further action is required	<i>[Signature]</i>	12/31/97		
3	2-3-LCAM-2.4.9	The System Plan needs to be completed and reviewed to include the annual task plans, two-year resource forecasts and annual optimization opportunities list. Also, references or summary sections should be included to establish the reporting and correction action systems	<i>[Signature]</i>	12/31/97		
		☒ Pre ☐ Post Closure Logic: The the annual task plans, two-year resource forecast and annual optimization opportunities list have been removed from the System Plans. The Site Technology Coordinating Group will evaluate technology development opportunities for TWRS. Also see CAP 2-3-LCAM 2.2.9 <i>SD 11/5/97</i>	<i>[Signature]</i>	12/31/97		
3	2-3-LCAM2.4.10	A TWRS Public Participation Plan which meets the above requirements should be developed, approved and issued as soon as can reasonably be done.	<i>[Signature]</i>	12/31/97		
		☒ Pre ☐ Post Closure Logic: Public participation planning has been included in the program plan.	<i>[Signature]</i>	1/2/98		
3	2-3-LCAM2.5.9	1. The TWR CMIP should address design reconstitution. For example, a section should be added that describes the task of as-building essential drawings for the TWR Project	<i>[Signature]</i>	1/5/98		

RTP Product	CRA #	CONCLUSION	
		☒ Pre ☐ Post	Closure Logic: This has been included in HNF-1900 and HNF-1901. Product Author: <u>John M. Brown</u> 1/5/98 Date Review Concurrence: <u>Steve Schuman</u> 1/5/98 Date
3	2-3-LC&M2.5.9	☒ Pre ☐ Post	2. A document hierarchy needs to be produced that shows the relationship between documents. The hierarchy should contain specific details, i.e., list the document title and/or number so as Closure Logic: A document hierarchy has been developed and included in the appropriate RTP plans. Product Author: <u>John M. Brown</u> 12/30/97 Date Review Concurrence: <u>Steve Schuman</u> 12/31/97 Date
3	2-3-LC&M2.5.9		3. The authors of the RTP Products or project management, need to ensure that appropriate reviews take place prior to January 12. Authors need to interact with other authors to assure continuity of the products.
		☒ Pre ☐ Post	Closure Logic: Reviews are an integral part of issuing these plans, no further action required Product Author: <u>Bill Brown</u> 12/30/97 Date Review Concurrence: <u>John M. Brown</u> 12/30/97 Date
3	2-3-LC&M2.5.10		A TWRS Public Participation Plan which meets the above requirements should be developed, approved and issued as soon as can reasonably be done.
		☒ Pre ☐ Post	Closure Logic: Public participation planning has been included in the program plan. Product Author: <u>John M. Brown</u> 1/2/98 Date Review Concurrence: <u>Steve Schuman</u> 1/5/98 Date
3	2-3-CR6		1. When this procedure is revised, the effect of corrective actions on organizational interfaces and/or Interface Control Documents should be clarified

RTP Product	CRA #	CONCLUSION		Product Author	Date	Review Concurrence	Date
		☐ Pre ☒ Post	Closure Logic: HNF-1881 (§6.0) refers to higher-tier plans for QA and corrective action procedures that will be followed when conducting work.	<i>Debra D. Potter</i>	1/5/98		
3	2-3-CR6		2. Many elements of Corrective Action Management, Risk Management, and the Enabling Assumptions Management and Control System are similar. They are all part of risk management. An effort should be made to integrate these systems as appropriate to help insure risks are managed consistently across the TWRS project. The same recommendation is being made under Criteria Review Approach (CRA) 5-4-CH16.	<i>Steve Lohman</i>	1/5/98		
		☒ Pre ☐ Post	Closure Logic: See 5-4-CH-16 for closure logic	<i>Debra D. Potter</i>	1-2-98		
3	2-3-CH8		1. The WFD plan does not refer to applicable Tri-Party Agreement milestones (M-43, M-45, and M-60). This discussion should be added.	<i>Debra D. Potter</i>	12/31/97		
		☐ Pre ☒ Post	Closure Logic: Defer. This detail is not needed in HNF-1881; milestones are accounted for in annual planning cycles and baselines.	<i>Debra D. Potter</i>	12/31/97		
3	2-3-CH8		2. None of the plans include an "Annual Optimization Opportunities List" specified in the "Review Approach" of the Criteria Review Approach (CRA). If such a list is a real requirement it needs to be added to each plan	<i>Debra D. Potter</i>	12/31/97		
		☒ Pre ☐ Post	Closure Logic: The plan format has changed and an Opportunities list is not required. The Site Technology Coordinating Group will evaluate technology development opportunities for TWRS.	<i>Debra D. Potter</i>	1-5-98		
3	2-3-CH8		3. The MYWP resource figures for the Infrastructure program compare favorably with those in the corresponding Program Plan. However, there are significant differences between the numbers in the WFD and Waste Storage/Disposal Program Plans and the MYWP. These numbers need to be reconciled once the new baseline has been established	<i>Debra D. Potter</i>	1/5/98		

RTP Product	CRA #	CONCLUSION		Product Author	Date
		☒ Pre ☐ Post	Closure Logic: Estimates have been removed so inconsistencies are resolved. Program will rely on TWRS MYWP and annual budget cycle for cost/resource details.	<u>Steve D. Lott</u>	<u>12/30/97</u>
				<u>Kimell J. Dent</u>	<u>12/31/97</u>
				Review Concurrence	Date
3	2-3-CH8	☒ Pre ☐ Post	4. The program plans for IHLW and ILAW do not include full-time equivalent (FTE) requirements/projections for these programs as required. These need to be added.	<u>P. J. Whit</u>	<u>1-2-98</u>
			Closure Logic: Estimates have been removed so inconsistencies are resolved. Program will rely on TWRS MYWP and annual budget cycle for cost/resource details.	<u>Steve Behrm</u>	<u>1/2/98</u>
				Review Concurrence	Date
3	2-3-CH8	☒ Pre ☐ Post	5. The Infrastructure Program Plan makes reference to "Program Representatives." This terminology is not consistent across programs. Some use "Program Champions" and others use "Points of Contact." All plans need to be consistent	<u>P. J. Whit</u>	<u>1-2-98</u>
			Closure Logic: The production team is ensuring consistent terminology.	<u>Steve Behrm</u>	<u>1/2/98</u>
			<u>See Comment Below</u>	Review Concurrence	Date
3	2-3-CH8	☒ Pre ☐ Post	6. Both the IHLW and ILAW Plans describe in detail the generic TWRS Systems Engineering Process. This should be done once in the overarching TWRS Program Plan, or maybe just in the Systems Engineering Management Plan (SEMP).	<u>P. J. Whit</u>	<u>1-2-98</u>
			Closure Logic: The production team is has reworked these plans- for consistent level of detail.	<u>Steve Behrm</u>	<u>1/2/98</u>
			<u>As Jim noted earlier, the plans are consistent and will be obtained</u>	Review Concurrence	Date
3	2-3-CH8	☒ Pre ☐ Post	7. The WFD Program Plan does not provide enough detail on the construction projects (e.g., W-211 and W-314) that will be necessary to successfully accomplish the program. See the IHLW and ILAW plans for appropriate detail on required projects.		

RTP Product	CRA #	CONCLUSION	Product Author	Date
		☒ Pre ☐ Post Closure Logic: Defor. Project details are described in Technical Baseline documents. No further action required.	<u>Norm D. Potter</u>	<u>12/31/97</u>
			<u>Russell J. Post</u>	<u>12/31/97</u>
			Review Concurrence	Date
3	2-3-CH8	8. The Waste Integration Team (WIT) is only described in the Infrastructure Program Plan. It should be discussed in the TWR Program Plan and referred to as an interface in the other program plans.	<u>Norm D. Potter</u>	<u>12/31/98</u>
		☒ Pre ☐ Post Closure Logic: WIT team reference has been added to section 5.3.4.	<u>Steve Schum</u>	<u>12/31/98</u>
			Review Concurrence	Date
3	2-3-CH8	9. The WFD Program Plan contains very detailed appendices in the following areas: - Appendix A TWRS Maintenance Organization Execution Plan - Appendix B Tank Farm Operations Execution Plan - Appendix C Tank Waste Characterization Execution Plan - Appendix D Tank Equipment Engineering Execution Plan - Appendix E Systems Engineering and Integration Organization Execution Plan - Appendix F Nuclear Safety and Licensing Execution Plan - Appendix G TWRS Construction Projects Execution Plan - Appendix H Environmental, Safety, and Health; and Quality Assurance Execution Plan - Appendix I Business Management Execution Plan These should be pulled out of the WFD Program Plan and provided as a separate document or combined with other higher level documents.	<u>Norm D. Potter</u>	<u>12/31/97</u>
			<u>Russell J. Post</u>	<u>12/31/97</u>
			Review Concurrence	Date
3	2-3-CH8	10. The TWR Program Plan (page 9-13) talks about the concept of Decision Maker and Decision Action Officer. No flow down or reference to this concept was found in any of the lower level program plans		

RTP Product	CRA #	CONCLUSION
		☒ Pre ☐ Post Closure Logic: No change to HNF-1881; will rely on HNF-1883 to describe this management system concept. Product Author: <u>Ross D. Potter</u> 12/98 Date Review Concurrence: <u>Aster Schum</u> 1/2/98 Date
3	2-3-CH8	11. These subtler plans should not describe in detail the TWR Division organizations. Instead, reference should be made back to the TWR Program Plan for this information ☒ Pre ☐ Post Closure Logic: HNF-1881 has been revised, provides minimal description, with focus on interfaces and coordination for waste feed delivery. Product Author: <u>Ross D. Potter</u> 12/31/97 Date Review Concurrence: <u>Russell D. Deard</u> 12/31/97 Date
3	2-3-CH12	1. Project W-519, Infrastructure Additions, needs to be discussed in Sections 3.0 and 4.0. ☒ Pre ☐ Post Closure Logic: Plan has been reworked W-519 is included. Product Author: <u>B. Hoot</u> 1/5/98 Date Review Concurrence: <u>Aster Schum</u> 1/5/98 Date
3	2-3-CH12	2. Page 6-5 - Reference is made to "Program Representatives." This terminology is not consistent across programs. Some use "Program Champions" and others use "Point of Contact (POC)." When interviewed, several people had not heard of "Program Representative." All plans should use consistent terminology. ☒ Pre ☐ Post Closure Logic: The production team is ensuring consistent terminology Product Author: <u>B. Hoot</u> 12/30/97 Date Review Concurrence: <u>Aster Schum</u> 12/31/97 Date
3	2-3-CH12	3. Page 6-1, ¶ 6.1.2. talks about Infrastructure Support" while ¶6.1.4 talks about "Infrastructure Program." Are they the same? If so, terminology needs to be consistent.

RTP Product	CRA #	CONCLUSION			☒ Pre ☐ Post	Closure Logic: The production team is ensuring consistent terminology. Product Author: <u>B. J. Post</u> 12/30/97 Date: _____ Review Concurrence: <u>Steve Schum</u> 12/31/97 Date: _____
3	2-3-CH12	4. Page 6-9 talks about "Waste Integration Team." No mention of this team is made in the higher tier plan, the TWRS Program Plan.			☒ Pre ☐ Post	Product Author: <u>B. J. Post</u> 12/31/97 Date: _____ Review Concurrence: <u>Steve Schum</u> 12/31/97 Date: _____
3	2-3-CH12	5. Figures 6-2 and 6-3 do not agree. On Figure 6-3, should "HTI" be "Development and Demonstration?"			☒ Pre ☐ Post	Product Author: <u>B. J. Post</u> 12/30/97 Date: _____ Review Concurrence: <u>Steve Schum</u> 12/31/97 Date: _____
3	2-3-CH12	6. The dollars and full time equivalent (FTE) numbers at the bottom of Figure 7-1 do not agree with those in Figures 8-1 and 8-2. These need to be reconciled.			☒ Pre ☐ Post	Product Author: <u>B. J. Post</u> 12/30/97 Date: _____ Review Concurrence: <u>Steve Schum</u> 12/31/97 Date: _____
3	2-3-CH12	7. Appendix B is missing and needs to be added.			☒ Pre ☐ Post	Product Author: <u>B. J. Post</u> 12/30/97 Date: _____ Review Concurrence: <u>Steve Schum</u> 12/31/97 Date: _____
3	2-3-CH12	Closure Logic: Production team will ensure appendices are in final documents.			☒ Pre ☐ Post	Product Author: <u>B. J. Post</u> 12/30/97 Date: _____ Review Concurrence: <u>Steve Schum</u> 12/31/97 Date: _____

RTP Product	CRA #	CONCLUSION
3	2-3-CH12	8. The CRA "Review Approach" states that the plan should address an "Annual Optimization Opportunities List." No such list exists in the plan. If such a list is a real requirement, it needs to be added to the document.
		☒ Pre ☐ Post Closure Logic: Plans have been reviewed and updated, and the annual opportunities list has been deleted from plan format. The Site Technology Coordinating Group will evaluate technology development opportunities for TWRS. Product Author: <u>Bill Post</u> Date: <u>12/31/97</u> Review Concurrence: <u>Steve Schum</u> 12/31/97 Date
3	2-3-CH20	Define or identify what constitutes the technical baseline. The definition of the technical baseline in Figure 1-2 of the Retrieval Technical Baseline Summary document and the Retrieval Configuration Management Plan (Figure 2) are consistent with the TWRS Program Plan (Figure 3.2) is different.
		☒ Pre ☐ Post Closure Logic: A document hierarchy has been developed and included in the appropriate RTP plans. Product Author: <u>Bill Post</u> Date: <u>12/31/97</u> Review Concurrence: <u>Steve Schum</u> 12/31/97 Date
3	2-3-CH28	1. The programmatic baseline needs to be defined in terms of documents and schedule. For example, the programmatic baseline consists of the TWR Cost Baseline and the TWR Level 0 Schedules.
		☒ Pre ☐ Post Closure Logic: These elements are addressed in the document hierarchy. Product Author: <u>Bill Post</u> Date: <u>12/30/97</u> Review Concurrence: <u>Steve Schum</u> 12/31/97 Date
3	2-3-CH28	2. A document hierarchy needs to be produced that shows the relationship between documents. The hierarchy should contain specific details, i.e., list the document title and/or number so as to make it clear if reference is being made to a TWRS document or a TWR document.
		☒ Pre ☐ Post Closure Logic: A document hierarchy has been developed and included in the appropriate RTP plans. Product Author: <u>Bill Post</u> Date: <u>12/30/97</u> Review Concurrence: <u>Steve Schum</u> 12/31/97 Date
3	2-3-CH31	1. There is considerable repetition and redundancy among the three documents reviewed. Serious consideration should be given to integrating the TWRS Program Plan and the PSPs into a single document.

RTP Product	CRA #	CONCLUSION	Product Author Date	Review Concurrence Date
		☒ Pre ☐ Post Closure Logic: Redundant information has been migrated to HNF-1883. Cross-document consistency has been improved.	<i>David V. Coleman</i> 12/29/97	<i>Steve Johnson</i> 1/5/98
3	2-3-CH31	☒ Pre ☐ Post 2. It is evident from a review of these documents that there is a great need for a top-down TWRS program systems review of the document and content of each document required to perform the job.	<i>Steve Johnson</i> 12/31/97	<i>Steve Johnson</i> 12/31/97
3	2-3-CH34	☐ Pre ☐ Post None	N/A Product Author	N/A Review Concurrence
6	2-6-LCAM2.2.3	☒ Pre ☐ Post 1. Some of the descriptions used to define terminology in the TWRS SEMP glossary are almost as verbose as the text in the body of the document. The definitions in the glossary need to be much briefer, more concise, and crisper.	<i>David V. Coleman</i> 12/31/97	<i>Steve Johnson</i> 12/31/97
6	2-6-LCAM2.2.3	☒ Pre ☐ Post 2. The scope and content of this draft (11/1/97) goes beyond that normally contained in a classical SEMP. Some of the content belongs in a TWRS Program Management Plan which should be prepared containing those management policies and requirements that are broad and cross-cutting across the several subordinate management plans, i.e., the SEMP, the Risk Management Plan, the Quality Assurance Program, etc (see attached figure).	<i>Steve Johnson</i> 12/31/97	<i>Steve Johnson</i> 12/31/97

RTP Product	CRA #	CONCLUSION	Product Author Date Review Concurrence
6	2-6-LCAM2.2.3	Closure Logic: When the SEMP revision was initiated, there was no TWRS Program Plan. Subsequently the TWRS Program Plan was initiated. The TWRS SEMP refers to the Program Plan and programmatic content was removed. 3. The SEMP for the Waste Retrieval Division is completely redundant with the TWRS SEMP. If the Tank Waste Retrieval Division is part of TWRS, it should be covered by the TWRS SEMP. Recommend eliminating the Tank Waste Retrieval SEMP	Product Author Date Review Concurrence
6	2-6-CH21	Closure Logic: 3) One SEMP is being developed at the TWRS level. 1. The TWRS SEMP should incorporate the requirements of the TWRS Program Plan, specifically the Opportunities List.	Product Author Date Review Concurrence
6	2-6-CH21	Closure Logic: The SEMP addresses the development of the technical baseline and the use of alternative analysis to select cost-effective design solutions. The expectation is that this list will contain opportunities beyond technical design alternative "opportunities" (e.g. cost, schedule alternatives). As such, the SEMP is not the proper document to direct or contain the Opportunities list 2. The TWRS SEMP should integrate the various components of alternative analysis (i.e., Risk Management, Alternative Generation, and Architecture Selection, etc.). The relationships of the individual components should be more clearly articulated.	Product Author Date Review Concurrence
6	2-6-CH21	Closure Logic: The SEMP addresses the development of the technical baseline and the use of alternative analysis to select cost-effective design solutions. 3. All reference to the TWRS SEMP should be eliminated from existing documents such as the TWRS Program Plan.	Product Author Date Review Concurrence

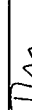
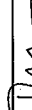
RTP Product	CRA #	CONCLUSION		Product Author	Date
		☒ Pre ☐ Post	Closure Logic: The Production Team will remove obsolete call outs.	<i>Steve Adams</i>	12/31/97
				Review Concurrence	12/31/97
6	2-6-CH29		Ensure that the final approved versions of these documents maintain these requirements, and that it is clearly identified who is responsible for implementation into the integrated baseline.		
		☒ Pre ☐ Post	Closure Logic: Section 3.0 of the TWRS SEMP implements the SE process. Section 3.2.6 addresses the analysis of alternatives leading to the selection of a cost-effective approach. Responsibility for performing the alternative analysis is identified in Table 2.	<i>Steve Adams</i>	12/31/97
				Review Concurrence	12/31/97
7	2-7-LCAM2.3.9	None			
		☐ Pre ☐ Post	Closure Logic: No action required.	N/A	Date
				Review Concurrence	Date
7	2-7-LCAM2.3.9	1. Issue approved copies of the Program Plan and the Configuration Management Plan.			
		☒ Pre ☐ Post	Closure Logic: No further action required. The CMP and PP will be approved as a requirement of the RTP.	<i>Steve Adams</i>	12/31/97
				Review Concurrence	12/31/97
7	2-7-LCAM2.3.9	2. Baseline schedules, budgets, and work scope must be completed, reviewed and understood, and agreement must be obtained from all parties prior to placing them under configuration control.			

RTP Product	CRA #	CONCLUSION	
		☒ Pre ☐ Post	Closure Logic: Schedules, budgets and work scope will be reviewed and approved a requirement of the RTP. <u>John P. Gamm</u> Product Author <u>12/31/97</u> Date <u>Steve Schauer</u> Review Concurrence <u>12/31/97</u> Date
7	2-7-LCAM2.3.9	3. Ensure that requirements contained in the draft documents are included in final approved versions.	
		☒ Pre ☐ Post	Closure Logic: All draft requirements will be contained in the final approved versions. <u>John P. Gamm</u> Product Author <u>12/31/97</u> Date <u>Steve Schauer</u> Review Concurrence <u>12/31/97</u> Date
7	2-7-LCAM2.4.9	None	
		☐ Pre ☐ Post	Closure Logic: No action required. N/A Product Author _____ Date N/A Review Concurrence _____ Date
7	2-7-LCAM2.5.9	1. Either the TWRP-CMIP or the TWRSC-MIP should note and track the requirement for correct as-built drawings. It would not be necessary to maintain both implementing plans as separate controlled documents so long as all requirements are covered. The TWRP-CMIP plans could be an addendum to the TWRSC-MIP if a reduction in the number of controlled documents is desired ☒ Pre ☐ Post	
		Closure Logic: Paragraph 3.1 of the TWRSC-MIP provides a requirement for these recommendations. <u>John P. Gamm</u> Product Author <u>12/31/97</u> Date <u>Steve Schauer</u> Review Concurrence <u>12/31/97</u> Date	
7	2-7-LCAM2.5.9	2. Either the TWRP-CMPP or the TWRSC-MIP schedules of planned activities should include validation of the as-built condition of existing facilities to be used in feed supply and storage	

RTP Product	CRA #	CONCLUSION		Product Author	Date
		☒ Pre ☐ Post	Closure Logic: Paragraph 3.1 of the TWRS CMP provides a requirement for these recommendations.	<i>Steve McLean</i>	<i>12/31/97</i>
				Review Concurrence	Date
				<i>Steve McLean</i>	<i>12/31/97</i>
7	2-7-CH17	☒ Pre ☐ Post	A document hierarchy needs to be produced that shows the relationship between documents. The hierarchy should contain specific details, i.e. list the document title and/or number so as to make it clear if reference is being made to a TWRS document or a TWR document. <i>Paragraph 3.1 and 4.1 of the TWRS CMP will address this recommendation. As stated in the document the TWRS further attention is required on the Technical Section Summary Description.</i>	Product Author	Date
				<i>SEE 19 B</i>	<i>For</i>
				Review Concurrence	Date
				<i>Steve McLean</i>	<i>12/31/97</i>
7	2-7-CH34	None			
		☐ Pre ☐ Post	Closure Logic: No action required.	N/A	Date
				Product Author	Date
				N/A	Date
				Review Concurrence	Date
13	2-13-LCAM2.2.6	☒ Pre ☐ Post	1. Because the three separate program plans share the same objective, that is, to describe the management systems and plans to implement the ESH&QA program requirements and corporate policies for the TWRS project. We suggest that they should be written to a standard format with minor alternations to fit the specific subjects. The standard format should be able to facilitate the presentation of plans that are established for the execution of the ESH&QA program.	Product Author	Date
				<i>Steve McLean</i>	<i>12/31/97</i>
				Review Concurrence	Date
				<i>Steve McLean</i>	<i>12/31/97</i>
13	2-13-LCAM2.2.6	☒ Pre ☐ Post	2. It is the observation of the review team that the TWRS Safety Program Plan is weak in presenting a safety management plan for the TWRS project activities. Suggestions and recommendations for strengthening the document are noted as underlined text in the Observations.	Product Author	Date
				<i>Steve McLean</i>	<i>12/31/97</i>
				Review Concurrence	Date
				<i>Steve McLean</i>	<i>12/31/97</i>

RTP Product	CRA #	CONCLUSION	
7	2-7-CH17	A document hierarchy needs to be produced that shows the relationship between documents. The hierarchy should contain specific details, i.e., list the document title and/or number so as to make it clear if reference is being made to a TWRS document or a TWR document.	
		Figure 2 and 4 of the TWRS SEMP begin the definition of the document hierarchy. Further definition is contained in the Technical Baseline Summary Description.	<i>[Signature]</i> 12/31/97 Product Author Date <i>[Signature]</i> 12/31/97 Review Concurrence Date

RTP Product	CRA #	CONCLUSION	
		☒ Pre ☐ Post	Closure Logic: Comments incorporated into execution plan for ESH&QA.  Product Author Review Concurrence 12/31/97 Date
13	2-13-LCAM2.3.6	Closure of CRA Recommendation same as CRA 2-13-LCAM2.2.6.	
		☒ Pre ☐ Post	Closure Logic: See CRA 2-13-LCAM2.2.6.  Product Author Review Concurrence 12/31/97 Date
13	2-13-LCAM2.3.6	Closure of CRA Recommendation same as CRA 2-13-LCAM2.2.6.	
		☒ Pre ☐ Post	Closure Logic: See CRA 2-13-LCAM2.2.6.  Product Author Review Concurrence 12/31/97 Date
13	2-13-LCAM2.4.6	Closure of CRA Recommendation same as CRA 2-13-LCAM2.2.6.	
		☒ Pre ☐ Post	Closure Logic: See CRA 2-13-LCAM2.2.6.  Product Author Review Concurrence 12/31/97 Date
13	2-13-LCAM2.4.6	Closure of CRA Recommendation same as CRA 2-13-LCAM2.2.6.	

RTP Product	CRA #	CONCLUSION	
		☒ Pre ☐ Post	Closure Logic: See CRA 2-13-LCAM2.2.6.  Product Author  Review Concurrence  Date  Date
13	2-13-LCAM2.5.6	Closure of CRA Recommendation same as CRA 2-13-LCAM2.2.6.	
		☒ Pre ☐ Post	Closure Logic: See CRA 2-13-LCAM2.2.6.  Product Author  Review Concurrence  Date  Date
13	2-13-CR14a	The TWR Safety Program Plan should be revised to discuss more directly its relationship to the ISMS and to how this program ensures the realization of the site-wide (assuming an appropriate one exists.)	
		☒ Pre ☐ Post	Closure Logic: Comments incorporated into execution plan for ESH&QA. ISMS included.  Product Author  Review Concurrence  Date  Date
13	2-13-CR14b	The TWR Safety Program Plan should be revised to discuss more directly its relationship to the ISMS and to how this program ensures the realization of the site-wide culture (assuming an appropriate one exists.)	
		☒ Pre ☐ Post	Closure Logic: Comments incorporated into execution plan for ESH&QA.  Product Author  Review Concurrence  Date  Date

RTP Product		CRA #	CONCLUSION	
13		2-13-CR9	Eliminate requirement to have a mid-level logic dedicated to emergency preparedness upgrades	
			☐ Pre ☐ Post	Closure Logic: No RTP action required.  Product Author  Review Concurrence 12/31/97 Date
13		2-13-CH32	Closure of CRA Recommendation same as 2-13-LCAM2.2.6.	
			☒ Pre ☐ Post	Closure Logic: See CRA 2-13-LCAM2.2.6.  Product Author  Review Concurrence 12/31/97 Date

RTP Product	CRA #	CONCLUSION	
8	3-8-LC&M6.e(7)	Attempt to identify some of the larger programmatic risks that the private contractors may include in their pricing proposals.	
		☒ Pre ☐ Post	Closure Logic: LMHC has identified in it's Critical Risk List that there is substantial risk to TWRS if the privatization contractors propose changes that are substantially different from the VDDO planning assumptions issued in June 1997. However, significant changes, i.e., start up prior to June 2002 and/or feed delivery rates in excess of those specified, will require changes to the LMHC contract resulting in modification to its cost and schedule baseline.
8	3-8-CH10	1. Prepare a master list of MOAs which identifies the entities involved, the status of development of the MOA and the status of review of the MOA.	
		☒ Pre ☐ Post	Closure Logic: The list of major interfaces between TWRS and non-TWRS facilities identifies the potential contract modifications (no longer MOAs/MOUs) that are required. Each of the major facilities/projects has planning in place to develop the necessary information for these contract modifications.
8	3-8-CH10	2. Develop a schedule for completing the MOA which demonstrates they will be completed by the necessary date.	
		☐ Pre ☒ Post	Closure Logic: The list of major interfaces between TWRS and non-TWRS facilities identifies the potential contract modifications (no longer MOAs/MOUs) that are required. Each of the major facilities/projects has planning in place to develop the necessary information for these contract modifications.
8	3-8-CH14	1. (8.A/C) Draft MOUs for TWRS are not complete and are in stages of being prepared and reviewed. This will be a changing process until the PCS ICD requirements have been baselined. The MOUs need to be updated once the PCS ICD requirements are received and must then be placed under configuration control.	
		☐ Pre ☒ Post	Closure Logic: Per current direction from FDH and LMHC contracts management, contract modifications, rather than MOUs, will be used to formally document changing requirements imposed by the privatization contractors.

Product Author	<u>Steve Johnson</u>	Date	<u>12/31/97</u>
Review Concurrence	<u>SS Seeman</u>	Date	<u>1/2/98</u>

Product Author	<u>Steve Johnson</u>	Date	<u>12/31/97</u>
Review Concurrence	<u>SS Seeman</u>	Date	<u>1/2/98</u>

Product Author	<u>Steve Johnson</u>	Date	<u>12/31/97</u>
Review Concurrence	<u>SS Seeman</u>	Date	<u>1/2/98</u>

RTP Product	CRA #	CONCLUSION
8	3-8-CH14	2. 8.D) TWRS SEMP is not issued and is currently in draft format. Section 2.4 discusses interface control and references TWRS Interface Control Procedure which is issued. TWRS SEMP, section 2.4 needs to address how the process will incorporate PCS design ICD requirements and how System Engineering Management Plan will work with PCS on Interface Control Issues. ☒ Pre ☐ Post Closure Logic: The SEMP is in final preparation for approval. It contains requirements to perform Interface Control via Interface Control Documents. The interfaces include those with the Private Contractor. The Interface Control procedure in HNF-IP-0842 is available to support ICD development and control. It is currently being revised to reflect current Interface Control guidance and to provide additional guidance on interfacing with the Private Contractors. Product Author: <u>[Signature]</u> Date: <u>12/31/97</u> Review Concurrence: <u>[Signature]</u> Date: <u>12/31/97</u>
8	3-8-CH14	3. (8.E) For projects beyond conceptual design, interfaces between double shell tank (DST) systems and other major facilities have been identified. There is no evidence of formal plans at system level for development of component-level ICD. Development of component-level ICDs needs to be included as part of the RTP planning. ☐ Pre ☒ Post Closure Logic: External component-level ICDs will be developed as required and as documented in agreed-to contract modifications. Internal component-level ICDs will be developed as required as part of each project's documentation. (NOTE: Internal interfaces are currently defined in project documentation such as DRDs.) Product Author: <u>[Signature]</u> Date: <u>12/31/97</u> Review Concurrence: <u>[Signature]</u> Date: <u>1/2/98</u>
8	3-8-CH14	4. Review of mid-level logic for projects in conceptual design shows that Interface Control Plans have not been incorporated. These planning steps should be included in the mid-level logic ☒ Pre ☐ Post Closure Logic: Planning for interface control now exists from Projects W-464, W-465, W-520 (Murkowski, Voogd), and W-519 (Roof/Parazin). Product Author: <u>[Signature]</u> Date: <u>12/31/97</u> Review Concurrence: <u>[Signature]</u> Date: <u>1/2/98</u>
8	3-8-CH14	5. Incorporate ICD process for PCS and W-Projects in TWRS Mission Analysis Report and/or Program Plan. This will clear up how ICDs are being managed in the program.

RTP Product	CRA #	CONCLUSION	Product Author	Date	Review Concurrence	Date
		☒ Pre ☐ Post	Steve Ahman	12/31/97		
			Steve Ahman	12/31/97		
8	3-8-CH17	None.	N/A	Date	N/A	Date
		Closure Logic: No response required.				
9	3-9-LCAM2.3.3	1. The TWRS QAPP Introduction, Section 1.0, should be modified to clearly describe the relationship and interdependency between the QAPP and the FDH QAPD. The phrase in the Introduction, second paragraph, "on the pattern of" should be replaced with "in conformance with the ten elements of DOE 5700.6C and 10 CFR 830.120".	John Brown	12/31/97		
		☒ Pre ☐ Post	Steve Ahman	12/31/97		
9	3-9-LCAM2.3.3	2. The 10 criteria of 5700.6C/10 CFR 830.120 should be listed by title in the QAPP, Introduction, and a statement made that the TWRS QA program will comply with the 10 criteria as defined and described in the FDH QAPD, with no exceptions. This is important because DOE-RL and especially DOE-HQ reviewers may not have access to the FDH QAPD	John Brown	12/31/97		
		☒ Pre ☐ Post	Steve Ahman	12/31/97		
9	3-9-LCAM2.3.3	3. A separate section/paragraph (e.g., 3.4.7) should be added to the QAPP that describes the responsibilities of the TWRS/TWR quality group and quality management. As a minimum, this should include the ES&H&QA Director and TWRS QA Manager. Also, QA Group	John Brown	12/31/97		
		☒ Pre ☐ Post	Steve Ahman	12/31/97		

RTP Product	CRA #	CONCLUSION		Product Author	Date
		☒ Pre ☐ Post	Closure Logic: Comments will be incorporated into final revision.	<u>John Bross</u>	<u>12/31/97</u>
				<u>Steve Schuman</u>	<u>12/31/97</u>
				Product Author	Date
				Review Concurrence	Date
9	3-9-LCAM2.3.3	☒ Pre ☐ Post	4. The QAPP should describe when project specific QAPPs are required. For example----- "for critical projects containing Safety Class SSCs or Safety Significant SSCs. This would agree with the FDH QAPD"	<u>John Bross</u>	<u>12/31/97</u>
			Closure Logic: Comments will be incorporated into final revision.	<u>Steve Schuman</u>	<u>12/31/97</u>
				Product Author	Date
				Review Concurrence	Date
9	3-9-LCAM2.3.3	☒ Pre ☐ Post	5. An introduction to the QAPP Implementation Matrix should be added explaining that the matrix is the TWRS approach to implementing the ten elements of DOE 5700.6C and 10 CFR 830.120 and the FDH QAPD	<u>John Bross</u>	<u>12/31/97</u>
			Closure Logic: Comments will be incorporated into final revision.	<u>Steve Schuman</u>	<u>12/31/97</u>
				Product Author	Date
				Review Concurrence	Date
9	3-9-LCAM2.3.3	☒ Pre ☐ Post	6. It is recommended that the TWRS QAPP and the FDH QAPD be submitted together as appendices to the Program Plan Readiness-to-Proceed (RTP) deliverable. This will minimize the risk that DOE-RL/HQ reviewers will view the TWRS QAPP as incomplete. Also, a brief description in the Program Plan should describe the inter-relationship and interdependency between the two QA documents.	<u>John Bross</u>	<u>12/31/97</u>
			Closure Logic: Comments will be incorporated into final revision. <u>The recommendation will be added taken at the point of submittal.</u>	<u>Steve Schuman</u>	<u>12/31/97</u>
				Product Author	Date
				Review Concurrence	Date
9	3-9-CH11	☒ Pre ☐ Post	1. TWRS OUP project support schedule Section 3.5 is not independently costed. Budget is costed by each project. Recommend that the project cost be rolled up to Project Support Schedule to ensure all schedule items have a cost center in the technical baseline. This results in an integrated cost structure for the project.	<u>John Bross</u>	<u>12/31/97</u>
				<u>Steve Schuman</u>	<u>12/31/97</u>
				Product Author	Date
				Review Concurrence	Date

RTP Product	CRA #	CONCLUSION		Product Author	Review Concurrence
		☒ Pre ☐ Post	Closure Logic: Accept, this information is available in the cost/schedule baseline. Does not need to be in the TWRS OUP.	<u>Randy A. Kirkbride</u> 12/31/97 Date	<u>Steve Scham</u> 12/31/97 Date
9	3-9-CH11	☒ Pre ☐ Post	2. Formally issue the plan to update TWRS OUP to ensure it's consistent with the current mission direction. If target completion dates are missed revise date and update status to complete deliverable in remarks section.	<u>Randy A. Kirkbride</u> 12/3/97 Date	<u>Steve Scham</u> 12/31/97 Date
		☒ Pre ☐ Post	Closure Logic: Letter report due 12/23/97 focuses primarily on a review for consistency and generally discusses plans for updating project sludge mobilization efficiency and comparison to computer model distributions. A specific plan for the FY 1998 update was due 10/31/97 and should be issued by 1/31/98.	<u>Randy A. Kirkbride</u> 12/3/97 Date	<u>Steve Scham</u> 12/31/97 Date
9	3-9-CH11	☐ Pre ☒ Post	3. Evaluate revising TWRS OUP prior to next schedule revision September 1998 since the changes will define the operational technical baseline process for the project	<u>Randy A. Kirkbride</u> 12/3/97 Date	<u>Steve Scham</u> 12/31/97 Date
		☐ Pre ☒ Post	Closure Logic: An update of the TWRS OUP was planned for February 1998 but was deleted from the MYWP by DOE-RL. Based on the review for consistency, there is no plan to prepare a revision before September 1998.	<u>Randy A. Kirkbride</u> 12/3/97 Date	<u>Steve Scham</u> 12/31/97 Date
9	3-9-CH20	☐ Pre ☒ Post	1. TWRS OUP provides inventory basis for 149 single-shell tanks and 28 double-shell tanks and explains the methodology for projecting inventory estimates based on future transfer assumptions. However, there is no evidence of incorporating Project W-151 Demonstration project sludge mobilization efficiency and comparison to computer model distributions, sludge suspension and settling rates to support Engineering Inventory estimates. Recommend the mid-level logic baseline for Project W-151 results be used to validate engineering assumptions made in TWRS OUP, Appendix C.	<u>Randy A. Kirkbride</u> 12/3/97 Date	<u>Steve Scham</u> 12/31/97 Date
		☐ Pre ☒ Post	Closure Logic: Mixer pump test results will be used to validate TWRS OUP assumptions when they become available.	<u>Randy A. Kirkbride</u> 12/3/97 Date	<u>Steve Scham</u> 12/31/97 Date
9	3-9-CH20		2. Develop a matrix mapping DQOs to requirements. Issue list of DQO characterization deliverables and evaluate incorporating DQOs into TWRS OUP.		

RTP Product	CRA #	CONCLUSION	Product Author	Review Concurrence
		☒ Pre ☐ Post	Randy A. Kikbide Date 12/3/97	Steve Schum Date 12/3/97
10	3-10-LCAM2.2.3	Closure Logic: Specific DQOs identify the requirements for sampling when the problem-specific DQOs are complete, matrices will be prepared (under an effort separate from the TWRS OUP) to summarize and communicate the information. The deliverable dates for the DQOs are identified in the MYWP and sampling deliverables for characterization are contained in the RTP schedule. The TWRS OUP will summarize the DQO effort but will not incorporate the DQOs. We recommend that the Retrieval Project define the documents designed to fit the systems engineering tree, their content, and how they relate to the above and below documents. This must be done so the efforts going on are focused and end up in early, formally complete, and consistent documents with focus on the retrieval, preparation, and staging of the feed.	Randy A. Kikbide Date 12/3/98	Steve Schum Date 12/3/98
10	3-10-LCAM2.2.7a	Closure Logic: A document hierarchy, both programmatic and technical, has now been developed. This has been included in the TWRS SEMF. Figure 2.4 of the SEMF begins the derivation of the document hierarchy. Further derivation is contained in the Technical Baseline Summary Description.	Steve Schum Date 1-2-98	Steve Schum Date 1-2-98
		1. Ensure that all requirements set forth in the CRAs are explicitly addressed in the Risk Management Plan.		
		Closure Logic: The Risk Management Plan has been revised factoring in CRA recommendations and requirements.	Steve Schum Date 1-2-98	Steve Schum Date 1-2-98
10	3-10-LCAM2.2.7a	2. Strongly consider utilizing Lockheed Martin resources from the defense and aerospace sectors to strengthen the risk management program.		
		Closure Logic: TWRS has assigned corporate-experienced personnel to mentor/lead Risk Management personnel.	Steve Schum Date 1-2-98	Steve Schum Date 1-2-98
10	3-10-LCAM2.2.7a	3. Continue regular risk management training for all appropriate program staff.		

