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Performance Expectation Plan

P. E. Ray

Lockheed Martin Hanford Company, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

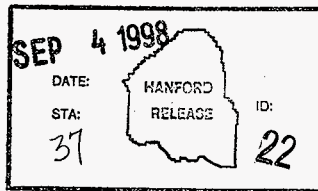
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Abstract: This document outlines the significant accomplishments of fiscal year 1998 for the Tank Waste Remediation System (TWRS) Project Hanford Management Contract (PHMC) team. Opportunities for improvement to better meet some performance expectations have been identified. The PHMC has performed at an excellent level in administration of leadership, planning, and technical direction. The contractor has met and made notable improvement of attaining customer satisfaction in mission execution. This document includes the team's recommendation that the PHMC TWRS Performance Expectation Plan evaluation rating for fiscal year 1998 be an Excellent.

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Project Hanford Management Contract Tank Waste Remediation System Performance Expectation Plan Self-Evaluation - Fiscal Year 1998

Ralph Wood
Lockheed Martin Hanford Corporation

Date Published
September 1998

Prepared for the U.S. Department of Energy
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FLUOR DANIEL HANFORD, INC.



P.O. Box 1000
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Hanford Management and Integration Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

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TANK WASTE REMEDIATION SYSTEM FISCAL YEAR 1998 PERFORMANCE EXPECTATION PLAN

EXECUTIVE SUMMARY

Fiscal year 1998 has been a challenging year for the Tank Waste Remediation System (TWRS) Project Hanford Management Contract (PHMC) team. There have been significant accomplishments that are molding the Hanford Site into mission success. Opportunities for improvement to better meet some performance expectations were identified and became the subject of mitigation plans which were executed with positive results.

SIGNIFICANT ACCOMPLISHMENTS

Tank Waste Operations

- Received SUBTAP comment that “a sustained vigorous safety program is paying off and should be continued”
- Achieved 1,000,000 hours worked without a lost workday case
- Decreased the rate and frequency of reportable occurrences
- Completed Phases I and II of Standard Requirements Identification Document (S/RIDs) process for identifying customer requirements related to personal monitoring and hazardous waste operations and emergency response
- Successfully supported the customer for M-41 milestones which helped the customer mitigate potential legal action by Washington Department of Ecology (WDOE)
- Received a rating of “2” (Meets Expectations) for environmental compliance from the Facility Evaluation Board
- Conducted the Hanford Site’s first-ever Maintenance Planner Qualification Program that all maintenance planners complete
- Obtained a 60 % reduction in the size of work packages
- Implemented a facility excellence program at tank farms and greatly improved the tank farms housekeeping functions.

Safety Project

- Made improvements to the Plant Review Committee to optimize the technical review process on critical TWRS issues and concerns; improvements allowed work to continue with close management involvement
- Completed extensive technical and communication efforts to support early closure of DNFSB 93-5 and DNFSB 92.4.
- Developed a strategy to close a criticality safety issue earlier than planned
- Resolved Tier II concerns related to the TWRS final safety analysis report
- Established a strategy for unexplained crust growth in tank 101-SY
- Initiated an Unreviewed Safety Question (USQ) process bulletin to communicate USQ process information to screeners and evaluators, shift personnel, and the

Plant Review Committee. The bulletin provides sound guidance, qualification information, and timely notification of changes to the approved TWRS Authorization Basis.

Characterization Project

- Qualified the rotary mode core sampling system for operations in flammable gas atmospheres; the amount of sample recovery in that sampling system was significantly increased
- Recovered the rotary mode core sampling system schedule even when numerous delays were encountered

Tank Waste Disposal

- Congress, WDOE, Hanford Advisory Board, and Stakeholders supported authorization to proceed with privatization, demonstrating confidence in TWRS's readiness to proceed
- Exceeded customer expectations with readiness to proceed day-to-day support and documentation; this effort fully supported the customer's most recent privatization initiative/negotiations with privatization contractor British Nuclear Fuel
- Provided a well-planned and executed Project W-465 performance assessment
- Continued progress with the Hanford Tanks Initiative that includes breaking new ground with innovative ways of involving the private sector in development of viable single-shell tank retrieval solutions

Management Systems

- Baseline management and funds control have been maintained throughout periods of instability
- Continued efficiencies in contract scope performance; cost and schedule performance for fiscal year 1998 is projected to be approximately negative 3% schedule variance and positive 6% cost variance
- PHMC has completed 85% of controlled milestones as planned; it is projected that 91% of fiscal year 1998 controlled milestones will be met as planned; it should be noted that the missed milestones are tied to Tri-Party Agreement renegotiations as a result of single-shell tank stabilization issues and U.S. Department of Energy, Richland Operations Office-approved delays
- Completed the Notice of Construction Permit Applications for Rotary Mode Core Sampling, SX-104, and Project W-030, to meet project deadlines; also on schedule to meet the RCRA Part B permit application in June 1999; on track in developing an environmental compliance program that is to be completed by the end of fiscal year 1998.

The major accomplishments listed above, coupled with the attached PEP Evaluation clearly demonstrate that the management and integration concept as set forth in this contract has been successful.

Specifically, FDH and its main subcontractors have demonstrated the technical excellence and focused commitment to achieve the stated TWRS mission success while providing the Government a fair price with best-in-class personnel and technology.

The technical quality of products increased during fiscal year 1998 while significant efficiencies were achieved, as evidenced by Performance Expectation MGR1.1.1. Fiscal year 1998 accomplishments reflect PHMC leadership excellence in executing the TWRS mission in accordance with contract specifications.

It should be noted that during the past six months, the team continued to focus on the mission and that focus is reflected in the team's accomplishments. The TWRS PHMC team has excelled in the following significant areas.

- Strengthened the planning process through the utilization of the mission logic, which drives the TBR planning process; this process provided TWRS the first exhaustive planning basis of this mission which includes evaluation of risks, assumptions, requirements, resources constraints
- Provided timely response to the customer while mitigating potential legal action by the Washington State Department of Ecology surrounding the milestones for stabilization of single-shell tank
- Provided timely information to the customer in support of privatization negotiations
- Completed extensive technical and communication efforts to support early closure of DNFSB 93-5 and DNFSB 92.4.
- Made the Authorization Basis more accessible to applicable personnel for increased awareness

In summary, Fluor Daniel Hanford and its main subcontractors have performed to an Excellent level. They have provided the planning, technical direction, and leadership to meet the mission objectives and exceed the customer's expectations.

The team therefore recommends that the PHMC TWRS Performance Expectation Plan evaluation rating for fiscal year 1998 be awarded as an Excellent.

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TABLE OF CONTENTS

Executive Summary		v
Table of Contents		ix
List of Figures		xi
List of Terms		xii
4.1	Safety and Health Performance Expectation	4.1-1
4.2	Environmental Performance Expectation	4.2-1
4.3	Training/Quality of Workforce Expectation	4.3-1
4.4	Performance of Work (Conduct of Operations and Maintenance, Radiological Control) Expectation	
4.4.1	Encourage employee involvement in the development of program goals, objectives, and performance measures	4.4.1-1
4.4.2	Continue reporting and indexing conduct of operations events.....	4.4.2-1
4.5	Schedule Performance Expectation	4.5-1
4.6	Cost Performance Expectation.....	4.6-1
4.7	Rework Required Expectation	4.7-1
4.8	Energy Efficiency and Pollution Prevention Performance Expectation	4.8-1
4.9	Project Management Performance Expectation.....	4.9-1
4.10	Overall Performance Expectation	4.10-1
4.11	Significant Evaluation Items	
4.11.1	Expectation: Issue a DOE reviewed and approved report on flammable gas issues in double-contained receiver tanks by June 23, 1998	4.11.1-1
4.11.2	Expectation: By July 1, 1998, provide U.S. Department of Energy (Richland Operations)—Tank Waste Remediation System with an interim stabilization program restructuring recommendation.....	4.11.2-1