RTP Product	CRA #	CONCLUSION		Product Author	Date	Review Concurrence	Date
		☐ Pre ☒ Post	Closure Logic: Ongoing. No further action required.	<i>Bruce Summerman</i>	1-2-98	<i>Bruce Summerman</i>	1-2-98
10	3-10- LCAM2.2.7a	☐ Pre ☒ Post	4. Strongly consider creating the position of a Risk Management Director to organize project-wide risk issues and lead risk management activities.	<i>Bruce Summerman</i>	1-2-98	<i>Bruce Summerman</i>	1-2-98
10	3-10- LCAM2.2.7a	☐ Pre ☒ Post	5. Develop a risk management "master diagram" that articulates how the myriad of similar program activities will work together to manage risks.	<i>Bruce Summerman</i>	1-2-98	<i>Bruce Summerman</i>	1-2-98
10	3-10- LCAM2.2.7a	☒ Pre ☐ Post	Closure Logic: The TWRS Risk Management Procedure (WHC-IP-0842, 2.6) currently contains a diagram showing the interplay between risk management, decision management, and alternatives generation and analysis activities. All of these program activities are involved in managing risk. Other, new activities (such as enabling assumptions tracking) will be added to this diagram, or illustrated on a new diagram, as the interfaces with these new activities become better defined.	<i>Bruce Summerman</i>	1-2-98	<i>Bruce Summerman</i>	1-2-98
10	3-10- LCAM2.2.7a	☒ Pre ☐ Post	6. Include in the draft of the Risk Management Plan a discussion that allows the reader to reach the conclusions that the risks of the program are identified, well characterized, manageable and within an acceptable range of uncertainty	<i>Bruce Summerman</i>	1-2-98	<i>Bruce Summerman</i>	1-2-98
10	3-10- LCAM2.2.7a	☒ Pre ☐ Post	Closure Logic: This conclusion is not appropriate to be included in the plan itself. But, this assessment is appropriate to be included in the RTP transmittal.	<i>Bruce Summerman</i>	1-2-98	<i>Bruce Summerman</i>	1-2-98
10	3-10- LCAM2.2.7a		7. Strengthen the risk mitigation/management portion of the RMP. Although cost model is well in hand, the discussion of risk identification and associated follow up activities needs clarification.	<i>Bruce Summerman</i>	1-2-98	<i>Bruce Summerman</i>	1-2-98

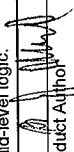
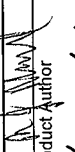
RTP Product	CRA #	CONCLUSION		Product Author	Date	Review Concurrence	Date
		☒ Pre ☐ Post	Closure Logic: The plan has been updated including Risk Handling activities. <i>Section B2</i>	<i>Bulle Summermon</i>	<i>1-2-98</i>		
10	3-10-LCAM2.2.7a	☐ Pre ☒ Post	8. Consider using/incorporating the HTWOS model into the risk management program as a longer-term resource to capture/identify the risks associated with future possible tank and piping configurations.	<i>Bulle Summermon</i>	<i>1-2-98</i>		
		☐ Pre ☒ Post	Closure Logic: How the use of the HTWOS model and its capabilities to identify future risks will be evaluated.	<i>Bulle Summermon</i>	<i>1-2-98</i>		
10	3-10-LCAM2.2.7b	☒ Pre ☐ Post	Closure of CRA recommendations same as CRA 3-10-LCAM2.2.7a.	<i>Bulle Summermon</i>	<i>1-2-98</i>		
		☒ Pre ☐ Post	Closure Logic: See CRA 3-10-LCAM2.2.7a	<i>Bulle Summermon</i>	<i>1-2-98</i>		
10	3-10-LCAM2.2.7c	☒ Pre ☐ Post	Closure of CRA recommendations same as CRA 3-10-LCAM2.2.7a.	<i>Bulle Summermon</i>	<i>1-2-98</i>		
		☒ Pre ☐ Post	Closure Logic: See CRA 3-10-LCAM2.2.7a	<i>Bulle Summermon</i>	<i>1-2-98</i>		
10	3-10-LCAM2.3.7a		Closure of CRA recommendations same as CRA 3-10-LCAM2.2.7a.	<i>Bulle Summermon</i>	<i>1-2-98</i>		

RTP Product	CRA #	CONCLUSION	
		☒ Pre ☐ Post	Closure Logic: See CRA 3-10-LCAM2.2.7a Product Author <u>Bruce Zimmerman</u> Date <u>1-2-98</u> Review Concurrence <u>Seena</u> Date <u>1-2-98</u>
10	3-10-LCAM2.3.7b	Closure of CRA recommendations same as CRA 3-10-LCAM2.2.7a.	
		☒ Pre ☐ Post	Closure Logic: See CRA 3-10-LCAM2.2.7a Product Author <u>Bruce Zimmerman</u> Date <u>1-2-98</u> Review Concurrence <u>Seena</u> Date <u>1-2-98</u>
10	3-10-LCAM2.4.7a	Closure of CRA recommendations same as CRA 3-10-LCAM2.2.7a.	
		☒ Pre ☐ Post	Closure Logic: See CRA 3-10-LCAM2.2.7a Product Author <u>Bruce Zimmerman</u> Date <u>1-2-98</u> Review Concurrence <u>Seena</u> Date <u>1-2-98</u>
10	3-10-LCAM2.4.7b	Closure of CRA recommendations same as CRA 3-10-LCAM2.2.7a.	
		☒ Pre ☐ Post	Closure Logic: See CRA 3-10-LCAM2.2.7a Product Author <u>Bruce Zimmerman</u> Date <u>1-2-98</u> Review Concurrence <u>Seena</u> Date <u>1-2-98</u>
10	3-10-LCAM2.4.7b	None	
10	3-10-LCAM2.4.7b	☐ Pre ☐ Post	Closure Logic: No action required. Product Author <u>N/A</u> Date _____ Review Concurrence <u>N/A</u> Date _____

RTP Product	CRA #	CONCLUSION
10	3-10-CR2	Increase duration on classroom training and drills/demonstrations from 2 to 4 weeks. (This may extend startup critical path 2 weeks at the drills/demonstration activity.) ☐ Pre ☒ Post Closure Logic: Classroom training will be accomplished off critical path. Performance demonstrations/drills should be scheduled over a 4 week period, which equates to one full shift rotation. Operations agrees that this would be the optimum for advanced planning. The two week plan could be met with extensive overtime if schedule needed to be made up. The project schedule will be enhanced for the July 98 deliverable (Boston). Product Author: <u>TW Bohan</u> Date: <u>11/2/98</u> Review Concurrence: <u>Steve Bohan</u> Date: <u>11/2/98</u>
10	3-10-CR3	Increase duration on classroom training and drills/demonstrations from 2 to 4 weeks. (This may extend startup critical path 2 weeks at the drills/demonstration activity.) ☐ Pre ☒ Post Closure Logic: Classroom training will be accomplished off critical path. Performance demonstrations/drills should be scheduled over a 4 week period, which equates to one full shift rotation. Operations agrees that this would be the optimum for advanced planning. The two week plan could be met with extensive overtime if schedule needed to be made up. The project schedule will be enhanced for the July 98 deliverable (Boston). Product Author: <u>TW Bohan</u> Date: <u>11/2/98</u> Review Concurrence: <u>Steve Bohan</u> Date: <u>11/2/98</u>
10	3-10-CR4	Revise HNF-1722, Rev. A, to include any changed to the MEL in both the discussion of the Authorization Basis-Amendment package and the schedule. ☒ Pre ☐ Post Closure Logic: HNF-1722 discusses, as one of the planned tasks, updating the TWRS Safety Equipment List (SEL). Because the SEL is a portion of the Master Equipment List (MEL) for TWRS (a listing of all TWRS equipment includes that equipment necessary for Safety), it is felt that no document revision is required. Product Author: <u>Steve Bohan</u> Date: <u>1-3-98</u> Review Concurrence: <u>Steve Bohan</u> Date: <u>1/3/98</u>
10	3-10-CR5	Since the Configuration Management Plan provides some evidence that safety SSCs are identified and that maintenance and surveillance is provided for in accordance with Authorization Basis commitments, follow through for the TWR activity is all that is required; thus, it is recommended that a definitive review be performed to ensure that these activities are provided for on the appropriate level schedule and logic. ☒ Pre ☐ Post Closure Logic: CR5 is thoroughly reviewed during project related readiness reviews and management verifies this through formal MSA (readiness preparations.) Both the MSA and ORR activities are on the Level 1 logics. The project startup activities include time to perform the initial surveillances plus develop the schedules for future surveillances. Product Author: <u>TW Bohan</u> Date: <u>11/2/98</u> Review Concurrence: <u>Steve Bohan</u> Date: <u>1/2/98</u>

RTP Product	CRA #	CONCLUSION
10	3-10-CR7	1. Provide management direction on how the S/RID program is to be implemented, i.e., as an individual project task, or as a component of the "programmatic overhead." ☒ Pre ☐ Post Closure Logic: Recommendation is covered in the Health and Safety Execution Plan appendix to the Program Plan. Product Author: <u>Steve Acheam</u> 1/5/98 Date Review Concurrence: <u>Steve Acheam</u> 1/5/98 Date
10	3-10-CR7	2. Based upon the determination in #1 above, evaluate each project to make adjustments to the plan and schedule for each project. ☒ Pre ☐ Post Closure Logic: Recommendation is covered in the Health and Safety Execution Plan appendix to the Program Plan. Product Author: <u>Steve Acheam</u> 1/5/98 Date Review Concurrence: <u>Steve Acheam</u> 1/5/98 Date
10	3-10-CR8	Provide for an early scoping assessment of existing management systems, staffing levels and support services vs. The projected requirements for the feed delivery/product handling and storage activities. ☒ Pre ☐ Post Closure Logic: Completed and included in Product #18, Internal Independent Assessment, Product #17, Financial Analysis, and Product #19, RTP Memorandum. Product Author: <u>Steve Acheam</u> 1/5/98 Date Review Concurrence: <u>Steve Acheam</u> 1/5/98 Date
10	3-10-CR10	Include additional startup testing detail for product handling and storage as project designs mature. ☐ Pre ☒ Post Closure Logic: Agree. Additional startup testing detail for product handling and storage will be done. Product Author: <u>Steve Acheam</u> 1/5/98 Date Review Concurrence: <u>Steve Acheam</u> 1/5/98 Date
10	3-10-CR11	The Technical Baseline Summary discussion should be augmented to include a better discussion of the contents of the Appendices. As currently constructed the document is incomplete and does not convey a sufficient understanding of the material contained in the appendices, which appears to adequately satisfy that portion of the requirement of clearly defining the functions, and responsibilities of the various activity elements. While each constituent element appears to be defined, the TWR element is not nor are the interrelationships between the activities identified. Finally, since no evidence of management responsibility for control of safety could be found, this discussion must be added to fully satisfy the Core Requirement.

RTP Product	CRA #	CONCLUSION			
10	3-10-CR19	None			
		Closure Logic: No action required.		N/A	Date
				N/A	Date
10	3-10-CH2	Define or identify what constitutes the technical baseline. The definition of the technical baseline in Figure 1-2 of the Retrieval Technical Baseline Summary document and the Retrieval Configuration Management Plan (Figure 2) are consistent but the TWRS Program Plan (Figure 3.2) is different.		Product Author	Date
		☒ Pre ☐ Post		Review Concurrence	Date
		Closure Logic: Accept. HNF-1900 has been revised (Executive Summary and Section 1.0) to clarify and elaborate on what constitutes the Technical Baseline, and the relationship of the Technical Baseline summary description to the identification and management of Technical Baseline documents.		Product Author	Date
				Review Concurrence	Date
10	3-10-CH3	Since documents are draft, assure someone follows documents to final version for consistency.		Product Author	Date
		☒ Pre ☐ Post		Review Concurrence	Date
		Closure Logic: Production Team will handle consistency issues. Documents have gone through Sr. Mem's Review.		Product Author	Date
				Review Concurrence	Date
10	3-10-CH4	The TBRs need to be completed for each of the 639 tasks.		Product Author	Date
		☒ Pre ☐ Post		Review Concurrence	Date
		Closure Logic: The TBRs will be completed for the 639 tasks.		Product Author	Date
				Review Concurrence	Date
10	3-10-CH5	None			

RTP Product	CRA #	CONCLUSION		N/A	Product Author	Date
		☐ Pre ☐ Post	Closure Logic: No action required.	N/A		
10	3-10-CH7	None				
		☐ Pre ☐ Post	Closure Logic: No action required.	N/A		
				N/A		
10	3-10-CH8		1. In regards to the first "Review Approach" statement dealing with contract personnel, the adequacy of contract personnel training is reviewed during the Operational Readiness Reviews (ORRs). The ORR activities are appropriately scheduled in the TBR's listed above. Therefore, a specific call out for contract personnel need not be included in the TBR's or mid-level logic.			
		☐ Pre ☐ Post	Closure Logic: No further action required.		 Product Author Steve DeLeon Review Concurrence Date 12/31/97	12/31/97
10	3-10-CH8		2. A more detailed subtask breakdown needs to be made to TBR's 450.010 and 470.010 to reflect the activities dealing with maintenance, MEL, and spare parts. These TBR's deal with preparing for operation of the IHLW and ILAW product storage/disposal facilities			
		☐ Pre ☒ Post	Closure Logic: The detailed P-3 schedule supports these TBRs and shows ORR activities for both ILAW disposal and IHLW storage which should assure maintenance and spare parts.		 Product Author Steve DeLeon Review Concurrence Date 12/31/97	12/31/97
10	3-10-CH8		3. Although not required by this Criteria Review Approach (CRA), TBR's 330.050 and 330.070 dealing with startup of the infrastructure utility system, were also reviewed from a maintenance, MEL and spare parts standpoint. Nothing could be found in these TBR's related to these areas. The Infrastructure Team should review/revise the appropriate TBR's to ensure that maintenance, MEL and spare parts are properly considered for the utility systems.			

RTP Product	CRA #	CONCLUSION	
		☐ Pre ☒ Post	Closure Logic: The detailed P-3 schedule supporting these TBR's shows ORR activities from both ILAW disposal and HLW storage which should assure maintenance, MEL and spare parts.
			Product Author: <u>[Signature]</u> Date: <u>12/1/97</u> Review Concurrence: <u>Blane Schum</u> 12/31/97 Date:
10	3-10-CH9	1. Use a figure like Figure 1 from the MAR to lead into Figure 1.3 of the TWR Technical Baseline Summary Description and some support text to establish the boundaries more clearly.	Product Author: <u>Blane D. Potter</u> 12/31/97 Date: Review Concurrence: <u>Russell D. Stuart</u> 12/31/97 Date:
10	3-10-CH9	☒ Pre ☐ Post	Closure Logic: Accept. Figures used in HNF-1900 have been substantially revised, and new figures have been added to improve their depiction of the Technical Baseline and it's relationship to the TWR'S Project and the Waste Retrieval and Disposal Mission.
10	3-10-CH11	☒ Pre ☐ Post	Closure Logic: Accept. Position descriptions, organization charts, and charters will not be part of the Technical Baseline. These types of documents address programmatic management of personnel and organizations performing the work, not to the technical requirements and standards that apply to the SSCs and TWR'S Project and Waste Retrieval and Disposal Mission.
10	3-10-CH13	☐ Pre ☒ Post	Closure Logic: No action required.
			Product Author: <u>N/A</u> Date: Review Concurrence: <u>N/A</u> Date:
10	3-10-CH13	☐ Pre ☒ Post	Closure Logic: Operations will be involved in detail planning of startup and testing phases during definitive design.
			Product Author: <u>[Signature]</u> 1-5-98 Date: Review Concurrence: <u>Blane Schum</u> 1/5/98 Date:

RTP Product	CRA #	CONCLUSION			
10	3-10-CH14	None			
		☐ Pre ☐ Post	Closure Logic: No action required.	N/A	Product Author _____ Date _____
				N/A	Review Concurrence _____ Date _____
10	3-10-CH15	See CRA 3-10-LCAM2.2.7a			
		☒ Pre ☐ Post	Closure Logic: See CRA-3-10LCAM2.2.7a for closure logic.	<u>David D. Potter</u> Product Author	<u>1-2-98</u> Date
				<u>Steve Schuman</u> Review Concurrence	<u>1/2/98</u> Date
10	3-10-CH16	The documents, their content, and their relationship should be defined immediately. The TWRS OUP should then be utilized for technical baseline information.			
		☒ Pre ☐ Post	Closure Logic: Accept. HNF-1900 has been revised to provide additional clarity on the documents, as well as their content and relationship. Technical Baseline documents will continue to be discussed within their relevant sections to provide a context within which their contribution to the Technical Baseline will be most meaningful.	<u>Ross D. Potter</u> Product Author	<u>12/2/97</u> Date
				<u>Samuel R. Post</u> Review Concurrence	<u>12/31/97</u> Date
10	3-10-CH18	Include RAM analysis in planning for by-product handling and product storage and disposal.			
		☒ Pre ☐ Post	Closure Logic: A RAM analysis is planned as part of the definitive design for project W-465 and W-464.	<u>Samuel R. Post</u> Product Author	<u>1/2/98</u> Date
				<u>Steve Schuman</u> Review Concurrence	<u>1/2/98</u> Date
10	3-10-CH19	Carefully scope the RAM and physical integrity activities to avoid duplication and low value activities. Consider combining physical integrity activities into the RAM analysis to avoid redundancy. See attached DOE checklist which noted potential redundancy.			

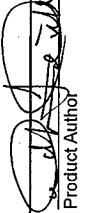
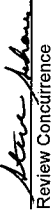
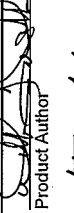
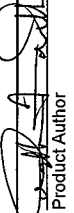
RTP Product	CRA #	CONCLUSION		Product Author	Date
		☒ Pre ☐ Post	Closure Logic: Checking of physical integrity is complete for pipelines. New pipelines are also tested by projects.	<i>Emmanuel D. Jant</i>	<i>1/5/98</i>
				<i>Steve Schovan</i>	<i>1/5/98</i>
				Review Concurrence	Date
10	3-10-CH21	☐ Pre ☒ Post	1. Define the specific documents needed, their content, and relationships to demonstrate within a systems engineering framework Readiness-To-Proceed. Utilize the TWRS OUP and, if at all possible, develop a least draft flowsheet documents, and design requirements documents to be included in the mid-level logics. These tied within a systems engineering framework would be valuable to demonstrate RTP. Closure Logic: A technical and programmatic hierarchy has been prepared. The immobilized waste and return streams and project need dates are included in the TWRS OUP. The quantities are based on DOE-provided parameters since private contractor flowsheets are not available at this time. The HTWOS and TWRS OUP will be updated as the private contractor data is released. The storage and disposal projects already have developed design requirements documents (DRDs) for Projects W-464 and W-465 and draft privatization ICDs. These projects are currently in conceptual design. The storage and disposal mid-level logics show activities for "Maintain ICDs" and "Maintain Technical Baseline." Under "Maintain ICDs," activities are planned to "examine remote handles versus contact handled waste" and "Overall waste volume estimates." The TWRS OUP will be used as an input to these analyses. Under "Maintain Technical Baseline," updates of the DRDs following completion of Conceptual Design Reports are planned. A DRD is being developed for Project W-520. Returned waste streams (e.g., entrained solids, TRU, Sr) will be addressed by HTWOS and TWRS OUP. Each batch of waste will be analyzed as a part of process control planning and safety analysis activities on the mid-level log (LAW Feed).	<i>Randy A. Kikinde</i>	<i>1/5/98</i>
				<i>Bill Lloyd for LGM</i>	<i>1-5-98</i>
				Review Concurrence	Date
10	3-10-CH21		2. Complete and document the availability analysis for product storage and waste streams to be returned to TWRS for storage.		

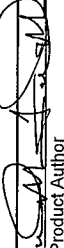
RTP Product	CRA #	CONCLUSION		Product Author	Date
		☐ Pre ☒ Post	Closure Logic: Time motion studies are being performed as part of the immobilized waste storage and disposal CDRs. This is complemented by a storage and disposal management and operations concept.	<i>[Signature]</i>	1-2-98
				<i>[Signature]</i>	1/2/98
10	3-10-CH27	☒ Pre ☐ Post	The final schedule risk analysis should be reviewed and incorporated into the final document. Closure Logic: The Risk Management Plan specifies a method for managing risks including schedule risks and the Financial Analysis also addresses schedule risks.	<i>[Signature]</i>	1/2/98
				<i>[Signature]</i>	1/2/98
10	3-10-CH28	☒ Pre ☐ Post	The programmatic baseline needs to be defined in terms of documents and schedules. For example, the programmatic baseline consists of the TWR Cost Baseline and the TWR Level 0 Schedules. Closure Logic: These elements are addressed in the document hierarchy.	<i>[Signature]</i>	1/2/98
				<i>[Signature]</i>	1/5/98
10	3-10-CH29	☒ Pre ☐ Post	The final documents should be reviewed to ensure that the alternatives generation and analysis are adequately addressed. Closure Logic: The SEMP retains the requirement to perform Alternative Analyses for the purpose of selecting the "best" architecture solution. In addition, a procedure, HNF-IP-0842, Vol IV, "Alternative Generation and Analysis" is to be used to assist in performing the analysis.	<i>[Signature]</i>	1/2/98
				<i>[Signature]</i>	1-2-98
10	3-10-CH33	None	Closure Logic: No action required.	N/A	
		☐ Pre ☐ Post		N/A	

RTP Product	CRA #	CONCLUSION
10	3-10-CH35	Closure of CRA recommendations same as CRA 3-10-LCAM2.2.7a Closure Logic: See CRA 3-10-LCAM2.2.7a for closure logic. ☒ Pre ☐ Post Product Author: <u>Steve Schum</u> 1-5-98 Date Review Concurrence: <u>Steve Schum</u> 1/5/98 Date
11	3-11-LCAM2.2.3	1. A hierarchy of technical documents should be prepared and annotated outline descriptions should be developed for the documents to be used in the TWR Program technical management. A clear path should lead from the Site Specification through these documents to the detail designs and specs which will be prepared prior to Critical Decision in May, 1998. Closure Logic: During the red team review, HNF-1901 describing the technical baseline was not available. ☒ Pre ☐ Post Product Author: <u>Steve Schum</u> 12/31/97 Date Review Concurrence: <u>Steve Schum</u> 12/31/97 Date
11	3-11-LCAM2.2.3	2. Technical Direction documents should be scrubbed of redundant information. Documents should be combined where feasible to simplify the program management Closure Logic: During the red team review, HNF-1901 describing the technical baseline was not available. Production Team handling consistency issues. ☒ Pre ☐ Post Product Author: <u>Steve Schum</u> 12/31/97 Date Review Concurrence: <u>Steve Schum</u> 12/31/97 Date
11	3-11-CR20	1. Expand FDH Section of Table 2-1 "Project Hanford Management Contractors and Responsibilities" to include oversight responsibilities. Closure Logic: Comment incorporated. ☒ Pre ☐ Post Product Author: <u>Steve Schum</u> 12/31/97 Date Review Concurrence: <u>Steve Schum</u> 12/31/97 Date
11	3-11-CR20	2. In the Appendix A.1.x writeup on FDH responsibilities include the oversight role and specifically mention the purpose of Facility Evaluation Board and the scope of its execution phase. This will address the core requirements.

RTP Product	CRA #	CONCLUSION	
		☒ Pre ☐ Post	Closure Logic: Recommendation incorporated.  Product Author <u>12/21/97</u> Date  Review Concurrence <u>12/31/97</u> Date
11	3-11-CR20	3. FDH should write section in Appendix A.1.x addressing their responsibilities.  Product Author <u>12/31/97</u> Date  Review Concurrence <u>12/31/97</u> Date	
11	3-11-CH2	Since Figure 1-2 of the TWR TBSD refers to the enabling assumptions and Table 2-2 best represent the block in Figure 1-2, add the key enabling assumptions to this Table so that they are clearly represented. If the key enabling assumptions are too numerous or not yet defined, add text to clarify.  Product Author <u>12/31/97</u> Date  Review Concurrence <u>12/31/97</u> Date	
11	3-11-CH3	Add another table or modify Table 2-2 to allocate the requirements to functions. A modification of Table 12 from the MAR would be a good start.  Product Author <u>12/31/97</u> Date  Review Concurrence <u>12/31/97</u> Date	
11	3-11-CH4	The final report should be reviewed to ensure that the requirements are adequately addressed.	

RTP Product	CRA #	CONCLUSION		Product Author	Date
		☒ Pre ☐ Post	Closure Logic: During the Red Team Review, HNF-1901, describing the technical baseline was not available. The final document was reviewed to ensure that the requirements were adequately addressed.	 Product Author	12/31/97 Date
				 Review Concurrence	12/31/97 Date
11	3-11-CH5		The final report should be reviewed to ensure that the requirements are adequately addressed.	 Product Author	12/31/97 Date
		☒ Pre ☐ Post	Closure Logic: During the Red Team Review, HNF-1901, describing the technical baseline was not available. The final document was reviewed to ensure that the requirements were adequately addressed.	 Review Concurrence	12/31/97 Date

RTP Product	CRA #	CONCLUSION
11	3-11-CH7	The final report should be reviewed to ensure that the requirements are incorporated. Closure Logic: During the red team review, HNF-1901 describing the technical baseline was not available. The final document was reviewed to ensure requirements were incorporated. ☒ Pre ☐ Post  Product Author Date <u>12/31/97</u>  Review Concurrence Date <u>12/31/97</u>
11	3-11-CH8	1. Develop a technical baseline for the project that downflows the project requirements into a system and component design requirements baseline. ☐ Pre ☒ Post Closure Logic: Reject recommendations 1 and 2 related to systems engineering and deletion of O&M concept based upon management directives. Defer all 9 observations until first revision (expected late FY 98).  Product Author Date <u>12/31/97</u>  Review Concurrence Date <u>12/31/97</u>
11	3-11-CH8	2. Delete the O&M concept from the technical baseline. The O&M Plan will address operations and maintenance execution plans ☐ Pre ☒ Post Closure Logic: Reject recommendations 1 and 2 related to systems engineering and deletion of O&M concept based upon management directives. Defer all 9 observations until first revision (expected late FY 98).  Product Author Date <u>12/31/97</u>  Review Concurrence Date <u>12/31/97</u>
11	3-11-CH8	3. The technical baseline does not capture the requirements baseline for IHLW, ILLW and return of secondary wastes. Develop system requirements for product handling, storage and infrastructure in the technical baseline. ☐ Pre ☒ Post Closure Logic: Accept recommendations 3 and 4 related to IHLW/ILLW/secondary wastes and incorporation of issues and assumptions (now part of HNF-1901). Defer all 9 observations until first revision (expected late FY 98).  Product Author Date <u>12/31/97</u>  Review Concurrence Date <u>12/31/97</u>
11	3-11-CH8	4. Incorporate issues and assumption section in the technical baseline. Also address the enabling assumptions that identify the means to proceed and management of the risks.

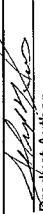
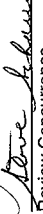
RTP Product	CRA #	CONCLUSION	 Product Author  Review Concurrence 12/31/97 Date
		☐ Pre ☒ Post Closure Logic: Accept recommendations 3 and 4 related to IHLW/ILAW/secondary wastes and incorporation of issues and assumptions (now part of HNF-1901). Defer all 9 observations until first revision (expected late FY 98).	
11	3-11-CH14	1. Performance Requirements - complete LCDs at appropriate time. ☒ Pre ☐ Post Closure Logic: Comments incorporated into HNF-1901 as suggested.	 Product Author  Review Concurrence 12/31/97 Date
11	3-11-CH14	2. Operational Concept and Functions - Correct purpose of LERF/ET Facility. ☒ Pre ☐ Post Closure Logic: Comments incorporated into HNF-1901 as suggested.	 Product Author  Review Concurrence 12/31/97 Date
11	3-11-CH14	3. Systems, Structures, Components - none ☐ Pre ☐ Post Closure Logic: No action required.	N/A Product Author N/A Review Concurrence Date
11	3-11-CH14	4. Description of how Phase I supports execution of Balance of Mission - add write-up as closing subsection in Section 7. Suggest subsection 7.6. ☒ Pre ☐ Post Closure Logic: Comments incorporated into HNF-1901 as suggested.	 Product Author  Review Concurrence 12/31/97 Date

RTP Product	CRA #	CONCLUSION	
11	3-11-CH14	5. Enabling Assumptions - Suggest a front end paragraph covering enabling assumptions either within each section (as appropriate) or reference to the list of key assumptions (and identify document in reference list) within Section 1.0, Introduction.	
		☒ Pre ☐ Post	Closure Logic: Comments incorporated into HNF-1901 as suggested. Product Author: <u>Steve Schum</u> Date: <u>12/31/97</u> Review Concurrence: <u>Steve Schum</u> Date: <u>12/31/97</u>
11	3-11-CH14	6. Section 6.2.1 Immobilized Low-Activity Waste - First paragraph indicates the "disposing of the packages in a manner that permits retrieval." Later in that same paragraph "immobilized LAW" "storage" and disposal facilities. The above examples places doubt on the acceptability of the ILAW form for disposal and on whether the proposed PC plants can produce it. Why the emphasis on storage? Eliminate throughout the document reference to storing ILAW or put into perspective why storage is required and steps necessary to dispose.	
		☒ Pre ☐ Post	Closure Logic: Comments incorporated into HNF-1901 as suggested. Product Author: <u>Steve Schum</u> Date: <u>12/31/97</u> Review Concurrence: <u>Steve Schum</u> Date: <u>12/31/97</u>
11	3-11-CH16	None	
		☐ Pre ☐ Post	Closure Logic: No action required. N/A Product Author Date N/A Review Concurrence Date
11	3-11-CH17	A document hierarchy needs to be produced that shows the relationship between the documents. The hierarchy should contain specific details, i.e., list the document title and/or number so as to make it clear if reference is being made to a TWRS document or a TWR document.	
		☒ Pre ☐ Post	Closure Logic: During the red team review, HNF-1901 describing the technical baseline was not available. This document describes the document hierarchy, including the relationship between the documents and the configuration control system to be used to control these documents. Product Author: <u>Steve Schum</u> Date: <u>12/31/97</u> Review Concurrence: <u>Steve Schum</u> Date: <u>12/31/97</u>
11	3-11-CH27	The final schedule risk analysis should be reviewed and incorporated into the final document.	

RTP Product	CRA #	CONCLUSION		Product Author	Date
		☒ Pre ☐ Post	Closure Logic: The use of the technical baseline to describe schedule risk is inappropriate. It will be assessed in RTP products #17, Financial Analysis, and #21, Updated Baseline.	<i>Steve Schum</i>	12/31/97
				<i>Steve Schum</i>	12/31/97
11	3-11-CH28	☒ Pre ☐ Post	The programmatic baseline needs to be defined in terms of documents and schedules. For example, the programmatic baseline consists of the TWR Cost Baseline and the TWR Level 0 Logics.	<i>Steve Schum</i>	12/31/97
		☒ Pre ☐ Post	Closure Logic: During the red team review, HNF-1901 describing the technical baseline was not available. Although this document does not in itself describe cost and schedule, it does describe the documents that make up the technical baseline, including the change control system.	<i>Steve Schum</i>	12/31/97
12	3-12-LCAM2.3.6	☒ Pre ☐ Post	1. The Team strongly recommends that a diagram be created that quickly illustrates to the reader: 1) the maturity of the TWRS authorization basis with respect to time (which shows past, on-going, and future projects "plugging" into and enlarging the baseline authorization basis); and 2) that the required and approved authorization basis is comfortably ahead of critical program milestones. In addition, a very brief discussion (with respect to authorization basis issues) of all projects that will comprise overall mission success should be provided.	<i>Steve Schum</i>	1-3-98
		☒ Pre ☐ Post	Closure Logic: A forward has been added to the document to more accurately define the scope of this document and identify the various locations of additional information. A figure was added as part of the foreword to demonstrate the recent changes and future changes to the allowable operations as various projects supporting Retrieval, Waste Feed Delivery and Receipt of Treated Waste are added. In addition, all projects that comprise the overall mission are discussed to demonstrate the relationship between these projects and the authorization basis.	<i>Steve Schum</i>	1/3/98
12	3-12-LCAM2.3.6	☒ Pre ☐ Post	2. The Team recommends that a table summarizing the nature, status, and scope of on-going USQ evaluations be provided in the report to allow the reader to understand how the Phase 1B authorization basis is developing. In addition, the report should include a section that describes to what extent the Phase 1B authorization basis will be increased with respect to time	<i>Steve Schum</i>	1/3/98

RTP Product	CRA #	CONCLUSION		Product Author	Date
		☒ Pre ☐ Post	Closure Logic: A forward has been added to the document to more accurately define the scope of this document and identify the various locations of additional information. A figure was added as part of the forward to demonstrate the recent changes and future changes to the allowable operations as various projects supporting Retrieval, Waste Feed Delivery and Receipt of Treated Waste are added. In addition, all projects that comprise the overall mission are discussed to demonstrate the relationship between these projects and the authorization basis.	<i>Steve Schain</i>	<i>1-3-98</i>
12	3-12- LCAM2.3.6		3. The Team recommends that the strategy author(s) include sections in the report that deal with the following issues: 1) enabling assumptions; 2) authorization basis risks and mitigation plans; and 3) interface issues with the PC or the Nuclear Regulatory Commission (NRC). Also, provide clear licensing and/or jurisdictional (DOE vs. NRC) criteria for interfaces between the PHMC and the PC (which includes a review/assessment of Interface Control Documents and potential system interface issues).	<i>Steve Schain</i>	<i>1/3/98</i>
		☒ Pre ☐ Post	Closure Logic: A forward has been added to the document to more accurately define the scope of this document and identify the various locations of additional information. A figure was added as part of the forward to demonstrate the recent changes and future changes to the allowable operations as various projects supporting Retrieval, Waste Feed Delivery and Receipt of Treated Waste are added. In addition, all projects that comprise the overall mission are discussed to demonstrate the relationship between these projects and the authorization basis.	<i>Steve Schain</i>	<i>1-3-98</i>
12	3-12- LCAM2.3.6	☐ Pre ☒ Post	4. The Team recommends that the report explicitly consider 1) the potential benefits of Kupfer et al. to promote enhanced controls cost-effectiveness and 2) the near- and long-term benefits of using the Hanford Tank Waste Optimization Simulator (HTWOS) model currently under development to enhance safety analysis and safety control cost-effectiveness at TWRS.	<i>Steve Schain</i>	<i>1-3-98</i>
		☐ Pre ☒ Post	Closure Logic: The Kupfer work has been evaluated and is currently not conducive to use in Safety Analysis. The HTWOS is the computer model forming the basis of the TWRS OUP, and so, through a strong reliance on the TWRS OUP as a technical baseline reference, the Authorization Basis Task Plan, HNF-1722, already utilized the HTWOS.	<i>Steve Schain</i>	<i>1/3/98</i>
12	3-12- LCAM2.3.6		5. The Team recommends that brief discussion of the possible new safety analyses or safety analysis issues that will most likely have to be performed or addresses in the upcoming USQ evaluations be provided.		

RTP Product	CRA #	CONCLUSION		Product Author	Date
		☒ Pre ☐ Post	Closure Logic: The plan for known additional safety analyses as they relate to upcoming projects is provided in Figure F-1 of HNF-1722, and the areas of potential analyses are provided in Appendix A of the document (further information on analysis specifics will be included in future updates as they become available.	<i>Steve Johnson</i>	1-3-98
				<i>Steve Johnson</i>	1/3/98
12	3-12-LCAM2.3.6	☒ Pre ☐ Post	6. The Team recommends that a discussion of how safety analysis information will be used in/by the NEPA process be provided in the report. Furthermore, a discussion of how safety analysis, NEPA/environmental, and performance assessment activities and information will be integrated would be very valuable.	<i>Steve Johnson</i>	1-3-98
		☒ Pre ☐ Post	Closure Logic: A forward has been added to the document to more accurately define the scope of this document and identify the various locations of additional information. A figure was added as part of the forward to demonstrate the recent changes and future changes to the allowable operations as various projects supporting Retrieval, Waste Feed Delivery and Receipt of Treated Waste are added. In addition, all projects that comprise the overall mission are discussed to demonstrate the relationship between these projects and the authorization basis.	<i>Steve Johnson</i>	1/3/98
12	3-12-LCAM2.4.6		Closure of these comments same as CRA 3-12-LCAM2.3.6.		
		☒ Pre ☐ Post	Closure Logic: See CRA 3-12-LCAM2.3.6 for closure logic.	<i>Steve Johnson</i>	1-3-98
				<i>Steve Johnson</i>	1/3/98
12	3-12-LCAM2.5.6		Closure of these comments same as CRA 3-12-LCAM2.3.6.		
		☒ Pre ☐ Post	Closure Logic: See CRA 3-12-LCAM2.3.6 for closure logic.	<i>Steve Johnson</i>	1-3-98
				<i>Steve Johnson</i>	1/3/98
12	3-12-CR4	None			

RTP Product	CRA #	CONCLUSION		☐ Pre ☐ Post	Closure Logic: No action required.	N/A Product Author _____ Date _____ N/A Review Concurrence _____ Date _____
12	3-12-CH32	Closure of these comments same as CRA 3-12-LCAM2.3.6.		☒ Pre ☐ Post	Closure Logic: See CRA 3-12-LCAM2.3.6 for closure logic.	 Product Author _____ Date <u>1-3-98</u>  Review Concurrence _____ Date <u>1/3/98</u>
15	3-15-LCAM2.2.5	The Technical Baseline Reports should include listings of the task milestones. A project rollout listing of milestones also needs to be documented and included or referenced in summary documents.		☒ Pre ☐ Post	Closure Logic: Milestones are included in the RTP schedule being submitted as part of the initial updated baseline.	 Product Author _____ Date <u>12/3/97</u>  Review Concurrence _____ Date <u>12/3/97</u>
15	3-15-LCAM2.3.5	The Technical Baseline Reports should include listings of the task milestones. A project rollout listing of milestones also needs to be documented and included or referenced in summary documents.		☒ Pre ☐ Post	Closure Logic: See CRA 3-15-LCAM2.2.5.	 Product Author _____ Date <u>12/3/97</u>  Review Concurrence _____ Date <u>12/3/97</u>
15	3-15-LCAM2.4.5a	The Technical Baseline Reports should include listings of the task milestones. A project rollout listing of milestones also needs to be documented and included or referenced in summary documents.				

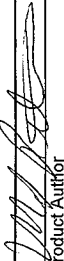
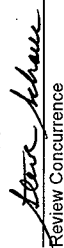
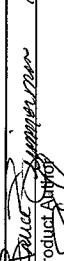
RTP Product	CRA #	CONCLUSION		Product Author	Date	Review Concurrence	Date
		☒ Pre ☐ Post	Closure Logic: See CRA 3-15-LCAM2.2.5.	<i>W.R. Smith</i>	12/31/97	<i>W.R. Smith</i>	12/31/97
15	3-15-LCAM2.4.5b		The schedule thresholds need to be incorporated into the final plans.	<i>W.R. Smith</i>	12/31/97	<i>W.R. Smith</i>	12/31/97
		☒ Pre ☐ Post	Closure Logic: Critical path resource loaded, logic driven schedules have been completed and are in updated baseline package; these schedules will be baselined per the established TWFRS change control procedure which includes thresholds for schedule control.	<i>W.R. Smith</i>	12/31/97	<i>W.R. Smith</i>	12/31/97
15	3-15-CH22		A complete set of the task cost estimates and resource forecasts need to be submitted and consolidated for top-level review.	<i>W.R. Smith</i>	12/31/97	<i>W.R. Smith</i>	12/31/97
		☒ Pre ☐ Post	Closure Logic: Cost estimates are prepared and resource loaded in the schedule for retrieval and disposal scope on the Level 1 logics.	<i>W.R. Smith</i>	12/31/97	<i>W.R. Smith</i>	12/31/97
15	3-15-CH23	None		N/A		N/A	
		☐ Pre ☐ Post	Closure Logic: No action required.				
15	3-15-CH24		Schedule risk analysis needs to be completed and the resulting schedule contingencies incorporated into the baseline.	<i>W.R. Smith</i>	12/31/97	<i>W.R. Smith</i>	12/31/97
		☒ Pre ☒ Post	Closure Logic: Some schedule risk analysis has been performed in the financial analysis. Additional schedule risk analysis will be performed, as part of RTP cost/schedule baseline .	<i>W.R. Smith</i>	12/31/97	<i>W.R. Smith</i>	12/31/97

RTP Product	CRA #	CONCLUSION
16	3-16-LCAM2.2.4	The cost risk analysis needs to be completed for all elements and the preliminary TEC, TPC, and LCC need to be revised to incorporate those results. ☒ Pre ☐ Post Closure Logic: This CRA relates to both RTP Products 16 and 17. Estimates have been prepared. Recommended adjustment to estimates are quantified in the Financial Analysis (Product 17). Baseline cost revision to address risk analysis is pending outcome of RTP submittal review. Product Author: <u>W.R. Smith</u> 12/31/97 Date Review Concurrence: <u>Steve Adams</u> 12/31/97 Date
16	3-16-LCAM2.3.4	The cost risk analysis needs to be completed for all elements and the preliminary TEC, TPC, and LCC need to be revised to incorporate those results. ☒ Pre ☐ Post Closure Logic: See CRA 3-16-LCAM2.2.4. Product Author: <u>W.R. Smith</u> 12/31/97 Date Review Concurrence: <u>Steve Adams</u> 12/31/97 Date
16	3-16-LCAM2.4.4	The cost risk analysis needs to be completed for all elements and the preliminary TEC, TPC, and LCC need to be revised to incorporate those results. ☒ Pre ☐ Post Closure Logic: See CRA 3-16-LCAM2.2.4. Product Author: <u>W.R. Smith</u> 12/31/97 Date Review Concurrence: <u>Steve Adams</u> 12/31/97 Date
16	3-16-LCAM2.5.4	The cost risk analysis needs to be completed for all elements and the preliminary TEC, TPC, and LCC need to be revised to incorporate those results. ☒ Pre ☐ Post Closure Logic: See CRA 3-16-LCAM2.2.4. Product Author: <u>W.R. Smith</u> 12/31/97 Date Review Concurrence: <u>Steve Adams</u> 12/31/97 Date
16	3-16-CR16	1. Determine if staffing projections for each PHMC contractor supporting RTP are necessary for the entire Phase IB period. Where appropriate, projections should be provided by the respective contractor.

RTP Product	CRA #	CONCLUSION	
		☒ Pre ☐ Post	Closure Logic: Completed; included in Product #17, Financial Analysis, and Product #21, Updated Baseline.
		Product Author: <u>Steve Schum</u> Date: <u>12/31/97</u> Review Concurrence: <u>Steve Schum</u> Date: <u>12/31/97</u>	
16	3-16-CR16	☒ Pre ☐ Post	2. Analyze the FTE data for anomalies and correct where appropriate.
		Product Author: <u>Steve Schum</u> Date: <u>12/31/97</u> Review Concurrence: <u>Steve Schum</u> Date: <u>12/31/97</u>	
16	3-16-CR16	☒ Pre ☐ Post	3. Rerun the cost baseline.
		Product Author: <u>Steve Schum</u> Date: <u>12/31/97</u> Review Concurrence: <u>Steve Schum</u> Date: <u>12/31/97</u>	
16	3-16-CR16	☐ Pre ☒ Post	4. Have individual company staffing plans in file to back up COCS projections of FTEs.
		Product Author: <u>Steve Schum</u> Date: <u>12/31/97</u> Review Concurrence: <u>Steve Schum</u> Date: <u>12/31/97</u>	
17	4-17-LCAM2.3.2a	☒ Pre ☐ Post	1. Proceed as planned.
		Product Author: <u>Steve Schum</u> Date: <u>12/31/97</u> Review Concurrence: <u>Steve Schum</u> Date: <u>12/31/97</u>	
17	4-17-LCAM2.3.2a	☒ Pre ☐ Post	Closure Logic: Funding profiles have been developed and validated. See RTP Product #17, Financial Analysis, and #21, Updated Baseline.
		Product Author: <u>Steve Schum</u> Date: <u>12/31/97</u> Review Concurrence: <u>Steve Schum</u> Date: <u>12/31/97</u>	
17	4-17-LCAM2.3.2a	2. Red Team verify December 16, 1997.	