- 4.11.3 Expectation: By May 15, 1998, provide the proposed RL
"Implementing Actions" list for RL approval4.11.3-1
- 4.11.4 Expectation: By August 30, 1998, prepare and issue an annual
operational waste volume projection report.....4.11.4-1
- 4.11.5 Expectation: By February 17, 1998, award tank C-106 heel
removal contract.....4.11.5-1
- 4.11.6 Expectation: By September 30, 1998, demonstrate 30-day
single-shell tank emergency pumping preparation capability4.11.6-1
- 4.11.7 Expectation: By August 30, 1998, complete installation and
signal acquisition of Tank Monitoring and Control Systems on
five tanks in AW Tank Farm (AW-102, AW-103, AW-104,
AW-105, and AW-106)4.11.7-1

LIST OF FIGURES

Figure 4.1-1	Employees Celebrating 1 Million Hours Without a Lost Workday Injury	4.1-4
Figure 4.1-2	TWRS Total OSHA Recordable Case Rate.....	4.1-5
Figure 4.1-3	RMCS Truck.....	4.1-7
Figure 4.3-1	Containment Course Training Equipment	4.3-4
Figure 4.3-2	Sample Qualification Card.....	4.3-7
Figure 4.4.1-1	FEP Monthly Status Chart	4.4.1-2
Figure 4.4.1-2	First "10" on a TWRS Facility.....	4.4.1-3
Figure 4.4.1-3	VPP License to Succeed Program.....	4.4.1-7
Figure 4.4.2-1	Monthly Frequency of Violation of Procedures	4.4.2-5
Figure 4.4.2-2	Monthly CONOPS Event Index.....	4.4.2-7
Figure 4.5-1	Performance Indicators Through July 1998.....	4.5-3
Figure 4.5-2	TBR Package Preparation Process Flow Chart.....	4.5-5
Figure 4.9-1	W-464 Storage Facility.....	4.9-7
Figure 4.9-2	John Wagoner Speaking at the W-058 Completion Ceremony...	4.9-13
Figure 4.9-3	W-058 Cross-Site Transfer System Piping	4.9-14
Figure 4.10-1	Letter, WDOE to John Wagoner, RL, no subject, dated November 19, 1997.....	4.10-5
Figure 4.10-2	Letter, J. T. Conway, DNFSB, to F. F. Pena, DOE-HQ, no subject, dated November 12, 1997.....	4.10-8

LIST OF TERMS

ATP	Acceptance Test Plan
BCR	Baseline Change Request
CFR	Code of Federal Regulations
CPO	Characterization Program Office
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy – Headquarters
DOE/RL	U.S. Department of Energy Richland Operations Office
DOH	U.S. Department of Health
DST	Double-Shell Tank
ECN	Engineering Change Notice
EWP	Enhanced Work Planning
FDH	Fluor Daniel Hanford, Incorporated
FDHPO	Fluor Daniel Hanford Project Office
FY	Fiscal Year
HNF	Hanford Nuclear Facility
HSTD	Hanford Site Technical Database
HTI-LDUA	Hanford Tanks Initiative – Light Duty Utility Arm
ICD	Interface Control Document
IHLW	Interim High Level Waste
ILAW	Interim Low Activity Waste
LMHC	Lockheed Martin Hanford Corporation
LO/TO	Lockout / Tagout
MYWP	Multi-Year Work Plan
NEPA	National Environmental Protection Agency
NOC	Net Open Commitments
OJT	On-the-Job Training
OSHA	Occupational Safety and Health Administration
OWVP	Operational Waste Volume Projections
PA	Performance Agreement
PHMC	Project Hanford Management Contract
PNNL	Pacific Northwest National Laboratory
PROCINFO	Procedure Information
RL	Richland Operations Office (DOE)
RMCS	Rotary Mode Core Sampling
RTP	Readiness-To-Proceed
SAD	Safety Assessment Document
SC	Safety Class
SCD	Steam Condensate Discharge
SNF	Special Nuclear Fuel
S/RID	Standard Requirements Identification Document
SRTC	Savannah River Technology Center
SST	Single-Shell Tank

SV	Safety Valve
SWP	Saltwell Pumping
TAP	Tanks Advisory Panel
TBD	To Be Determined
TMACS	Tank Monitoring and Control Systems
TMX	Training Matrix
TPA	Tri-Party Agreement (Hanford Federal Facility Agreement and Consent Order)
TWINS	Tank Waste Information Network System
TWR	Tank Waste Remediation
TWRS	Tank Waste Remediation System
TWRS BIO	Tank Waste Remediation System Basis for Interim Operation
USQ	Unreviewed Safety Question
WDOE	Washington State Department of Ecology (use Ecology)
WIRD	Waste Information Requirements Document
WMH	Waste Management Hanford