RTP Product	CRA #	CONCLUSION		
		☒ Pre ☐ Post	Closure Logic: The Financial Analysis product has been prepared and reviewed by a senior review team.	 Product Author  Review Concurrence 12/17/97 Date
17	4-17-LCAM2.4.2a	Closure of these comments same as CRA 4-17-LCAM2.3.2a..		 Product Author  Review Concurrence 12/31/97 Date
		☒ Pre ☐ Post	Closure Logic: See CRA 4-17-LCAM2.3.2a for closure logic.	 Product Author  Review Concurrence 12/31/97 Date
17	4-17-LCAM2.3.2b	Closure of these comments same as CRA 4-17-LCAM2.3.2a..		 Product Author  Review Concurrence 12/31/97 Date
		☒ Pre ☐ Post	Closure Logic: See CRA 4-17-LCAM2.3.2a for closure logic.	 Product Author  Review Concurrence 12/31/97 Date
17	4-17-LCAM2.4.2b	Closure of these comments same as CRA 4-17-LCAM2.3.2a..		 Product Author  Review Concurrence 12/31/97 Date
		☒ Pre ☐ Post	Closure Logic: See CRA 4-17-LCAM2.3.2a for closure logic.	 Product Author  Review Concurrence 12/31/97 Date
17	4-17-LCAM2.3.2c	Closure of these comments same as CRA 4-17-LCAM2.3.2a..		

RTP Product	CRA #	CONCLUSION	
		☒ Pre ☐ Post	Closure Logic: See CRA 4-17-LCAM2.3.2a for closure logic. Product Author: <u>WJ Pelt</u> 12/3/97 Date: <u>12/3/97</u> Review Concurrence: <u>Steve Schuman</u> 12/31/97 Date: <u>12/31/97</u>
17	4-17-LCAM2.4.2c	Closure of these comments same as CRA 4-17-LCAM2.3.2a..	
		☒ Pre ☐ Post	Closure Logic: See CRA 4-17-LCAM2.3.2a for closure logic. Product Author: <u>WJ Pelt</u> 12/3/97 Date: <u>12/3/97</u> Review Concurrence: <u>Steve Schuman</u> 12/31/97 Date: <u>12/31/97</u>
17	4-17-CH10	Closure of these comments same as CRA 4-17-LCAM2.3.2a.	
		☒ Pre ☐ Post	Closure Logic: See CRA 4-17-LCAM2.3.2a for closure logic. Product Author: <u>WJ Pelt</u> 12/3/97 Date: <u>12/3/97</u> Review Concurrence: <u>Steve Schuman</u> 12/31/97 Date: <u>12/31/97</u>
17	4-17-CH24	1. Ensure that the finished budget estimates are used to verify available funding will support the baseline scope, schedule and cost. Closure Logic: This has been completed as part of the Financial Analysis, RTP Product #17. Product Author: <u>WJ Pelt</u> 12/3/97 Date: <u>12/3/97</u> Review Concurrence: <u>Steve Schuman</u> 12/31/97 Date: <u>12/31/97</u>	
17	4-17-CH24	2. Red Team verify December 16, 1997. Closure Logic: A Financial Analysis has been completed and reviewed by a senior review team. Product Author: <u>WJ Pelt</u> 12/3/97 Date: <u>12/3/97</u> Review Concurrence: <u>Steve Schuman</u> 12/31/97 Date: <u>12/31/97</u>	

RTP Product		CRA #	CONCLUSION	
17		4-17-CH25	Closure for these comments same as CRA 4-17-CH24.	
			☒ Pre ☐ Post	Closure Logic: See CRA 4-17-CH24 for closure logic.  Product Author  Review Concurrence Date: 12/31/97
17		4-17-CH26	Closure of these comments same as CRA 4-17-LCAM232a.	
			☒ Pre ☐ Post	Closure Logic: See CRA 4-17-LCAM2.3.2a for closure logic.  Product Author  Review Concurrence Date: 12/31/97
4		5-4-CH15	1. Ensure that all requirements set forth in the CRAs are explicitly addressed in the Risk Management Plan.	
			☒ Pre ☐ Post	Closure Logic: The Risk Management Plan has been revised factoring in CRA recommendations and requirements.  Product Author  Review Concurrence Date: 1-2-98
4		5-4-CH15	2. Strongly consider utilizing Lockheed Martin resources form the defense and aerospace sectors to strengthen the program risk management program.	
			☐ Pre ☒ Post	Closure Logic: TWRS has assigned corporate-experienced personnel to mentor/lead Risk Management personnel  Product Author  Review Concurrence Date: 1-2-98
4		5-4-CH15	3. Continue regular risk management training for all appropriate program staff.	

RTP Product	CRA #	CONCLUSION	
		☐ Pre ☒ Post Closure Logic: Ongoing. No further action required.	Product Author: <u>Bruce Summerman</u> 1-2-98 Date: _____ Review Concurrence: <u>SS</u> 1-2-98 Date: _____
4	5-4-CH15	4. Strongly consider creating the position of a Risk Management Director to organize project-wide risk issues and lead risk management activities.	Product Author: <u>Bruce Summerman</u> 1-2-98 Date: _____ Review Concurrence: <u>SS</u> 1-2-98 Date: _____
4	5-4-CH15	5. Develop a risk management "master diagram" that articulates how the myriad of similar program activities will work together to manage risks.	Product Author: <u>Bruce Summerman</u> 1-2-98 Date: _____ Review Concurrence: <u>SS</u> 1-2-98 Date: _____
4	5-4-CH15	6. Include in the draft of the Risk Management Plan a discussion that allows the reader to reach the conclusions that the risks of the program are identified, well characterized, manageable and within an acceptable range of uncertainty	Product Author: <u>Bruce Summerman</u> 1-2-98 Date: _____ Review Concurrence: <u>SS</u> 1-2-98 Date: _____
		☒ Pre ☐ Post Closure Logic: This conclusion is not appropriate to be included in the plan itself. But, this assessment is appropriate to be included in the RTP transmittal.	Product Author: <u>Bruce Summerman</u> 1-2-98 Date: _____ Review Concurrence: <u>SS</u> 1-2-98 Date: _____
4	5-4-CH15	7. Strengthen the risk mitigation/management portion of the Risk Management Plan. Although cost model is well in hand, the discussion of risk identification and associated follow up activities needs clarification.	

CRA #	CONCLUSION	
	☒ Pre ☐ Post	Closure Logic: The plan has been updated including Risk Handling activities. <i>Section 8.2</i> <i>1-2-98</i> Product Author: <i>[Signature]</i> Date: <i>1-2-98</i> Review Concurrence: <i>[Signature]</i> Date: <i>1-2-98</i>
4	5-4-CH15	8. Consider using/incorporating the HTWOS model into the risk management program as a longer-term resource to capture/identify the risks associated with future possible tank and piping configurations ☐ Pre ☒ Post Closure Logic: How the use of the HTWOS model and it's capabilities to identify future risks will be evaluated. Product Author: <i>[Signature]</i> Date: <i>1-2-98</i> Review Concurrence: <i>[Signature]</i> Date: <i>1-2-98</i>
4	5-4-CH16	1. Work on the <i>TWRS Risk Management Plan</i> should continue with the goal of having an approved Plan that meets the requirements of the TWRS SEMP and the CRAs related to Risk Management. ☒ Pre ☐ Post Closure Logic: Work on the plan is continuing. Product Author: <i>[Signature]</i> Date: <i>1-2-98</i> Review Concurrence: <i>[Signature]</i> Date: <i>1-2-98</i>
4	5-4-CH16	2. Efforts to develop a Risk List including a list of "Critical Risks" should continue. ☒ Pre ☐ Post Closure Logic: Work on the risk lists, including the Critical Risk List, is continuing. A Critical Risk List will be submitted as part of the final RTP package. Product Author: <i>[Signature]</i> Date: <i>1-2-98</i> Review Concurrence: <i>[Signature]</i> Date: <i>1-2-98</i>
4	5-4-CH16	3. The Plan should contain guidance on risk identification, assessing probabilities, and developing mitigating actions so that risk management actions are reasonably consistent across the project.

RTP Product	CRA #	CONCLUSION	☒ Pre ☐ Post	Closure Logic: Section 2.2 of the revised plan discusses risk identification, Section 2.6 discusses mitigating actions. Assessing probabilities (as well as risk identification and mitigating actions) are also discussed in the TWRS Risk Management Procedure (WHC-IP-0842, 2.6).	Product Author Review Concurrence Date
4	5-4-CH16	4. The Risk Management Plan, the Enabling Assumptions Management and Control System and Corrective Action Management (HNF-PRO-052) all contain elements of "risk management." The involve identification of risks, deficiencies, issues, and other conditions that, if left unmanaged, could have negative impact on the success of the project. They all involve making enabling assumptions or other mitigating actions to deal with the situation followed by management of actions to reduce or eliminate the potential impact. They also involve assessment of probabilities and prioritization. These systems should be integrated in an appropriate way so that similar risks, issues, and/or deficiencies are handled in a similar manner. Integration would also help avoid duplication if an item appears in multiple systems.	☐ Pre ☒ Post		Product Author: <i>Bill Zimmerman</i> 1-2-98 Review Concurrence: <i>[Signature]</i> Date:
		Closure Logic: Extensive integration of the risk management and enabling assumption activities has already occurred and will continue. The Corrective Action Management System deals primarily with deficiencies that have already been identified, rather than risks that may occur. However, integration between the risk management activity and the Corrective Action Management System will be pursued.	☐ Pre ☒ Post		Product Author: <i>Bill Zimmerman</i> 1-2-98 Review Concurrence: <i>[Signature]</i> Date:
4	5-4-CH21	Closure of comments same as CRA 5-4-CH16.	☒ Pre ☐ Post	Closure Logic: See CRA 5-4-CH16 for closure logic.	Product Author: <i>Bill Zimmerman</i> 1-2-98 Review Concurrence: <i>[Signature]</i> Date:
4	5-4-CH27	Insure that schedule risk impact on cost is contained in the final Financial Plan.	☒ Pre ☐ Post	Closure Logic: The Risk Management Plan specifies a method for managing risks including schedule risks and the Financial Analysis also addresses schedule risks.	Product Author: <i>Bill Zimmerman</i> 1-2-98 Review Concurrence: <i>[Signature]</i> Date:
4	5-4-CH28	None			Product Author: <i>Bill Zimmerman</i> 1-2-98 Review Concurrence: <i>[Signature]</i> Date:

RTP Product		CRA #	CONCLUSION		
			☐ Pre ☐ Post	Closure Logic: No action required.	Product Author: <u>N/A</u> Date: _____ Review Concurrence: <u>1/19/98</u> Date: _____
4		5-4-CH35	Closure of comments same as CRA 5-4-CH15.		
			☒ Pre ☐ Post	Closure Logic: See CRA 5-4-CH15 for closure logic. 15 30	Product Author: <u>[Signature]</u> 1-2-98 Date: _____ Review Concurrence: <u>[Signature]</u> 1-2-98 Date: _____
4		5-4-LCAM2.3.7	Closure of comments same as CRA 5-4-CH15.		
			☒ Pre ☐ Post	Closure Logic: See CRA 5-4-CH15 for closure logic.	Product Author: <u>[Signature]</u> 1-2-98 Date: _____ Review Concurrence: <u>[Signature]</u> 1-2-98 Date: _____
4		5-4-LCAM2.3.7	Closure of comments same as CRA 5-4-CH15.		
			☒ Pre ☐ Post	Closure Logic: See CRA 5-4-CH15 for closure logic.	Product Author: <u>[Signature]</u> 1-2-98 Date: _____ Review Concurrence: <u>[Signature]</u> 1-2-98 Date: _____
4		5-4-LCAM2.4.7	Closure of comments same as CRA 5-4-CH15.		

RTP Product	CRA #	CONCLUSION	
		☒ Pre ☐ Post	Closure Logic: See CRA 5-4-CH15 for closure logic. <i>Steve Samuelson</i> 1-2-98 Product Author Date <i>Steve Samuelson</i> 1-2-98 Review Concurrence Date
5	6-5-CH6	☒ Pre ☐ Post	1. The STRATEGY document should be completed by accessing other potential sources of enabling assumptions noted in the STRATEGY document and by appending the complete list of enabling assumptions to the STRATEGY document. Closure Logic: The STRATEGY document was a guide for the development of the Enabling Assumptions Management and Control System (EAMCS). The STRATEGY was never intended to be a complete document, it is not a deliverable product and will not be published. The EAMCS includes an Implementation Guide which does list all the sources of Enabling Assumptions reviewed for the development of the EAMCS database. The database contains 380 EAs and a printout is available upon request. <i>Russ D. Pottas</i> 1/2/98 Product Author Date <i>Steve Samuelson</i> 1/2/98 Review Concurrence Date
5	6-5-CH6	☒ Pre ☐ Post	2. The source and the location within the document should be noted for each enabling assumption. Closure Logic: Each EA reference has been assigned a unique number comprised of three parts: (1) 'EAMCS'; denoting entry in the Enabling Assumption Management Control System; (2) the acronym for the source of the assumption (e.g., PG, MAR, OUP), and (3) a number(s) relating to the location within the document. For TBR sources the acronym is a number corresponding to the Activity ID. A "Reference" field in the database also provides the full reference for the source document. <i>Russ D. Pottas</i> 1/2/98 Product Author Date <i>Steve Samuelson</i> 1/2/98 Review Concurrence Date
1	7-1-LCAM2.2.1		1. Incorporate into the text under Section 1.2 Hanford Site Mission the concept of key high-level documents that establish requirements. Include the DOE Strategic Plan (DOE/PO-0053) now. Indicate that if the DOE-EM 2006 Plan is approved, the requirements from that document will be incorporated where appropriate.

RTP Product	CRA #	CONCLUSION		Product Author	Date	Review Concurrence	Date
		☐ Pre ☒ Post	Closure Logic: The DOE Strategic Plan only contains one direct requirement for TWRS which is "...the cleanup of our own facilities..." The DOE Strategic Plan is a high-level document that is intended to be implemented by the lower level "Program Plans." Thus it is only appropriate to reference the program plan. The DOE Program Plan was done after RL did its "Hanford Strategic Plan." We used the Hanford Strategic Plan as a primary reference in the MAR and the Hanford Site Technical Database. The DOE Program Plan (Alm's 10-Year Plan) is still in draft form and will be voted on by Congress in February. At that time we will pick up requirements as appropriate in a later version of the MAR.	<i>[Signature]</i>	01/22/98	<i>[Signature]</i>	1-2-98
1	7-1-LCAM2.2.1		2. Complete definition/identification of technical baseline.				
		☐ Pre ☒ Post	Closure Logic: Will defer until after 1/12/98. <i>Technical Baseline is defined in the SENT and the Technical Baseline Summary Description. gblm</i>	<i>[Signature]</i>	01/02/98	<i>[Signature]</i>	1-2-98
1	7-1-CH1	☒ Pre ☐ Post	1. The MAR needs to clearly identify the source of incoming requirements so that traceability is assured.	<i>[Signature]</i>	01/02/98	<i>[Signature]</i>	1-2-98
		☒ Pre ☐ Post	Closure Logic: All comments & recommendation accepted except reference to JMN acceptability. No action was taken here.	<i>[Signature]</i>	01/02/98	<i>[Signature]</i>	1-2-98
1	7-1-CH1	☒ Pre ☐ Post	2. The MAR should be cleared of extraneous information and details that belong in lower tier documents.	<i>[Signature]</i>	01/02/98	<i>[Signature]</i>	1-2-98

RTP Product	CRA #	CONCLUSION
1	7-1-CH13	1. Revise the following TBR's to provide additional visibility of the subtasks that will be required in the operations/maintenance areas to complete facility startup and the Operational Readiness Review (ORR) process: - TBR 450.010 Prepare Procedures, Training, OTPs/Conduct Readiness Assessment (W-464) - TBR 470.010 Procedures/Training/OTP/ORR (Initial Phase 1) (W-465) - TBR 470.060 Procedures/Training/OTP/ORR (Balance Phase 1) (W-465) Closure Logic: Above TBRs will be revised to incorporate the above comments. ☐ Pre ☒ Post Product Author <u>Delbert Jr. Lynn</u> Date <u>1-5-98</u> Review Concurrence <u>W. McNeill</u> Date <u>1/5/98</u>
1	7-1-CH13	2. In the Mission Analysis Report: - Page 57 The last sentence of the last paragraph denotes the new project to build the ILAW Disposal Facility as project W-464. Change "W-464" to "W-520". - Page 61 Revise the last paragraph to include reference to project W-464 which will modify the Canister Storage Building (CSB) to accept the IHLW product from Phase 1 processing. Closure Logic: Corrections were made. ☒ Pre ☐ Post Product Author <u>DDH/lyl</u> Date <u>01/02/98</u> Review Concurrence <u>Steve Schum</u> Date <u>1/2/98</u>
TBR	TBR-1	It is recommended that the internal self assessment team be utilized for the final review of the RTP 20 product deliverables. Closure Logic: Senior review team to perform final review. ☒ Pre ☐ Post Product Author <u>Steve Schum</u> Date <u>1/2/98</u> Review Concurrence <u>W. McNeill</u> Date <u>1/5/98</u>

RTP Product		Comment ID#	CONCLUSION	
1		SUM1-1	1. Tie document to DOE Strategic Plan and indicate that when DOE-EM-2006 Plan is approved the necessary changes will be incorporated where appropriate	Closure Logic: The DOE Strategic Plan only contains one direct requirement for TWRS which is "...the cleanup of our own facilities..." The DOE Strategic Plan is a high-level document that is intended to be implemented by the lower level "Program Plans." Thus it is only appropriate to reference the program plan. The DOE Program Plan was done after RL did its "Hanford Strategic Plan." We used the Hanford Strategic Plan as a primary reference in the MAR and the Hanford Site Technical Database. The DOE Program Plan (Alm's 10-Year Plan) is still in draft form and will be voted on by Congress in February. At that time we will pick up requirements as appropriate in a later version of the MAR.
			☐ Pre ☒ Post	Product Author: <u>[Signature]</u> Date: <u>01/23/98</u> Review Concurrence: <u>[Signature]</u> Date: <u>1/2/98</u>
1		SUM1-2	2. Clearly identify the source of incoming requirements within the MAR so that traceability is assured.	Closure Logic: All comments & recommendation accepted except reference to JMN acceptability. No action was taken here.
			☒ Pre ☐ Post	Product Author: <u>[Signature]</u> Date: <u>01/23/98</u> Review Concurrence: <u>[Signature]</u> Date: <u>1/2/98</u>
1		SUM1-3	3. Clear extraneous information and details from the MAR that belong in lower TBR documents.	Closure Logic All comments & recommendation accepted except reference to JMN acceptability. No action was taken here.
			☒ Pre ☐ Post	Product Author: <u>[Signature]</u> Date: <u>01/23/98</u> Review Concurrence: <u>[Signature]</u> Date: <u>1/2/98</u>
1		SUM1-4	4. Incorporate specific comments provided to the authors on draft MAR dated 12/14/97 (MAR Rev. 2.CDS).	

RTP Product	Comment ID#	CONCLUSION	
		☒ Pre ☐ Post	Closure Logic: Corrections were made. Product Author Date Review Concurrence Date
2	SUM2-1	☒ Pre ☐ Post	1. Using the TWRS Program Plan as a basis, a specific format should be established for the sub-tier program system plans, and these plans revised accordingly to provide a consistent, cohesive set of plans for achieving waste vitrification in Phase IB. It is not considered mandatory that these revisions be completed prior to the January 12, 1998 RTP submittal. Product Author Date Review Concurrence Date
		☒ Pre ☐ Post	Closure Logic: The Production Team is handling consistency issues and has reworked the subtier plans to provide a cohesive RTP product. Product Author Date Review Concurrence Date
2	SUM2-2	☐ Pre ☒ Post	2. Consideration should be given to integrating the TWRS Program Plan and the program system plans into a single document. This would provide a more effective document which would be considerably easier to manage. This could be completed after the January 12, 1998, RL submittal Product Author Date Review Concurrence Date
		☐ Pre ☒ Post	Closure Logic: Redundant information has been migrated to HNF-1883. Cross-document consistency has been improved. Product Author Date Review Concurrence Date
2	SUM2-3	☒ Pre ☐ Post	3. Section 8.0, Master Plan, should be independently reviewed prior to submittal to RL on January 12, 1998. Product Author Date Review Concurrence Date
		☒ Pre ☐ Post	Closure Logic: The Master Plan has been added to the Program Plan and been reviewed by the senior review team. The master plan is contained in the TWRS Retrieval and Disposal Mission Initial Updated Baseline HNF-1883. This document is undergoing SC Man-T review prior to RL submittal. Product Author Date Review Concurrence Date
3	SUM3-1	☐ Pre ☐ Post	1. A specific format should be established for these program plans, and the plans revised accordingly, to provide a consistent, cohesive set for achieving the overall Waste Retrieval Program. This format should be consistent with, but not duplicate, material included in the TWRS Program Plan. It is not considered mandatory that these revisions be completed prior to January 12, 1998. Product Author Date Review Concurrence Date

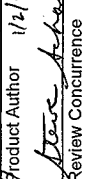
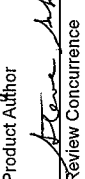
RTP Product	Comment ID#	CONCLUSION		Product Author	Date
		☐ Pre ☒ Post	Closure Logic: The Production Team is handling consistency issues and has reworked the subtier plans to provide a cohesive RTP product. <i>At The near Revision, Consistency will be improved</i>	<i>R. J. Ward</i>	<i>1/2/98</i>
				<i>Steve Behrman</i>	<i>1/2/98</i>
3	SUM3-2	☐ Pre ☒ Post	2. Consideration should be given to integrating the TWRS Program Plan and the program system plans into a single document. This would provide a more effective document which would be considerably easier to manage. This does not need to be completed before the January 12, 1998, submittal to RL.	<i>R. J. Ward</i>	<i>1/2/98</i>
			Closure Logic: Redundant information has been migrated to HNF-1883. Cross-document consistency has been improved. <i>Same as above</i>	<i>Steve Behrman</i>	<i>1/2/98</i>
3	SUM3-3	☐ Pre ☒ Post	3. A Public Participation Plan should be prepared for the TWRS privatization effort with a particular focus on what will be needed to aid the decision making process leading to approval to proceed with Phase IB. This plan is not considered a prerequisite for the January 12, 1998, RTP submittal, but should be completed as quickly as possible thereafter.	<i>Bill Freeman</i>	<i>1/2/98</i>
			Closure Logic: Public participation planning has been included in the program plan. Public involvement is the responsibility of RL and will be controlled by HNF-MP-012, "Integrated Hanford Communications Plan" submitted to DOE by FDH. Reference to this plan has been included in the TWRS Program Plan.	<i>Steve Behrman</i>	<i>1/5/98</i>
4	SUM4-1		1. Develop a comprehensive risk handling process and document it in the Risk Management Plan. The Risk Management Plan should contain guidance on risk identification, assessing probabilities, and developing mitigating actions so that risk management actions are reasonably consistent across the project. Develop a risk management master diagram that articulates how the similar program activities will work together to manage risks. Include a discussion that allows the reader to reach the conclusions that the risks of the program are identified, well characterized, manageable, and within an acceptable range of uncertainty. Strengthen the risk mitigation/management portion of the Risk Management Plan and include the cost/risk assessment process.		

RTP Product	Comment ID#	CONCLUSION	Product Author	Date	Review Concurrence	Date
		☒ Pre ☐ Post Closure Logic: Rev. 2 of the TWRS Risk Management Plan will be issued in January 1998. It contains guidance (either directly or by reference to the TWRS Risk Management Procedure) on risk identification, assessing probabilities, and developing mitigating actions. One version of a risk management master diagram already exists in the TWRS Risk Management Procedure. However, this diagram will be revised (or a new diagram issued) to explicitly include new activities such as the enabling assumptions tracking activity, when the interfaces between these new activities and risk management become better defined. The risk mitigation portion (section 2.6) of the Risk Management Plan has been strengthened in the latest revision. The cost risk activity is mentioned briefly in the TWRS Risk Management Plan, but is covered in detail in Lockheed-Martin management policies. The TWRS Risk Management Plan, together with the TWRS Risk Management Procedure, provide a detailed discussion of how risks are managed within the TWRS program.	<i>D. Sullivan</i>	1-2-98	<i>D. Sullivan</i>	1-2-98
4	SUM4-2	2. Strongly consider creating the position of a Risk Management Director to organize project-wide risk issues and lead risk management activities.	<i>D. Sullivan</i>	1-2-98	<i>D. Sullivan</i>	1-2-98
4	SUM4-3	3. A review needs to be made to ensure that every Key Enabling Assumption is clearly reflected in the Critical Risk Management list. These two lists should then be thoroughly analyzed to assure that the risks of the Program are identified, well characterized, manageable, and within an acceptable range of uncertainty.	<i>D. Sullivan</i>	1-2-98	<i>D. Sullivan</i>	1-2-98
		☒ Pre ☐ Post Closure Logic: Every Key Enabling Assumption was reviewed for possible incorporation into the Critical Risk Management List. Both the Key Enabling Assumptions list and the Critical Risk Management List have been subjected to multiple management reviews. Both these documents will receive additional, periodic reviews and updates	<i>D. Sullivan</i>	1-2-98	<i>D. Sullivan</i>	1-2-98
4	SUM4-4	4. Ensure that risk/key enabling assumptions impact on cost is evaluated and contained in the final Financial Plan Analysis.				

RTP Product	Comment ID#	CONCLUSION
	☒ Pre ☐ Post	Closure Logic: Items from both the Critical Risk List and the Key Enabling Assumptions List were considered in the Financial Plan Analysis. Product Author: <u>Steve Schuman</u> 1-2-98 Date Review Concurrence: <u>SS</u> 1-2-98 Date
4	SUM4-5	5. Complete regular risk management training for all appropriate program staff. (Training is not required prior to the January 12, 1998, submittal to RL) Closure Logic: Risk management training is ongoing and will continue. Product Author: <u>Steve Schuman</u> 1-2-98 Date Review Concurrence: <u>SS</u> 1-2-98 Date
5	SUM5-1	1. The STRATEGY document should be completed by accessing other potential sources of enabling assumptions noted in the STRATEGY document and by appending the complete list of enabling assumptions to the STRATEGY document. Closure Logic: The STRATEGY document was a guide for the development of the Enabling Assumptions Management and Control System (EAMCS). The STRATEGY was never intended to be a complete document, it is not a deliverable product and will not be published. The EAMCS includes an Implementation Guide which does list all the sources of Enabling Assumptions reviewed for the development of the EAMCS database. The database contains 380 EAs and a printout is available upon request. Product Author: <u>Ross D. Potter</u> 1/2/98 Date Review Concurrence: <u>Steve Schuman</u> 1/2/98 Date
5	SUM5-2	2. The source and the location within the document should be noted for each enabling assumption Closure Logic: Each EA reference has been assigned a unique number comprised of three parts: (1) 'EAMCS' denoting entry in the Enabling Assumption Management Control System; (2) the acronym for the source of the assumption (e.g., PG, MAR, OUP); and (3) a number(s) relating to the location within the document. For TBR sources the acronym is a number corresponding to the Activity ID. A 'Reference' field in the database also provides the full reference for the source document. Product Author: <u>Ross D. Potter</u> 1/2/98 Date Review Concurrence: <u>Steve Schuman</u> 1/2/98 Date
5	SUM5-3	3. A review to ensure that every Key Assumption is clearly reflected in the Critical Risk Management List. These two lists should then be thoroughly analyzed to assure that the risks of the program are identified, well characterized, manageable, and within an accepted range of uncertainty.

RTP Product	Comment ID#	CONCLUSION		Product Author	Date
		☒ Pre ☐ Post	Closure Logic: Every Key Enabling Assumption was reviewed for possible incorporation into the Critical Risk Management List. Both the Key Enabling Assumptions List and the Critical Risk Management List have been subjected to multiple management reviews. Both these documents will receive additional, periodic reviews and updates.	<i>James Williamson</i>	1-2-98
6	SUM6-1	1.	All reference to the TWR SEMP should be eliminated from existing documents such as the TWRS Program Plan and replaced with "TWR SEMP."	<i>Steve Behan</i>	1/2/98
		☒ Pre ☐ Post	Closure Logic: Production Team will remove <u>TWR SEMP</u> call outs.	<i>Steve Behan</i>	1-2-98
6	SUM6-2	2.	The TWRS SEMP should incorporate the requirements of the TWRS Program Plan, specifically the TWR Opportunities List.	<i>Steve Behan</i>	1/2/98
		☒ Pre ☐ Post	Closure Logic: The expectation is that this list will contain opportunities beyond technical design alternative "opportunities" (e.g. cost, schedule alternatives). The Site Technology Coordinating Group will evaluate technology development opportunities for TWRS. As such, the SEMP is not the proper document to direct or contain the Opportunities list	<i>Steve Behan</i>	1-2-98
6	SUM6-3	3.	The TWRS SEMP should integrate the various components of alternative analysis (i.e. Risk Management, Alternative Generation, and Architecture Selection, etc.). The relationships of the individual components should be more clearly articulated.	<i>Steve Behan</i>	1/2/98
		☒ Pre ☐ Post	Closure Logic: The SEMP addresses the development of the technical baseline and the use of alternative analysis to select cost-effective design solutions.	<i>Steve Behan</i>	1-2-98
6	SUM6-4	4.	Some of the descriptions used to define terminology in the TWRS SEMP glossary are almost as verbose as the text in the body of the document. The definitions in the glossary need to be much briefer and crisper.	<i>Steve Behan</i>	1-2-98

RTP Product	Comment ID#	CONCLUSION	
		☒ Pre ☐ Post	Closure Logic: A minimum glossary is currently planned. <u>Robert Beck</u> 1/5/98 Product Author <u>200</u> 1/5/98 Review Concurrence Date
6	SUM6-5		5. The annotated outline for the planned revision of the TWRS SEMP should be followed and the document not allowed to grow needlessly to support submittal of the document by January 12, 1998. <u>Robert Beck</u> 1/2/98 Product Author <u>SSR</u> 1-2-98 Review Concurrence Date
7	SUM7-1	☒ Pre ☐ Post	1. The TWR CMIP, as expanded to include TWRS, should be reviewed to ensure consistency with the document hierarchy. Closure Logic: Production team will handle consistency issues. <u>Robert Beck</u> 1/5/98 Product Author <u>Steve Schum</u> 1/5/98 Review Concurrence Date
7	SUM7-2		2. The TWRS CMIP should then address the interface with the privatization contractors. Closure Logic: All interfaces are controlled and handled in accordance with Paragraph 3.1.4, "Interface Control." <u>Robert Beck</u> 1/5/97 Product Author <u>Steve Schum</u> 1/5/98 Review Concurrence Date
7	SUM7-3	☒ Pre ☐ Post	3. The TWRS CMIP should address the process for identifying reviewers and for maintaining review comments on configuration items. Closure Logic: This level of detail is provided by the procedures. <u>Robert Beck</u> 1/5/97 Product Author <u>Steve Schum</u> 1/5/98 Review Concurrence Date

RTP Product	Comment ID#	CONCLUSION	
8	SUM8-1	1. A formal plan should be written at the system level for development of component level ICDs. This does not have to be completed prior to the January 12, 1998, RTP submittal.	
		☐ Pre ☒ Post Closure Logic: A TWRS External Interface Matrix has been developed and is attached to LMHC internal memo #73600-97-PSS-001.	<u>Steve Schauer</u> Product Author  <u>1/2/98</u> Date Review Concurrence <u>1/5/98</u> Date
8	SUM8-2	2. ICD development should be added to the mid-level logic planning steps. This does not have to be completed prior to the January 12, 1998, RTP submittal.	
		☐ Pre ☒ Post Closure Logic: Planning for interface control now exists from Projects W-464, W-465, W-520 (Murkowski, Voogd), and W-519 (Root/Parazin).	<u>Steve Schauer</u> Product Author  <u>1/2/98</u> Date Review Concurrence <u>1/5/98</u> Date
9	SUM9-1	1. The TWRS QAPP Introduction, Section 1.0, should be modified to clearly describe the relationship and interdependency between the QAPP and the FDH QAPD. The hierarchy of documents and the relationship of the TWRS OUP to the Technical Baseline should be addressed. The TWRS OUP revisions should include verification of compliance with mission directions.	
		☒ Pre ☒ Post Closure Logic: Comments will be incorporated into final revision. Hierarchy of documents and relationship of the TWRS OUP to the Technical Baseline is addressed in the Technical Baseline Summary Description. Future TWRS OUP revisions will cite the source of bases and assumptions. This will verify compliance with mission directions.	<u>Steve Schauer</u> Product Author  <u>1/2/98</u> Date Review Concurrence <u>1/2/98</u> Date
9	SUM9-2	2. Process flow sheets should be added to the TWRS OUP. However, this does not have to be done prior to the January 12, 1998, submittal to RL.	
		☐ Pre ☒ Post Closure Logic: The TWRS OUP contains process flowsheets (process diagrams and material balances) for Phases 1 and 2 in Appendices E and F, and in other locations throughout the document. Will evaluate additional flow sheet needs with next revision.	<u>Handy A. Kirkbide</u> Product Author  <u>1/5/98</u> Date Review Concurrence <u>1/5/98</u> Date

RTP Product	Comment ID#	CONCLUSION
9	SUM9-3	3. The phrase in the Introduction, second paragraph, "on the pattern of" should be replaced with "in conformance with the ten elements of DOE 5700.6C and 10CFR 830.120". The 10 criteria of 5700.6C/10 and 10CFR 830.120 should be listed by title in the QAPP introduction, and a statement made that the TWRS QA program will comply with the 10 criteria as defined and described in the FDH QAPD, with no exceptions.
		☒ Pre ☐ Post Closure Logic: Comments will be incorporated into the final version. <u>John Brown</u> Product Author <u>12/19/98</u> Date <u>Steve Johnson</u> Review Concurrence <u>1/2/99</u> Date
9	SUM9-4	4. TWRS OUP project support schedule Section 3.5 should be revised to include cost to ensure that required action items are met.
		☒ Pre ☐ Post Closure Logic: ^{Revised} Accept this information is available in the cost/schedule baseline. Does not need to be in the TWRS OUP. <u>Randy A. Kirkbride</u> Product Author <u>1/5/99</u> Date <u>Steve Johnson</u> Review Concurrence <u>1/5/99</u> Date
9	SUM9-5	5. The mid-level logic baseline for Project W-151 should be included in the TWRS OUP, Appendix C to further validate engineering assumptions.
		☐ Pre ☒ Post Closure Logic: Mixer pump test results will be used to validate TWRS OUP assumptions when they become available. <u>Randy A. Kirkbride</u> Product Author <u>1/5/99</u> Date <u>Steve Johnson</u> Review Concurrence <u>1/5/99</u> Date
9	SUM9-6	6. A matrix mapping of DQO's to requirements should be developed and a list of DQO characterization deliverables should be issued. Incorporation of DQO's into the TWRS OUP should be evaluated. These do not have to be done prior to the January 12, 1998, deliverable to RL.
		☐ Pre ☒ Post Closure Logic: Specific DQOs identify the requirements for sampling when the problem-specific DQOs are complete, matrices will be prepared (under an effort separate from the TWRS OUP) to summarize and communicate the information. The deliverable dates for the DQOs are identified in the MYWP and sampling deliverables for characterization are contained in the RTP schedule. The TWRS OUP will summarize the DQO effort but will not incorporate the DQOs. <u>Randy A. Kirkbride</u> Product Author <u>1/5/98</u> Date <u>Steve Johnson</u> Review Concurrence <u>1/5/99</u> Date

RTP Product	Comment ID#	CONCLUSION	
10	SUM10-1	1. The infrastructure and immobilized waste TBRs should be brought to the same degree of completeness as the waste feed delivery TBRs. This can be accomplished after submittal of the RTP documents to RL on January 12, 1998.	
		☐ Pre ☒ Post	Closure Logic: The TBRs will be routinely revised and improved upon. Product Author: <u>R. J. W. M. A.</u> Date: <u>1/2/98</u> Review Concurrence: <u>Steve Schum</u> Date: <u>1/2/98</u>
10	SUM10-2	2. All TBRs should be put under configuration control.	
		☒ Pre ☐ Post	Closure Logic: Accept, TBR will be put under configuration control. Product Author: <u>R. J. W. M. A.</u> Date: <u>1/5/98</u> Review Concurrence: <u>Steve Schum</u> Date: <u>1/5/98</u>
10	SUM10-3	3. Prepare a companion document to the TWRS OUP for infrastructure and immobilization. This can be accomplished after the January 12, 1998, submittal to RL.	
		☐ Pre ☒ Post	Closure Logic: The storage and disposal products already have developed design requirement documents (ORDs) for projects W-464 and W-465. These projects are currently in conceptual design. These reports supply the same information provided in the TWRS OUP. Product Author: <u>R. J. W. M. A.</u> Date: <u>1/2/98</u> Review Concurrence: <u>Steve Schum</u> Date: <u>1/2/98</u>
11	SUM11-1	1. A TWRS integrated document hierarchy (both programmatic and technical) should be developed along with annotated outlines for each document.	
		☒ Pre ☐ Post	Closure Logic: During the red team review, HNF-1901 describing the technical baseline was not available. This document describes the document hierarchy, including the relationship between the documents and the configuration control system to be used to control these documents. Product Author: <u>R. J. W. M. A.</u> Date: <u>1/2/98</u> Review Concurrence: <u>Steve Schum</u> Date: <u>1/2/98</u>
11	SUM11-2	2. A clear flow down of requirements from the site level to the TWR system level and then down the to the sub-system and component levels should be prepared and issued.	

RTP Product	Comment ID#	CONCLUSION		
		☒ Pre ☐ Post	Closure Logic: Reject recommendation 2 related to systems engineering and deletion of O&M concept based upon management directives. Defer all 9 observations until first revision (expected late FY 98).	<u>[Signature]</u> 1/2/98 Product Author Date <u>Nora D. Pitter</u> 1/2/98 Review Concurrence Date
11	SUM11-3	3.	The Technical Baseline requirements for IHLW, ILAW, and secondary waste products needs to be prepared and issued.	<u>[Signature]</u> 1/2/98 Product Author Date <u>Nora D. Pitter</u> 1/2/98 Review Concurrence Date
11	SUM11-4	4.	The enabling assumptions need to be clearly spelled out in the Technical Baseline and incorporated into the issues and risk management process.	<u>[Signature]</u> 1/2/98 Product Author Date <u>Nora D. Pitter</u> 1/2/98 Review Concurrence Date
12	SUM12-1	1.	Convey that the Licensing Strategy and authorization basis activities are for the entire Phase IB Program. The introductory portion of the RTP product should be revised to convey to the reader that the licensing staff understands the interrelationship of the strategies for individual projects and how the authorization basis must evolve, and that the overall Phase IB Program must be included.	<u>[Signature]</u> 1-3-98 Product Author Date <u>Nora D. Pitter</u> 1/3/98 Review Concurrence Date
		☒ Pre ☐ Post	Closure Logic: A forward has been added to the document to more accurately define the scope of this document and identify the various locations of additional information. A figure was added as part of the forward to demonstrate the recent changes and future changes to the allowable operations as various projects supporting Retrieval, Waste Feed Delivery and Receipt of Treated Waste are added. In addition, all projects that comprise the overall mission are discussed to demonstrate the relationship between these projects and the authorization basis.	<u>[Signature]</u> 1-3-98 Product Author Date <u>Nora D. Pitter</u> 1/3/98 Review Concurrence Date

RTP Product	Comment ID#	CONCLUSION
12	SUM12-2	2. A diagram should be created that illustrates to the reader: 1) the maturity of the TWRS authorization basis with respect to time (showing past, on-going, and future projects); and 2) that the required and approved authorization basis is comfortably ahead of critical program milestones. In addition, a very brief description (with respect to authorization basis issues) of all projects that will comprise overall mission success should be provided.
		☒ Pre ☐ Post Closure Logic: A forward has been added to the document to more accurately define the scope of this document and identify the various locations of additional information. A figure was added as part of the forward to demonstrate the recent changes and future changes to the allowable operations as various projects supporting Retrieval, Waste Feed Delivery and Receipt of Treated Waste are added. In addition, all projects that comprise the overall mission are discussed to demonstrate the relationship between these projects and the authorization basis. Product Author: <u>Steve Schauer</u> 1-3-98 Date Review Concurrence: <u>Steve Schauer</u> 1/3/98 Date
12	SUM12-3	3. The Team recommends that a table summarizing the nature, status, and scope of on-going Unreviewed Safety Question (USQ) evaluations be provided in the report to allow the reader to understand how the Phase IB authorization basis is developing. In addition, the report should include a section that describes to what extent the Phase IB authorization basis will be increased with respect to time.
		☒ Pre ☐ Post Closure Logic: A forward has been added to the document to more accurately define the scope of this document and identify the various locations of additional information. A figure was added as part of the forward to demonstrate the recent changes and future changes to the allowable operations as various projects supporting Retrieval, Waste Feed Delivery and Receipt of Treated Waste are added. In addition, all projects that comprise the overall mission are discussed to demonstrate the relationship between these projects and the authorization basis. Product Author: <u>Steve Schauer</u> 1-3-98 Date Review Concurrence: <u>Steve Schauer</u> 1/3/98 Date
12	SUM12-4	4. The Team recommends consideration of 1) the potential benefits of Kupfer et al. to promote enhanced controls cost-effectiveness and 2) the near- and long-term benefits of using the Hanford Tank Waste Optimization Simulator model currently under development to enhance safety analysis and safety control cost-effectiveness at TWRS. These activities may be completed after the January 12, 1998, submittal to RL.
		☐ Pre ☒ Post Closure Logic: The Kupfer work has been evaluated and is currently not conducive to use in Safety Analysis. The HTWOS is the computer model forming the basis of the TWRS OUP, and so, through a strong reliance on the TWRS OUP as a technical baseline reference, the Authorization Basis Task Plan, HNF-1722, already utilized the HTWOS. Product Author: <u>Steve Schauer</u> 1-3-98 Date Review Concurrence: <u>Steve Schauer</u> 1/3/98 Date
13	SUM13S-1	1. The TWRS Safety Program Plan and its relationship to the Integrated Safety Management System should be evaluated. Changes to the Safety Program Plan can be made after the January 12, 1998, RL submittal.

RTP Product	Comment ID#	CONCLUSION		Product Author	Date
		☐ Pre ☒ Post	Closure Logic: The ISMS has been included in the Execution Plan for ESH&QA.	<i>Steve Schwan</i>	<i>1/2/98</i>
				<i>Steve Schwan</i>	<i>1/2/98</i>
13	SUM13S-2	☐ Pre ☒ Post	2. The Safety Management Plan section to include should be strengthened to include actual program elements implementing specific planned activities. This activity can be completed after the January 12, 1998, submittal to RL.	<i>Steve Schwan</i>	<i>1/2/98</i>
				<i>Steve Schwan</i>	<i>1/2/98</i>
13	SUM13E-1	☐ Pre ☒ Post	1. A resource management plan should be added. This does not have to be done prior to the January 12, 1998, submittal to RL.	<i>Steve Schwan</i>	<i>1/2/98</i>
				<i>Steve Schwan</i>	<i>1/2/98</i>
13	SUM13Q-1	☐ Pre ☒ Post	1. The 10 criteria from DOE Order 5700.6C and 10CFR 183.120, should be listed by title in the introduction of the QAPP and a statement made that the TWRS QA program will comply with the 10 criteria as defined and described in the FDH QAPD, with no exceptions. This is important because RL and, especially, DOE-HQ reviewers may not have access to the FDH QAPD.	<i>Steve Schwan</i>	<i>1/2/98</i>
		☒ Pre ☐ Post	Closure Logic: Comments incorporated into QA Plan.	<i>Steve Schwan</i>	<i>1/2/98</i>
13	SUM13Q-2	☐ Pre ☒ Post	2. THE TWRS QAPP Introduction, Section 1.0, should be modified to clearly describe the relationship and interdependency between the TWRS QAPP and FDH QAPD. The phrase in the Introduction, second paragraph, "on the pattern of should be replaced with "in conformance with the ten elements of DOE 5700.6C and 10 CFR 830.120".	<i>Steve Schwan</i>	<i>1/2/98</i>

RTP Product		Comment ID#	CONCLUSION	
			☒ Pre ☐ Post	Closure Logic: Comments incorporated into QA Plan. <u>John Brown</u> Product Author <u>1/2/98</u> Date <u>Steve Behnam</u> Review Concurrence <u>1/2/98</u> Date
13	SUM13Q-3	3. A separate section/paragraph should be added to the QAPP that describes the responsibilities of the TWRS/TWR quality group and quality group management. As a minimum, this should include the ESH&QA Director and TWRS QA Manager. Also the QA Group interfaces with other applicable internal TWR organizations should be discussed. The QAPP may also reference other TWRS/TWR documents that discuss these interfaces.		<u>John Brown</u> Product Author <u>1/2/98</u> Date <u>Steve Behnam</u> Review Concurrence <u>1/2/98</u> Date
13	SUM13Q-4	4. The QAPP should describe when project-specific QAPPS are required. For example, "Project specific QAPPS will be required for critical projects containing Safety Class SSCs or Safety Significant SSCs". This would also agree with the FDH QAPD requirements for QAPPS.		<u>John Brown</u> Product Author <u>1/2/98</u> Date <u>Steve Behnam</u> Review Concurrence <u>1/2/98</u> Date
13	SUM13Q-5	5. An introduction to the TWRS QAPP Implementation Matrix should be added explaining that the QAPP matrix is the TWRS/TWR approach to implementing the ten elements of DOE Order 5700.6C and 10 CFR 830.120 and the FDH QAPD including appropriate PHMC and LMHC implementing procedures.		<u>John Brown</u> Product Author <u>1/2/98</u> Date <u>Steve Behnam</u> Review Concurrence <u>1/2/98</u> Date

RTP Product		Comment ID#	CONCLUSION	
13		SUM13Q-6	6. If it is determined that the TWRS QAPP will be submitted to DOE-RL/HQ as part of the RTP deliverable package, it is recommended that the TWRS QAPP and the FDH QAPD be submitted together as appendices to the RTP Program Plan deliverable. This will minimize the risk that RL and HQ reviewers will view the TWRS QAPP as incomplete since the two QA documents must be used together to understand the TWRS QA Program. Also a brief description in the TWRS Program Plan should describe the interrelationship and interdependence between the two QA plans/documents.	<u>John Bone</u> 1/2/98 Product Author Date <u>Steve Schum</u> 1/2/98 Review Concurrence Date
15		SUM15-1	1. The schedule risk analysis must be completed and incorporated into the roll up document prior to the January 12, 1998, submittal to RL	<u>Steve Schum</u> 1/2/98 Product Author Date <u>Steve Schum</u> 1/2/98 Review Concurrence Date
15		SUM15-2	2. A project roll up listing of milestones needs to be generated and included or referenced in summary level documents. The TBRs should also include a listing of task milestones.	<u>Steve Schum</u> 1/2/98 Product Author Date <u>Steve Schum</u> 1/2/98 Review Concurrence Date
15		SUM15-3	3. Schedule thresholds need to be incorporated into the final schedule baseline; however, this can be completed after the January 12, 1998, submittal to RL.	<u>Steve Schum</u> 1/2/98 Product Author Date <u>Steve Schum</u> 1/2/98 Review Concurrence Date

RTP Product		Comment ID#	CONCLUSION	
16		SUM16-1	1. Determine if staffing projections for each PHMC contractor supporting the RTP are necessary for the entire Phase IB period. Where appropriate, projections should be provided by the respective contractor.	
			☒ Pre ☐ Post	Closure Logic: Completed; included in Product #17, Financial Analysis, and Product #21, Updated Baseline. Product Author: <u>M. J. Deane</u> Date: <u>1/2/98</u> Review Concurrence: <u>Steve Schuman</u> Date: <u>1/2/98</u>
16		SUM16-2	2. Analyze the FTE data for anomalies and correct where appropriate	
			☒ Pre ☐ Post	Closure Logic: Completed; major subcontractor participants (DESH, NHC, and LMHC) included in Product #17, Financial Analysis and Product #21, Updated Baseline. Product Author: <u>M. J. Deane</u> Date: <u>1/2/98</u> Review Concurrence: <u>Steve Schuman</u> Date: <u>1/2/98</u>
16		SUM16-3	3. Rerun the cost baseline.	
			☒ Pre ☐ Post	Closure Logic: Completed and included in Product #17, Financial Analysis and Product #21, Updated Baseline. Product Author: <u>M. J. Deane</u> Date: <u>1/2/98</u> Review Concurrence: <u>Steve Schuman</u> Date: <u>1/2/98</u>
16		SUM16-4	4. Have individual company staffing plans on file to back up COCS projections of FTEs.	
			☐ Pre ☒ Post	Closure Logic: Baseline resources will be reviewed for contractor, comma, subcontractor, and other supporting organizations to optimize the type, mix, and distribution from FY 1998 through FY 2011. Staffing projections will be reviewed and validated with PHMC contractors. Product Author: <u>M. J. Deane</u> Date: <u>1/2/98</u> Review Concurrence: <u>Steve Schuman</u> Date: <u>1/2/98</u>
17		SUM17-1	1. The Preliminary Financial Analysis document should be completed and an independent review be conducted prior to submittal to RL in January 1998.	

RTP Product	Comment ID#	CONCLUSION		Product/Author	Date
		☒ Pre ☐ Post	Closure Logic: Financial Analysis has been completed. Document to be reviewed by senior review team.	<i>[Signature]</i>	<i>1/2/98</i>
				<i>[Signature]</i>	<i>1/2/98</i>
TBR	SUMTBR-1	1. The TBRs form an excellent basis for generation of baseline costs and schedules. TBRs for infrastructure and immobilized waste should be brought to the same degree of completeness as the ones for retrieval. (Note: This can be done after submittal of the RTP documents to RL on January 12, 1998). All TBRs should be put under configuration control.		<i>[Signature]</i>	<i>1/2/98</i>
		☐ Pre ☒ Post	Closure Logic: The TBRs will be routinely revised and improved upon.	<i>[Signature]</i>	<i>1/2/98</i>
				<i>[Signature]</i>	<i>1/2/98</i>
TBR	SUMTBR-2	2. The internal LMHC team did a thorough job of reviewing the TBRs and 20 product deliverables and should be utilized to review the final RTP submittals going to RL on January 12, 1998.		<i>[Signature]</i>	<i>1/2/98</i>
		☒ Pre ☐ Post	Closure Logic: A senior review team has been established to perform the final review of the RTP products.	<i>[Signature]</i>	<i>1/3/98</i>
				<i>[Signature]</i>	<i>1/3/98</i>

Table 3-3. Internal Assessment Final Report
Recommendations

Comment Source	ID #	CONCLUSION	
Letter 70600-97.001	LTR-1	Need a cross-reference (crosswalk) among the 36 requirements identified in the RL letter and the 20 RTP technical product documents..	
	☒ Pre ☐ Post	Closure Logic: Completed crosswalk generated. Product Author <u>Steve Schum</u> 1/2/98 Date Review Concurrence <u>ROTHLANK</u> 1/3/98 Date	
	LTR-2	Define which risk management process will be used and then standardize it's use and applicability to all TWRS programs.	
	☒ Pre ☐ Post	Closure Logic: The TWRS Risk Management Plan, HNF-SD-WM-PMP-018, describes the risk management process that is the standard for use across TWRS. Product Author <u>Steve Schum</u> 1-2-98 Date Review Concurrence <u>[Signature]</u> 1-2-98 Date	
	LTR-3	All RTP documents need to be placed under configuration management and document control.	
	☒ Pre ☐ Post	Closure Logic: That requirement is specified in paragraph 3.2 "Configuration Identification," and 3.3, "Configuration Status Accounting." Product Author <u>Steve Schum</u> 1-2-98 Date Review Concurrence <u>[Signature]</u> 1/2/98 Date	
	LTR-4	A general hierarchy of the RTP documentation and the process used to generate them needs to be developed.	
	☒ Pre ☐ Post	Closure Logic: A document hierarchy has been developed, both technical and programmatic. Product Author <u>Steve Schum</u> 1/2/98 Date Review Concurrence <u>[Signature]</u> 1/2/98 Date	

Comment Source	ID #	CONCLUSION
Letter 70600-97- 001 Attachment 3	ATT3-1	Conduct a systematic screening of all mid-level logic activities that have been used for the cost and schedule exercise for their associated enabling assumptions and risks.

Comment Source	ID #	CONCLUSION Closure Logic: Subsequent to this finding a systematic screening was done by each activity owner which included completion of a form for each of the first of a kind and unique activities contained in the level 1 logics. This form was designed to capture both activity risks and assumptions and document probabilities and consequences of the risks. This form, titled "TBR Risk Assessment", includes sections to capture both Subactivity (WBS 8) Risk Assessment information and Level 1 (WBS 7) Risk Assessment information. This form was used to close the gap between the risks and assumptions captured on the TBR forms by the activity owners and the risks and assumptions captured by the estimators on the cost estimating input sheets. Assumptions and risks were then run thru a Monte Carlo simulation to determine program risk consequences to support the pricing model. The Risk Management Plan has as its primary purpose to focus on technical and programmatic risk. The "TBR Risk Assessment" process described above is designed to focus on the identification of financial risks. For this first TBR planning effort the "TBR Risk Assessment" process was used to assist in fixing the deficiency identified between the cost estimating input sheets and the TBR forms. The TWRS Critical Risk Management List is the top level risk list which includes identified risks from all activity levels and activity owners. The RTP Enabling Assumption List contains identified enabling assumptions captured at all levels by all activity owners. Only the top level risks and assumptions are designated as key for the RTP deliverable. Future planning activities will use the lesson learned on this issue and capture all level 7 and 8 technical, programmatic, and financial assumptions and risks on the planning forms. These planning forms will be used to feed the master risk and assumptions lists. It is anticipated that an enhanced TBR form will be developed for use with additional guidance on risk and assumption identification and documentation. Product Author: <i>[Signature]</i> Date: <i>1-2-98</i> Review Concurrence: <i>[Signature]</i> Date: <i>1-2-98</i>
	ID #	CONCLUSION Closure Logic: Subsequent to this finding a systematic screening was done by each activity owner which included completion of a form for each of the first of a kind and unique activities contained in the level 1 logics. This form was designed to capture both activity risks and assumptions and document probabilities and consequences of the risks. This form, titled "TBR Risk Assessment", includes sections to capture both Subactivity (WBS 8) Risk Assessment information and Level 1 (WBS 7) Risk Assessment information. This form was used to close the gap between the risks and assumptions captured on the TBR forms by the activity owners and the risks and assumptions captured by the estimators on the cost estimating input sheets. Assumptions and risks were then run thru a Monte Carlo simulation to determine program risk consequences to support the pricing model. The Risk Management Plan has as its primary purpose to focus on technical and programmatic risk. The "TBR Risk Assessment" process described above is designed to focus on the identification of financial risks. For this first TBR planning effort the "TBR Risk Assessment" process was used to assist in fixing the deficiency identified between the cost estimating input sheets and the TBR forms. The TWRS Critical Risk Management List is the top level risk list which includes identified risks from all activity levels and activity owners. The RTP Enabling Assumption List contains identified enabling assumptions captured at all levels by all activity owners. Only the top level risks and assumptions are designated as key for the RTP deliverable. Future planning activities will use the lesson learned on this issue and capture all level 7 and 8 technical, programmatic, and financial assumptions and risks on the planning forms. These planning forms will be used to feed the master risk and assumptions lists. It is anticipated that an enhanced TBR form will be developed for use with additional guidance on risk and assumption identification and documentation. Product Author: <i>[Signature]</i> Date: <i>1-2-98</i> Review Concurrence: <i>[Signature]</i> Date: <i>1-2-98</i>
ATT3-2		A TWRS long range schedule that matches the level of detail in the TWR/WFD long range schedule needs to be developed.

Comment Source	ID #	CONCLUSION		Product Author	Review Concurrence
		☐ Pre ☒ Post	Closure Logic: TWRS plans on using the TBR process to generate a detailed baseline for the remaining TWRS activities and to develop a long range schedule.	<u>[Signature]</u> Date <u>1/2/98</u>	<u>[Signature]</u> Date <u>1/2/98</u>
	ATT3-3	☐ Pre ☒ Post	Select a good example of a TBR package and establish a standard or check list for all others. Use this as a metric to ensure consistent, good quality TBR.	<u>[Signature]</u> Date <u>1-2-98</u>	<u>[Signature]</u> Date <u>1/2/98</u>
	ATT3-4	☐ Pre ☒ Post	Adopt a means (RDD-100, or other tool) to demonstrate two-way traceability (to/from) various TWRS technical requirement documents to the TBR package.	<u>[Signature]</u> Date <u>1/2/98</u>	<u>[Signature]</u> Date <u>1-2-98</u>
	ATT3-5	☐ Pre ☒ Post	The LMHC RTP Plan should be revised to include a decision management process.	<u>[Signature]</u> Date <u>1/2/98</u>	<u>[Signature]</u> Date <u>1-2-98</u>
	ATT3-6	☐ Pre ☒ Post	Closure Logic: TWRS decision management is an integral part of the TWRS Risk Management Program. The process for managing decisions is outlined in HNF-IP-0842, Vol IV, Section 2.7, "Decision Management." The TWRS Risk Management Plan, HNF-SD-WM-PMP-018 and the TWRS procedure for Alternative Generation and Analysis, HNF-IP-0842, Vol IV, Section 3.3, refers to the Decision Procedure to integrate the decision process into the risk and alternative analysis process. Top-level TWRS decisions are captured in the TWRS Decision Status Summary and updated regularly.	<u>[Signature]</u> Date <u>1-2-98</u>	<u>[Signature]</u> Date <u>1-2-98</u>

Comment Source	ID #	CONCLUSION	Product Author	Review Concurrence	Date
		☐ Pre ☒ Post Closure Logic: Revision of the Risk Management procedure is planned for early CY 1998. This recommendation will be included in the revision.	<i>Steve Schum</i>	<i>1-2-98</i>	<i>1-2-98</i>
	ATT3-7	Although TWRS performance metrics exist for TWRS risk and decision management processes, these are not addressed in HNF-SP-1241. Some means should be identified in HNF-SP-1241 to report performance with risk and decision management programs.	<i>Steve Schum</i>	<i>1-2-98</i>	<i>1-2-98</i>
		☐ Pre ☒ Post Closure Logic: The Risk Management Plan includes the requirement to assess progress in implementing the risk/decision program regularly (at least annually). The TWRS SEMP, Section 2.2.2, identifies the process for periodic System Engineering process assessment. This process includes assessment of both risk and decision management. The Planned Revision of the Risk Management and Decision Management procedures will include specific guidance for assessing performance of the risk/decision program.	<i>Steve Schum</i>	<i>1-2-98</i>	<i>1-2-98</i>
Letter 70600-97-001 Attachment 5	ATT5-1	The RTP project needs a single project integrator who is responsible for the integration of all projects and coordination with Operations to ensure work is accomplished in an orchestrated method without mutual interference.	<i>Steve Schum</i>	<i>1/5/98</i>	<i>1/5/98</i>
		☒ Pre ☐ Post Closure Logic: Accept. A senior person (R. Wejtersky) was assigned RTP lead responsibility. A RTP multi-function team has also been established. This recommendation is under consideration by UNIC Senior Management.	<i>Steve Schum</i>	<i>1/5/98</i>	<i>1/5/98</i>
	ATT5-2	The incorporation of other PHMC contractors, essential to declare readiness-to-proceed with privatization, needs to be strengthened prior to our declaration of readiness.	<i>Steve Schum</i>	<i>1/2/98</i>	<i>1/2/98</i>
		☒ Pre ☐ Post Closure Logic: The RTP team has worked with the other PHMC contractors and FDH. The list of major interfaces between TWRS and non-TWRS facilities identifies the potential contract modifications (no longer MOAs/MOUs) that are required. Each of the major facilities/projects has planning in place to develop the necessary information for these contract modifications.	<i>Steve Schum</i>	<i>1/2/98</i>	<i>1/2/98</i>

4.0 REFERENCES

DOE, 1996, *Critical Decision Criteria*, Life Cycle Asset Management Good Practice Guide, GPG-GM-002, March 1996.

DOE Order 425.1, *Startup and Restart of Nuclear Facilities*, U.S. Department of Energy, Washington D. C.

Taylor, W. J. 1997, to H. J. Hatch/ FDH, *Contract Number DE-AC06-96RL13200 - Tank Waste Remediation System (TWRS) Privatization - Hanford Contractors Readiness To Proceed*, " 97-WDD-129, dated August 8, 1997

HNF-2018, Rev. 0

ATTACHMENT A

**TANK WASTE RETRIEVAL READINESS-TO-PROCEED
INDEPENDENT REVIEW TEAM FINAL REPORT**

To: H. L. Boston
From: R. E. Lerch
Subject: FINAL REPORT - INDEPENDENT ASSESSMENT OF
READINESS-TO-PROCEED
Date: December 23, 1997

MEMORANDUM

Enclosed is the Tank Waste Retrieval Readiness-To-Proceed Independent Review Team Final Report. The report summarizes the results, conclusions, and recommendations from our review of the M&I Contractor's process and products for determining Readiness-To-Proceed. Review comments on the draft report have been incorporated.

Members of the Independent Review Team would be pleased to support you as necessary as you move forward with Phase IB Privatization.



R. E. Lerch, Team Lead
Readiness-To-Proceed Independent Review Team

rel/mlc

cc: C. A. Hall
L. E. Hall
D. M. McDaniel
P. S. Schaus
W. D. Wojtasek

**Tank Waste Retrieval
Readiness-To-Proceed
Independent Review Team

Final Report**

December 1997

EXECUTIVE SUMMARY

The U.S. Department of Energy (DOE) is planning to make critical decisions during fiscal year (FY) 1998 regarding privatization contracts for the treatment of Hanford tank waste. Specifically, DOE, Richland Operations Office (RL) will make decisions related to proceeding with Phase IB Privatization. In support of these decisions, the M&I contractor must be able to meet the requirements to support the Phase IB privatization contractors. Fluor Daniel Hanford, Inc. (FDH), directed the Lockheed Martin Hanford Corporation (LMHC) to integrate all M&I contractor requirements necessary to support the Phase IB RTP activities.

As part of the LMHC assessment of the Tank Waste Retrieval (TWR) Readiness-To-Proceed (RTP), an independent review of their process and products was required by the RL letter of August 8, 1997. This report presents the results of that independent review. The Independent Review Team reviewed the adequacy of the planning that has been done by the M&I contractor to validate that, if the plans are carried out, there is reasonable assurance of success. Overall, the RTP Independent Review Team addressed the general question, "Has the M&I contractor demonstrated a clear and complete understanding of what needs to be done to accomplish the TWR mission, and is that scope achievable?"

The overall results of this review conclude that, if the planning by the M&I contractor team is carried out with adequate funding, there is reasonable assurance that the M&I contractor will be able to deliver waste to the privatization contractor for the duration of Phase IB, provided that:

- The Risk Management Plan and Risk Management List and the Enabling Assumptions roll up documents are completed and thoroughly analyzed to make a summary evaluation that the risks of the program are identified, well characterized, manageable, and within an acceptable range of uncertainty; and
- The Financial Analysis document is completed and evaluated against the critical risks and enabling assumptions; and
- The recommendations provided in this report on specific RTP technical products are addressed.

To support the above conclusion, the Independent Review Team reviewed all key RTP products, except the Preliminary Financial Analysis, and determined that the M&I contractor has:

- Demonstrated a clear and complete understanding of what needs to be done to support RTP and Phase IB,
- Planned for and implemented a RTP process that will provide the basis for a positive RTP decision, and
- Established a very detailed and sound mid-level logic and associated set of Technical Basis Review (TBR) documents on which to build as the program moves forward.

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APPENDICES

APPENDIX A READINESS-TO-PROCEED PLAN FOR M&I CONTRACTOR WORK SCOPE IN SUPPORT OF TWRs IB PRIVATIZATION	
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LIST OF TERMS

CMIP	Configuration Management Implementation Plan
COCs	Common Occupational Code System
CRA	Criteria and Review Approach
DOE	U.S. Department of Energy
DQO	data quality objective
DST	double-shell tank
ESH&QA	Environmental, Safety and Health, and Quality Assurance
FDH	Fluor Daniel Hanford, Inc.
FTE	full-time equivalent
HLW	high-level waste
ICD	Interface Control Document
IHLW	immobilized high-level waste
ILAW	immobilized low-activity waste
ISMS	Integrated Safety Management System
LAW	low-activity waste
LMHC	Lockheed Martin Hanford Corporation
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
OUP	Operation and Utilization Plan
QA	Quality Assurance
QAPD	Quality Assurance Program Description
QAPP	Quality Assurance Program Plan
RL	U.S. Department of Energy, Richland Operations Office
RTP	Readiness-To-Proceed
SEMP	Systems Engineering Management Plan
SSC	systems, structures, and components
SST	single-shell tank
TBR	Technical Basis Review
TEC	total estimated cost
TLCC	total life cycle cost
TPC	total project cost
TWRS	Tank Waste Remediation System
USQ	Unreviewed Safety Question

1.0 INTRODUCTION

As part of the Tank Waste Remediation System (TWRS) Management and Integration (M&I) contractor assessment of the Tank Waste Retrieval (TWR) Readiness-to-Proceed (RTP), an independent review of their process and products was conducted. This report presents the results of that independent review. The RTP Independent Review Team reviewed the planning that has been done by the M&I contractor such that if the plans are carried out there is a reasonable assurance of success. Overall, the RTP Independent Review Team addressed the general question "Has the M&I contractor demonstrated a clear and complete understanding of what needs to be done to accomplish the Tank Waste Retrieval mission in support of Phase IB Privatization?" The Independent Review Team was impressed with the amount and quality of work accomplished by the M&I team on the RTP effort in a very short period of time.

1.1 BACKGROUND

The U.S. Department of Energy (DOE) is planning to make critical decisions during fiscal year (FY) 1998 regarding privatization contracts for the treatment of Hanford tank waste. Specifically, DOE, Richland Operations Office (RL) will make decisions related to proceeding with Phase IB Privatization. In support of these decisions, the M&I contractor must be able to meet the requirements to support the Phase IB privatization contractors. Fluor Daniel Hanford, Inc., (FDH) directed the Lockheed Martin Hanford Corporation (LMHC) to integrate all M&I contractor requirements necessary to support the Phase IB RTP activities.

The M&I contractor will deliver low-activity waste (LAW) feed and high-level waste (HLW) feed to the privatization contractors. In addition, the M&I contractors will provide the necessary infrastructure, as well as the storage of immobilized HLW (IHLW) products and the disposal of immobilized LAW (ILAW) products generated by and received from the Phase IB privatization contractors. The M&I contractors will also provide for the storage of intermediate waste products, e.g. extracted cesium, and disposal of liquid effluents and solid waste received from the privatization contractors. These activities are assigned to the TWR Program and constitute the Retrieval mission.

LMHC has issued a RTP Plan (Wojtasek 1997) on how they will assess the M&I contractor's readiness to support implementation of Phase IB Privatization. The plan outlines the process they will use to assess their RTP. When completed, LMHC and FDH will issue a Readiness-to-Proceed Memorandum to RL declaring their ability to support Phase IB of the privatization process. The Memorandum is due to RL by January 12, 1998.

1.2 SCOPE OF REVIEW

The purpose of this review is to assess whether, through the RTP planning, the M&I contractor has demonstrated that they will have the technical foundation, baseline plans (scope, schedule, and cost) and management system definition necessary to achieve startup and to conduct operations to support DOE's contract specifications with the DOE privatization contractors. The rationale for meeting this objective was developed along two lines; first, that the M&I contractor has assured that the plans, organization, and resources to be successful will be in place, and second, that a RTP package has been prepared that is able to communicate this information to DOE and stakeholders. This review is limited to the M&I scope and will not evaluate either DOE or the privatization contractors' areas of responsibilities.

The RTP scope includes all Phase IB activities needed:

- To safely operate and maintain the tank farms and supporting infrastructure;
- To provide infrastructure in support of privatization contractor operations;
- To construct, operate, and maintain facilities that are necessary for continued storage of tank wastes, and its characterization and retrieval,
- To provide storage/disposal of ILAW on site;
- To provide interim storage of IHLW until it is shipped to the HLW repository; and
- To receive by-products, such as extracted cesium and liquid effluents and solid waste from the privatization contractors.

1.3 REVIEW APPROACH

A plan (see Appendix A) was issued outlining the process to be used for this independent review. The independent review used a structured process to assess the M&I contractor's preparations on RTP. Selected requirements from the following documents were mapped into criteria and review approaches (CRAs) for each RTP document as appropriate.

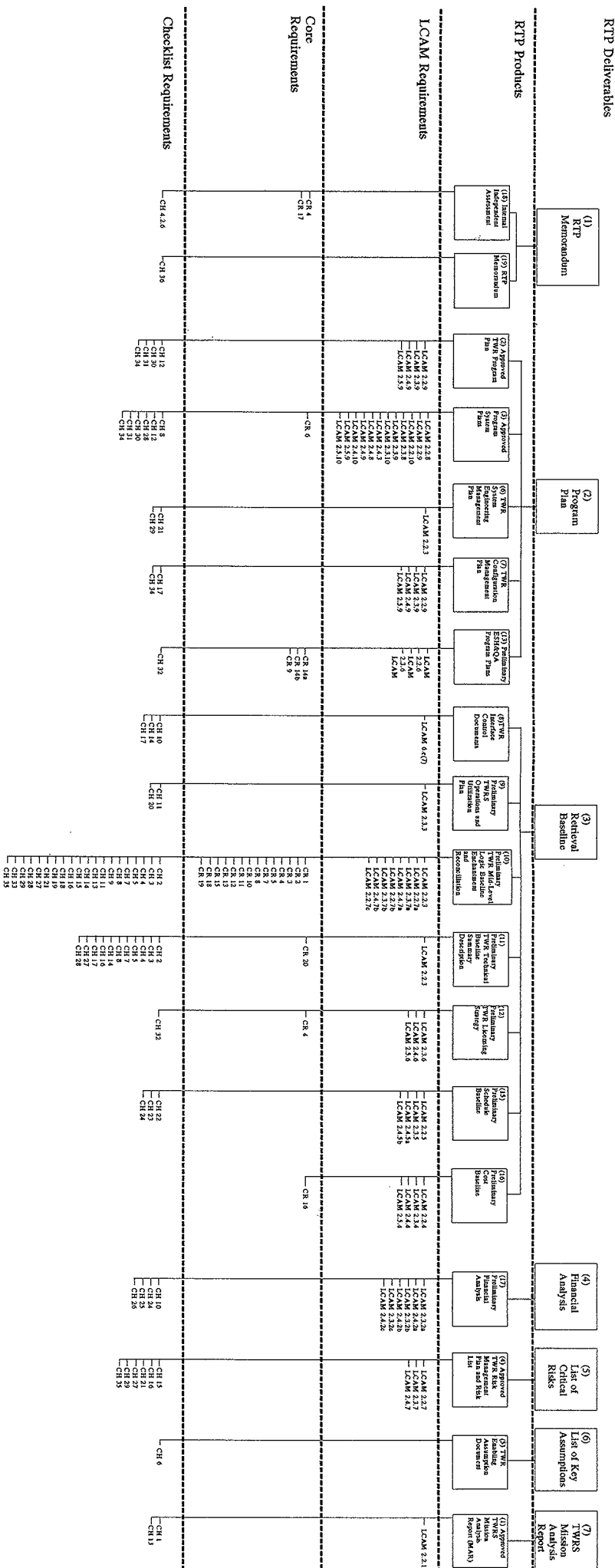
- Good Practice Guide, GPG-FM-002, *Critical Decision Criteria*, which supports implementation of DOE Order 430.1, LCAM (DOE 1996)
- DOE Order 425.1, *Startup and Restart of Nuclear Facilities* (DOE 1996) (specifically the 20 Core Requirements).
- Letter from W.J. Taylor, RL to H.J. Hatch, FDH, "Contract Number DE-AC06-96RL13200 - Tank Waste Remediation System (TWRS) Privatization - Hanford Contractors Readiness To Proceed," 97-WDD-129, dated August 8, 1997, (Taylor 1997)

The RTP Independent Review Team reviewed available M&I RTP documentation against these requirements. This was a review of work-in-progress and, as such, the documentation to be reviewed had not been finalized. Document authors and RTP team members were also interviewed, as appropriate, to assess their understanding of the plans and requirements necessary to support Phase IB Privatization.

Individual CRAs were assigned to each RTP product, as shown in Figure 1.3-1, and were used to assess the RTP products and document the results. The CRAs were then summarized at the product level and the conclusions and results are documented in Section 2.2 of this report. Some of the document's titles have been modified. However, this report uses original titles to maintain consistency with the CRAs.

A separate LMHC internal review of selected Technical Basis Review (TBR) packages was performed by a M&I team led by Jim Wicks. The independent review team assessed the internal review and also conducted a sampling of the TBRs. There was a separate CRA developed to address these reports. (See Section 2.2.19)

TANK WASTE RETRIEVAL READINESS-TO-PROCEED INDEPENDENT REVIEW CRA ASSIGNMENTS



1.4 REVIEW TEAM

The makeup of the Independent Review Team is shown in Figure 1.4-1. Members of the team were selected for their particular expertise in the following areas: Operations and Maintenance; Environmental and Safety; Quality Assurance; Technical Baseline; Business Management; and Stakeholder Involvement.

All RTP Independent Review Team members were trained on the use of the CRAs and disposition of comments. Training attendance was also recorded through the meeting minutes for December 2 and 11, 1997.

All voting RTP Independent Review Team members were qualified to American National Standards Institute (ANSI) requirements ANSI/ANS-3.1-1993, "Selection, Qualification, and Training of Personnel for Nuclear Power Plants", Sections 4.7.1 and 4.7.2 for Independent Reviews.

This ANSI standard requires the following qualifications for Supervisor or Chairman of a Committee for Independent Review:

Education: Baccalaureate in engineering or related science.

Minimum experience for this position: Combined managerial and technical support, 6 years

The ANSI standard requires the following qualifications for the technical Independent Review Organization Members:

Education: Baccalaureate in engineering or related science.

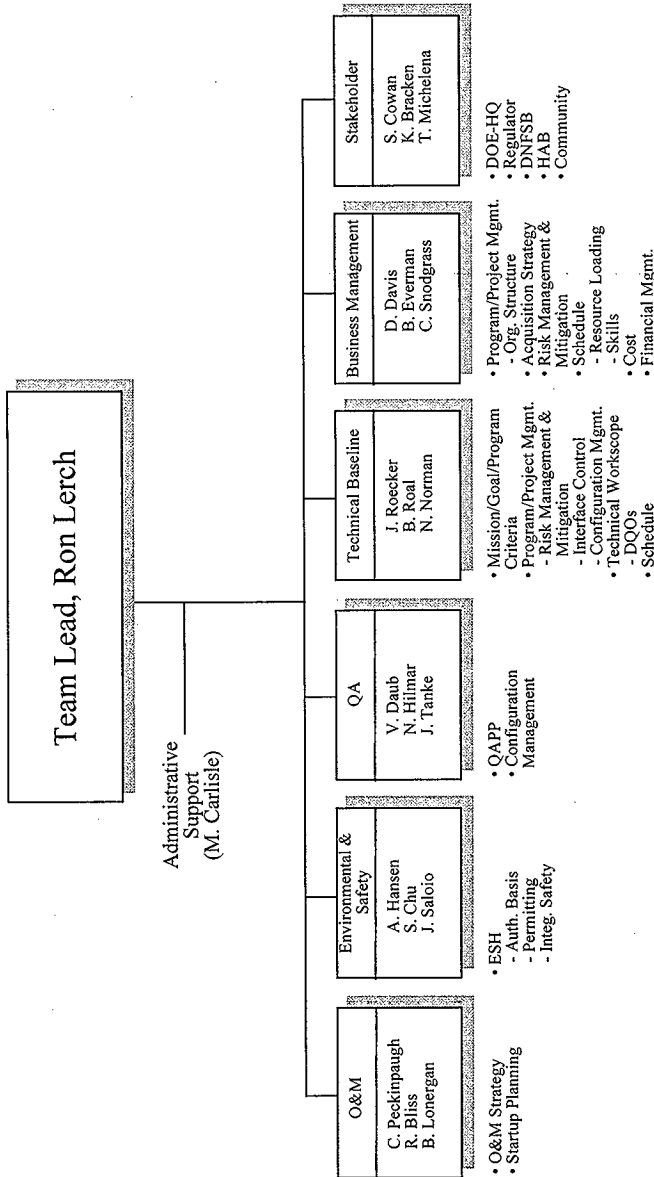
Minimum experience for this position: Experience in an area related to nuclear operations and their respective area of review, 5 years.

Evidence of education and related experience is provided through the Team member's resumes.

Requirements for the non-technical areas were an appropriate baccalaureate degree and 5 years related experience.

Figure 1.4-1. Tank Waste Retrieval Readiness-To-Proceed Independent Review Staff

RTP Independent Assessment Team



2.0 RESULTS AND CONCLUSIONS

The RTP Independent Review Team performed a review of 18 specific products being prepared in support of the M&I contractor's determination of RTP. In many cases, the products being reviewed were "work-in-progress." As such, some of the review team's results and conclusions reflect an early state of production, and the final documents are expected to be much more complete. Where possible, review team results and conclusions were provided directly to the authors to assist them in improving the final documents.

2.1 OVERALL SUMMARY

The Independent Review Team was tasked with answering four questions:

1. Has the M&I Contractor demonstrated a clear and complete understanding of what needs to be done to accomplish the Tank Waste Retrieval mission?
2. Is the process for addressing RTP being used by the M&I adequate and complete?
3. If the plans as documented are carried out, is there a reasonable assurance of success?
4. Is the planning executable within the identified schedule and funding?

The Independent Review team response to these four questions follows:

1. The Independent Review Team believes that the M&I contractor has demonstrated a clear and complete understanding of what needs to be done as evidenced by the detailed planning available in the TBRs and in the various documents that were reviewed. The elements necessary to support RTP for Phase IB Privatization were planned and scheduled although many of the documents were "work-in-progress" and, as such, need additional work.
2. While it is not possible at this time to make an absolute judgement on "adequate and complete," the Independent Review Team believes that the RTP process, as being conducted, will provide the basis for a RTP decision for the following reasons:
 - The minimum core requirements from DOE Order 425.1 were used directly. These requirements are accepted by DOE and external reviewers as forming the minimum set of requirements to support safe operation of nuclear facilities.
 - Requirements related to technical and programmatic considerations were also selected from the DOE Good Practice Guide GPG-FM-002, *Critical Decision Criteria*, which supports implementation of DOE Order 430.1.
 - In addition to these requirements, DOE provided a checklist of requirements to be met to support a readiness determination as

Appendix B to their August 8, 1997, letter.

- Using requirements from the above sources provides a traceable, acceptable, and manageable set to support RTP.
 - To test whether this set of requirements is reasonably complete, each Independent Review sub-team was asked to assess whether they thought the requirements were reasonably adequate for their particular area, i.e., Operations and Maintenance, Quality Assurance, Technical Baseline, etc. Each team responded that they thought the appropriate requirements were identified or enveloped by the requirements.
3. The Independent Review Team concludes that if the planning by the M&I team is carried out with adequate funding, there is reasonable assurance that the M&I contractor will be able to deliver waste to the privatization contractor to support the total duration of Phase IB, provided that:
- The Critical Risk Management List and enabling assumptions roll up documents are completed and thoroughly analyzed to make a summary evaluation that the risks of the program are identified, well characterized, manageable, and within an acceptable range of uncertainty; and
 - The Financial Analysis document is completed and evaluated against the critical risks and enabling assumptions; and
 - Other recommendations contained within Section 2.2 are addressed.
4. The Financial Analysis document was not available for this review; therefore, the adequacy of schedule and funding could not be addressed. Independent review of the financial analysis should be performed prior to submittal of the RTP package to RL on January 12, 1998.

In addition to the above comments two additional areas of concern:

- A TWRS integrated hierarchy (both programmatic and technical) is required. This will improve the flow down of requirements and improve consistency and level of detail questions in the RTP planning documents. (RTP staff has developed a draft hierarchy.)
- A Public Participation Plan should be prepared for the TWRS Privatization effort. This is not a prerequisite for the January 12, 1998, submittal but should be completed as quickly as possible thereafter.

The Independent Review Team was impressed with the amount and quality of work accomplished by the M&I team on the RTP effort. Many of the technical products are well based and, with minor rewrite, should be acceptable documents for the January 12, 1998, RTP submittal to RL. The following summarizes our assessment of the readiness of the technical documents.

Documents which should demonstrate RTP with minor editing required:

- TWRS Mission Analysis Report (Section 2.2.1)
- TWRS Program Plan (Section 2.2.2)
- Program System Plans (Section 2.2.3)
- TWR Configuration Management Plan (Section 2.2.7)
- TWR Interface Control Documents (Section 2.2.8)
- TWRS Operations and Utilization Plan (Section 2.2.9)
- TWR Mid-Level Logic Baseline Enhancement and Reconciliation (Section 2.2.10)
- TWRS Safety Program Plan (Section 2.2.13.1)
- TWRS Environmental Program Plan (Section 2.2.13.2)
- TWRS Quality Assurance Program Plan (Section 2.2.13.3)
- Preliminary Schedule Baseline (Section 2.2.15)
- Preliminary Cost Baseline (Section 2.2.16)

Documents which should demonstrate RTP, but require significant editing or rewrite:

- TWR Enabling Assumptions (Section 2.2.5)
- TWRS Systems Engineering Management Plan (Section 2.2.6)
- TWR Technical Baseline Summary Document (Section 2.2.11)
- TWR Licensing Strategy (Section 2.2.12)

Documents which require substantial rewrite:

- TWR Risk Management Plan and Risk Management List (Section 2.2.4)

Documents which were unavailable for review:

- Preliminary Financial Analysis (Section 2.2.17)

Specific recommendations on how the documents can be improved to support RTP are contained in the individual writeups in Section 2.2 and in the CRAs for each of the technical products.

2.2 RTP TECHNICAL PRODUCTS REVIEWED

Each of the 18 specific products are discussed in the following sections. A brief description of the product is given, followed by the acceptance criteria and evaluation process used to assess the product, the results and conclusions, and any recommendations relative to improving the document to support the RTP determination. In addition, a representative sample of the TBR packages was evaluated as discussed in Section 2.2.19.

2.2.1 Tank Waste Remediation System Mission Analysis Report

Conclusion: There is reasonable certainty that a quality document will be ready by January 12, 1998, for submittal to RL. Minor modifications are required.