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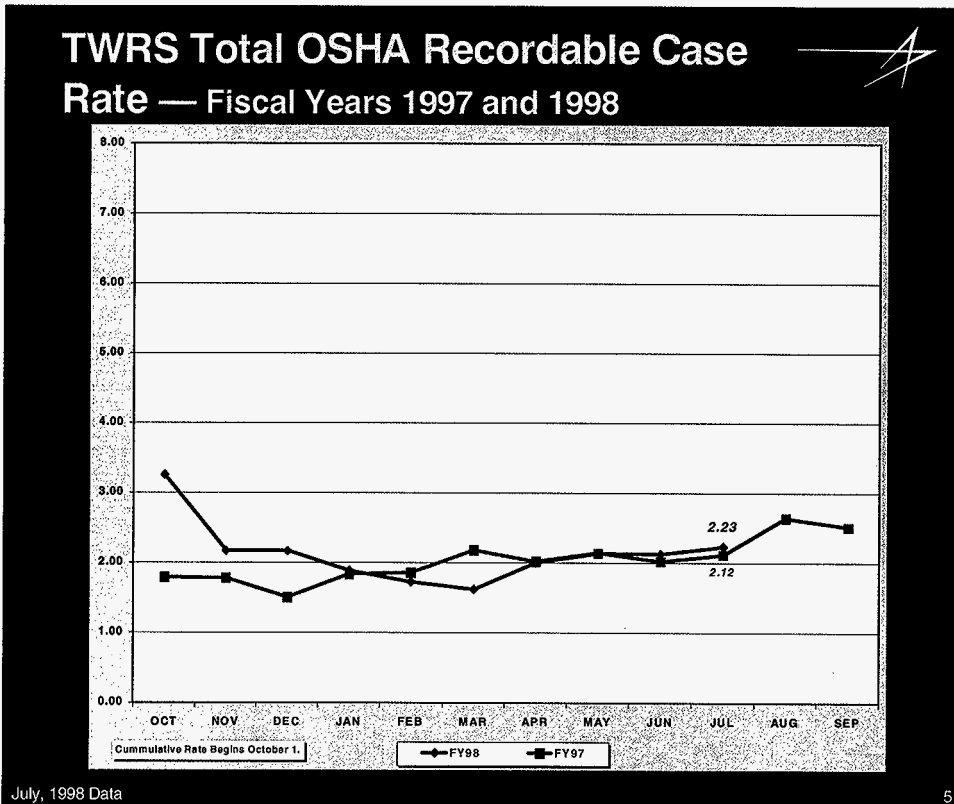
Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Monitoring systems meet national standards and DOE requirements (continued)	X		<p>Institute of Occupational/Safety & Health (NIOSH), Occupational Safety & Health Administration (OSHA), United States Coast Guard (USCG), and Environmental Protection Agency requirements; <i>Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities</i> (NIOSH 1985); and Project Hanford management policies and procedures. The most stringent requirements apply when differences in governing regulations or policies exist.</p> <p>Tank waste operations comply with 29 CFR 1910.120, for a <i>Resource Conservation and Recovery Act of 1976</i> (RCRA) facility. Respiratory protection zones are established and updated. Precautions over and above requirements of 29 CFR 1910.120(p) requirements are implemented at the direction of LMHC whenever feasible to protect employee safety and health.</p> <p>Following a May 1998 presentation on the status of TWRS Environmental, Safety & Health programs, the Safety and Health SUBTAP commented that Industrial Hygiene Program figures for lost workday and OSHA recordable case rates indicate “that a sustained vigorous safety program is paying off and should be continued” and that the Safety Improvement Program “is set on a correct path</p>	<p>Letter, C.S. Abrams, Chairman, Worker Safety & Health Sub-Panel, to M. Royack, DOE, <i>Nineteenth Meeting of the Subtap for Worker Safety and Health (WSH) – May 18-21, 1998</i>, dated June 4, 1998.</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Monitoring systems meet national standards and DOE requirements (continued)	X		<p>and (SUBTAP) approves its vigor and aspirations.” Figure 4.7-1 shows employees celebrating 1 million hours without a lost workday injury. Figure 4.1-2 shows the TWRS Total OSHA Recordable Case Rate.</p> <p>A recent Facility Evaluation Board (FEB) evaluation of double-shell tanks (DSTs) resulted in an overall evaluation of “2” (Meets Expectations) for occupational safety and health performance (1 is best possible score on a 1-to-5 scale).</p> <p>PHMC calibrates and documents calibration of monitoring equipment to national standard and manufacturer specifications.</p> <p>Monitoring of toxic vapors and combustible gases is performed by the TWRS Industrial Hygiene group in accordance with the Tank Farms Health and Safety Plan (HNF-SD-WM-HSP-002) and the TWRS BIO (HNF-SD-WM-BIO-001). These documents have been verified to be in compliance with national standards and DOE requirements and have been reviewed and agreed to by DOE.</p> <p>PHMC completed a compressed gas self</p>	<p>G.W. Grier and G.A. Harvey, FDH, to M.P. Delozier, LMHC, <i>Facility Evaluation Board Report, Double Shell Tanks And Characterization Project</i>, dated April 30, 1998.</p> <p>Results are maintained and retrievable through the Industrial Hygiene Monitoring Programs Coordinator (E. R. Hewitt).</p> <p>Monitoring information is recorded and maintained in TWRS Industrial Hygiene files.</p> <p>Internal assessments documented</p>