Product Description and Purpose:

The TWRS Mission Analysis Report (MAR) captures the Hanford site-level requirements assigned to TWRS; the definition of the initial and final end states of the TWRS program; the major interfaces that require definition and management; and initial assessment of the activities that must be executed to successfully achieve the defined mission.

Acceptance Criteria:

This document was reviewed against a set of pre-defined criteria established in the individual CRAs based on the source requirements as outlined in Section 1.3. The CRAs reviewed are listed in Figure 1.3-1.

This document was also reviewed against the following requirements:

- Goals and Requirements identified in the DOE Strategic Plan, site strategic plan and site specifications are clearly stated and completely accounted for.
- Scope assigned to TWRS from the site specification is completely accounted for in mission analysis and major facility specifications (or will be).
- All Interfaces with other activities on site are unambiguously identified with plans to develop required Interface Control Documents (ICDs).

Evaluation Process

The MAR and applicable supporting documents were reviewed for compliance with the acceptance criteria and the specific review approach of the individual CRAs. RTP Independent Review Team members from Stakeholder and Operations/Maintenance sub-teams interviewed Steve Seeman, Dan Acree and Jeff Voogd.

Results and Conclusions

- The MAR and TBR packages provide a consistent approach for waste feed delivery, ILAW disposal, and IHLW storage facilities. The MAR recognizes and supports the Hanford Strategic Plan. The MAR is a very useful document for collecting all site requirements allocated to TWRS facilities and reallocating them to TWRS functions. The MAR should form the basis for a high level summary plan to help market RTP.
- The MAR does not recognize the DOE Strategic Plan nor the Draft DOE-EM 2006 Plan. The flowdown of requirements from site level documents to the MAR is not clear and evident within the MAR itself. The MAR does not tie the incoming requirements to their specific source documents. It is difficult to determine who the MAR document is intended for, i.e., DOE, FDH, or LMHC. The relationships between TWRS players is not clearly delineated.

Recommendations

1. Tie document to DOE Strategic Plan and indicate that when DOE-EM-2006 Plan is

approved the necessary changes will be incorporated where appropriate.

2. Clearly identify the source of incoming requirements within the MAR so that traceability is assured.
3. Clear extraneous information and details from the MAR that belong in lower TBR documents
4. Incorporate specific comments provided to the authors on draft MAR dated 12/14/97 (MAR Rev. 2.CDS).

2.2.2 Tank Waste Remediation System Program Plan

Conclusion: There is a reasonable certainty that a quality document will be ready by January 12, 1998, for submittal to RL. Minor modifications are required.

Product Description and Purpose

This product is intended to provide the plans, policies, and organization needed to manage and control the work involved in being ready to fully support the duration of Phase IB Privatization. Four subordinate program plans are intended to flow out of this document to cover the following areas:

- Waste Retrieval
- Infrastructure
- IHLW Storage
- ILAW Storage/Disposal

The version of the TWRS Program Plan reviewed focused on the Tank Waste Retrieval mission and the activities required to support that component of the TWRS Project.

Acceptance Criteria

These documents were reviewed against a set of pre-defined criteria established in the individual CRA based on the source requirements as outlined in Section 1.3. The CRAs reviewed are listed in Figure 1.3-1. These CRAs required verification that the Program Plan and Master Plan were issued; that organizational elements have been established; and that management systems are in place to track and report cost, schedule, and technical performance.

Evaluation Process

The evaluation was conducted by reading the draft program plan and reviewing it against the mid-level logic that was prepared for the waste retrieval, IHLW and ILAW waste/disposal and infrastructure programs. A review was also made of each of the subordinate program plans to ensure consistency and proper flow down of requirements to these lower tier plans. Meetings and discussions were also held with the following personnel: Fran DeLozier, Martell Petermann, Mike Ebben, John Vann, Rick Wojtasek, and Steve Seeman.

Results and Conclusions

- A lot of effort and hard work have gone into this plan and the subordinate program system plans. The plans can be improved by removing duplication and resolving inconsistencies. Examples of duplications and/or inconsistencies in these documents include:
 - A detailed discussion of the generic TWRS Systems Engineering process is included in each of the IHLW and ILAW program system plans. This discussion is even more detailed than the writeup in the higher level TWRS Program Plan. This detail should be included only in the TWRS Program Plan and only referred to by the lower level program system plans.
 - Extensive duplication of organizational descriptions and responsibilities is included in all plans. Again, most of this discussion should only be included in the TWRS Program Plan.
 - The PNNL Waste Integration Team is only discussed in the Infrastructure Program Plan; it should be discussed in the TWRS Program Plan and referred to as an interface in the other lower level program system plans.
 - The TWRS Program Plan talks about the concept of Decision Maker and Decision Officer. No flow down or reference to this concept is found in any of the lower level program plans.
- Section 3, "Requirements," gives no recognition to the Hanford Site Technical Database. The Hanford Site Technical Database is the source of many requirements for TWRS. It should be discussed in this section and shown in Figure 3.2
- Section 8.0, "Master Plan," was unavailable for review at this time and needs close review before being submitted to DOE.

Recommendations

1. Using the TWRS Program Plan as a basis, a specific format should be established for the sub-tier program system plans, and these plans revised accordingly to provide a consistent, cohesive set of plans for achieving waste vitrification in Phase IB. It is not considered mandatory that these revisions be completed prior to the January 12, 1998 RTP submittal.
2. Consideration should be given to integrating the TWRS Program Plan and the program system plans into a single document. This would provide a more effective document which would be considerably easier to manage. This could be completed after the January 12, 1998, RL submittal.
3. Section 8.0, Master Plan, should be independently reviewed prior to submittal to RL on January 12, 1998.

2.2.3 Program System Plans

Conclusion: There is reasonable certainty that quality documents will be ready by January 12, 1998 for submittal to RL. Minor modifications are required.

Product Description and Purpose

This particular product consisted of four separate program plans, as follows:

- Project Plan - ILAW Disposal Subproject
- Project Plan - IHLW Storage Subproject
- TWRS Waste Feed Delivery (WFD) Program System Plan
- TWR Division Infrastructure Program System Plan

These four documents are intended to describe the summary plans, projects, interfaces, and organization required to ensure that these key activities will be ready to support beginning of Phase IB Privatization. Additionally, although not directly related to the four program plans described above, this summary will also discuss the public participation plan: [Note: The CRA for this document discussed public participation plans; however, this would more clearly fit under the TWRS Program Plan (Section 2.2.2).]

- Hanford Communication Plan

Acceptance Criteria

These documents were reviewed against a set of pre-defined criteria established in the individual CRAs based on the source requirements as outlined in Section 1.3. The CRAs reviewed are listed in Figure 1.3-1. These CRAs established a set of requirements for what should be included in the individual Program Plans and asked for verification that the plans had been developed, approved, and released. One CRA also required that a Public Participation Plan exist for the TWR Program.

Evaluation Process

The evaluation was conducted by thoroughly reviewing each of the draft plans and comparing them to the overarching Tank Waste Remediation System Program Plan. The TBRs that provide the Work Breakdown Structure (WBS) level seven work scope, logic, and resource requirements for these specific program elements were also reviewed. Individual meetings/discussions were also held with the following personnel: Bud Dunbar, Mike Ebben, Martell Petermann, Bill Root, Rick Wojtasek, Ace Etheridge, Steve Seeman, John Vann, Tim Bohan, Warren Thompson, John Bores, and Steve Schaus.

Results and Conclusions

2.2.3.1 Program Plans

- The documents do not provide a consistent, cohesive set of program plans that tie back to the higher level TWRS Program Plan. The differences in these plans is even apparent by reviewing the titles of the documents.

The IHLW and ILAW documents are focused primarily on the construction projects that need to be completed in order to be ready to receive immobilized waste products in 2002. In fact, these documents were prepared to meet a specific Tri-Party Agreement (M-90-01) deliverable due in December 1997 for project management plans, not program management plans.

The waste retrieval and infrastructure plans are higher level documents and provide very little discussion of the construction projects planned to carry out the Phase IB Mission.

- There are inconsistencies in these documents that need to be resolved. For example:
 - Inconsistent level of detail on planned construction projects.
 - Duplication of TWR Division organizational responsibilities which should only be included in the higher level TWRS Program Plan.
 - The WFD Program Plan contains 9 Execution Plans as appendices; other documents have no such plans.
 - A detailed discussion of the generic TWRS Systems Engineering process is included in each of the IHLW and ILAW documents. This discussion should be included only in the TWRS Program Plan or, alternatively, a reference should be made to the TWRS Systems Engineering Management Plan (SEMP).
 - The IHLW and ILAW plans discuss related Tri-Party Agreement milestones while the WFD plan has no discussion of its related Tri-Party Agreement milestones (e.g., M-43, M-45, and M-60).
- None of the plans include an annual task plan, a two-year resource forecast, nor an annual optimization opportunity list which were listed as specific requirements in the CRA.
- The plans for IHLW and ILAW do not include full-time equivalent (FTE) requirements/projections for these programs as required.

2.2.3.2 Public Participation Plan

Although not directly related to the four program plans described above, several of the specific CRAs included in this summary cover the requirement to have a Public Participation Plan. This probably would be more correctly addressed in the TWRS Program Plan (Section 2.2.2).

- The only existing plan related to this area is the Integrated Hanford Communication Plan dated March 31, 1997. This document discusses stakeholder communication for the entire Hanford site. This plan was submitted to RL by FDH in March 1997.
- Except for identifying stakeholder groups, the above communication plan did not meet or mention any of the specific requirements delineated in the CRA. It states that plans for specific projects will be developed and implemented as necessary.

Recommendations

1. A specific format should be established for these program plans, and the plans revised accordingly, to provide a consistent, cohesive set for achieving the overall Waste Retrieval Program. This format should be consistent with, but not duplicate, material included in the TWRS Program Plan. It is not considered mandatory that these revisions be completed prior to January 12, 1998.
2. Consideration should be given to integrating the TWRS Program Plan and the program system plans into a single document. This would provide a more effective document which would be considerably easier to manage. This does not need to be completed before the January 12, 1998, submittal to RL.
3. A Public Participation Plan should be prepared for the TWRS privatization effort with a particular focus on what will be needed to aid the decision making process leading to approval to proceed with Phase IB. This plan is not considered a prerequisite for the January 12, 1998, RTP submittal, but should be completed as quickly as possible thereafter.

2.2.4 TWR Risk Management Plan and Risk Management List

Conclusion: The status of this document is uncertain. Considerable rewrite is necessary.

Product Description and Purpose

The TWR Risk Management Plan is intended to describe how the risks associated with Phase IB activities will be identified, analyzed, and managed. The Risk Management List is a compilation of the actual program risks and enabling assumptions. In addition, these RTP products and deliverables are intended to demonstrate how the impacts of risks on TWR program cost and schedule will be identified and managed.

Acceptance Criteria

This area was reviewed against a set of pre-defined criteria established in the individual CRAs based on the source requirements as outline in Section 1.3. The CRAs reviewed are listed in Figure 1.3-1. These CRAs evaluate 1) that programmatic risk (technical, cost, and schedule) have been identified and managed, 2) that risk mitigation/elimination strategies are developed, and 3) that risk and decision management has been implemented throughout the program.

Evaluation Process

Two versions of the TWR Risk Management Plan were reviewed. Steve Seeman and Don McDaniel were interviewed and risk discussions were also held with technical and business representatives. The December 8, 1997, draft of the TWR Risk Management List was reviewed.

Results and Conclusions

- The TWR Risk Management Plan, the Risk Management List, and the overall implementation of the Risk Management Program are presently in widely varying states of readiness. Considerable effort remains to document that the TWR Risk Management Plan contains a risk handling process that adequately demonstrates that the TWR is ready to proceed with Phase IB Privatization.
- The process for handling (i.e., managing) risks in the TWR Program continues to require development and documentation in the TWR Risk Management Plan. The RTP Independent Review Team did not find adequate evidence - either in the most current versions of the TWR Risk Management Plan or through discussions with Program staff to describe critical issues such as :
 - If/how risk mitigation strategies should be developed for identified risks,
 - To what level of risk should the TWR Program be managed,
 - How risk mitigation actions translate to the day-to-day responsibilities of Program staff,
 - How risks not initially identified (i.e., emerging risks) will be handled, and
 - How successful and unsuccessful risk mitigation actions will influence the project baseline.
- The Risk Management Plan, the Enabling Assumptions Document, and the Corrective Action Plan all contain elements of risk management. They involve identification of risks, deficiencies, issues, and other conditions that, if left unmanaged, could have negative impacts on the success of the project. They all involve making enabling assumptions or other mitigating actions to deal with the situation followed by management actions to reduce or eliminate the potential impact. They also involve assessment of probabilities and prioritization. These systems should be integrated in an appropriate way so that similar risk, issues, and/or deficiencies are handled in a similar manner. Integration would also help avoid duplication if an item appears in multiple systems.
- Interviews with the Business Team identified a cost-risk assessment process is being implemented. However, there is no documentation of this process in the Risk Management Plan.
- The Risk Management List contains over 100 risk issues that could negatively impact the mission success of the TWR Program. Many of these issues were

originally identified as part of the risk assessment process at the work breakdown structure level. The enabling assumptions from the top level program documents also need to be included. The mechanics of entering data into the Risk Management List needs improvement. The risks in some cases are not articulated as clearly as necessary to communicate to a wider audience.

The general conclusions and recommendations regarding the Risk Management List are consistent with the comments provided on the TWR Risk Management Plan. That is, there needs to be a closer and deeper linkage between the cost analysis (the Preliminary Financial Analysis), risk identification (Risk Management List), and risk handling aspects of the TWR Risk Management Program articulated in the Key Enabling Assumptions and Risk Management Plan.

Recommendations

1. Develop a comprehensive risk handling process and document it in the Risk Management Plan. The Risk Management Plan should contain guidance on risk identification, assessing probabilities, and developing mitigating actions so that risk management actions are reasonably consistent across the project. Develop a risk management master diagram that articulates how the similar program activities will work together to manage risks. Include a discussion that allows the reader to reach the conclusions that the risks of the program are identified, well characterized, manageable, and within an acceptable range of uncertainty. Strengthen the risk mitigation/management portion of the Risk Management Plan and include the cost/risk assessment process.
2. Strongly consider creating the position of a Risk Management Director to organize project-wide risk issues and lead risk management activities.
3. A review needs to be made to ensure that every Key Enabling Assumption is clearly reflected in the Critical Risk Management list. These two lists should then be thoroughly analyzed to assure that the risks of the Program are identified, well characterized, manageable, and within an acceptable range of uncertainty.
4. Ensure that risk/key enabling assumptions impact on cost is evaluated and contained in the final Financial Plan Analysis.
5. Complete regular risk management training for all appropriate program staff. (Training is not required prior to the January 12, 1998, submittal to RL.)

2.2.5 TWR Enabling Assumptions

Conclusion: *There is reasonable certainty that an acceptable document will be ready by January 12, 1998, for submittal to RL. However, significant modifications are required.*

Product Description and Purpose

Three specific products were reviewed during this assessment:

- *Implementing Guide for Enabling Assumptions Management and Control System,*

draft HNF Rev 0, dated November 1997.

- *STRATEGY - System for Managing and Controlling Enabling Assumptions, TWRS Waste Retrieval and Disposal Program, dated September 2, 1997*
- *Description of Key Enabling Assumptions System, HNF-1945, Rev. A*

These documents describe the process that has been used to develop the enabling assumptions list and the system being implemented to document, track, and resolve those enabling assumptions relevant to the TWR mission. The key enabling assumptions are focused on specific uncertainties about technical and programmatic issues that might not be resolved for months or years. The enabling assumptions provide assumed resolution of those issues for planning and tracking purposes.

Acceptance Criteria

These documents were reviewed against pre-assigned criteria established in CRA 6-5-CH6. The specific requirement directed that all enabling assumptions be formally documented and that assumptions which have been replaced with facts or decisions have been correspondingly changed in requirements documentation.

Evaluation Process

The evaluation was conducted by reviewing the documents listed above as well as the TWRS Operation and Utilization Plan (OUP) and the MAR. Russ Treat was also interviewed during the review process.

Results and Conclusions

- The STRATEGY document has identified over 100 enabling assumptions in tables drawn from the TWRS OUP, from the TWRS MAR, and a few from other internal program documents. In only a few cases do the tables identify the specific source of the assumptions from the source requirements document.
- The Implementing Guide for the Enabling Assumptions describes the Enabling Assumptions Management and Control System which has been designed to document, track, and control the enabling assumptions. It includes Table 3-1 which lists 26 organizations and sources for enabling assumptions;. The list appears to be comprehensive. Assumptions in the STRATEGY document are drawn mainly from only two of the 26 sources noted.
- The Draft Description of Key Enabling Assumptions for RTP provides a more recent list of 33 enabling assumptions for RTP. These are referenced to the prior lists and other sources not reviewed. This document includes a Basis for Assumption column which gives the rationale for the assumption but not the specific source location.
- The requirement that "all enabling assumptions have been formally documented" cannot be concluded as met from the documents available since a number of

potential sources listed in the STRATEGY document may not have been accessed.

- As part of this review, the correlation between the Key Enabling Assumptions and the Critical Risk Management List was evaluated. There was no evidence found that these two lists were being closely coordinated even though each list was intended to describe risks or assumptions that "have the greatest potential impact to cost, scope, and schedule." It is considered very important that there be a direct correlation between the two lists.

Recommendations

1. The STRATEGY document should be completed by accessing other potential sources of enabling assumptions noted in the STRATEGY document and by appending the complete list of enabling assumptions to the STRATEGY document.
2. The source and the location within the document should be noted for each enabling assumption.
3. A review to ensure that every Key Assumption is clearly reflected in the Critical Risk Management List. These two lists should then be thoroughly analyzed to assure that the risks of the program are identified, well characterized, manageable, and within an accepted range of uncertainty.

2.2.6 TWRS System Engineering Management Plan

Conclusion: There is reasonable certainty that an acceptable document will be ready by January 12, 1998, for submittal to RL. However, significant modifications are required.

Product Description and Purpose

The TWRS SEMP defines the products, processes, organization, and procedures used by TWRS to implement the DOE systems engineering policy provided in letter #97-MSD-193, "Tank Waste Remediation System Systems Engineering Management Policies," RL to FDH, 1997.

Acceptance Criteria

This document was reviewed against pre-assigned criteria established in the individual CRAs. The CRAs reviewed are listed in Figure 1.3-1. Specific criteria called for an established systems engineering program including alternative identification, tradeoff studies, and documentation of functional and operational requirements pertaining to the TWRS program. One particular "review approach" asked the team to assess if it had been determined if a TWR System Engineering Plan is required.

Evaluation Process

This assessment was completed by reviewing the draft TWR SEMP, the draft TWRS SEMP (two versions), and the draft TWRS Program Plan. During the review, meetings and discussions were

held with the following personnel: Steve Seeman, Steve Schaus, Chuck Wilson, and Martell Petermann.

Results and Conclusions

- The draft TWRS Program Plan clearly articulates the need for a TWR SEMP in Section 9.2.1, "Systems Engineering". A draft TWR SEMP does exist; however, during the interviews, it became clear the TWR SEMP and the TWRS SEMP were being combined. This has resulted in the TWR SEMP being eliminated as a document. A memo to the file has been prepared documenting this fact.
- As a result of this change in documents, a review was completed of the new TWRS SEMP to verify the criteria of these CRAs have been met.
- Both the TWRS Program Plan and TWRS Systems Engineering Management Plan have been issued in draft form. The requirements for Alternative Generation Analysis is identified in Section 9.2.1 of the Program Plan entitled "Systems Engineering". The SEMP includes Alternative Generation Analysis as an integral part of Operational Requirements Analysis in Section 3.0. Procedures not referenced in the TWRS SEMP demonstrate the decision process to be used for completing alternative analyses.
- The TWRS Program Plan specifies a requirement for a TWR Opportunities List to be prepared (Section 9.2.3, "Alternatives Management"). This requirement does not appear in the SEMP. How this list is used for alternative analysis implementation and its relationship to other lists, such as the Risk Management List, is not addressed in the SEMP.

Recommendations

1. All reference to the TWR SEMP should be eliminated from existing documents such as the TWRS Program Plan and replaced with "TWRS SEMP."
2. The TWRS SEMP should incorporate the requirements of the TWRS Program Plan, specifically the TWR Opportunities List.
3. The TWRS SEMP should integrate the various components of alternative analysis (i.e. Risk Management, Alternative Generation, and Architecture Selection, etc.). The relationships of the individual components should be more clearly articulated.
4. Some of the descriptions used to define terminology in the TWRS SEMP glossary are almost as verbose as the text in the body of the document. The definitions in the glossary need to be much briefer and crisper.
5. The annotated outline for the planned revision of the TWRS SEMP should be followed and the document not allowed to grow needlessly to support submittal of the document by January 12, 1998.

2.2.7 TWR Configuration Management

Conclusion: There is reasonable certainty that a quality document will be ready by January 12, 1998, for submittal to RL. Minor modifications are required.

Product Description and Purpose

This product is intended to establish the requirements under which configuration management will be used to manage the work needed to complete the TWRS mission. Configuration management will be a pivotal point of management control and will provide the mechanism to identify, document, and control the functional and physical characteristics of the TWRS products. Configuration management focuses on five principal activities: system management; configuration identification; configuration states accounting; change control; and configuration management assessments.

Acceptance Criteria

This document was reviewed against pre-assigned criteria established in the individual CRAs. The CRAs reviewed are listed in Figure 1.3-1. Specifically, that TWRS program plans are developed, approved, and released; that a records management program, including technical drawings, has been implemented; and that the Technical Baseline is under configuration control.

Evaluation Process

This evaluation was conducted by reviewing the TWRS Configuration Management Plan, both the TWRS and the TWR Configuration Management Implementation Plans, the TWRS Quality Assurance Program Plan (QAPP) and the TWRS Program Plan. In the process of this review, discussions were held with the following personnel: Rick Wojtasek, Fran DeLozier, John Bores, and Steve Seeman.

Results and Conclusions

- The Configuration Management Implementation Plan (CMIP) is drafted for TWR activities. The TWR CMIP will be expanded to include TWRS activities and will supersede the existing TWRS CMIP (WHC-SD-SM-CM-014).
- Activities are on-going for as-building of TWRS drawings under the TWRS CMIP. TWR-specific drawings requiring as-building should be identified and placed under configuration control.
- Appendix A of the TWR CMIP contains a schedule for the five areas of configuration management. The TWR CMIP references a product hierarchy and relationship information as part of the Technical Baseline Summary Description and Hanford Site Technical Database. A document hierarchy has been produced that will be in the Mission Analysis Report document.
- The TWR CMIP identifies the change control process to be used for TWR. The TWRS Change Control system will be utilized, comprising of A, B, and C change control boards. Specific instructions for TWR will be implemented through CMIP procedures.

- Records will be placed under configuration control through Lockheed Martin Systems Information. There are Document Service Centers throughout Hanford, and the Document Service Center at 2440 Stevens will be the primary center for physical control of documents. The Document Service Centers provide records management (document number, distribution, storage, etc.) for the project. Individual authors of documents are expected to identify the participants for review, receive and incorporate comments, and store backup material.
- Baseline documents will be under configuration control by January 12, 1998.

Recommendations

1. The TWR CMIP, as expanded to include TWRS, should be reviewed to ensure consistency with the document hierarchy.
2. The TWRS CMIP should then address the interface with the privatization contractors.
3. The TWRS CMIP should address the process for identifying reviewers and for maintaining review comments on configuration items.

2.2.8 TWR Interface Control Documents

Conclusion: There is reasonable certainty that a quality document will be ready by January 12, 1998, for submittal to RL. Minor modifications are required.

Product Description and Purpose

This product is intended to provide a description of functional and physical interfaces between the M&I contractor and the privatization contractors and to identify the requirements, constraints, and responsibilities of each organization for Phase IB activities. Each privatization contractor is to deliver to DOE a finalized interface control document by the end of Phase IA, January 24, 1998.

Acceptance Criteria

This document was reviewed against pre-defined criteria established in the individual CRAs based on the source requirements as outlined in Section 1.3. The CRAs reviewed are listed in Figure 1.3-1. Specifically, the document was reviewed to ensure plans and implementing actions that support privatization contract requirements are on track, interface control documents have been prepared, DOE comments have been resolved, issues have been addressed, and approved interfaces are managed. Completed ICDs are under configuration management and open issues have been identified and are being tracked for resolution.

The review process included a review of ICDs Package, ICD Procedures, Memoranda of Understanding (MOUs), project schedules, and interviews with cognizant personnel.

Evaluation Process

This assessment involved reviewing the ICD Package, ICD Procedures, Memoranda of Agreement, and project schedules. During the process discussions were held with the following

personnel: Steve Schaus, Steve Seeman, Jeff Voogd, Ken Gasper, Tim Bohan, and John Vann.

Results and Conclusions

- Overall, the RTP Independent Review Team concludes that the ICD process is in place and all of the internal ICDs can be placed under configuration management control when issued. The TWRS project team may want to consider not placing the privatization contractor's ICDs under configuration management until after the May 1998 time frame when the contracts for Phase IB are implemented. This will be a changing process until privatization contractors finalize their designs.
- The interface control process is a mature process that establishes the requirements and responsibilities for interface control. The process manages the internal and external organization interfaces for the TWRS project. The team review of ICDs and cognizant personnel concluded that the process is adequate and personnel had the working knowledge of the process needed to develop ICDs for the projects.
- The RTP Independent Review Team randomly selected projects beyond the conceptual design phase to ensure project specific Interface Control Procedures and Interface Control Documents have been completed. The review showed interfaces between double-shell tank (DST) systems and other major facilities have been identified. However, there is no evidence of a formal plan at the system level for development of component level ICDs. Cognizant personnel are working on the next level for development of component level ICDs.
- A similar review was conducted for projects in conceptual design. The review showed that mid-level logic planning steps did not show ICD development.
- Draft MOUs for TWRS are not complete and are in stages of being prepared and reviewed. This will be a changing process until the privatization contractors ICD requirements have been baselined (expected January 24, 1998). To date, only one MOU has a completed draft (electrical power supply) that has been reviewed through LMHC and General Counsel.

Recommendations

1. A formal plan should be written at the system level for development of component level ICDs. This does not have to be completed prior to the January 12, 1998, RTP submittal.
2. ICD development should be added to the mid-level logic planning steps. This does not have to be completed prior to the January 12, 1998, RTP submittal.

2.2.9 TWRS Operations and Utilization Plan

Conclusion: There is reasonable certainty that a quality document will be ready by January 12, 1998, for submittal to RL. Minor modifications are required.

Product Description and Purpose

The TWRS Operations and Utilization Plan (OUP) provides an integrated tool for assessing

the feed delivery for the disposal program. This is a living document that will be updated in the future to support programmatic planning needs. This document represents the best information to date on how source tanks can be used to satisfy Phase I envelopes. This document also shows how Phase IB delivery is integrated with SST retrieval and provides the SST retrieval sequence for Phase 2. The Hanford Tank Waste Operating System provides a model including baseline transfers and mass balances for both TWRS Operations and Disposal. Hanford Tank Waste Operating System will be validated in FY 1998. The TWRS life-cycle of waste movement from the present through Phase IB and Phase 2 is contained in this single, dynamic flowsheet model and is managed as a "system".

Acceptance Criteria

This document was reviewed against a set of pre-defined criteria established in the individual CRAs based on the source requirements as outlined in Section 1.3. The CRAs reviewed are listed in Figure 1.3-1.

This document was also reviewed for alignment with the MAR and the TBRs in the hierarchy of RTP technical requirements documents.

Evaluation Process

The TWRS OUP and applicable supporting documents were reviewed for compliance with the acceptance criteria and the specific review approaches of the individual CRAs. Selected interviews of QA and operations/support personnel were conducted with the following: Randy Kirkbride, Tim Bohan, Warren Thompson, Ross Potter, Paul Certa, Steve Byers, John Bores, and John Garfield. This document was reviewed to ensure QA factors, including standards, specifications, and limitations have been identified. The MAR, QAPP, and W-151 Feed Delivery Project Information were sampled to verify the technical quality of the TWRS OUP. This document was also reviewed for alignment with in the document hierarchy with the MAR, TWRS QAPP and the TBRs.

Results and Conclusions

- Based on a review of the TWRS OUP, QAPP, and W-151 Feed Delivery Project documentation and selected interviews of QA and operations/support personnel, the TWRS OUP establishes the process technical flow requirements. The authors indicated that their intentions were to strengthen the OUP by adding process flow sheets. The TWRS OUP is developed to specifically address retrieval preparation and waste feed to support privatization for Phases IB and 2.
- The RTP Independent Review Team explored consistency between program documents and noted that the relationship between TWRS QAPP and FDH Quality Assurance Program Description (QAPD) is not clearly described in the TWRS QAPP. The ten criteria of DOE Order 5700.6C and 10CFR 830.120 are not clearly addressed in the TWRS QAPP, including how these criteria are applicable to the TWRS Project. The TWRS QAPP does not identify when project specific QAPPs are required (e.g., "for critical projects containing safety class systems, structures, and components (SSCs) or significant SSCs.")

- A sampling review was done to ensure waste has been characterized as necessary to satisfy Data Quality Objectives (DQO). The project has done an excellent job of defining DQO requirements around the mid-level logic diagrams. To the extent appropriate, they are building on existing DQOs and adding problem-specific DQOs based on mid-level logic requirements. The list of DQOs is currently being developed and is in preliminary format. A review of traceability of requirements noted there is no clean mapping of DQOs to requirements. Project personnel interviewed understood the need to develop that DQO requirement. The team recommends adding the details to TWRS OUP Appendix D, which is currently a good top level discussion of the DQO process.
- The RTP Independent Review Team reviewed the plan developed to ensure consistency of the TWRS OUP with the current mission direction. The project has a draft plan to update the TWRS OUP to ensure consistency with other project plans. Review is scheduled to be complete by 12/23/97 to support RTP. A review of current project status, as compared to their draft plan, shows four missed target completion dates. Based on interviews with responsible personnel for plan update, they demonstrate satisfactory knowledge of what needs to be updated and understand what needs to be done to support the planned commitment dates.
- The letter report documenting the update of the basis and assumptions has not been issued to date. A draft of the letter requirements/assumptions sections has been started and determined to provide an acceptable level of detail to support the commitment completion date of 12/23/97.
- Based on interviews conducted, project personnel recognize the TWRS OUP as the technical document that defines the operational process and the retrieval Technical Baseline. When questioned how the TWRS Technical Baseline Summary captures system and component design requirements to the TWRS OUP, they did not have a clear understanding of the relationship between the documents. The TWRS OUP does an excellent job of defining the operational process but does not directly address the system design requirements and how the operational process requirements meet the requirements baseline.
- The waste feed plans and implementing actions and procedures are on track. Waste has been characterized as necessary to satisfy all data quality objectives.
- The TWRS OUP provides the inventory basis for 149 SSTs tanks and 28 DSTs and projects that inventory based on future transfers, but it does not mention incorporation of Project W-151 and its potential impact on inventory estimates.
- A QA plan has been established and the quality control and QA oversight organizations have been identified.

Recommendations

1. The TWRS QAPP Introduction, Section 1.0, should be modified to clearly describe the relationship and interdependency between the QAPP and the FDH QAPD. The hierarchy of documents and the relationship of the TWRS OUP to the Technical Baseline should be addressed. The TWRS OUP revisions should include verification of compliance with mission directions.

2. Process flow sheets should be added to the TWRS OUP. However, this does not have to be done prior to the January 12, 1998, submittal to RL.
3. The phrase in the Introduction, second paragraph, "on the pattern of" should be replaced with "in conformance with the ten elements of DOE 5700.6C and 10CFR 830.120". The 10 criteria of 5700.6C/10 and 10CFR 830.120 should be listed by title in the QAPP introduction, and a statement made that the TWRS QA program will comply with the 10 criteria as defined and described in the FDH QAPD, with no exceptions.
4. TWRS OUP project support schedule Section 3.5 should be revised to include cost to ensure that required action items are met.
5. The mid-level logic baseline for Project W-151 should be included in the TWRS OUP, Appendix C to further validate engineering assumptions.
6. A matrix mapping of DQO's to requirements should be developed and a list of DQO characterization deliverables should be issued. Incorporation of DQO's into the TWRS OUP should be evaluated. These do not have to be done prior to the January 12, 1998, deliverable to RL.

2.2.10 TWR Mid-Level Logic Baseline Enhancement and Reconciliation

Conclusion: There is reasonable certainty that an acceptable product will be ready by January 12, 1998.

Product Description and Purpose

This area provides the basic technical understanding of the M&I work that is required to be accomplished to support Phase IB Privatization. There is no summary document. The products reviewed were the mid-level logic diagrams and the TBRs. The mid-level logic diagrams depict the relationship of the planned activities. The TBRs provide the foundation for costs, schedule durations, assumptions, and risks for the items on the mid-level logics. LMHC's internal review of the TBR packages is discussed in Section 2.2.19.

Acceptance Criteria

This area was reviewed against a set of pre-defined criteria established in the individual CRAs based on the source requirements as outlined in Section 1.3. The CRAs reviewed are listed in Figure 1.3-1.

This area had 41 CRAs for evaluation. About 1/3 of the CRAs assessed the technical details that are required for timely startup and operations, such as maintenance planning and training. The other 2/3 of the CRAs assessed the technical products to ensure that fundamental cost, schedule, and risk information is being produced. Another aspect of the assessment is to determine if the Technical Baseline is adequate and understood.

Evaluation Process

All sub-teams completed CRAs associated with this product area. The TWRS OUP and selected mid-level logics and TBRs were reviewed and interviews were conducted by all sub-teams. The Technical Leads interviewed were: Bill Root, Russ Treat, and Jeff Voogd, as well as personnel in Risk Management and Cost Baseline areas.

Results and Conclusions

- Overall the mid-level logics and TBRs provide an excellent foundation. There is significant detail displayed in the TBRs. In particular, the feed delivery TBRs (and mid-level logics) have an adequate level of detail to meet the acceptance criteria associated with startup and operations, and cost and schedule. The storage of immobilized products and infrastructure TBRs (and mid-level logics) do not have the same level of planning and technical scope identified. Expanding the level of detail in the immobilized waste and infrastructure TBRs will allow evaluation of such issues as how the delays in the Spent Nuclear Fuels Canister Storage schedule will impact the IHLW Storage Program.
- The Risk Management CRAs identified a concern with how programmatic risk is handled at the TBR level. It is not clear how risks like equipment failures and their effects on cost and schedules were identified and/or mitigated. No formal or systematic identification of technical or schedule risks or mitigation plans is included in the TWRS OUP.
- In reviewing the documents which make up the TWRS Technical Baseline, there was not a clear requirements path from the DOE directives and MAR to the project level technical documents. This issue has been addressed and action is proceeding to develop an agreed to hierarchy of technical documents as a component of the TWR Technical Baseline Summary Description. Also, if the TBRs are baseline documents they need to be formally put under change control and maintained current.
- The TWRS OUP provides process design requirements necessary to meet the privatization contractor's feed specification. No similar document is available to provide overall requirements for the immobilized product storage or waste streams to be returned to TWRS from the contractors. The greater detail provided in the TWRS OUP provides a next level which will also be needed for the immobilized product storage or waste streams to be returned to TWRS from the immobilization contractors. This is not needed for the RTP decision relative to feed only, but will be needed for the full description of the Technical Baseline.

Recommendations

1. The infrastructure and immobilized waste TBRs should be brought to the same degree of completeness as the waste feed delivery TBRs. This can be accomplished after submittal of the RTP documents to RL on January 12, 1998.
2. All TBRs should be put under configuration control.
3. Prepare a companion document to the TWRS OUP for infrastructure and immobilization. This can be accomplished after the January 12, 1998, submittal to RL.

2.2.11 TWR Technical Baseline Summary Document

Conclusion: There is reasonable certainty that an acceptable document will be ready by January 12, 1998, for submittal to RL. However, significant modifications are required.

Product Description and Purpose

The Technical Baseline Summary Description, including preparation of waste, hardware, staff, and enabling documents, is intended to serve as the basis for planning and managing completion of all technical objectives over the project life cycle. It is the top-level management and planning tool for completing the Technical Baseline. The Technical Baseline Summary Description serves the following purposes:

- Identifies and summarizes the key technical documents that represent the Technical Baseline for the TWR Program.
- Designates "official source" information in each key document to assure the use of consistent technical bases in all technical analyses.
- Defines the hierarchical relationship of the documents, thus enabling the impacts of changes to one document to be traced and controlled through all inter-related documents.
- Identifies which documents are managed under the configuration management requirements of the TWRs CMIP.

Acceptance Criteria

This document was reviewed against pre-defined criteria established in the individual CRAs. The CRAs that were reviewed are listed in Figure 1.3-1. Specifically, the review was to determine that the Technical Baseline has been established describing the configuration, performance, and characteristics of the system/structures/components (SSCs) required for retrieval, feed delivery, by-product handling, and product storage and disposal; and that the scope of work is sufficiently described to ensure the Technical Baseline can be implemented and cost and schedule can be developed.

Evaluation Process

The review was conducted by reading an early draft of the Technical Baseline Summary Description, other TWRs planning documents, e.g., the TWRs MAR, the TWRs Program Plan, the TWRs CMIP, etc., and assessing these against the various criteria and requirements. Meetings and discussions were also held with the following personnel: Rick Wojtasek, Dennis Kervick, Tim Bohan, John Garfield, Tim Veneziano, Lucinda Borneman, Martell Petermann, Jeff Voogd, Bill Willis, and John Vann.

Results and Conclusions

- Difficulty was encountered in defining what constituted the "TWR Technical Baseline." Some individuals interviewed named the RDD 100 Hanford Site Technical Database, some called out the MAR, others called out the Technical Baseline Summary Description,

and still others called out the TWRS OUP. Based on this, the need for a comprehensive document hierarchy defining all the documents required to support RTP is clearly needed.

- Another consistent observation in reviewing technical documents is the repetition of similar material in several documents. In addition, some detailed material is presented in high level documents (e.g., MAR) when it should be contained in lower levels. Again, a document hierarchy is clearly needed. This concern points out the need for annotated outlines for all the documents contained in the TWRS document hierarchy.
- The Independent Review Team did not have a final document for review. The TWR Technical Baseline Summary Description should result in an acceptable Technical Baseline definition if the outline presented to the team truly represents the contents of the final product, and if the many specific observations of several RTP Independent Review Team members are followed. However, the status of the document is highly uncertain at this time. The flow down of system design requirements is not clear and evident within the current version. As such, it does not resemble a true Technical Baseline.
- A process operational baseline, as well as many aspects of a Technical Baseline, are covered in the TWRS OUP. However, the relationship of the TWRS OUP to the Technical Baseline Summary Description must be established. The TWRS OUP presents a good representation of requirements for Waste Feed Delivery. However, there are no such documents existing for the immobilized product storage function or for waste streams returned to TWRS from the privatization contractors.

Recommendations

1. A TWRS integrated document hierarchy (both programmatic and technical) should be developed along with annotated outlines for each document.
2. A clear flow down of requirements from the site level to the TWR system level and then down the to sub-system and component levels should be prepared and issued.
3. The Technical Baseline requirements for IHLW, ILAW, and secondary waste products needs to be prepared and issued.
4. The enabling assumptions need to be clearly spelled out in the Technical Baseline and incorporated into the issues and risk management process.

2.2.12 TWR Licensing Strategy

Conclusions: There is reasonable certainty that an acceptable document will be ready by January 12, 1998, for submittal to RL. However, significant modifications are required.

Product Description and Purpose

The Preliminary TWR Licensing Strategy is intended to describe the strategic and tactical activities required to provide the licensing and Authorization Basis needed for proposed Phase IB activities. This includes construction activities as well as operations.

Acceptance Criteria

The acceptance criteria for the Preliminary TWR Licensing Strategy are set forth in seven CRA statements dealing with authorization basis issues. In general, the acceptance criteria for the licensing strategy is the demonstration that the TWR Program understands how to successfully amend the existing TWRS authorization basis to allow the timely commencement of Phase IB activities.

Evaluation Process

The Preliminary Licensing Strategy, HNF-1722, Rev. A, and the associated TBRs were reviewed by the Safety and Environment sub-team. Tom Geer, David Hammond, and John Harris were interviewed.

Results and Conclusions

- The Independent Review Team finds that the authors of the RTP product have a clear understanding of the authorization basis activities that must be performed. Our principal questions deal with the current limited scope of the Licensing Strategy. The Licensing Strategy should encompass the entire Phase IB life-cycle (including the storage of ILAW and IHLW and miscellaneous projects.) HNF-1722 currently does not adequately address these other life-cycle stages.
- No mention of the Kupfer, et. al. work in the area of individual tank waste "best-basis" or "best-basis with uncertainty" inventory is included. This work potentially holds the promise of reducing the high level of conservatism present in the current safety analyses.

Recommendations

1. Convey that the Licensing Strategy and authorization basis activities are for the entire Phase IB Program.. The introductory portion of the RTP product should be revised to convey to the reader that the licensing staff understands the interrelationship of the strategies for individual projects and how the authorization basis must evolve, and that the overall Phase IB Program must be included.
2. A diagram should be created that illustrates to the reader: 1) the maturity of the TWRS authorization basis with respect to time (showing past, on-going, and future projects); and 2) that the required and approved authorization basis is comfortably ahead of critical program milestones. In addition, a very brief description (with respect to authorization basis issues) of all projects that will comprise overall mission success should be provided.
3. The Team recommends that a table summarizing the nature, status, and scope of on-going Unreviewed Safety Question (USQ) evaluations be provided in the report to allow the reader to understand how the Phase IB authorization basis is developing. In addition, the report should include a section that describes to what extent the Phase IB authorization basis will be increased with respect to time.
4. The Team recommends consideration of 1) the potential benefits of Kupfer et al. to promote enhanced controls cost-effectiveness and 2) the near- and long-term benefits of using the Hanford Tank Waste Optimization Simulator model currently under development to enhance

safety analysis and safety control cost-effectiveness at TWRS. These activities may be completed after the January 12, 1998, submittal to RL.

2.2.13 Environmental, Safety, and Health& Quality Assurance Program Plans

Product Description and Purpose

These products are intended to provide the planning to ensure that appropriate Environmental, Safety and Health, and Quality Assurance (ESH&QA) requirements are being addressed and built into the schedules and plans to fully support Phase IB waste vitrification in 2002. Three separate program plans were reviewed. Nuclear Safety and Licensing planning was addressed in 2.2.12.

- HNF-IP-0842, Volume IX, Safety 1.1, Rev 0, TWRS Safety Program Plan
- HNF-1773, Rev 0, TWRS Environmental Program Plan for M&I
- HNF-IP-0842, Volume XI, Section 1.1, Draft Dated 11/13/97, Quality Assurance Program

Acceptance Criteria

These documents were reviewed against a set of pre-defined criteria established in the individual CRAs based on the source requirements as outlined in Section 1.3. The CRAs reviewed are listed in Figure 1.3-1. The source requirements to be verified are as follows:

- Assure the commitment to a safety, health, and environmental program is in place and periodically verified.
- Assure the preliminary TWR Safety, Environmental and Quality Assurance Program Plans are complete.

Over and above the technical CRA requirements that need to be met by these plans, action plans for the execution of the ESH&QA programs need to be established.

Evaluation Process

The Safety and Environment and the Quality Assurance sub-teams evaluated their specific areas. In addition, the Safety and Environment sub-team reviewed the TWRS Integrated Safety Management System (ISMS) Implementation Plan, HNF-WM-PLN-114, Rev. 2. The Quality Assurance sub-team reviewed the FDH Quality Assurance Program Description, HNF-MP-599.

2.2.13.1 Safety Program Plan

Conclusion: *There is reasonable certainty that a quality document will be ready by January 12, 1998, for submittal to RL. Minor modifications are required.*

Results and Conclusions

- The TWRS Safety Program Plan presented a comprehensive listing of the Hanford site-wide organization, subcontractors' and safety personnel's safety responsibilities, and

descriptions of safety assurance programs. It also provides actions and performances needed from the site organizations, safety program elements, and special programs. These reflect a mature operating site and encompass what is necessary to assure compliance to safety requirements and safe operations. More importantly, they reflect the understanding of the author with respect to what is required for safety assurance. The existence of these safety personnel, organizations, programs, and their actions and performance technically have met the CRA requirements relating to occupational safety.

The TWRS Safety Program Plan did not describe a clear and detailed action for implementing the collection of required programs and actions that are currently described in the Safety Program Plan. Specifically, the framework and authority within TWRS by which the safety programs and actions are administered, controlled, and proceduralized are buried in the mass of information in the current program plan.

- The Independent Review Team observed that the issue at hand is predominantly packaging of the document. Areas have been identified for specific improvements (see observations and recommendations from individual CRAs). The Safety Program Plan presented its information keyed to organizations, support groups, personnel positions and programs and does not give an appearance of an action plan. The document should be keyed to activities and answer the following questions:
 - What safety assurance activities and functions need to be done to maintain safety compliance and safe operations for on-going TWRS operations/construction and new operations/construction necessary for waste feed delivery, infrastructure, and waste storage and disposal projects?
 - For each activity and function, who is responsible for the performance of the activity and function, and what safety programs (tools) are employed to accomplish the activities and function?
 - How are resources managed to ensure that the necessary activities and functions are adequately supported?
- The ISMS Implementation Plan was reviewed to determine whether it described a program promoting a TWRS-wide safety culture. This document describes the approach of ensuring that work within TWRS is conducted safely; that hazards are assessed and mitigative/preventive measures are identified and performed effectively; that there is worker involvement in the determination of hazards of work activities and assessment of those hazards. The ISMS is discussed in the Safety Plan and its tenets are included but they are not integrated into the Safety Program Plan.

Recommendations

1. The TWRS Safety Program Plan and its relationship to the Integrated Safety Management System should be evaluated. Changes to the Safety Program Plan can be made after the January 12, 1998, RL submittal.
2. The Safety Management Plan section to include should be strengthened to include actual program elements implementing specific planned activities. This activity can be completed after the January 12, 1998, submittal to RL.

2.2.13.2 Environmental Program Plan

Conclusion: *There is reasonable certainty that a quality document will be ready by January 12, 1998 for submittal to RL. Minor modifications are required.*

Results and Conclusions

- The Independent Review Team has found that the TWRS Environmental Program Plan has met the CRA Acceptance Criteria with the exception of resource management.
- The TWRS Environmental Program Plan presented a clear action plan of the implementation of environmental policy and requirements. It identified all the National Environmental Policy Act and related law documentation requirements and described how the requirements are met for TWRS. The Environmental Program Plan presented the permitting requirements and TWRS activities in obtaining the necessary permits in the same manner. The plan included a preliminary PHMC Permit Modification Schedule that time phased each of the NEPA and permitting activities necessary for the initiation of each of the TWRS projects. The plan also included operational controls and activities for implementing environmental requirements and permitting requirements.

Recommendations

1. A resource management plan should be added. This does not have to be done prior to the January 12, 1998, submittal to RL.

2.2.13.3 Quality Assurance Program Plan

Conclusion: *There is reasonable certainty that an acceptable document will be ready by January 12, 1998, for submittal to RL. Minor modifications are required.*

Results and Conclusions

- The overall assessment concluded that the TWRS QAPP addressed the necessary requirements and criteria of the FDH QAPD, DOE Order 5700.6C, and 10 CFR 830.120. It also addressed necessary requirements of DOE Order 430.1 delineated in the Independent Team Criteria and Review Approach CRA checklists. There were, however, a number of areas covered in the QAPP that need further clarification and improvement to clearly address the above requirements.
- The TWRS QAPP is currently in draft form awaiting final approval by FDH. Discussions with TWRS QA personnel indicated that the QAPP will be ready for final Revision 0 status by January 12, 1998, and placed under formal TWRS configuration control at that time. The QAPP was submitted to FDH for formal review, comment, and approval during the latter part of November 1997. Comments from FDH had just been received and the TWRS QA group was in the process of responding to and incorporating these comments into the QAPP.
- The Independent Review Team reviewed both the TWRS QAPP and FDH QAPD to evaluate the required inter-relationship between the two documents. It should be noted that FDH QAPD requires PHMC Subcontractors to develop QAPPs that are responsive to

the FDH QAPD and DOE Order 5700.6C/10CFR 830.120 requirements.

- The TWRS QAPP was developed based on the format and structure required by FDH QAPD. The Independent Review Team met with the TWRS QA Manager and TWR QA Lead Engineer to discuss the content and completeness of the QAPP in the areas that needed improvement. The review primarily looked at the QAPP adequacy and completeness in relation to its readiness for submittal to RL and DOE-HQ and also evaluated whether the essential requirements of the FDH QAPP were properly integrated into the TWRS QA in a clear manner.

Recommendations

1. The 10 criteria from DOE Order 5700.6C and 10CFR 183.120, should be listed by title in the introduction of the QAPP and a statement made that the TWRS QA program will comply with the 10 criteria as defined and described in the FDH QAPD, with no exceptions. This is important because RL and, especially, DOE-HQ reviewers may not have access to the FDH QAPD.
2. THE TWRS QAPP Introduction, Section 1.0, should be modified to clearly describe the relationship and interdependency between the TWRS QAPP and FDH QAPD. The phrase in the Introduction, second paragraph, "on the pattern of" should be replaced with "in conformance with the ten elements of DOE 5700.6C and 10 CFR 830.120".
3. A separate section/paragraph should be added to the QAPP that describes the responsibilities of the TWRS/TWR quality group and quality group management. As a minimum, this should include the ESH&QA Director and TWRS QA Manager. Also the QA Group interfaces with other applicable internal TWR organizations should be discussed. The QAPP may also reference other TWRS/TWR documents that discuss these interfaces.
4. The QAPP should describe when project-specific QAPPs are required. For example, "Project specific QAPPS will be required for critical projects containing Safety Class SSCs or Safety Significant SSCs". This would also agree with the FDH QAPD requirements for QAPPS.
5. An introduction to the TWRS QAPP Implementation Matrix should be added explaining that the QAPP matrix is the TWRS/TWR approach to implementing the ten elements of DOE Order 5700.6C and 10 CFR 830.120 and the FDH QAPD including appropriate PHMC and LMHC implementing procedures.
6. If it is determined that the TWRS QAPP will be submitted to DOE-RL/HQ as part of the RTP deliverable package, it is recommended that the TWRS QAPP and the FDH QAPD be submitted together as appendices to the RTP Program Plan deliverable. This will minimize the risk that RL and HQ reviewers will view the TWRS QAPP as incomplete since the two QA documents must be used together to understand the TWRS QA Program. Also a brief description in the TWRS Program Plan should describe the interrelationship and interdependence between the two QA plans/documents.

These recommendations and gaps in the TWRS QAPP were discussed with the TWRS QA Manager and TWR QA Lead Engineer during the Independent Review Team review and general agreement was reached that they would be addressed and incorporated into the QAPP prior to the January 12, 1998 RTP deliverable.

2.2.14 TWR Operation and Maintenance Strategy

Product Description and Purpose

Although this document was initially identified as a Readiness-To-Proceed product, a decision was made to roll the information into the Program System Plans.

2.2.15 Preliminary Schedule Baseline

Conclusion: There is reasonable certainty that a quality document will be ready by January 12, 1998 for submittal to RL. Minor modifications are required.

Product Description and Purpose

This product is intended to provide detailed schedule data tied to the integrated logic network so that an integrated schedule for all M&I contractor activities in support of Phase IB Privatization can be generated. The detailed schedule has over 600 discrete activities, each backed by a TBR that contains the work scope, cost estimate, and a list of risks associated with the activities.

Acceptance Criteria

The integrated logic network schedule data were reviewed against pre-defined criteria established in the individual CRAs. The CRAs reviewed are listed in Figure 1.3-1. Specifically, the schedule information was reviewed to assure that key project milestones were defined and incorporated in the schedules, milestone lists were available, and a Master Schedule Network had been developed defining work sequence and significant task interdependencies, as well as critical path and contingencies appropriate for the schedule risk.

Evaluation Process

The Primavera Integrated Logic Network for the TWR Program was closely reviewed during this evaluation. As part of the review, discussions were also held with Martell Petermann and Mike Ebben.

Results and Conclusions

- Integrated logic network schedules have been developed for TWR and Phase IB Privatization. The schedules are derived from detailed TBRs that show the schedule duration and logic. Systems engineering practices such as Reliability Availability Maintainability (RAM) Analyses and Alternative Analyses (what if studies, trade off studies) are included in the schedules and are being used to ensure that the Technical Baseline in the TBRs are accurate and traceable to appropriate requirements. The following results and conclusions are based on review of the schedules.
 - The Primavera schedule network adequately reflects the TWR and Phase IB schedule.
 - Schedules for each task have been incorporated into a program summary network, the critical path designated, and float durations calculated for each element.

- While the schedules have been produced as required, it is not apparent that schedule thresholds (which emphasize the project phase and consider project size, complexity, and risk) have been produced and incorporated.
- The schedule risk analysis is not complete.

Recommendations

1. The schedule risk analysis must be completed and incorporated into the roll up document prior to the January 12, 1998, submittal to RL
2. A project roll up listing of milestones needs to be generated and included or referenced in summary level documents. The TBRs should also include a listing of task milestones.
3. Schedule thresholds need to be incorporated into the final schedule baseline; however, this can be completed after the January 12, 1998, submittal to RL.

2.2.16 Preliminary Cost Baseline

Conclusion: There is reasonable certainty that a quality document will be ready by January 12, 1998 for submittal to RL. Minor modifications are required.

Product Description and Purpose

This product is intended to provide detailed cost information tied to the integrated logic network schedule so that annual budgets can be derived by cost account for each major program area. The detailed schedule has over 600 discrete activities, each backed by a TBR that contains the work scope, schedule duration and logic, a bottoms-up cost estimate, and a list of risks associated with the activities.

Acceptance Criteria

The integrated logic network cost and schedules data were reviewed against pre-defined criteria established in the individual CRAs. The CRAs reviewed are listed in Figure 1.3-1.

Specifically, the cost information was reviewed to assure that preliminary Total Estimated Cost (TEC), Total Project Cost (TPC), and Total Life Cycle Cost (TLCC) could be derived for all workscope using appropriate estimating methodology and techniques. In addition, the M&I contractor has adequate qualified personnel assigned with responsibilities for direction of the feed delivery/product handling and storage activities, and a staffing plan has been developed.

Evaluation Process

This evaluation was completed by reviewing the Preliminary Cost Baseline for Phase IB Privatization and a cost risk analysis for the TWR Program. During the review process discussions were held with Mike Ebben and Martell Petermann.

Results and Conclusions

At the time of the Independent Review Team review, no financial analysis document was available for review; the document was still being prepared. However, much of the information that will form the basis for the financial analysis was available in draft form for review. The following results and conclusions are based on review of this information.

- A preliminary cost baseline for Phase IB (TWR) has been developed. This baseline is summarized by cost account and major program area. Projected annual budgets for FY 1998 - FY 2011 have been calculated. In addition, integrated logic network schedules have been developed for TWR and Phase IB. The preliminary cost baseline was derived by loading over 600 discrete schedule activities with the cost information contained in the TBRs.
- This integrated, logic-based, cost-loaded schedule is the essential ingredient and primary tool for assuring that the TWR Program has a fully integrated, defensible, and auditable cost and schedule baseline.
- Systems engineering practices such as Reliability Availability Maintainability (RAM) Analyses and Alternatives Analyses (what if studies, trade off studies) are included in the schedule and are being utilized to ensure that the Technical Baseline captured in the TBRs is accurate and traceable to appropriate requirements.
- A preliminary staffing plan is in place for the M&I contractor by Common Occupational Code System (COCS), PBS level, and by company for the period FY 1998 through FY 2011 (Phase IB). However, in reviewing this staffing projection, there were anomalies in the data that raise questions on its accuracy and completeness and, therefore, validity of the RTP cost estimate. Two prime examples of this are:
 - FTE projections by contractor do not cover the total FY 1998 to FY 2011 time frame. While there may be appropriate logic for certain skills for a specific period, the absence of any identified support is not logical. In general, the data on DynCorp, Duke Engineering & Services Hanford, Inc., and FDH covers only the first three years (FY 1998 - FY 2000).
 - Variations in FTE levels between fiscal years that are beyond normal occurring fluctuations - at both the sub-levels and the grand total. There is an expected lack of specificity the further out a projection is made; however, the staffing projections have a remarkable decrease beyond FY 2005 that, on the surface, seriously questions the credibility of the data.

The cost/risk evaluation process is not documented (see 2.2.4, Risk Management). The cost/risk analysis should be performed and the results factored into the Financial Analysis (see Section 2.2.17).

In addition, a test was done to see if an individual company's staffing plan reflected what the COCS staffing projection indicated. The FDH data were not traceable to FDH staffing projections.

Recommendations

1. Determine if staffing projections for each PHMC contractor supporting the RTP are necessary for the entire Phase IB period. Where appropriate, projections should be provided by the respective contractor.
2. Analyze the FTE data for anomalies and correct where appropriate.
3. Rerun the cost baseline.
4. Have individual company staffing plans on file to back up COCS projections of FTEs.

2.2.17 Preliminary Financial Analysis

Conclusion: The Preliminary Financial Analysis document was not available for review.

Product Description and Purpose

This product is intended to provide a financial analysis of proceeding with Phase IB activities including identification of potential impacts of technical and programmatic risks. The assumptions used to enable development of the cost and schedule detail must also be clearly defined.

Acceptance Criteria

The integrated logic network cost and schedule data were reviewed against pre-defined criteria established in the individual CRAs. Specific CRAs reviewed are listed in Figure 1.3-1.

Specifically, funding profiles are consistent with the status of the project and with cost estimate, schedule and technical requirements in the current budget documentation. In addition, the impact of the funding has been analyzed and the LCC estimate for DOE resources has been completed (Critical Decision-1).

Results and Conclusions

The financial analysis document was not available for Independent Review Team review.

Recommendation

1. The Preliminary Financial Analysis document should be completed and an independent review be conducted prior to submittal to RL in January 1998.

2.2.18 Internal Independent Assessment

The Internal Independent Assessment was conducted according to the Plan in Appendix A and established CRAs. This report summarizes that assessment.

2.2.19 Technical Basis Reviews

Although the Technical Basis Review (TBR) packages are not part of the planned submittal to RL as part of the M&I assessment on RTP, the Independent Review Team reviewed many of the TBRs in responding to specific CRAs. Therefore, we are including this section to reflect our assessment of the TBRs.

Product Descriptions and Purpose

TBRs have been prepared for each discrete element in the integrated logic network (639 in all). The TBRs describe the work scope, schedule duration and logic, cost estimates, and a list of risks associated with the activities. In addition, each TBR identifies any predecessor activities and any successor activities.

Acceptance Criteria

The approach selected by the Independent Review Team was 1) to review the assessment being performed by an internal LMHC team, led by Jim Wicks, on the status of the TBRs and the 20 product deliverables, and 2) to conduct limited sampling of the TBRs. The TBRs were reviewed to assure the technical basis was defined, technical issues were identified, interface/infrastructure were identified, and the methodology used to establish the TBRs was adequate and complete.

Results and Conclusions

- The internal LMHC team review of the 40 selected TBRs and the 20 RTP product documents was rigorous and thorough; we fully endorse their comments and recommendations (Reference: Interoffice Memo, J. H. Wicks to R. D. Wojtasek entitled "Final Report of Readiness to Proceed Internal Assessment" 70600-71-001, December 12, 1997). Many of their comments cover similar observations of our team. The internal LMHC team was impressed by the quality and detail of the TBR packages and by how well the process held together the basic Level 1 logic and RTP Process Flow Diagram.
- Independent Review Team members reviewed many of the TBRs while assessing a particular product document. In general we found that:
 - The TBRs associated with the actual waste retrieval were quite good while those associated with infrastructure and immobilized waste storage provided less detail.
 - Specificity of cost detail was quite good on many of the TBRs and directly traceable to resource loaded schedules. However, on some of the future activities (e.g., design IHLW Storage facility) a cost was given with virtually no backup.
 - Risk and enabling assumptions were not consistently defined and did not easily roll up into an integrated statement of risk.

Recommendations

1. The TBRs form an excellent basis for generation of baseline costs and schedules. TBRs for infrastructure and immobilized waste should be brought to the same degree of completeness

as the ones for retrieval. (Note: This can be done after submittal of the RTP documents to RL on January 12, 1998). All TBRs should be put under configuration control.

2. The internal LMHC team did a thorough job of reviewing the TBRs and 20 product deliverables and should be utilized to review the final RTP submittals going to RL on January 12, 1998.

3.0 REFERENCES

DOE, 1996, *Critical Decision Criteria*, Life Cycle Asset Management Good Practice Guide, GPG-GM-002, March 1996.

DOE Order 425.1, *Startup and Restart of Nuclear Facilities*, U.S. Department of Energy, Washington D. C.

DOE Order 430.1, *Life Cycle Capital Asset Management*, U.S. Department of Energy, Washington D. C.

Taylor, W. J. 1997, to H. J. Hatch/ FDH, *Contract Number DE-AC06-96RL13200 - Tank Waste Remediation System (TWRS) Privatization - Hanford Contractors Readiness To Proceed,* 97-WDD-129, dated August 8, 1997

Wojtasek, R. D. 1997, *Readiness-To-Proceed Plan for M&I Contractor Work Scope in Support of TWRS Phase IB Privatization*, HNF-SP-1241, Lockheed Martin Hanford Company, Richland, Washington.

APPENDIX A

**READINESS-TO-PROCEED PLAN FOR M&I CONTRACTOR WORK SCOPE IN SUPPORT OF
TWRS IB PRIVATIZATION**

**PLAN FOR INDEPENDENT ASSESSMENT OF THE M&I
CONTRACTOR READINESS-TO-PROCEED
WITH PHASE IB OF PRIVATIZATION**

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) is planning to make critical decisions during fiscal year (FY) 1998 regarding private contracts for the treatment of Hanford tank waste. Specifically, DOE Richland Operations Office (RL) will make decisions related to proceeding with Phase IB privatization. In support of these decisions, the Tank Waste Remediation System (TWRS) Management and Integration (M&I) contractor must be able to meet the requirements to support the Phase IB private contractors.

Lockheed Martin Hanford Corporation (LMHC), the M&I contractor primarily responsible for the tank waste storage and disposal, will deliver low-activity waste (LAW) feed and high-level waste (HLW) feed to the private contractors. In addition, LMHC, supported by the other FDH M&I contractors, will provide the necessary infrastructure, as well as the storage of HLW products and the disposal of LAW products generated by and received from the Phase IB private contractors. The M&I contractors will also provide for the storage of intermediate waste products, e.g. extracted Cs, and disposal of liquid and solid effluents. These activities are assigned to the Tank Waste Retrieval Program and constitute the Retrieval mission.

Lockheed Martin Hanford Corporation has issued a Readiness-to-Proceed Plan (Reference 1) on how they will assess their own readiness to support implementation of Phase IB privatization. The plan outlines the process they will use to assess their Readiness-to-Proceed. When completed, LMHC and FDH will issue a Readiness-to-Proceed Memorandum to RL declaring that they can support Phase IB of the privatization process. The Memorandum is due to RL by January 12, 1998.

In addition to the M&I Readiness-to-Proceed assessment, three other Readiness-to-Proceed assessments will be done: 1) RL will assess the readiness of the M&I contractor to proceed with Phase IB privatization; 2) RL will assess the readiness of the two privatization contractors to proceed with Phase IB privatization; and 3) DOE-HQ (EH) will assess the readiness of the RL regulatory group to proceed with Phase IB privatization.

As part of the M&I assessment of Readiness-to-Proceed, an independent review of their process and products is being performed. The independent evaluation will review the planning that has been done by the M&I contractor such that if the plans are carried out there is a "reasonable" chance for success. The independent review team will look at the adequacy and completeness of the planning, the risks identified in the various plans, funding assumptions for achieving Phase IB of privatization, and whether the process to determine Readiness-to-Proceed is a good one and did they follow it. Overall, the independent review team will address the general question "Has the M&I contractor demonstrated a clear and complete understanding of what needs to be done to accomplish the Tank Waste Remediation mission? It should be noted that the independent team will only assess the M&I contractors preparation for Readiness-to-Proceed as related to their scope of work. No assessment is being made of the private contractors' scope of work for Phase IB of privatization, nor of DOE's readiness to proceed.

2.0 INDEPENDENT REVIEW PROCESS

The independent review will use a structured process to assess the M&I contractors preparations on Readiness-to-Proceed. It will use the requirements of three specific documents as applicable:

DOE Order 0 430.1, Life Cycle Capital Asset Management (LCAM)
Good Practice Guide GPG-FM-002, Critical Decision Criteria
(Reference 2)

DOE Order 0 425.1, Startup and Restart of Nuclear Facilities (specifically the
20 Core Requirements). (Reference 3)

Letter from W.J. Taylor, DOE-RL to H.J. Hatch, Fluor Daniel Hanford Inc. dated
August 8, 1997 (specifically the 36 item checklist). (Reference 4)

The independent team will review available M&I documentation supporting the Readiness-to-Proceed against these requirements. It is understood that this is a review of work-in-progress and as such, the documentation to be reviewed may not be finalized at this time. Specific documents to be reviewed include but are not limited to:

- o Program Plan for Tank Waste Retrieval
- o Retrieval Baseline
- o Financial Analysis
- o List of Critical Risks
- o List of Key Assumptions
- o TWRS Mission Analysis Report

A separate internal review of selected Technical Basis Reports is being performed by a M&I team led by Jim Wicks. Approximately 63 of the 639 Technical Basis Reports have been selected for review based on the activity being a first-of-a-kind (i.e., first time it is being done in the sequence) or being a unique activity (i.e., first time being done and is not repeated). The Technical Basis Reports are being reviewed for their overall quality and for their completeness. The independent review team will also conduct limited sampling of the Technical Basis Reports.

The independent review team will also interview the document author and the readiness-to-proceed team members as appropriate to assess their understanding of the plans and requirements necessary to support Phase IB privatization.

During the review process, documentation of review observations will be the responsibility of individual team members in accordance with the specific areas assigned to them for review. Criteria and review sheets have been prepared specific to each area being assessed identifying the deliverable being reviewed, the technical product being reviewed, the specific criteria against which the deliverable is being reviewed, and the specific requirement that is to be met. An example of a typical Management Review Criteria and Review Approach sheet is attached. The reviewers will compile their conclusions and recommendations for the six subject area being reviewed and provide these to the team leader for compilation into the final report.

In addition to the Management Review Criteria and Review Approach forms, an administrative form will be used to accurately document review activities and observations. The form will be used to document the methods and actions by a review team member taken in their criteria evaluation process. The form covers a specific objective and lists the means by which the team member measured the M&I readiness relative to the objective provided in the Criteria and Review Approach. The conclusion will specify whether the criteria for a particular objective are likely to be achieved if the M&I contractor follows the process outlined in the document being reviewed. Forms may include observations that are either recognition of excellent progress or deficiencies. An example of the form is attached.

At the completion of the review process, the independent review team will prepare a report for LMHC summarizing the review, evaluating the M&I contractor's preparations for supporting Phase IB privatization, and providing recommendations on how their preparations can be strengthened.

3.0 INDEPENDENT REVIEW TEAM

The makeup of the Independent Review Team is shown in Figure 1. Members of the team were selected for their particular expertise in the following areas: Operations and Maintenance; Environmental and Safety; Quality Assurance; Technical Baseline; Business Management; and Stakeholder Involvement.

4.0 SCHEDULE

The Independent Review of the M&I contractors Readiness-to-Proceed will commence on December 2, 1997. Data gathering, document reviews, and interviews will take place between December 2, 1997 and December 12, 1997. Observations, conclusions, and recommendations resulting from these reviews will be generated for each of the six areas being assessed. The recommendations will then be summarized into a summary report to be submitted to LMHC by December 19, 1997.

5.0 QUALITY EFFECTING RECORDS

Two quality effecting records will be produced from this independent review:

- o Completed Criteria and Review Approach (CRA) forms
- o Final Report

6.0 REFERENCES

1. Readiness-to-Proceed Plan for M&I Contractor Work Scope in Support of TWRS Phase IB Privatization, HNF-SP-1241 REV O, October 1997.
2. DOE Order 430.1 - Life Cycle Capital Asset Management (LCAM) Good Practices Guide, GPG-FM-002 Critical Decision Criteria, March 1996.
3. DOE Order 425.1 - Startup and Restart of Nuclear Facilities, September 10, 1996
4. Letter, William J. Taylor to H.J. Hatch, Contract Number DE-AC06-96RL13200, Tank Waste Remediation System (TWRS) Privatization - Hanford Contractors Readiness-to-Proceed, August 8, 1997, Letter 9757162 A.

7.0 ATTACHMENTS

- A. Management Review Criteria and Review Approach Form
- B. Independent Review Team Observation Form

HNF-2018, Rev. 0

ATTACHMENT B

FINAL REPORT OF READINESS TO PROCEED INTERNAL ASSESSMENT

INTEROFFICE MEMO

LOCKHEED MARTIN

70600-97.001

From: Performance Measures
Phone: 373-9372 H7-07
Date: December 12, 1997
Subject: FINAL REPORT OF READINESS TO PROCEED INTERNAL ASSESSMENT

To: R. D. Wojtasek G3-21

cc: J. W. Bloom H6-12
S. M. Byers S1-57
A. F. Choho H6-35
C. A. Davis R2-50
T. S. Ferguson G3-21
E. A. Fredenburg H6-12
T. L. Jennings R2-33

D. L. Lenseigne S7-35
T. J. McLaughlin H5-03
W. E. Ross S7-84
J. D. Thomson H7-07
J. H. Wicks H7-07
C. E. Wilson H8-71
JHW File/LB

At your request, a multi-disciplined team was established to assess work in progress toward Lockheed Martin Hanford Corporation's (LMHC)s readiness to proceed (RTP) declaration. Understand that this assessment was a review of work in progress, and not of a completed product.

The team was impressed by the quality and detail of the Technical Baseline Requirement (TBR) packages and by how well the process held together the basic Level 1 logic and RTP Process Flow Diagram.

The following are executive summary comments. Specific comments are contained within the body of the report and attachments:

The efforts and resources needed to maintain a detailed, resource-loaded schedule are not universally appreciated. Tank Waste Remediation System (TWRS) has been at the edge of a true resource-loaded schedule several times in the last five years. We need to integrate the Tank Waste Operation's schedule into the RTP schedule. It is recommended that part of the existing team remain to do this effort at the completion of the 'long team'. Our team doubted the cost of maintaining a resource-loaded schedule is included in the budget planning. Lacking a resource-loaded schedule, we neither can decide with confidence, nor manage the continuing efforts to ensure the required resources and funding are available as needed.

The RTP project needs a single project integrator, who is responsible for the integration of all projects and coordination with operations, to ensure work is accomplished in an orchestrated manner without mutual interference.

The quality and readability of the 20 RTP technical product documents varied considerably. While we recognize that much of this work is in progress, they will require considerable effort before release. Corrective action to improve existing documents is underway. These documents must be placed under configuration control - immediately!

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Incorporation of Fluor Daniel Hanford, Inc (FDH) and its Project Hanford Management Contract Subcontractors, essential to our ability to declare readiness to go with privatization, needs strengthening before our declaration of readiness.

Risk and enabling assumptions are not consistently defined and do not easily roll up into an integrated statement of risk. Corrective actions to redline enabling assumptions and quantify the risks are underway.

The process used to generate and decompose Level-1 logic is well thought out and documented. They must capture this process in one of the 20 RTP technical product documents to show the strength of what the team has accomplished. The detail provided in the TBRs and subsequent decomposition varied. We recommend that in the next revision, a second attack be initiated to standardize the content. Because multiple TBR authors identified similar issues, some TBR information is repetitive (e.g., enabling assumptions, risks, etc.)

Review Criteria and Approach:

The multi-disciplined team members (Attachment 1) were selected for their proficiency to ensure review was comprehensive.

This effort was a review of work in progress. Several documents were still in draft form and many reviews and modifications were in progress. This was more of a 50 percent design review than a classical audit of completed work; therefore, the team focused on what the RTP team might have missed instead of what existed.

Team leaders from the original 'short team' briefed the review team regarding the program logic process and recommendations to the follow-on 'long team'. Additionally, our team was briefed on the Level-1 logic creation process, the RTP process, and the process by which Retrieval, Operations, Characterization, and Project requirements flowed down from the RDD-100 requirements database. Mr. W. E. (Bill) Ross, original 'short team' member, explained the crosswalk between the requirements flow-down, the RTP process, and the process that created the 20 RTP technical product documents that support the RTP process.

The team read and discussed in open forum HNF-SP-1241, "Readiness to Proceed Plan for M&I Contractor Work Scope In Support of TWRS Phase IB Privatization," Rev 0, including the tasking directive, letter, W. J. Taylor, RL, to H. J. Hatch, FDH, "Tank Waste Remediation System (TWRS) Privatization - Hanford Contractors Readiness to Proceed," 9757162 A, dated August 8, 1997. At the time of this review, we had not received comments from the U.S. Department of Energy, Richland Operations Office (RL) on the adequacy of the RTP plan. The RTP plan was considered solid and, if followed, capable of achieving the RTP objective.

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Next, the team reviewed the published documents that made up the 20 RTP technical product documents. Each team member reviewed two documents. We conducted discussions each day on progress, overall impressions, and quality of the documents. It was required that team members provide feedback to the technical product authors.

The final phase was to select a representative sample of the TBR documents and develop a checklist to standardize the TBR reviews (Attachment 2). Attachment 4 defines the questions used in the checklist. We decided to review a sample from all eight organizational categories. The sample population was initially limited to first-of-a-kind and unique TBRs as defined by the Level-1 logic decomposition process. The number of TBRs varied with the category, and the number selected for review was based on perceived risk related to complexity or potential schedule impact. For example, the Retrieval TBRs were perceived as particularly complex; therefore, the team decided to review all the first-of-a-kind packages and a third of the unique packages. Although Operations had a large number of packages, many were related to a relatively small number of first-of-a-kind packages, such that a small sample would provide information about a large number of packages. The selection of individual packages was made by the team lead for baseline enhancement, following the criteria of complexity, schedule impact, and 'representativeness'.

Team meetings were held daily. Results of reviews and general concerns were boiled down into specific comments. These concise comments were briefed to senior management and the RTP team during their plan of the day. Issues identified by the team resulted in a strategy meeting and direction to correct these high level problems.

Before the start of the RED team review, team leaders met with the RED team and discussed their process, impressions, findings, and concerns. The team out briefed LMHC and FDH Project Director senior management Thursday, December 4, 1997 (Attachment 5).

Results and Recommendations:

The team identified a need for a cross-reference among the 36 requirements identified in the RL letter mentioned above, and the 20 RTP technical product documents. Some cross-references did exist between DOE Orders 425.1.8(d), "Startup and Restart of Nuclear Facilities", 430.1 - GPG-FM-002, "Critical Decision Criteria", and the RTP technical products.

Risk Management was scrutinized closely because of an initial lack of traceability between the Tank Waste Retrieval risk management process and the TWRS HNF-IP-0842 risk management procedure. The RTP team needs to define which risk management process will be used then standardize its use and applicability to all TWRS programs. Item 35 of the RL letter mentioned above, requires a risk management and decision management program implemented at all levels. The risk management plan is in tact, but the 20 technical product documents are silent as to a decision management program.

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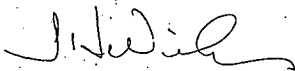
Conversation with the RTP team members clearly indicates that a process exists, but has yet to be captured in a procedure or document. The Systems Engineering Management Plan (SEMP) does speak to a decision management process, but a clear decision to make the SEMP the reference document for decision management does not exist. Additionally, our team struggled to understand how risk, as defined in the TBRs, would be quantified and summed up into a concise statement of overall project risk. Daily briefings to senior management of this finding resulted in an extensive reevaluation of the aggregate risk quantifying the residual risk remaining after risk mitigating actions were complete. This initiative improved significantly the risk definitions and enabled the RTP team to describe the risk in measurable quantities.

Because several documents were either in draft form or in a review cycle, the team identified a need to configuration manage the vast number of documents. The RTP team elected to continue revising the documents and would place all documents under configuration control as revision 0 on a concurrent data date.

The RTP Plan is silent on the general hierarchy of the RTP documentation and the process used to generate them. In discussions with the RTP team, it is clear what the process is and how to use it consistently. We recommend the RTP team capture the process being used in the RTP Plan. Without this connectivity, credibility of cost and schedule estimates can be suspect.

Individual team member comments are contained in Attachment 3.

The team commends the RTP team for their high level of mission focus that has solidified many organizational pieces into a creditable plan. We also thank the RTP team for their patience and willingness to walk us through all aspects of the RTP Plan and their ability to evaluate critically their own work and act quickly to incorporate recommended changes.



J. H. Wicks, Director
Performance Measures
Tank Waste Remediation System

cd

Attachments (5)

TANK WASTE REMEDIATION

Readiness to Proceed Self Assessment

Team Members

J. W. Bloom	Senior Engineer, Nuclear Safety & Licensing, DESH
S. M. Byers	Manager, TWRS Quality Assurance, LMHC
A. F. Choho	Technical Integrator, TWRS Construction Projects, NHC
C. A. Davis	Executive Secretary, Tank Waste Operations, LMHC
E. A. Fredenburg	Acting Manager, Tank Closure, LMHC
T. L. Jennings	Manager, Production Control, LMHC
D. L. Lenseigne	Manager, Financial Control Integration & Reporting, LMHC
T. J. McLaughlin	Program Manager, MACTEC
W. E. Ross	Acting Director, Characterization Project, LMHC
J. D. Thomson	Senior Project Manager, Antlonen Lucas Associates
J. H. Wicks	Director, Performance Measures, LMHC
C. E. Wilson	Senior Engineer, Systems Engineering, LMHC

WTR RTP Self Assessment: Items Requiring Disposition

Question 1 TBR Package Number	Question 2 Is this item in the inventory?	Question 3 Are all requirements identified?	Question 4 Does any statement convey that work is to be done in a timely manner? (e.g., "as soon as possible")	Question 5 Are configuration management controls active?	Question 6 Is required preventive and predictive maintenance being performed (e.g., "as required")?	Question 7 Are readiness activities being performed?	Question 8 Are all hazardous materials properly identified?	Question 9 Are open conditions being monitored?	Question 10 Are conditions being monitored and reported as required?	Question 11 Are approval signatures present?
050.030 - W-320 Construct New Equip/Complete ATPs	LOW: Yes	Yes	Yes	MED: No change control evident	Yes	Yes, but the readiness review shouldn't be listed as a risk under these construction activities.				
050.050 - W-320 Perform Ops Test of Equip per OTs	LOW: Yes	Yes	Yes	MED: Same as 050.030	Yes	Yes				
050.090 - Sluice 241-C-106 into 241-A-102	HIGH: Complete; excepted as noted.	LOW: Requirements not identified in TBR. However would be in project criteria documentation.	LOW: Additional detail contained in project documentation	LOW: Change control log is provided.	LOW: In agreement with mid-level logic.	LOW: List appears thorough	HIGH: Regulator non-acceptance of leak impacts and/or leak impacts and/or controls to minimize leakage during retrieval is not addressed. Is a major concern due to recent tank leaks contaminating groundwater. Acceptability of leaks estimated in WHC- SD-ES-218 not addressed by regulators. No NEPA decisions reached on remediation of soil contaminated by sluicing leaks.			