Figure 4.1-1 Employees Celebrating 1 Million Hours Without a Lost Workday Injury

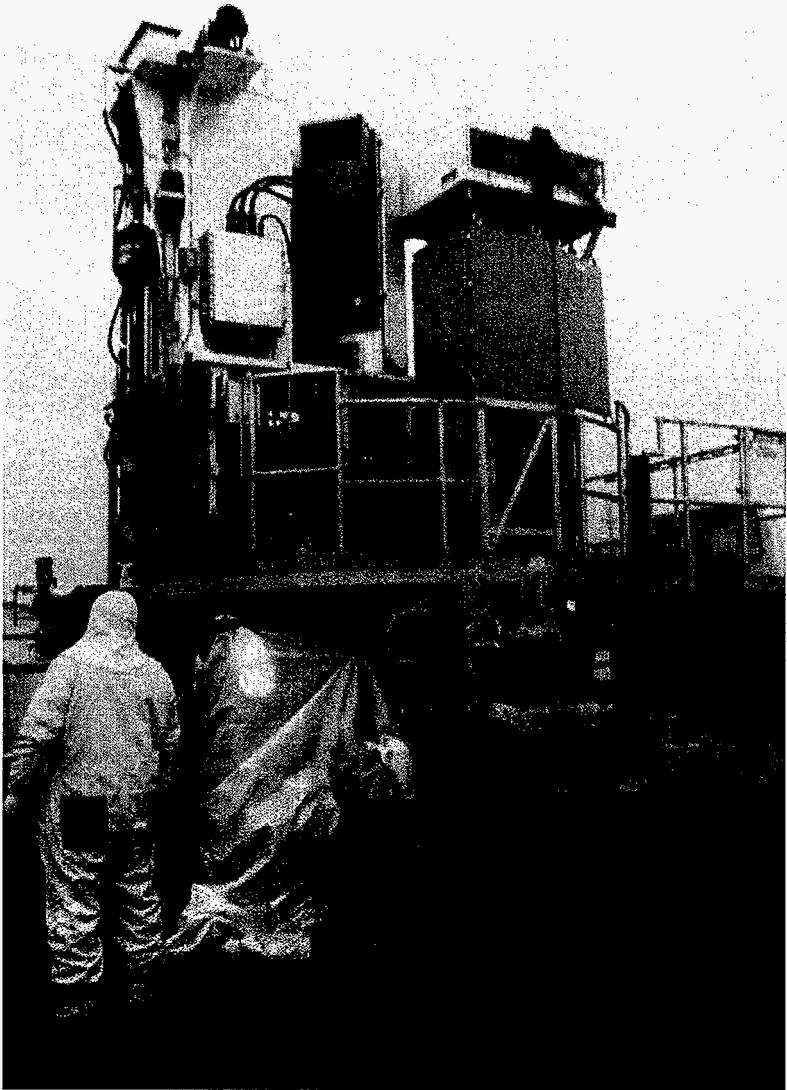


Figure 4.1-2 TWRS Total OSHA Recordable Case Rate



Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Monitoring systems meet national standards and DOE requirements (continued)	X		<p>assessment, confined space assessment, fire protection assessment, and a field verification assessment of monitoring procedures, equipment application, and methodology associated with source monitoring for flammable gases and ammonia in fiscal year 98.</p> <p>Implemented additional monitoring requirements to gain acceptance for the deployment of the rotary mode exhauster as a major stack.</p> <p>The rotary mode core sampling (RMCS) system was qualified for operations in flammable gas atmospheres and was placed back in operation in December 1997. Additionally, the amount of sample recovery in the RMCS was significantly increased over that achieved during fiscal year 1995. An RMCS truck is shown in Figure 4.1-3.</p>	<p>and maintained in Environmental, Safety, Health & Quality files.</p> <ol style="list-style-type: none"> 1) Design change package/acceptance for beneficial use for portable exhauster B and C. 2) Approval letter of the Notice of Construction (NOC) by the DOH.
Unreviewed Safety Questions (USQs) are identified, analyzed and actions taken	X		<p>PHMC has recognized and made recommendations related to USQs in a timely manner.</p> <p>Sixty-three USQ determinations have been identified, analyzed, and timely corrective</p>	<p>USQ database entries.</p>

Figure 4.1-3 RMCS Truck



Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>Unreviewed Safety Questions (USQs) are identified, analyzed and actions taken (continued)</p>	<p>X</p>		<p>actions were taken thus far in fiscal year 1998.</p> <p>Reviewed 1,044 USQ evaluations performed in fiscal year 1997 and issued a report documenting the results. The report identified 107 USQ screenings which were advanced to USQ determinations, USQ screenings and determinations which were presented to the Plant Review Committee, and whether any Authorization Basis changes resulted.</p> <p>Established a USQ Website interface to the database. The tool provides general access to the USQ database over the Hanford Web (Intranet Resource Center).