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

R R RTP Self Assessment: Items Requiring Disposition

TRC Package Number	Question 1 Is the TRC complete? Yes, TRC complete	Question 2 Are sufficient requirements identified? Yes, sufficient	Question 3 Does scope include all identified hazards to harm? (Unidentified hazards to harm are discussed in the hazard analysis)	Question 4 Are configuration management procedures in place?	Question 5 Is the TRC consistent with the latest hazard analysis?	Question 6 Is the TRC consistent with the latest hazard analysis?	Question 7 Is the TRC consistent with the latest hazard analysis?	Question 8 Is the TRC consistent with the latest hazard analysis?	Question 9 Is the TRC consistent with the latest hazard analysis?	Question 10 Is the TRC consistent with the latest hazard analysis?	Question 11 Is the TRC consistent with the latest hazard analysis?	Question 12 Is the TRC consistent with the latest hazard analysis?
10.070 - W-151 Perform Mixer Pump Test	MED: Not complete as written. Contains a characterization not on sampling requirements with expanded risks. A new box was added to the Level I Logic for the AZ- 101 mixer pump test and a new TBR, 110.047, was created, but this information is absent from TBR 110.070/080.	LOW: Referenced procedure revision numbers are incorrect. Recommend expanded risks. A new box was added to the Level I Logic for the AZ- 101 mixer pump test and a new TBR, 110.047, was created, but this information is absent from TBR 110.070/080.	LOW: Scope is incomplete without reference to characterization TBR 110.070.	HIGH: Not under configuration management yet and needs to be revised.	No, 110.047 should be added as successor. See Pennington's comment concerning the reconciliation with other activities of the mid-level logic, on the signature page.	Yes	With the incorporation of TBR 110.047 this corrects an open risk issue ~047 still contains risk associated with the yet-to-be determined sampling technique to determine efficiency of receiving and settling tests.	No	Yes, still needs to provide an internal comment to correct 110.070/080 to 110.047.	Question 10 Are open issues being tracked? Yes	Question 11 Are open issues being tracked? Yes	Question 12 Are open issues being tracked? Yes
10.080 - W-151 Perform Mixer Pump Test	Yes	Yes	Yes	MED: No change control evident	Same as 110.070	Yes						
20.830 - Revise Project W-211 CDC	Yes	Requirements identified in the reference document list appears thorough, but technical basis paragraph is not clear.	After review and discussions with W-211 Project Manager, TBR felt unnecessary and should be canceled. Also, logic schedule shows this item complete.	No, not under configuration management.	Yes, mid-level logic indicates that this activity is complete.	No, enabling assumption should be easily verified as part of a requirements flow down validation, which should have been completed. Project Manager says issue resolved.	The risk issue identified all within the normal range of project risk and are not unique.	No	This is a predecessor activity to W-211 only.			No

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

WTR RTP Self Assessment: Items Requiring Disposition

TRC Project Number	Question #1 Is this complete?	Question #2 Is this item a requirement identified?	Question #3 Does this item commandeer work to be done? Is sufficient detail to serve as a basis for further planning?	Question #4 Are configuration management controls effective?	Question #5 Is indicated predecessor and successor identified with mid- level logic?	Question #6 Are enabling assumptions correct?	Question #7 Are risk items and risk-handling items identified?	Question #8 Are open identified items?	Question #9 Are connections with other items identified?	Question #10 Are open identified items?
120 B35 - W-211 Install 241-AP-102/104 Mixing...Design	Yes	Yes	Yes	MED: No change control evident	No, 120.B42 is a successor (Start to Start) instead of a predecessor, and 120.B15 should be replaced by 120.B10 as a predecessor.		HIGH: In "changes to the mid-level logic" there's risk incorporating a sampling system: needs captured in TBR. Risk linked with compressed schedule, design, construction, and testing for tanks AP- 102, AP-104, & AP- 105 will be performed, at the same time as other projects (mainly W- 314). Activity is larger than any recent experience in TWFS and needs identified.			
120 B45 - W-211 Install 241-AP-102/104. Construction & Acceptance...	Yes	Yes	Yes	MED: Same as 120.B35	Yes, but 120.B40 and 120.B35 could not be found on the mid-level logic.		Same as 120.B35			

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

RTP Self Assessment: Items Requiring Disposition

TBR Number	Question 1 Is TBR complete?	Question 2 Are all items identified?	Question 3 Is the TBR complete? Is the TBR complete? Is the TBR complete?	Question 4 Is the TBR complete? Is the TBR complete? Is the TBR complete?	Question 5 Is the TBR complete? Is the TBR complete? Is the TBR complete?	Question 6 Is the TBR complete? Is the TBR complete? Is the TBR complete?	Question 7 Is the TBR complete? Is the TBR complete? Is the TBR complete?	Question 8 Is the TBR complete? Is the TBR complete? Is the TBR complete?	Question 9 Is the TBR complete? Is the TBR complete? Is the TBR complete?	Question 10 Is the TBR complete? Is the TBR complete? Is the TBR complete?	Question 11 Is the TBR complete? Is the TBR complete? Is the TBR complete?	Question 12 Is the TBR complete? Is the TBR complete? Is the TBR complete?
150 - 211 Install 1-AP-102/4... verability testing...	Yes	Yes	Yes	Yes	MED: Same as 120.B35	No, 120.B60 is a predecessor, and 130.B40 should be added as a successor. 120.B55 couldn't be found on the mid-level logic, and the whole scope of this TBR seems to be covered by 120.B50.	Same as 120.B35	Same as 120.B35	Same as 120.B35	Same as 120.B35	Same as 120.B35	Same as 120.B35
155 - 211 Install 1-AP-102/4... verability testing...	Yes	Yes	Yes	Yes	MED: Same as 120.B55	Same as 120.B50	Same as 120.B50	Same as 120.B50	Same as 120.B50	Same as 120.B50	Same as 120.B50	Same as 120.B50
150.D25 - characterization	LOW: Yes, per the checklist in the TBR and my review.	LOW: Yes, the technical basis is clearly written and corresponds well with the estimating input sheets.	LOW: Yes, the functional requirements, as well as the estimating input sheets, provide a complete picture of this activity.	MED: It appears that the approvers were appropriate, and all signatures were obtained. However, at this point one cannot determine the effectiveness of the change control system. No change log attached.	LOW: Yes, the MED: Same as 120.B35	LOW: Yes, the MED: Same as 120.B35	LOW: Other than uncertainties identified enabling assumptions or risk issues, nothing was identified as TBD.	MED: Assumptions are described briefly, appear to be result of experience and easily understood. Three risks are identified, and as a whole are classed as Amber. Possibly another risk regarding DQOs now being written, in that products produced are not satisfactory to the customer for those documents - Process Engineering.	LOW: No	LOW: Yes	LOW: Yes	LOW: Yes

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

TVR RTP Self Assessment: Items Requiring Disposition

TBR Package Number	Question #1 Is TBR complete?	Question #2 Are sufficient requirements identified?	Question #3 Does scope statement communicate work to be done? Is rationale for "out of scope" package?	Question #4 Are configuration management controls effective?	Question #5 Is indicated predecessor and successor consistent with mid-level logic?	Question #6 Are enabling assumptions correct?	Question #7 Are risk levels and understanding actions identified?	Question #8 Any open technical items?	Question #9 Are connections with other activities well documented? Identified?	Question #10 Are approved signatures provided?
120.D35 - Perform a Maximum Implied Radionuclides Trade Study	LOW: TBR is complete.	LOW: Scope is to perform and issue a trade study. That scope is sufficiently defined.	LOW: Scope is to conduct and issue a trade study to ensure waste feed would not violate bounding source terms established in safety analysis and other documentation for retrieval and transfer system. Criteria for study will be further defined in SOW or Task Package Agreement Forms.	LOW: Change log accompanying TBR indicates such control is being applied.	MED: The successor activity listing of predecessors and successors did not correspond with latest mid-level logic.	MED: Enabling assumption relates to what may be consequence of trade study, i.e., addresses scope, schedule, and funding to resolve potential problems that may be identified. Such an enabling assumption should be included in the successor design/construction activities, e.g., 120.D65/D75.	MED: The risk issue identified relates to potential changes in scope, cost, or schedule for design, construction, or operations. These risks should be captured in the successor design/construction activities, e.g., 120.D65/D75.	LOW: No open items.	LOW: Interfacing activities and organizations in Section 5 is overly brief based on description of technical basis and references in Sections 1 and 2. However, should be sufficient to lead the investigator to study what needs to be studied.	LOW: Signatures are provided.
120.D40 - Confirm Plans and Requirements	LOW: Very comprehensive package for a \$14K task - perhaps this could be combined with another task? No start/complete date.	LOW: Definition provided.	LOW: Detail provided.	LOW: Change log provided; back check of changes not complete.	HIGH: Not consistent with mid-level logic.	MED: Need to add characterization data needs and test result expectations.	MED: Author claims little or no risk. Recommend contingency planning in the event that author is incorrect.	MED: One reviewer claims that "this TBR is useless or irrelevant". Recommend closure of this comment ASAP.	MED: It is not clear who the decision maker is.	LOW: All signatures provided, including support staff.

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

R.R. RTP Self Assessment: Items Requiring Disposition

TBR Package Number	Question 1: Is TBR complete?	Question 2: Do some statements or comments in the TBR appear to be insufficient to serve as a decision-making package?	Question 3: Are conditions in the TBR that require immediate attention?	Question 4: Is the TBR consistent with risk management logic?	Question 5: Are the TBR assumptions reasonable?	Question 6: Are the TBR assumptions reasonable?	Question 7: Are the TBR assumptions reasonable?	Question 8: Are the TBR assumptions reasonable?	Question 9: Are the TBR assumptions reasonable?
AB15 - NW/BLAW	MED: Missing P-3 schedule, also intertwines with the maintenance strategy document, but does not list maintenance strategy as a reference.	HIGH: This TBR does not stand alone and relies on several (cultural practices) to be changed by Engineering, Operations, Maintenance, and Projects.	LOW: Controls in place.	MED: TBR identifies more predecessors than is indicated on current logic diagram.	HIGH: Assuming the DOE Order 4330.4b compliance will make you successful in implementation is a very poor assumption. We have proven this over several time frames in recent past. Having an implemented strategy for maintenance in place by October 2000 is probably to late. There should be an assumption that there is an operations long-range schedule that will be able to integrate with the TWR/WFD schedule with the high risks involved in not having one.	HIGH: Risks are pointed at jurisdictional issues, this is not addressing the risks of not performing this activity or the assumption of being incorrect. Risks should address interfaces unclear, schedule improvements, etc.	LOW: No	MED: This TBR is to build one of the products needed by 1/12/98, I will need to review TBR along with the Maintenance Strategy Section of the Site System Plan to determine consistency. Currently there is no tie between Site System Plan and this TBR yet TBR describes Maintenance Strategy. FY 2001 is probably too late. Products are easily identified, but poorly defined.	LOW: Approval signatures are in place.
30 B20 - retrieval	LOW: Yes, per checklist and my review.	LOW: Scope is relatively simple.	LOW: Evidence the change log was used appropriately.	LOW: Yes	LOW: Yes	LOW: Yes	LOW: No	LOW: Yes	LOW: Yes

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

WYR RTP Self Assessment: Items Requiring Disposition

70600.97.001 ATTACHMENT 2 Page 7 of 21	TBR Package Number	Question #1 Is this complete?	Question #2 Are sufficient requirements identified?	Question #3 Does scope statement commensurate work to be done; is it sufficient to define the mission's priority?	Question #4 Are configuration management controls effective?	Question #5 Is indicated performance and schedule consistent with mid- level logic.	Question #6 Are enabling assumptions correct?	Question #7 Are risk issues and risk-handling activities identified?	Question #8 Any open checklist items?	Question #9 Are connections with other packages identified?	Question #10 Are approved signatures present?
	130.B65 - (LAW) Perform Assessment to Determine Overall Readiness...	MED: Requires the development of planning for three additional activities.	LOW: Basic technical requirements specified.	MED: Planning incomplete as indicated by the author; three additional activities need to be planned.	MED: Change control sheet with cost package provided no indication of controls in place.	HIGH: Not consistent with mid- level logic.	LOW: Uses similar task as a planning basis.	MED: General statement for risk and proposed risk- handling actions. Recommend use lessons learned from recent readiness review activities.	HIGH: No checklist	MED: Provided in general terms.	HIGH: No signatures
	130.N10 - Characterization /Operations	LOW: Yes, the appears to be complete, although no checklist is attached.	LOW: Yes, the scope is relatively simple. Technical basis refers to "Disposal Project".	LOW: Yes	LOW: This is evidence that the change log was used appropriately.	LOW: Yes	MED: "developing a and implementing a procedure to determine Wt% in the IIA Hot Cell" will find 4 areas of improvement that can be achieved for less than \$50K each. The "TBD" is the potential improvements, but should ask what if improvements identified cost more than \$50K each, and estimating assumption doesn't agree with Basis of Estimate (4 vs 3 areas of improvement).	MED: There may be more risk associated with the enabling assumptions than are addressed by the risk issues. For example, one assumption is that a DQO to be developed could result in a "significant change in scope and schedule," but this is not addressed in the risk issues section.	Unknown, not attached.	LOW: Yes	MED: No

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

R RTP Self Assessment: Items Requiring Disposition

TBR Item Number	Question 1 Is the checklist adequately identified?	Question 2 Are the resources adequately identified to address the requirements?	Question 3 Does the TBR document adequately identify the requirements?	Question 4 Are the resources adequately identified to address the requirements?	Question 5 Is the logic adequately identified to address the requirements?	Question 6 Are the resources adequately identified to address the requirements?	Question 7 Are the resources adequately identified to address the requirements?	Question 8 Are the resources adequately identified to address the requirements?	Question 9 Are the resources adequately identified to address the requirements?	Question 10 Are the resources adequately identified to address the requirements?	Question 11 Are the resources adequately identified to address the requirements?	Question 12 Are the resources adequately identified to address the requirements?
0.810 -	HIGH: Checklist not complete. Requirement not adequately identified.	HIGH: TBR does not identify any DOE Orders, SRIDS, or PHMC requirements.	HIGH: Not all items addressed from resource sheets. Resources to identify the SSCs may be adequate in hours but don't show operations or design authority, which are essential, and could be a limited resource for the overall schedule. Recommend Operations and design authority be added to the resource profile. Resources identified for amending SEL should be design authority not NS&L. The significance is the design authority resource may be a limited resource. Recommend resource profile be changed.	HIGH: None used.	LOW: On the Pure Logic Diagram, the logic seems to show that amending the SEL is a predecessor to Prepare Final Safety Analysis documentation. I must assume that this is a FS&L, since the SEL would be based on the approved authorization basis.	MED: An attempt should be made to update the enabling assumptions since this activity is in progress. It should be possible to better define the scope of the effort now. If not, then the resources needed to have contingency added to allow for the uncertainty.	LOW: Yes	MED: Checklist items seem complete, but it is not signed off.	MED: Not specific to this TBR, but looking at schedule element XI60H25 (confirm AY-102 is acceptable for feed), it needs to be noted that HTI will be adding material to AY-102 after that date. Recommend that another schedule element be added to the schedule to confirm the acceptability of AY-102 as feed after HTI is finished transferring material from C-106 (estimated time - December 2000).	Question 13 Are the resources adequately identified to address the requirements?	Question 14 Are the resources adequately identified to address the requirements?	

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

TWR RTP Self Assessment: Items Requiring Disposition

TER Package Number	Question #1 Is TWR compliant?	Question #2 Are sufficient requirements identified?	Question #3 Does scope statement committee work is to be done, to stand-alone package?	Question #4 Are configuration management controls effective?	Question #5 Is indicated preference and decision consistent with mission?	Question #6 Are enabling assumptions correct?	Question #7 Are risk levels and risk-handling actions identified?	Question #8 Any open deadline items?	Question #9 Are contractors who other activities are identified?	Question #10 Are approved signatures provided?
150.B14 -	HIGH: Requirements are not complete, risks need to be expanded, and interfaces need to be expanded.	HIGH: No DOE Orders, S/RIDS, or PHMC procedures are identified.	MED: To function as a stand-alone package the scope statement needs to be expanded.	HIGH: None used.	LOW: Yes	MED: What is identified as an enabling assumption is a risk. Changes to TSRS require DOE approval. RL approval is one assumption.	HIGH: Unrated assumption W-211 safety documentation is incorporated in WFD safety documentation and both are processed as a single authorization basis amendment. If not, costs and schedule would be adversely impacted. No risk-handling actions identified. Not all risks identified. Lack of timely DOE approval of TSRS changes is a risk.	HIGH: Checklist is not signed off.	HIGH: Changes in interface with other organizations which are not identified.	LOW: Yes

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

RTP Self Assessment: Items Requiring Disposition

TBR Package ID#	Question #1 Is TBR complete?	Question #2 Are sufficient requirements identified?	Question #3 Does cover sheet contain a summary of the current status of the program? Is sufficient detail to serve as a guide for future planning?	Question #4 Are requirements identified in the TBR consistent with the program's mission?	Question #5 Is the TBR consistent with the program's level of effort?	Question #6 Is the TBR consistent with the program's current status?	Question #7 Is the TBR consistent with the program's current status?	Question #8 Is the TBR consistent with the program's current status?	Question #9 Is the TBR consistent with the program's current status?	Question #10 Is the TBR consistent with the program's current status?	Question #11 Is the TBR consistent with the program's current status?	Question #12 Is the TBR consistent with the program's current status?
0.B17 -	It is difficult to evaluate this TBR since it is written as a place holder for future activities.							Is a "place holder" to the individual technical and safety documents. No resources tied to it, to avoid double dipping. Assumption resources for authorization basis work will be supplied by current and future project and operational activity driving work. Concerned resources may not be identified at time of RTP memorandum, failure to identify these, funding, and schedule contingency could impact the RTP.				
0.B24 - Maintain ICDs	MED: Complete package; needs to remove budget back-up information, cross-walk tables, etc. May have incorrect dates in item 1(g). No start/complete date.	LOW: Definition provided.	MED: Package carries too much (0.5" thick) supporting information ~need to edit down to be more manageable.	HIGH: No controls in place.	LOW: Consistent with current mid-level logic for corrections.	LOW: Comprehensive list provided.	MED: No handling actions provided for known risk that the technical baseline will change: "Likelihood that the baseline will remain the same...is small." How will the programmatic impacts to these ICD changes be managed?	MED: Checklist completed - open issue regarding funding level.	LOW: "Connections" provided on attached table sorted by ICD designation.	LOW: All signatures provided (one date missing).		

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

TWR RTP Self Assessment: Items Requiring Disposition

Question #1 TBR Package Number	Question #2 Does scope statement communicate work to be in scope in a clear, concise, and standard phrase?	Question #3 Are sufficient requirements identified?	Question #4 Does scope statement communicate work to be in scope in a clear, concise, and standard phrase?	Question #5 Are configuration management controls effective?	Question #6 Is indicated predecessor and successor consistent with other logic?	Question #7 Are enabling assumptions correct?	Question #8 Are risk lines and risk-handling actions identified?	Question #9 Any open action items?	Question #10 Are connections with other activities and/or organizations identified?	Question #11 Are approved signatures provided?
150.B34 - LAW Obtain Grab Samples From 102-AP	MED: No checklist P-3 schedule and only one signature on approvals.	LOW: Requirements are identified.	MED: Number of samples unclear.	MED: Change control OK, but initial approval by one organization indicates lack of good configuration control.	HIGH: Successor activity EIS uses different assumptions for number of samples.	MED: Although hours are loaded on EIS, it's not clear how hours can be loaded when number of samples taken is not clear.	MED: Need to validate sample during testing, but does not indicate another activity is in place to do it.	N/A	N/A	MED: Only one signature on approval document.
150.B38 - LAW	MED: No checklist, No P-3 Schedule output.	LOW: Requirements are identified.	MED: Number of samples is unclear.	MED: Change control OK, but initial approval by one organization indicates lack of good configuration control.	HIGH: Predecessor activity EIS uses different assumptions for number of samples.	Assumptions assumes up to 19 grab samples, yet estimating assumption on EIS assumes 3 grab samples. Predecessor estimating work sheet shows only 1 sample taken yet both TBRs assume up to 19. This TBR's EIS identifies 1 grab sample.	HIGH: Says to insure expeditious negotiation with RL and vendor, but does not indicate responsible people or that activity is in place to perform.	N/A	LOW: Connections are made with other organizations.	MED: Only one signature.
150.B42 - LAW	LOW: All required documents included.	LOW: Requirements are identified.	LOW: Scope is clear.	MED: No change control evident. Change log was attached.	HIGH: According to Logic Diagram there should only be one predecessor and one successor. 150.B48 is not a successor to this TBR, but to the "sister" TBR concerning AN-105 Feed in AP-104.	MED: Assumptions will be used for most camera now use small gain in resources. Assumptions are well described, both in the text and in the estimate work sheets.	HIGH: Risk section is clearer, but impacts are not plan to resolve only identifies, is not a plan. Risks are less well addressed and not quantified. Don't understand risks from reading section 8 of TBR.	N/A	LOW: Organizational connections are made.	MED: Only Operations and CFO signatures.

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

R RTP Self Assessment: Items Requiring Disposition

TRB Package Number	Question 31 Is this response in this category requiring immediate attention?	Question 32 Does the response adequately address the commentary? Is it clear and concise?	Question 33 Are conditions management controls effective?	Question 34 Is the information and data presented in this response consistent with other responses?	Question 35 Are existing assumptions correct?	Question 36 Are the issues and recommendations clearly identified?	Question 37 Are open checklist items being updated?	Question 38 Are conditions that require further evaluation identified?	Question 39 Are approval signatures provided?
00 B44 - Deliver AN-105 ed ...	MED: There seemed to be an inordinate number of "N/A"s.	MED: 600 hours (no \$ shown).	LOW: Change log provided.	HIGH: No contacts shown. Successors don't show 130.E35, predecessors show 150.B42 and 150.B80 neither of which are direct predecessors on the logic diagram.	MED: W-314 Master Pump shutdown upgrade circuitry reducing NPOs per transfer from 8 down to 2 on EIS but not on TBR. W-211 installs equipment to do transfer on EIS assumptions and not on TBR assumptions. No mixing and settling is required is on EIS assumptions but not on TBR. All of these have impacts if not completed as per the EIS assumptions.	HIGH: "N/A" used.	LOW: Checklist provided and updated.	HIGH: "N/A" used.	LOW: All but Projects signed.
00 B52 - Perform Feed Status Study	MED: Requires additional scope definition, signatures, and resolution of checklist items.	HIGH: Need to expand description of alternatives to justify \$163K of funding for AGA trade study. Recommend using 5 alternatives as a planning basis instead of "3 alternatives or more".	HIGH: No controls in place.	HIGH: Not consistent with mid- level logic. Red- lined note indicates a logic change.	HIGH: None indicated, even though the basis for the AGA hinges on the outcome of a TBD PL meeting.	HIGH: Not quantified, and no risk-handling actions indicated.	MED: Checklist completed - open issue regarding funding level.	HIGH: No information provided.	HIGH: 10/20/97 revision is signed but the 11/6/97 revision is not.

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

TVR RTP Self Assessment: Items Requiring Disposition

TVR Package Number	Question #1 Is the project complete?	Question #2 Are all requirements identified?	Question #3 Does scope statement communicate work to be done? Is it sufficient to define the boundaries of the project?	Question #4 Are configuration management controls effective?	Question #5 Is indicated predecessor and successor consistent with end user input?	Question #6 Are enabling assumptions correct?	Question #7 Are risk issues and sub-issues identified?	Question #8 Any open schedule items?	Question #9 Are connections with other activities identified and identified?	Question #10 Are approved signatures provided?
160.A12 - Establish Preliminary Requirements...	MED: All boxes complete but not too well written.	MED: No \$, ~400 man-hours.	MED: Not especially clear.	LOW: Change log in place and changes already made.	MED: Only retrieval and safety mentioned.	MED: EA's not too clear.	LOW: Good job in describing.	LOW: Provided.	LOW: Small enough not to require many other organizations.	LOW: All signed except Projects.
160.A20 - Evaluate Alternatives for HLW Pretreatment Equipment	MED to LOW: Probably OK.	LOW: 187K.	LOW: Fairly well laid out.	MED: Change log in place, but nothing to indicate it's use.	LOW: Predecessors numbered with "xxx" only.	MED: EA's could be better stated.	LOW: Well described.	LOW: Checklist provided.	MED: Only 2 organizations linked.	LOW: All parties signed.
160.A32 - Upgrade 241-AZ-104 Design (sludge...	MED to LOW	LOW: Good description (~3,000 man-hours \$ not shown)	LOW	MED: Project engineer more comfortable with a 11/93 rather than a 06/93, start date since the project is on the critical path (6 months duration OK since FDNY will be doing the design they have been forewarned, and design personnel did a very similar job ~3 years ago.)	LOW: Good connections shown.	MED: EA's shown are mostly insignificant.	LOW: Well described.	LOW: Checklist shows all OK.	LOW: Good description.	LOW: All but Projects signed.

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

R R RTP Self Assessment: Items Requiring Disposition

TRC Bridge Number	Question #1 Is this component a TRC component?	Question #2 Are sufficient requirements identified?	Question #3 Does more information need to be done to identify the problem?	Question #4 Are unperformed management controls effective?	Question #5 Is related personnel and resources available with the task?	Question #6 Are existing management controls effective?	Question #7 Are risk factors well identified and understood?	Question #8 Any open choices about the task?	Question #9 Are recommendations about activities being implemented?	Question #10 Are personnel provided?
0.041 - Analyze Sludge Temperature...	MED: All boxes answered.	LOW: Definitive scope shown. SOW provided as backup. 54K	LOW: Background provided and more available through the cognizant engineers SOW (in his office).	MED: Change log included but no narrative. Originator showed a SOW that the thermal analysis won't be finished until one month (2/15/98) after the completion date in TBR. However, his task is not on the critical path and won't be unless the schedule slips beyond mid-June 1998.	MED: Only 2 shown.	LOW: Several provided.	HIGH: Quantified, but not defined.	HIGH: Checklist without detail.	MED: Not discussed much.	LOW: All provided.
0.042 - HLW treat A2-101	Yes	Yes	Yes	Yes	LOW: TBR reflects a project WXXX that is not on mid- level logic.	Yes	Yes	No	Yes	Yes
0.046 - Environmental	LOW: Yes	LOW: Yes, by reference to the estimating input sheets.	MED: The title, the technical basis, and the functional requirements are not consistent such that one has a clear idea of the nature of the task. But the scope can be understood from reading the estimating input sheets.	MED: Can't determine effectiveness of change control; no change log attached.	LOW: Yes	MED: Assumptions seem weak or not completely thought out; risk issues not quantified. But, we are looking at less than 20 MH of work.	SEE #6	LOW: No	LOW: Yes	LOW: Yes

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

TYBR RTP Self Assessment: Items Requiring Disposition

TYBR Package Number	Question 41 Signatures in TBR complete?	Question 42 Does copy submitted communicate work to be done, in accordance with the baseline package?	Question 43 Are configuration management control effective?	Question 44 Is indicated predecessor and successor consistent with mid-level logics?	Question 45 Are enabling assumptions correct?	Question 46 Are risk factors and risk handling measures identified?	Question 47 Any open schedule issues?	Question 48 Are connections with other activities and organizations identified?	Question 49 Are approved signatures provided?
240-4A0 - W-314 Master Pump Shutdown Upgrades	Yes	Yes	MED: No configuration management is evident	Yes, but 130.B25 should be replaced by 130.B20 as a successor	Yes, but enabling assumptions should be stated with "will" or "won't" instead of "is not planned".	Same as 240.4A0	No	Yes	MED: Approved signatures are not provided.
230-4F0 - W-314 AW Farm Upgrades	Yes	Yes	Same as 240.4A0		Same as 240.4A0		No risk definition on work sheets.	Yes	MED: Connection with other activities and organizations is overly brief (i.e., does not describe interconnections with safety and no ICDs are mentioned or referenced). Also, this level of detail is provided in Project W-464 documentation.
440-020 - Maintain ICDs	No, no signatures.	Yes	No, not under configuration control.	Yes	Some assumptions need to be reviewed as given DOE will fund activities, etc.		No	MED: A checklist was not included. The standard checklist item requiring P-3 logic is not at a low enough level to be meaningful. The lower level of detail is likely in Project W-464 schedules.	MED: Approved signatures are not provided.
440-100 - Design IHLW Storage Facility	MED: No signatures in Block 12. Reference document section does not identify documents by number(s), so not clear what they are, or whether they exist. Information in TBR Section 1-12 is quite brief.	LOW: Requirements for "design" IHLW Storage Facility" would be contained in design requirements document which is referenced. Requirements pertaining to this design effort are not sufficiently described.	MED: No evidence changes are controlled. The Schedule Activity Planning Form has not been modified to delete the safety analysis and permitting scope.	HIGH: Predecessor and successor activities are identified, and are consistent with mid-level logics. However, (not just for this activity) mid-level logic does not indicate detailed design outputs are required inputs to environmental permitting activities.	LOW: Enabling assumptions are thorough and well defined.	MED: Risks appear incomplete. For example, safety analysis and permitting processes could require corrective actions that would impact design. Also, there is risk associated with each of the enabling assumptions. These are not addressed.	MED: A checklist was not included. The standard checklist item requiring P-3 logic is not at a low enough level to be meaningful. The lower level of detail is likely in Project W-464 schedules.	MED: Connection with other activities and organizations is overly brief (i.e., does not describe interconnections with safety and no ICDs are mentioned or referenced). Also, this level of detail is provided in Project W-464 documentation.	MED: Approved signatures are not provided.

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

RTP Self Assessment: Items Requiring Disposition

TRC Package Number	Question 1 Is the requirement clearly stated?	Question 2 Is the requirement clearly stated?	Question 3 Is the requirement clearly stated?	Question 4 Is the requirement clearly stated?	Question 5 Is the requirement clearly stated?	Question 6 Is the requirement clearly stated?	Question 7 Is the requirement clearly stated?	Question 8 Is the requirement clearly stated?	Question 9 Is the requirement clearly stated?	Question 10 Is the requirement clearly stated?	Question 11 Is the requirement clearly stated?	Question 12 Is the requirement clearly stated?
140 - dty/struct item	HIGH: Requires additional development in most areas. This package is a budget "place holder" that refers to other budget data.	HIGH: Insufficient definition to support \$23M budget.	HIGH: Scope statement very general and non-specific.	HIGH: No controls in place.	HIGH: Not consistent with mid-level logic.	HIGH: Only general information provided, nothing specific.	HIGH: No strategy to manage interface with Spent Fuel program. Author claims that "no trade studies identified at this time" - difficult to accept given the \$23M budget.	HIGH: No checklist	HIGH: Inadequate information provided.	HIGH: No signatures.		
530 - HLW Storage/posal	HIGH: No approvals or reference to Project files W-464.	HIGH: No functional requirements listed or reflected.	MED: Very little description of scope.	MED: Page 12 of 12 indicates some configuration management material.	MED: Management estimate work sheet survey (page 10 of 12) is too high!!	Yes	Yes	HIGH: No checklist	Yes	HIGH: No signatures.		
015 - HLW Storage/posal	HIGH: No approval on 11/20/97 when copy was reviewed.	Yes	Yes	HIGH: No approvals identified.	LOW: New knowledge is required in the form of Engineering studies.	Yes	Yes	HIGH: No checklist.	Yes	HIGH: No approval.		
075 - Storage/Disposal	The package does not contain a (ALL activity package) checklist, signature page, nor ending assumptions (N/A, stated without explanation).	See 3	No, one must go through the estimating work sheets to sort out the different tasks.	No approvals apparent, no change log.	Yes	Nothing identified as TED	Assumptions and risk issues are poorly described.					

New Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

MYR RTP Self Assessment: Items Requiring Disposition

TBR Priority Number	Question #1 Is the company describing this risk information is apparently in the references cited (e.g., HNF-SD- WN-PAP-062) and has not been repeated in the TBR.	Question #2 Is the company's definition of the risk in the cited document (HNF- SD-WPA-PAP- 062).	Question #3 Does the company communicate work to be done is sufficient detail to serve as a stand-alone package?	Question #4 Are configuration management controls effective?	Question #5 Is indicated predecessor and successor consistent with mid- level logic?	Question #6 Are enabling assumptions correct?	Question #7 Are risk factors and risk-handling actions identified?	Question #8 Any open decision items?	Question #9 MED: In view of RI's policy on integration of vadose zone and groundwater management issues, including integration of transport modeling and risk assessment for stewards consistency, those interfaces should also be identified.	Question #10 Are approval signatures present?
140 - "1998 PA"	LOW: Much of the information describing this risk is apparently in the references cited (e.g., HNF-SD- WN-PAP-062) and has not been repeated in the TBR.	LOW: Most of the definition is in the cited document (HNF- SD-WPA-PAP- 062).	LOW: TBR can serve as stand-alone package, but referenced documents provide additional detail not repeated in the TBR.	LOW: Controls appear to be in place as shown in change log, page 14 of 14.	LOW: Predecessors and successors listed are consistent with mid-level logic.	LOW: Enabling assumptions are thorough and well- defined.	LOW: The identified risks appear incomplete. However, per conversation with the author, a more thorough list of some 30 risks associated with this and related mid-level logic PA activities has been identified and documented in the ILAW risk management plan.	LOW: Checklist was not provided. However, all items on the standard checklist are complete.	MED: Approval signatures are not provided.	Are approval signatures present?

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

RTP Self Assessment: Items Requiring Disposition

TBR Package Number	Question 1 Is this information in the TBR complete?	Question 2 Are sufficient requirements identified to ensure the TBR is complete?	Question 3 Do the requirements identified in the TBR provide a clear stand-alone package?	Question 4 Are configuration management requirements identified in the TBR?	Question 5 Is indirect predecessor information identified in the TBR?	Question 6 Are enabling assumptions identified in the TBR?	Question 7 Are risks, including enabling assumptions, thoroughly identified?	Question 8 Are the risks, including enabling assumptions, thoroughly identified? Are the risks, including enabling assumptions, thoroughly identified?	Question 9 Are the risks, including enabling assumptions, thoroughly identified? Are the risks, including enabling assumptions, thoroughly identified?	Question 10 Are the risks, including enabling assumptions, thoroughly identified? Are the risks, including enabling assumptions, thoroughly identified?
0.040 - ILAW Interim Storage/ Disposal	LOW: Much of the information describing this task is apparently in the references cited (e.g., HNF-SD- WM-PAP-062) and has not been repeated in the TBR.	LOW: Most of the definition is in the cited document (HNF- SD-WM-PAP- 062).	LOW: The TBR can serve as stand-alone package, but referenced documents provide additional detail not repeated in the TBR.	LOW: Controls appear to be in place as shown in change log, page 14 of 14.	LOW: Predecessors and successors listed are consistent with mid-level logic.	LOW: Enabling assumptions are thorough and well- defined.	LOW: Assumptions are thorough and well-defined. However, risks appear incomplete, addressing only 5th enabling assumption. Per author, a more thorough list of some 30 risks with this and related mid-level logic PA activities has been identified and documented in the ILAW risk management plan, including risks associated with each of the other enabling assumptions. Author indicated the key risk affecting this activity was the one cited which deals with uncertainties involving which of two separate DOE Orders (old 5820.2A and new 435.1) will be applied in DOE- HC review of the 1998 PA for ILAW.	LOW: Checklist was not provided. However, all items on the standard checklist are complete.	MED: In view of RL's policy on integration of vadose zone and groundwater management issues, including integration of transport modeling and risk assessment for site-wide consistency, those inertness should also be identified.	MED: Approval signatures are not provided.

review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

VR RTP Self Assessment: Items Requiring Disposition

TBR Number	Question 1 Is TBR complete?	Question 2 Are all requirements identified?	Question 3 Does the work to be done, is sufficient detail to serve as a guide for the program?	Question 4 Are coordination management complete effective?	Question 5 Is indicated predecessor and successor consistent with risk handling?	Question 6 Are enabling assumptions correct?	Question 7 Are risk items and risk-handling actions identified?	Question 8 Any open checklist items?	Question 9 Are open items with others identified?	Question 10 Are open items with others identified?
620.030 -	MED: USQ method used, but more information needed to make final decision. Recommend schedule element(s) be added to revisit results of USQ screens when more information available. Valuable tool, but recognize it can't be finished at this time. RTP resources should reflect additional resources at periodic intervals as design detail becomes available. Checklist not signed off.	MED: Requirements statement is descriptive, but does not refer to any DOE Orders or PHMC schedule element(s) or PHMC procedures.	LOW: Adequate for this TBR.	HIGH: Not used.	N/A for this TBR	LOW: Yes	MED: Risk is identified, but the risk-handling actions need to be expanded.	HIGH: Checklist not signed off.	MED: None identified. Input will come from various orders. Should identify the big ones.	LOW: Yes

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

RTP Self Assessment: Items Requiring Disposition

TBR Package Number	Question 1 Is TBR complete?	Question 2 Does scope section in the plan contain the technical basis authorization section and is clear.	Question 3 Are all TBRs identified and controlled effectively?	Question 4 Is the TBR strategy a plan for RTP. It is described as a document that will continue to evolve as additional technical and programmatic information becomes available. This is adequate for this document. The estimating input sheet (page 3 of 3) for schedule item 62005080 looks like a generic insert and is not consistent with sheet (page 1 of 3).	Question 5 MED: Assumptions cover main authorization basis scope drivers. No discussion if impacts are not met. It's assumed PCSs operate within TWRs authorization basis. Even if true, will involve extensive TWRs review of PCS procedures, design media, etc. Recommend RTP team assure the resources the PHMC must apply to review of OFCs products is captured in resource loaded schedule.	Question 6 Are risk issues identified?	Question 7 Any open activities?	Question 8 Are interfaces with other activities are listed.	Question 9 Are signatures provided
050 - Nuclear Safety Licensing	MED: Still in progress.	LOW: The scope statement is contained in the technical basis section and is clear.	HIGH: The TBRs are not under configuration control.	LOW: Licensing strategy is a planning document for RTP. It is described as a document that will continue to evolve as additional technical and programmatic information becomes available. This is adequate for this document. The estimating input sheet (page 3 of 3) for schedule item 62005080 looks like a generic insert and is not consistent with sheet (page 1 of 3).	MED: Assumptions cover main authorization basis scope drivers. No discussion if impacts are not met. It's assumed PCSs operate within TWRs authorization basis. Even if true, will involve extensive TWRs review of PCS procedures, design media, etc. Recommend RTP team assure the resources the PHMC must apply to review of OFCs products is captured in resource loaded schedule.	MED: Risk issues are identified. Handling actions need to be developed further.	HIGH: Yes	LOW: Yes	LOW: Yes
1060 - Environmental baseline	LOW: All areas are addressed.	LOW: Provides Phase 1B permitting plan, based some on input from individual projects defining permitting needs. Could serve as stand-alone, but more detail is available in references.	LOW: Change log accompanying TBR package indicates controls are in effect.	MED: Identified predecessors and successors are not consistent with current mid-level Waste Feed Delivery DQO.	LOW: Enabling assumptions are thorough and well defined.	MED: No risks that would jeopardize conducting this activity are identified. This activity is described as a risk-handling activity for activities conducted during Phase 1B.	LOW: Checklist is provided and all listed items are covered.	LOW: Interfaces with projects and activities are listed.	LOW: Approval Signatures are provided

View Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention. MED. LOW

WYR RTP Self Assessment: Items Requiring Disposition

TBR Package Number	Question #1 Is TBR complete?	Question #2 Are sufficient references provided, and are the requirements identified?	Question #3 Does the assessment statement contain sufficient detail to permit the work to be done as intended?	Question #4 Are conditions being met, and are the controls effective?	Question #5 Is indicated predecessor and successor consistent with mid-level logic?	Question #6 Are enabling assumptions thorough and well-defined?	Question #7 Are risk levels and risk-handling actions identified?	Question #8 Any open questions or issues?	Question #9 Are interfaces with DOE in permitting activities not addressed?	Question #10 Are the signatures provided?
620.070 - Update Environmental Baseline	HIGH: Programmatic permitting activities (RCKRA Part B, air operating permit, and NEPA evaluations per the TWRIS EIS ROD) are not included in schedule logic or resources. These activities are included in the technical basis section, and confirmed by the technical contact person as included in scope.	LOW: Through the references provided, the task are identified in sufficient detail to conduct the work scope.	HIGH: Scope statement identified work scope related to programmatic permitting (see response to Q1) that is not addressed in logic, schedule, or resources sections of this TBR.	LOW: Change log indicated controls are in place and effective.	MED: Predecessors and successors not consistent with mid-level logic relative to Activity 620.053, Section 2 of TBR states final design for projects W-030, W-211, W-314, W-370, W-454, W-451, W-519, W-464, and W-465 needed to complete activity. Such logic ties are not shown on mid-level logic, and if necessary, would significantly delay completion of this task. Permitting is potentially constrained by detailed design activities.	LOW: Enabling assumptions are thorough and well-defined.	HIGH: Risks jeopardizing completion of this activity are not defined.	HIGH: As indicated in response to previous questions, logic, schedule, and resources for programmatic permitting activities are not covered.	MED: Interfaces with DOE in permitting activities is not addressed.	LOW: Approval signatures are provided.
620.090 - Maintain Environmental Compliance	Yes	Yes	Yes	LOW: Wrong TBR# referenced on cost estimate input sheets.	Yes	Yes	Yes	No	Yes	Yes

Review Comments: Estimate significance and give details (HIGH - very significant risk requiring immediate attention, MED, LOW)

70600-97-001

ATTACHMENT 3

**TANK WASTE REMEDIATION
READINESS TO PROCEED
SELF ASSESSMENT TEAM
COMMENTS**

Consisting of 20 pages,
including cover page

TANK WASTE REMEDIATION (TWR)

Readiness to Proceed (RTP)

Self-Assessment Team

Comments

December 1997

TWR RTP Self-Assessment Team Comments

December 1997

FROM: Mr. J. W. (John) Bloom

Discussion with Mr. T. W. (Tim) Bohan and T. L. (Tony) Jennings about the Operations Plan for RTP (November 20, 1997)

Mr. Bohan provided the Tank Farm Operations Waste Feed Delivery Execution Plan (draft). The status of the plan is that it is not complete, he will be working on it over the weekend to deliver the complete draft on November 24, 1997. It will be incorporated as part of the Program Systems Plans for Waste Feed Delivery. Mr. Bohan stated that he does not see having the time to spend to assure that the various components that are submitted for the Program Systems Plans are consistent with each other and don't have gaps that must be addressed. *Additional help will be needed to do this integration, and completeness review.*

Discussion was held about the mid-level logic (MLL) decomposition. My assessment is that the decomposition was well done, at the proper level and had reasonable resources allocated to the tasks. The MLL had been decomposed into the discreet steps needed to support the higher level activity, the right expertise was used or consulted to allocate resources and estimate durations.

Current activity is correcting/adding/deleting logic ties as necessary to make the schedule reflect how work is to be done. After some discussion, I am convinced that again the right process is being used to do this and the right expertise is being used to make the key decisions.

The integration of the schedule with the multi-year program plan (MYPP) and the balance of the schedules being prepared as part of the readiness to proceed (RTP) is outside of operations (Mr. Bohan's) scope. *Additional folks having the working level expertise will have to be added to the RTP staff to assist with the schedule integration. THIS PART OF THE TASK IS TOO IMPORTANT TO ASSIGN TO SCHEDULERS WHO HAVE NOT PERFORMED THE WORK THEY ARE SCHEDULING.* Also, for this part of the work experienced production control schedulers would be more useful than program schedulers. *It is my judgement that the integration is too large a task to be completed with quality in time to meet the January 12, 1998 commitment date.*

An observation that I will make is that the RTP team is working hard to prepare an integrated schedule covering the RTP scope. To be useful for an RTP decision it must be integrated with all other schedules that will be competing for the same resources. I understand that the RTP network is being integrated with the MYPP schedule. However, Mr. Bohan stated that the Project schedules, e.g., W-211 are level of effort (LOE) schedules with little resource details. This will distort the real resource picture. For successful schedule implementation, the devil truly is in the details.

A concern of mine is that the effort and resources needed to maintain a detailed, resource loaded schedule is not appreciated by key decision makers. Tank Waste Remediation System (TWRS) has been at the edge of a true resource loaded schedule several times in the last five years and still does not have one. There is a reason for this - it is very costly. I don't believe that the cost of maintaining a resource loaded schedule is included in any of the planning for RTP or TWRS. Lacking a resource loaded schedule we cannot make a RTP decision with confidence, or manage the continuing efforts in a manner that will assure that the required resources and funding are identified and available as needed.

Discussion with Mr. D. P. (Dennis) Kerwick and Mr. T. L. (Tony) Jennings about the Maintenance Plan for RTP (November 21, 1997)

Mr. Kerwick told us that he had submitted the Maintenance section for the Program Systems Plans. Of the balance of the Program Systems Plans, he has only read the Characterization section. While he has had extensive discussions with Mr. Bohan, he has not seen the Operations section. He, like Mr. Bohan, did not feel that he would be able to provide the time to review the Program Systems Plans for consistency and completeness. *I recommend that additional help be brought in with maintenance experience to perform the review of the Program Systems Plans.*

December 1997

When asked if he felt the maintenance section would be consistent with the multi-year work package (MYWP) and the LCAM, he stated that he was OK with the MYWP, but could not be consistent with the LCAM, since it did not exist. Subsequent discussion with Steve Schaus (LMHC) and Brian Hendel (+TRW) uncovered that 430.1 had been deleted from the PHMC contract and the RL implementing procedure was reported to be very "vanilla", with no hard requirements. Therefore consistency with the LCAM is not a meaningful requirement from the 37 point checklist.