</p> <p>A TWRS USQ process bulletin was initiated. Bulletins communicate the USQ process information to USQ screeners and evaluators, shift personnel, and the Plant Review Committee. Information provides sound guidance, qualification information, and timely notification of changes to the approved TWRS Authorization Basis.</p>	<p>Annual report of USQ Determinations (LMHC-9851875)</p> <ol style="list-style-type: none"> 1) This Website has a number of features, including the request for new USQ tracking number, revision status, query the database, and help. 2) The Website has text of the USQ screenings/determinations as well as current list of qualified USQ screeners, evaluators, and core evaluators. <p>USQ bulletins</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Unreviewed Safety Questions (USQs) are identified, analyzed and actions taken (continued)	X		<p>A comprehensive assessment of the USQ process was conducted by the Authorization Basis Management and Implementation Group to determine whether the TWRS USQ process was being effectively implemented as required by HNF-IP-0842, Volume IV, <i>Engineering</i>, Section 5.1, "Plant Review Committee." Results indicated the process is firmly in place and the assessment team observed significant improvement.</p> <p>The USQ associated with the waste level growth in tank 241-SY-101 is being effectively and efficiently handled to minimize stakeholder impacts. A task team was assembled, a path forward developed, and two void fraction instrument readings taken and reported.</p>	<ol style="list-style-type: none"> 1) Interoffice memo #2N150-98-012, M.C. Brady to M.P. DeLozier, <i>Unreviewed Safety Question Assessment</i>, dated August 98. 2) RL comment that the Contractor has recognized and made recommendations related to USQs in a timely manner. <ol style="list-style-type: none"> 1) <i>Task Team Report on the Level Growth Issue in 241-SY-101, February 23, 1998</i>, transmitted by Safety Issue Resolution Project interoffice memo, G.D. Johnson, February 27, 1998. 2) Formal briefings were provided by the task team to Project Hanford Management Contract (PHMC) senior management and DOE, Richland Operations Office (RL). 3) HNF-2772, <i>Tank 241-SY-101, Level Confirmation Report</i>, Rev. 0, released June 5, 1998. 4) Letter, A.M. Umek, Fluor Daniel Hanford, Inc. (FDH), to J.E. Kinzer, RL, <i>Contract Number DE-AC06-96RL13200</i>,

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Unreviewed Safety Questions (USQs) are identified, analyzed and actions taken (continued)	X			<p><i>Plan for Addressing the Level Growth Issue in Tank 241-SY-101</i>, FDH-9851287, dated March 25, 1998.</p> <p>5) <i>Letter of Instruction for Void Fraction Measurements in Tank 241-SY-101</i>, Lockheed Martin Hanford Corp (LMHC) interoffice memo 7A120-98-002, N.E. Wilkins.</p> <p>6) Pacific Northwest National Laboratory (PNNL) report, <i>Void Fraction Instrument Data for SY-101, Riser 11B, June 29 and July 22, 1998, Quick Look Report</i>, TWS98.61, dated July 28, 1998.</p>
Quality and availability of Authorization Basis documentation	X		<p>Tank dome loading issues were evaluated and structural concerns quantified. This extensive effort allowed for continued operation within the tank farms and allowed for the associated USQ to be closed.</p> <p>Knowledge of the TWRS Authorization Basis by cognizant engineers and facility operators has improved. Three Qual Cards for cognizant engineering functions within the Nuclear Safety & Licensing organization were developed;</p>	<p>HNF-2733, <i>Rational for the Closure of the Soil Density Unreviewed Safety Question and Recommended Structural Analyses Improvements for the TWRS Underground Storage Facilities</i>, Rev. 0, dated June 12, 1998.</p> <p>1) Qual Cards for safety analyses engineers.</p> <p>2) Qual Cards for licensing engineers.</p> <p>3) Qual Cards for Authorization</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>Quality and availability of Authorization Basis documentation (continued)</p>	<p>X</p>		<p>these Qual Cards established training requirements for individuals with key position responsibilities.</p> <p>The Tier II concerns related to the facility safety analysis reports were quickly and professionally resolved.</p> <p>Six Authorization Basis satellite stations were created to provide Authorization Basis documents at key locations around TWRS. This information has been effectively maintained and has passed 13 consecutive audits without deficiencies.</p>	<p>Basis engineers.</p> <p>Facility safety analysis reports Tier II review</p> <ol style="list-style-type: none"> 1) Documents are located with the single-shell tank (SST) and double-shell tank (DST) shift offices, in the Nuclear Safety and Licensing, Characterization Project office, and in RL Safety and Characterization Division offices. The sixth set is retained in Building 2750E, room C116. 2) Because of the importance and the substantial use of these documents they are periodically surveyed to check revision status and physical condition. As evidenced by the last 13 straight surveillances with no discrepancies, these documents are being properly maintained. 3) Copies of the audits are available in the Tank Characterization and Safety Resource Center, Building 2750E, Room C116,

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>Quality and availability of Authorization Basis documentation (continued)</p>	<p>X</p>		<p>An Authorization Basis library was established. The library is a collection of documents related to the development and implementation of the TWRS Authorization Basis. In addition to the documents identified as part of the Authorization Basis, the collection includes non-Authorization Basis documents that are referenced by Authorization Basis documents and documents that were developed for or that otherwise support implementation of the Authorization Basis.</p> <p>The TWRS <i>Authorization Basis Status Report</i>, HNF-2503, Rev.0, was completed and sent to FDH on April 29, 1998. This report identifies facilities and the corresponding Authorization Basis applicable to each facility. Also, the report identified upgrade tasks along with a prioritization and preliminary cost estimate for each facility upgrade.</p> <p>Rapid turn-around on Authorization Basis</p>	<p>Established as documented in LMHC Interoffice memo 2N150-98-013. To minimize the cost of setting up the library, the following collections of documents were incorporated as part of the library:</p> <ul style="list-style-type: none"> • Environmental Library - 2750E Building, Room A-125 • FSAR Reference Library - Federal Building, Room 301-L • Authorization Basis Requirements Management Interface • Procedure Information (PROCINFO) • Records Management Information System (RMIS). <p>Letter from M.A. Payne, LMHC, to A.M. Umek, FDH, LHMC 9853746, dated April 29, 1998.</p> <p>E-mail, D.G. Baide to W.E. Bryan</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Assurance that the controls were retained from the interim safety basis	X		clarifications supported the B Plant facility closure critical path schedule. Three liquid waste transfers were accepted while satisfying TWRS Authorization Basis requirements.	(forwarded message from Kent Smith [B-Plant], <i>Final B-Plant Transfer to Tank Farms</i> , dated 8/3/98.