Dennis stated that Project W-211 is not providing spare parts. *It is recommended that steps be taken to assure adequate spares are on hand prior to start of waste feed delivery.* Without assurance of spares when needed, the plant could not be considered RTP.

Dennis also noted that he does not yet have sufficient information from W-211 or W-314 to determine the level of resources needed to support these projects. This seems to be a big hole in the ability of TWR to project an adequate spending/staffing profile. *It is recommended that the projects be reviewed to assure that adequate funding is identified for the plant resources needed to support the projects.* This would still leave open the issue of adequate staff availability even if funding is adequate. Dennis expressed some concern that funding and headcount often seem to have different drivers and are viewed as separate issues. He was not comfortable that having adequate funding implied having adequate staff to perform the work.

Dennis stated that he felt a risk existed because of the lack of redundant systems. A system failure required repair or replacement to restore operation. This puts added importance on the maintenance of an adequate spare parts inventory. *It is recommended that the spare parts funding and procedures be reviewed for adequacy to support an operations mode.*

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FROM: S. M. Byers

Enabling assumptions in the TBRs are not always crisp, nor do they correspond to the EAMCS. [Understand that this is being addressed]. Those in the EAMCS are generally well described.

Risk issues in the TBRs are often stated vaguely. [Understand that risk management document is being reworked, but will the TBRs be brought up to date?]

Data Quality Objectives may not be adequately addressed nor acceptable to the customer organization. [Understand that the customer organization is addressing this problem by preparing one of the DQOs to establish expectations]

In very broad sense one must question how the extremely detailed planning and scheduling for TWR will eventually match up with the less detailed approach of Operations.

TBR Estimating input sheets were thorough and detailed. A good job by the estimators.

TBR configuration control and maintenance is important.

Overall, the amount of variation in quality across all documents (TBRs and other major products) is disturbing. Much of the variation is likely due to the preliminary stage of some of the documents or products, but that is a problem considering the schedule for declaring readiness. Linc's expectation for quality needs to be on everyone's mind during every task they perform. Frequent re-emphasis of this point, as well as recognition of acceptable (and better) products as they are created, will help raise the quality of our work.

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FROM: A. F. Chocho

READINESS TO PROCEED SELF ASSESSMENT REVIEW REPORT

Documents reviewed:

- ◆ Readiness To Proceed Plan for M&I Contractor Work Scope In Support Of TWRs Phase 1B Privatization, HNF-SP-1241, Rev.0,
- ◆ Technical Basis Reports # 050.030, 050.050, 110.070, 120.B35, 120.B45, 120.B50, 120.B42, 240.4A0, 250.4F0,
- ◆ Tank Waste Remediation System Tank Waste Retrieval Risk Management Plan, HNF-1753, Rev.0,
- ◆ STRATEGY: System for Managing and Controlling Enabling Assumptions TWRs Retrieval and Disposal Program September 2, 1997, and
- ◆ Technical Basis Summary Description: draft Introduction provided by Russ Treat.

Comments: The general hierarchy of the RTP documentation and the process used to generate it, are not explained comprehensively enough in the RTP Plan, which thus fails to generate the required credibility for the final cost and schedule products. A very clear explanation was obtained from Hal Halverson, who also drafted such an explanation in writing. It is strongly recommended to include this type of information in the RTP Plan or in any other introductory document.

The incomplete status of most documents did not allow a systematic review.

General and specific comments were made on the TBRs (see specific reports).

The Risk Management strategy was identified as an area needing improvement, suggestions were made, that resulted in the implementation of a path forward by the RTP team (see specific report).

The Enabling Assumption documentation is at the information gathering stage, and a plan exists to turn it into an information updating and processing tool. However, like the initial Risk Management strategy, this area is currently being managed at the TWRs Retrieval and Disposal (TWRs R&D) organization level, not at the whole TWRs level. It is recommended to generate a TWRs Enabling Assumption Management Plan, instead of a Plan limited to TWRs R&D.

The Technical Baseline Summary Report Introduction section appears to address the intent.

Another assigned area of review was the Interface Control Documents (ICDs). The only documents available for review were the Privatization ICDs, which have been produced and extensively reviewed prior to the Readiness To Proceed (RTP) effort. Therefore, on this matter, the review was concentrated on understanding the RTP process for ensuring that all technical interfaces between TWRs and other organizations were addressed appropriately. On December 2, during a meeting involving the RTP team (Rick Wojtaszek, Brian Hendel), the site Systems Engineering group (Jo Ferguson, Mike Grygiel), and Fluor Daniel Hanford (Tim Veneziano), the following was decided:

- ◆ The material flow interfaces within the PHMC, e.g., liquid/solid wastes, utilities, will be managed through the Hanford Site Technical Database (HSTD), managed by the site SE group. This database is not complete yet, but site SE is in the process of generating it. For the purpose of the Readiness to Proceed demonstration, (1) site SE will provide samples of interface management matrices, and (2) the RTP, together with FDH, will check a few interfaces between TWRs and other PHMC facilities for the validity of their management by the HSTD.
- ◆ The site SE group will produce a site interface management procedure, which will specify the distinct uses of Memorandum Of Understandings (MOUs) versus Interface Control Documents (ICDs).
- ◆ The hardware interfaces between projects, e.g. flange connection or crane sharing between Project W464 and the Canister Storage Building, will be managed by the concerned parties, through MOUs and ICDs, as appropriate. The corresponding interface management activities have been identified and costed in the TBRs.

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- ◆ This interface management strategy will be mentioned in the MAR and the Technical Basis Summary.

REVIEW OF THE TECHNICAL BASIS REQUIREMENTS PROCESS

Completeness: Most checklists have comments requesting enhancements or refinements of the schedules and cost estimates. Are the TBR master copies going to remain with these comments?

A systematic review of the TBRs versus the Mid-Level Logic is needed, especially for predecessor/successor identifications, and also for activity breakdowns into boxes.

A systematic review of the risks and enabling assumptions listed in the TBR packages (including the Estimating Input Sheets) is needed, and all risks/enabling assumptions need to be captured in the TBR write-ups and RTP upper level Risk/Enabling Assumption documents.

REVIEW OF THE RISK AND ENABLING ASSUMPTION LIST GENERATION PROCESS

References:

- ◆ HNF-1753 Rev.0 Tank Waste Remediation System Tank Waste Retrieval Risk Management Plan,
- ◆ RTP Checklist Item Review by JD Thomson: draft 24-Nov-97, and
- ◆ RML Status 11/26/97 PM, by Bruce Zimmermann:

Meetings:

- ◆ Friday, November 21, RTP Team 7AM meeting,
- ◆ Tuesday, November 25, RTP Team 7AM meeting,
- ◆ Tuesday, November 25, 11AM: meeting on RTP Risk and Enabling Assumption Lists generation, involving: Tim Veneziano, Randy Kirkbride, Larry Pennington, Bill Root, Ross Potter, J. Baldwin, Russ Treat, Russ Murkowski, Tim Bohan, Anne-Marie Choho, Bruce Zimmermann, Steve Seeman,
- ◆ Wednesday, November 26th, meeting called by Linc Hall, involving: M. Payne, J. Honeyman,
- ◆ H. Boston, P. Angelier, JN Alibert, W. Thompson, M. O'Neil, J. Van Beek, W. Rutherford, C. Rieck, M. Eben, and
- ◆ Monday, December 1st, 10AM, meeting with Linc Hall for directions on the RTP Risk Assessment.

Status of the RTP Risk and Enabling Assumption Lists generation:

Risk List: A Risk Management Plan was issued by the TWRS Retrieval organization (Harry Boston's organization). It describes the process to be used by this organization to generate and maintain its Risk List, based on the TWRS Retrieval WBS. This process is on-going, and the resulting Risk List, including Risk Management data (mitigation plan, owner, qualification of the risk, etc), is planned to be created by December 5th.

As highlighted in Jim Thomson's memo, there are discrepancies between this Risk Management Plan and the DOE requirement documents, as well as the draft Performance Agreements. Note that the Performance Agreements are still to be negotiated.

The Risk List being generated will capture risks per TWRS Disposal WBSs only. Owners of these WBS elements have been directed to review the relevant TBRs, and all identifiable related activities (even if not in the TWRS Retrieval organization), in order to capture all possible risks impacting their activity.

It is unclear if all Mid-Level Logic boxes, and thus, all TBRs, are covered by the TWRS Retrieval WBSs or if there are some activities covered by other WBSs. As a result, some risks identified in the TBR packages (in the TBRs themselves or in the Estimating Input Sheets) may not be captured in the Risk Lists.

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In addition, although the TBR format contains a "Risk" section, most of the TBR generators had not been provided with the Risk Management Plan at the time of their effort, so that (1) they may have misunderstood or underestimated the Risk section (see comments on TBRs), and (2) the risks identified in the TBRs, for the most part, lack the corresponding Risk Management data.

As a result, the Risk List currently being generated is likely to miss some significant risks associated with the Mid-Level Logic activities, which are the basis for the cost estimate and schedule parts of the January 12 package.

Enabling Assumptions: An effort is underway (R. Potter/J. Baldwin) to capture and update all TWRS enabling assumptions in RDD100. The source documents for that effort are: the MAR, TBRs, TWRSOUP, CDRs, FDCs, AGAs, and other RTP deliverables. Like for the risks, the TBRs do include a section called "enabling assumptions," but some enabling assumptions have been listed in the cost input sheets, and not in the main TBRs.

Recommendation: Conduct a systematic screening of all Mid-Level Logic activities that have been used for the cost and schedule exercise for their associated enabling assumptions and risks. This screening should include the following activities:

- ◆ Assign of a single point of contact for the TWRS Retrieval organization and the rest of the RTP contributors.
- ◆ Develop and document a Readiness To Proceed Risk List Generation Process, based on, but more specific than, the TWRS Retrieval Risk Management Plan. This process should describe how the risks were generated and analyzed at the WBS and Mid-Level Logic levels, who was involved, and what criteria were used to sort and prioritize the risks, and
- ◆ Distribute the plan to the lower level TBR producers as well as to the WBS element owners, and involve them in the process.

Path forward: In the December 1st meeting, Linc Hall gave the following directions:

All TBR owners, i.e.,

Operations, Tim Bohan
Retrieval, Randy Kirkbride
Nuclear Safety, John Harris/David Hammond
Characterization, Larry Pennington
Environmental Rebecca Raven

Projects, Jean-Noel Alibert
Storage and Disposal, George Williamson
Infrastructure, Bill Root
Other, Mike O'Neil

- ◆ Re-review their TBRs, or at least a significant sample of them,
- ◆ Articulate Risks with: Risk, Mitigation Plan (if any), Residual Risk (with probability and name of owner),
- ◆ Articulate any Enabling Assumptions with: Assumption, Basis, Associated Risk (if any) with probability, and
- ◆ Generate a list of Enabling Assumptions and a list of Risks.

This process will be describes in the revised Risk Management Plan that Linc will produce.

Daily update of these actions is requested by Don Mc Daniel.

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FROM: E. A. Fredenburg

Environmental permitting responsibilities are not consistently defined or assigned:

- ◆ 620.070 identifies programmatic permitting activities (i.e., RCRA Part B, air permitting, NEPA review) as within scope, but logic, resources, and schedule do not include such activities.
- ◆ 120.B35 TBR does not indicate W-211 project permitting activities are included, but discussion with project personnel confirms permitting activities are included, and are being performed.

Recommended solution: Modify 620.070 and TBRs for project to clarify respective permitting responsibilities. If 620.070 scope includes environmental permitting activities, modify mid-level logic to show logic ties to projects affected by those permits.

Environmental permitting activities in mid-level logics generally are shown as successors to conceptual design, with no logic ties to detailed design. Typically permitting will require output from detailed design.

Recommended solution: Ensure detailed schedules include finish-to-finish logic ties from detailed design to permitting activities for projects.

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FROM: T. L. Jennings

Review of Operations and Maintenance Strategy (12/01/97)

This review was conducted following a briefing by Dennis Kerwick and Tim Bohan. This review focused on the document drafted by Dennis Kerwick as input to the System Plan Appendix E, Maintenance Strategy.

Section E3.3 paragraph 1 and 2 addresses Safety as an Organization. This should probably address ES&H as an Organization.

Section E3.3 paragraph 2 Interfaces with the Radiological Controls, Engineering, and Hoisting and Rigging services are identified as being through the budgeting process. This interface should also be addressed through procedures and policies.

Section E4.0 paragraph 3, identifies that a Tank Farms Integrated Schedule "must be developed", but does not have a plan/strategy for how or who is to develop this Integrated Schedule. Development of a Tank Farms Integrated Schedule is clearly identified but maintaining this type of schedule is not inherent in the strategy. This is critical to mission success and therefore needs to be very clearly addressed in the strategy document.

Section E4.0 paragraph 3, the last sentence states that maintenance organization must have the ability to establish priorities for work that must be accomplished to support the TWR and WFD program schedule baselines. I disagree, I believe that the schedule baseline establishes the priorities of work and that change control of the schedule will keep priorities in line with the baseline schedule.

Section E4.0 paragraph 3, When discussing the Tank Farms Integrated Schedule it is important to understand that only 65% to 80% of the available resources should be loaded into the schedule. This gives the ability to complete daily "crisis/emergent" work as part of the daily schedule giving operations the flexibility they need, without compromising the longer range schedule that flows down from a Tank Farms Integrated Schedule.

Section E4.0 paragraph 5, Preventive Maintenance is identified as focusing on early detection of conditions that may lead to equipment failure. In fact, preventive maintenance is to maintain the equipment in a manner that assures it reaches its designed life. I believe that the strategy document should identify the need to optimize preventive maintenance. Paragraph 6 identifies the predictive maintenance program, this is where the discussion is on identifying equipment that may be ready to fail prematurely and needs to be replaced.

Section E4.0 paragraph 7, It is recommended that it be clarified that maintenance outages should be a part of the Tank Farms Integrated Schedule, and that each outage should have its own detailed schedule.

Section E4.0 paragraph 8, It is recommended that we not specify how we organize, but specify the principles used in organizing the maintenance organization. We should describe the principle of having the staff perform functions for all of TWRS maintenance with some people focused on more discrete functional areas using team approaches as appropriate.

Overall Comment: This maintenance strategy document is based on improvements identified as Maintenance Program. It is very closely tied to the Technical Baseline Requirements 130.B15 and 130.B16, both of which are identified within the Maintenance Strategy document. The improvements will require significant changes in the current practices of not only maintenance but operations, engineering, and various other support organizations.

Understanding that we are reviewing work that is in progress, I appreciate the cooperation and enthusiasm your team has displayed in working with us in resolving issues we have raised.

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I reviewed 5 Technical Baseline Requirements documents and found the following:

- ♦ Estimating work sheets were very detailed,
- ♦ Enabling assumptions on some TBRs did not include assumptions that were on the Estimating work sheets. (previously identified and being worked on by your team),
- ♦ Some TBRs had only the authors signature on the TBR for approval, this may indicate integration with the rest of the schedule as an area of concern, and
- ♦ Assumptions did not always have risks/impacts identified, (this has been previously identified and worked on by your team).

I reviewed the Maintenance Strategy Document Draft and provided comments and recommendations to the author which he agrees with. The Maintenance and Operations Strategies are being incorporated into the site system plan. This plan was issued previously as a draft without the maintenance and operations strategies incorporated. Both authors have concerns with getting proper reviews of their sections of the Site System Plan due to the short time left to get the product approved. I would like to offer assistance, if they request it, in the review of the product if it would help.

Overall Concern: The development of this kind of detail in a Long Range Schedule and Cost Baseline is a major improvement in business practices. My concern is how we maintain the schedule detail and how we integrate it with the current operations mission that does not have this kind of detailed Long Range Schedule. I know that the TWRS long range schedule is being discussed and has been assigned. The concern is that the TWRS Long Range Schedule has a very long way to go in order for the TWR/WFD Long Range Schedule to have something to integrate with. This issue may be an area of concern by DOE-RL during their review. I believe that only a little less energy will be needed for the TWRS long range schedule as has been required by your team for the TWR/WFD long range schedule.

Recommendation: I would recommend that a team be in place very quickly for TWRS and that your team's lessons learned would be helpful in accelerating the development of a TWRS Long Range schedule with the same level of detail.

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FROM: D. L. Lenseigne

Although my review time was limited I did spend a couple of hours reviewing the ICD document. I thought that the document was very thorough and went into a significant level of detail. Risks or open items were identified and actions identified to close the issues. After reviewing the document I tried to think of other interface type of items that may not have been considered:

- ◆ Requirement if any for additional groundwater monitoring wells.
- ◆ Requirement if any for backup boilers and associated fuel oil.
- ◆ Requirement if any for compressed air (may be insignificant).
- ◆ Requirement if any for additional security/patrol.
- ◆ Requirement for badging and training of new employees. Will there be a requirement for "cleared" personnel, if so, this could be an impact to schedule and cost. I understand we are planning for the training of the personnel so this shouldn't be an issue.

I also read through a couple of TBRs and found them to be short on narrative documentation. Descriptions of work to be performed and associated risks were not adequately discussed. Nothing close to the thoroughness of the ICD document.

I am concerned that regardless of the quality of the final submittal, if we cannot demonstrate through our detailed backup data (TBRs) that we have adequately assessed the work and considered the risks that a external review team would question the validity of the submittal.

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FROM: TJ McLaughlin

General: The orchestration and rationale of the Phase I RTP process has not reached the working level; as a result, some working-level RTP product authors may not understand the importance of their efforts.

The quality and readability of RTP documents varied considerably. Many of these documents seemed to have only recently been initiated.

TBRs: The process used to generate and decompose Level 1 logics is well thought out and documented; TBR products should be useful throughout Phase I. The detail provided in TBR's and subsequent decomposition varied depending upon originator. Because multiple TBR authors identified similar issues, in many instances TBR information is repetitive (e.g. Enabling Assumptions, Risks, etc.).

Regulatory and Licensing Documents: The draft LMHC position to decouple AP-106/8 from the existing Hanford RCRA Permit may not be tenable. LMHC may wish to have a backup plan should DOE-RL and the WIT Program Manager decline to accept Option 1 from the "Feed Tank RCRA Permit Issues."

Recommendations: If any, follow-on activity support from the self assessment team should include continued assistance to the RTP document authors, e.g. use the team as a "buffer" between the red team and the authors (primary goal is to keep the author mood positive).

Pay more attention to the "hints" laid out by DOE-RL's 8/8/97 RTP direction letter.

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FROM: J. D. Thomson

There is no apparent "standard" for the TBR packages. Some appear to be place-holders for planning media found elsewhere (not stand alone) and others are very comprehensive and detailed.

Recommendation: Select a good example of a TBR package and establish a standard or check list for all others. Use this as a metric to ensure consistent, good quality TBRs.

The mid-logic (some times referred to as the level 1 logic) is too complex to be effectively managed. Of the population of 600+ elements, some are valued at <\$20K and some >\$20M.

Recommendation: Simplify the logic and eliminate less important TBR packages. Manage the smaller elements (say <\$50-100K) at lower levels of the logic hierarchy.

Although the planning for many capital projects is well developed and under the control of specific project managers, no one is managing the integrated outcomes required for Phase I success.

Recommendation: Assign dedicated project managers with the decision authority for the integrated collection of activities necessary to ensure successful LAW and HLW privatization initiatives.

The current technical baseline is described with several different ICD processes, old (FDC) and new (DRD) project documentation, site-level requirements from the Hanford Site Technical Data Base, Privatization Contract scope, and TBRs. These represent a number of important (although different) perspectives. How has traceability of these requirements been demonstrated; from the MAR to/from lower level specifications?

Recommendation: Adopt some means (RDD-100, or other tool) to demonstrate two-way traceability (to/from) various TWRS technical requirement documents to the TBR package.

The August 8, 1997 RL letter (#9757162 A, W. J. Taylor to H. J. Hatch) expectations include: a) "... risk and decision management program ... implemented at all levels."; and, b) "... risk-handling actions for all medium and higher programmatic risks". The current RTP Plan, Risk Management Plan, and IP-0842 document are not consistent. These are to be revised based on senior management expectations developed over the last week.

Recommendation: Ensure that the new senior management strategy for risk management implementation:

- ♦ Is consistent with RL expectations (August 8, 1997, letter #9757162),
- ♦ Addresses the need for a decision management program, and
- ♦ Is consistent with FY 1998 PAs [see item 7 below].

What is the relationship between the TBRs and WBSs; is all WBS scope covered in TBR packages?

Recommendation: Be able to demonstrate crosswalks (to/from) the TBR packages and WBS elements.

The language in PA #3.2.1 and 7.1.1 (and to a lesser extent #2.4.2) place inconsistent requirements on the RTP Plan (and lower-tier Risk Management Plan and IP-0842).

Recommendation: Revise the criteria/specification language in PAs #3.2.1 and 7.1.1, to be consistent with the new risk management strategy.

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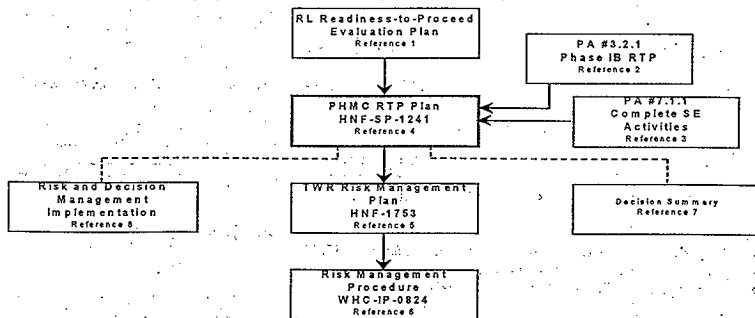
RTP Checklist Item: "A risk and decision management program has been implemented at all levels."

Review assumptions:

- ◆ The RTP requirements are defined letter # 9757162 A (reference 1), *READINESS-TO-PROCEED EVALUATION PLAN*.
- ◆ The RTP implementing document is the LMHC RTP Plan, HNF-SP-1241 (reference 4).

Summary Recommendations:

- ◆ Terms such as "current, critical, high, and medium" describing risk levels (references 2-6) need to be used consistently when describing the risk management process required by reference 1.
- ◆ The LMHC RTP Plan, HNF-SP-1241 (reference 4) should be revised to include a decision management process as required by reference 1.
- ◆ The criteria/specification language in draft PAs #3.2.1 and 7.1.1 should be revised to be consistent with LMHC management strategy and RTP planning documents.
- ◆ Procedure WHC-IP-0842, Volume IV, Section 2.6 *Risk Management* should be revised to reflect the PHMC risk management implementation strategy (less formal roll-up process with more flexibility for project-specific implementation).
- ◆ Although TWRs performance metrics exist (reference 8) for TWRs risk and decision management processes, these are not addressed in HNF-SP-1241. Some means should be identified in HNF-SP-1241 to report performance with risk and decision management programs.



References:

1. Letter #9757162 A, W. J. Taylor to H. J. Hatch, *FDH CONTRACT NUMBER DE-AC06-96RL13200 - TANK WASTE REMEDIATION SYSTEM (TWRs) PRIVATIZATION - HANFORD CONTRACTORS READINESS TO PROCEED*, 8/8/97.
2. Performance Agreement #3.2.1, *Provide a detail-based initial Resource-Loaded Project Schedule for Phase IB Readiness-to-Proceed by 12/12/98 (draft)*.
3. Performance Agreement #7.1.1, *Consistent with the Multi-Year Work Plan, complete all system engineering activities as described in Section 5 of this Performance Agreement (draft)*.
4. HNF-SP-1241, Rev 0, *Readiness-to-Proceed Plan for M&I Contractor Work Scope in Support of TWRs Phase IB Privatization*, issued 10/30/97.
5. HNF-1753, Rev 0, *TWRs Tank Waste Retrieval Risk Management Plan*, issued 11/03/97.
6. Procedure WHC-IP-0842, Volume IV, Section 2.6, Rev 0A, *Risk Management*, issued 9/30/97.
7. Memo, W. E. Bryan to W. M. Funderburke, *Update of the TWRs Technical Decision Status Summary*, updated 9/30/97.
8. Memo, B. D. Zimmerman to W. M. Funderburke, *Report of the Metrics Assessment of Current Tank Waste Remediation System Risk and Decision Management Implementation Status*, issued 9/30/97.

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Requirement/Deliverable	Analysis	Comment/Issue	Recommendation
SP-1241 RTP Plan			
From section 3.0 List of Critical Risks ". identifies technical, cost, schedule and programmatic events ...". Critical risks require DOE attention and/or the M&L contractors to minimize the likelihood/ impacts of undesired events through management actions.	Commitment to satisfy "risk" part of checklist requirement. Commitment only to critical risks (not those designated as "medium and higher").	No requirement for decision management program as specified in Appendix B. Not responsive to requirement to "describe risk-handling actions for all medium and higher programmatic risks" in section 2.2 (7) of ref. 1.	Reconcile disconnect between HNF-SP-1241 and RL Evaluation Plan. A TWRS decision program does exist (reference 7 and 8) and could be used for this requirement. Define "medium and higher risks" and establish effective performance metric.
Performance Agreement # 3.2.1 "Project Schedule" Section 3 Criteria/Specification (draft November, 1997)			
"Issue FDH-approved Risk Management Plan and Current Risk List."	Commitment to satisfy the requirement for a risk management plan. The term "current risk" is non-specific. Could refer to "critical risk", "medium or higher"	No mention of decision management plan (see above). Confusing language needs to be clarified.	Reconcile disconnect between SP-1241 and RL Evaluation Plan. Renegotiate section 5 of PA #3.2.1 to: -Clarify terms like critical or medium or higher risk; and, -Clarify RML "roll-up" requirements.
Performance Agreement #7.1.1 "Consistent with the MTRP, complete all SE activities as described in Section 5 of this PA." (draft November, 1997)			
Requires formal roll-up of lower-tier risk management lists and implementation of existing procedures.	Inconsistent with LMHC senior management strategy for risk management reflected in reference 5.	"Competing" risk management implementation strategies will compromise integrity of RTP risk management process deliverables.	Renegotiate PA #7.1.1 (reference 3) consistent with references 2, 4 and 5.
Deliverable(s)			
TWRS Tank Waste Retrieval (TWR) Risk Management Plan HNF-1753	Commitment to implement existing risk management procedure at all levels of the TWR system. Specifies responsibilities, training requirement, etc. Indicates "risk management part of day-to-day decision making". Refers to WHC-IP-0842, Volume IV, Section 2.6 Rev 0a for implementation. Commitment to produce RMLs per WBS by 11/14/97 and specified (by name) points of contact for all WBS elements. No mention of "critical", "medium or higher" risk.	Not responsive to requirement for decision management program as specified in Appendix B (last item in table). No specific performance metrics defined for implementation may be difficult to validate performance. [See below.] <50% of the Retrieval Program RMLs are in place. Potential RTP performance issue.	Reconcile disconnect between SP-1241 and RL Evaluation Plan and make revisions to this plan. Using reference 7 and 8 define some means in SP-1753 to demonstrate implementation performance. Implement corrective action to recover RML deployment schedule. Clarify through revision of PA #3.2.1 and 7.1.1 and/or HNF-SP-1241 text.

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Implementation of Deliverable(s)			
WHC-IP-0842, Volume IV, Section 2.6 Rev 0a; Issued September 30, 1996.	Comprehensive, 39-page procedure known to have high administrative costs. Defines low, medium, high, very high and critical risks.	Degree of implementation not clear, may require additional administrative staff. Not clear what the reporting thresholds will be for each risk category.	Revise IP-0842 procedure to reflect implementation guidance of HNF-1763. Include implementation guidance in HNF-1763 to define reporting requirements for each risk level.

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FROM: C. E. Wilson

I reviewed three areas as part of the team activities and have provided the summary of opinion and observations for your use. Please let me know if I can be of further assistance with these.

Enabling Assumptions: This review evaluated how the Enabling Assumptions are integrated with the program baseline, risk efforts and the many technical interface points. The general areas that were evaluated were:

- ◆ Is the information in the EA's traceable to: the technical baseline, ICD's, requirements, and program baseline?
- ◆ Is the risk value of each EA understood and integrated with the risk list?
- ◆ Is the EA information captured in the TBR's?
- ◆ Will the EA information eventually be incorporated into the TWRS TBL?

Current Situation Overview:

- ◆ EA's are being collected from about 20 source documents (TBRs, Soup, MAR, WDD, etc). I did not see any link to the draft Technical Baseline Summary Description document that supposedly has all of the TWRS baseline documents identified. This was because the TBSD has not been released for review by Mr. Treat. When the TBSD is out and approved, an effort should be undertaken to evaluate the many baseline documents in the TBSD for possible EA's.
- ◆ There needs to be an effort to ensure that all EA's are under configuration control, linked to the source documents, and updated as needed. There is a risk that EA's will be put on the shelf and not considered to be part of the program baseline documentation.
- ◆ There are over 300 EA's expected.
- ◆ I did not see an organized process to disposition the EA's and move the assumption into the baseline as either a fact, requirement, or direction.
- ◆ 95% have a priority assigned to them.
- ◆ EA's are connected to Phase 1 logics. I do not know if all parts of the program have been evaluated for possible EA's.
- ◆ The January 12 product will be all Category One EA's populated with a minimum amount of information on each.
- ◆ Assignments and development of guidance and other information for the remaining will be worked in the upcoming year.
- ◆ An EA implementing guide will be out in draft form next week and will focus on the actual form filling directions.

Overall Assessment: The effort is focused on documenting the known EAs. There will be an effort to categorize them into the most important ones and ensure that most all information for these are developed.

From an overview of the process standpoint, the steps for identifying, processing and incorporating the information contained on an EA form into the appropriate program baseline needs to be accomplished.

The EA's contain potential baseline change directions and have to be integrated with ICD's, the technical baseline, requirements, and other baseline documents as appropriate. This effort should be initiated soon, but is not called out in any of the January 12 checklists.

The quality of the information on the EA's was not consistent. There needs to be effort put into the evaluation and analysis of the EA's to ensure that impacts, risks, and contingencies are fully developed and communicated to program management.

Actions Taken: I provided the attached outline of the key areas to consider for EA development to the people responsible for them. The list contains some end goals that should be factored into the work for the upcoming year to ensure that the EA information is rolled into a baseline document and under control.

Also provided input to the EA folks regarding how to prioritize EA's and integrate with the ongoing risk analysis activities.

Technical Baseline Summary Description (TBSD): I obtained the recent draft of the document "under the table" with the cautions that Mr. Treat has not finished his review and has not released the document for general review. However, I read the material and have the following observations:

- ◆ The goal of the document is called out in the introduction section and focuses on identifying the many program technical baseline documents that will be needed over the life cycle of the program. This is a good target to achieve.
- ◆ However, the document has taken on the role of defining program technical requirements at various levels ranging from flow sheet specifications for water flow rates, to interfaces between projects. In my opinion, requirements should not be part of this document as it establishes another data repository for requirements that will be impossible to reconcile with requirements controlled in the HSTD

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and TWRs RDD-100 data bases or provide the needed requirements traceability. It will also be impossible to use the TBSD as a requirements source document as it only contains a very small portion of technical baseline requirements and has no way of providing requirements linked to interfaces, component, facility or other important crosscuts.

Overall Assessment: It is my opinion that the focus of the TBSD should be constrained to the five areas in the document summary and that all requirements information be either taken out, or only used to the extent of familiarizing the reader with general operating information. As it stands, the document established another "requirements repository" that will eventually conflict with the recognized HSTD.

The document should be integrated with the work being followed by Mr Peck in the area of Life Cycle Documentation and supporting products. This area has been identifying many of the Critical Decision Documents specified by the DOE system. Many of these documents contain and establish technical baseline information and need to be clearly identified in the TBSD.

Tracking the ties between the HSTD data, to the specifications, to the project DRD documents.

MAR J.D.: Develop a plan for completion of the TWRs Facility Specifications necessary for Phase 1B down to the (W) project level.

I was asked as part of the team effort to evaluate this area to determine what work exists. I established some evaluation criteria (attached) and discussed the situation with the Infrastructure folks (Bill Root). At that time, the entire issue surfaced as a focus area with management and at the time of this report, all projects were directed to develop this area by the December 5. My effort stopped as of this date.

End Report: Attachments follow:

Product 5 - Enabling Assumptions - Evaluation Questions:

11/18/97 / cew

This effort will evaluate how the Enabling Assumptions area is integrated with the program baseline, risk efforts and the many technical interface points. The end goal will be to identify areas of improvement as appropriate. The general areas of interest are as follow and will be discussed in further detail:

- ♦ Is the information in the EA's traceable to: the technical baseline, ICD's, requirements, and program baseline?
- ♦ Is the risk value of each EA understood and integrated with the risk list?
- ♦ Is the EA information captured in the TBR's?
- ♦ Will the EA information eventually be incorporated into the TWRs TBL.

Is the information in the EA's traceable to: the technical baseline, ICD's, requirements, and program baseline?

- ♦ Is technical guidance contained in an EA incorporated in the appropriate design media, data bases, or other documents?
- ♦ When a decision documented in an EA specifies a technical solution or equipment / component configuration, is this information then incorporated in the appropriate interface control diagram(s)?
- ♦ How are program decisions in an EA incorporated into the program baseline?
- ♦ How is the decision information in an EA developed into an actual work schedule implementing the EA with a responsible person assigned?
- ♦ If the work involved in an EA is different than defined in the current baseline, is there a process to get the work defined in the EA included in the baseline via a change package?
- ♦ Are EA's included in current program operating procedures such as ICD's, ECN or others as appropriate?
- ♦ Is there an effort to tie each EA to a program requirement(s) in the Technical Baseline as one of the evaluation steps?
- ♦ Will this tie-in to requirements be accomplished for all EA's?
- ♦ Are the EAs being generated from the new program baseline configuration logic diagrams?
- ♦ As the logics are pushed further in detail, is the EA process being effectively applied at the lower levels as appropriate?
- ♦ In EAs where a decision on an issue has been made and implemented, are the feed-in technical baseline requirements going to be changed to reflect the decision? This would impact the accuracy of any requirement traceability efforts that are done in the future.
- ♦ What is the formal process to take the EA information and feed it back to the ICDs or other program baseline data and implement a change based on the EA decision?

TWR RTP Self-Assessment Team Comments

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Is the risk value of each EA understood and integrated with the risk list?

- ♦ Have risks for each EA been captured in risk lists?
- ♦ Have the EA's been sorted in relative risk and/or importance and risk impacts verified?
- ♦ Are the decisions made in an EA evaluated to see if work scope outside the baseline has been defined and authorized without being in the baseline and funded?
- ♦ Has the EA list been fully evaluated for items that would significantly change and/or impact the program configuration?
- ♦ Could the EA include a suggested "alternative" in case the assumption was not the best? This might.
- ♦ Does the EA analysis process feed into the on-going program definition / design efforts so that impacts are readily known to the appropriate organizations?
- ♦ Are all areas of the program being evaluated for possible EAs to ensure that work is proceeding and is not being held up due to lack of an EA?

Is the EA information captured in the TBR's?

Will the EA information eventually be incorporated into the TWRS TBL?

- ♦ Is there a formal process to verify the completion of an EA's implementation and documentation?
- ♦ Who is responsible to verify and close each EA?
- ♦ When will the EAMCS be fully loaded with all current EA's and this information merged into the TWRS TBL?
- ♦ Who owns the rules and structure of the EAMCS?

Tracking the ties between the HSTD data, to the specifications, to the project DRD documents.

MAR 1.D: Develop a plan for completion of the TWRS Facility Specifications necessary for Phase 1B down to the (W) project level.

IHLW Storage Facility (W 464) - Jeff Voogd / Russ Murkowski

- ♦ Does a Final and Complete Plan exist to meet MAR 1.D?
- ♦ Is the work described in the (an) associated TBR?
- ♦ Will this work planning be included in the TBR(s) by January 12, 1998?
- ♦ If not, has the work needed to meet MAR 1.D been planned in other documents? which one(s)? Are they reviewed and approved?
- ♦ Is the work definition in draft form or been reviewed?
- ♦ When will this work definition/planning be finalized and moved into the TBR?
- ♦ What are the constraints preventing this work from being in the TBR by January 12, 1998?
- ♦ Is there a P3 schedule developed for the necessary work? Is it resource loaded?
- ♦ Is this schedule included in the TBR schedule data?
- ♦ Is there a change control action in process to incorporate this work planning into the TBR(s)?
- ♦ Other Related Information.

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ATTACHMENT 4
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**Tank Waste Remediation
Readiness to Proceed Self-Assessment Team's
Definition of Questions**

1. Is TBR complete?

"Completeness" is one indication of quality.

2. Are sufficient requirements identified?

It was important to know whether the TBR was prepared in response to all known and appropriate requirements.

3. Does scope statement communicate what work is to be done; is there sufficient detail to serve as stand-alone package?

Clarity and accuracy are important attributes in concise communication. A concise and correct scope statement was a necessary part of a good TBR.

4. Are configuration management controls effective?

There was a system established to document changes, and we needed to determine whether it was being used.

5. Is indicated predecessor and successor consistent with mid-level logic?

This question was a check on changes taking place at various points in the logic.

6. Are enabling assumptions correct?

Enabling assumptions are of critical importance because there are so many uncertainties.

7. Are risk issues and risk-handling actions identified?

Risk cannot be managed until they are identified.

8. Any open checklist items?

Another element of completeness, but intended to identify specific actions known to be outstanding.

9. Are connections with other activities and/or organization identified?

Interface management is an important element overall, and identification of connections between activities and organizations is one part of that management process.

10. Are approval signatures provided?

This question was a check that the TBR was reviewed as intended.

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ATTACHMENT 5
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INTEROFFICE MEMO

LOCKHEED MARTIN

From: Performance Measures
Phone: 373-9372 H7-07
Date: December 3, 1997
Subject: PRELIMINARY REPORT OF FINDINGS AND TEAM PERSONAL COMMENT BRIEFINGS
ON CONCLUSION OF READINESS TO PROCEED INTERNAL ASSESSMENT

To: R. D. Wojtasek G3-21

cc: J. W. Bloom	H6-12	D. L. Lenseigne	S7-35
S. M. Byers	S1-57	T. J. McLaughlin	H5-03
A. F. Choho	H6-35	W. E. Ross	S7-84
C. A. Davis	R2-50	J. D. Thomson	H7-07
T. S. Ferguson	G3-21	J. H. Wicks	H7-07
E. A. Fredenburg	H6-12	C. E. Wilson	H8-71
T. L. Jennings	R2-33	JHW File/LB	

At your request a multi-disciplined team was established to assess work in progress toward Lockheed Martin Hanford Corporation readiness to proceed (RTP) declaration. The team was comprised of the following people:

J. W. Bloom	E. A. Fredenburg	W. E. Ross
S. M. Byers	T. L. Jennings	J. D. Thomson
A. F. Choho	D. L. Lenseigne	J. H. Wicks
C. A. Davis	T. J. McLaughlin	C. E. Wilson
T. S. Ferguson		

Daily out briefings by myself and Bill Ross to you and other senior level managers have resulted in immediate corrective actions to most of the issues discussed below.

The team was impressed by the quality and detail of the Technical Baseline Requirements (TBR)s and how well the process holds together as you follow the basic Level 1 logic and RTP Process Flow Diagram. Many of the team members have expressed a sincere desire to assist in future reviews of the documents they reviewed and to assist in any other way that would improve quality.

The following comments are roll-ups of specific comments that will be attached to my final report.

The effort and resources needed to maintain a detailed, resource-loaded schedule is not universally appreciated. Tank Waste Remediation System (TWRS) has been at the edge of a true resource-loaded schedule several times in the last five years. We need to quickly integrate the Tank Waste Operation's schedule into the RTP schedule. It is recommended that part of the existing team be held to perform this effort at the completion of the "Long Team". It is doubtful that the cost of maintaining a resource-loaded schedule is included in any of the planning for the RTP or TWRS budgets. Lacking a resource-loaded

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R. D. Wojtasek
Page 2
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schedule, we neither can make a RTP decision with confidence, nor manage the continuing efforts to ensure the required resources and funding are identified and available as needed.

The RTP project needs a single project integrator, who is responsible for the integration of all projects and coordination with operations to ensure work is accomplished in an orchestrated method without mutual interference.

The quality and readability of the RTP (20 product) documents varied considerably. While we recognize that much of this work is in progress, considerable effort will be required prior to releasing these documents. It is evident that corrective actions to complete these documents and improve existing documents is underway. These documents must be placed under configuration control - immediately!

The incorporation of other PHMC contractors, essential to declare readiness to proceed with privatization, needs to be strengthened prior to our declaration of readiness.

Risk and enabling assumptions were not consistently defined and do not easily rolled up into an integrated statement of risk. Corrective actions to redline the TBR's enabling assumptions and quantify the risk is underway.

The process used to generate and decompose Level 1 logic is well thought out and documented. This process must be captured in one of the 20 product documents to demonstrate the strength of what the team has accomplished. The detail provided in the TBRs and subsequent decomposition varied depending upon author. We recommend that in the next revision, a second attack be initiated to standardize the content. Because multiple TBR authors identified similar issues, some of the TBR information is repetitive (e.g. enabling assumptions, risks, etc.).

The final report will be submitted within five working days.

Sincerely,

[original signed by]

J. H. Wicks, Director
Performance Measures

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Tank Waste Remediation Systems (HNF-2018)		ECN No.

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