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**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Self-Evaluation - Fiscal Year 1998**

- 4.2 Environmental Performance Expectation:** Develop a technical environmental foundation for permit negotiations with federal and state regulatory agencies. Maintain an electronic database of all regulatory requirements to assist in the TWRS compliance assurance program. Integrate all environmental activities for the TWRS program including operations, safety, characterization, retrieval, disposal and privatization programs and projects.

Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory

Contractor:

X

FDH:

RL:

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Regulatory compliance with laws and regulations	X		TWRS Operations, supported by the TWRS Safety staff, completed the Phase I and Phase II S/RID process. The S/RID process identified DOE requirements related to personal monitoring system requirements and required hazard characterization requirements related to hazardous waste operations and emergency response. A safety and health plan meeting the 29 CFR 1910.120 safety and health standard requirements is consistent with National Institute of Occupational Safety and Health, United States Coast Guard, and Environmental	TWRS compliance with national standards and DOE requirements is documented through an internal and external assessment process. The following are recent results of assessments and evaluations. Safety and Health SUBTAP, May 1998. High-level review of TWRS industrial hygiene programs was praised by the Safety and Health SUBTAP conducted in May of 1998. Facility Evaluation Board

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Regulatory compliance with laws and regulations (continued)	X		<p>Protection Agency requirements; <i>Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities</i> (NIOSH 1985); and Project Hanford management policies and procedures. The most stringent requirements apply when differences in governing regulations or policies exist. Tank farm operations comply with 29 CFR 1910.120 for a <i>Resource Conservation and Recovery Act of 1976</i> facility. Respiratory protection zones have been established and updated. Precautions over and above the requirements of 29 CFR 1910.120(p) have been implemented at the direction of LMHC whenever feasible to protect employee safety and health.</p>	<p>comprehensive assessments have been completed annually for all tank farm facilities by the Facility Evaluation Board. Performance-based assessment areas include industrial hygiene and environmental monitoring systems. The most recent evaluation resulted in a score of 2 (1 being the best possible score on a 1-to-5 scale) and a grade of 3 in the environmental appraisal. This assessment was conducted in April 1998. For DOE field representative audit self-assessments, LMHC has completed a compressed gas self-assessment, a confined space assessment, fire protection assessments, and a field verification assessment of monitoring procedures, equipment application, and methodology associated with source monitoring for flammable gases and ammonia in fiscal year 1998. LMHC calibrated and documented calibration of monitoring equipment to national standards and manufacturer specifications. Monitoring results are retrievable through the Industrial Hygiene Monitoring Programs coordinator.</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Regulatory compliance with laws and regulations (continued)	X		<p>The FEB conducted in April 1998 for double-shell tanks and characterization gave a rating of 3 (Meets Minimum Requirements) to environmental protection performance.</p> <p>Prepared and issued report summarizing assessment of TWRS characterization and sampling activities against environmental regulations and permits.</p> <p>Handled hazardous waste in accordance with</p>	<p>G.W. Grier and G.A. Harvey, FDH, to M.P. Delozier, LMHC, <i>Facility Evaluation Board Report, Double Shell Tanks and Characterization Project</i>, dated April 30, 1998.</p> <p>Performed compliance assessment of characterization project activities against the regulatory and permitting requirements under the <i>Clean Air Act, Resource Conservation and Recovery Act</i> (specifically training, waste generation, identification, record keeping, transportation and manifesting, and storage of hazardous waste), hazard communications, and waste minimization. Supported the characterization project by Environmental Protection and Compliance organization. MYWP deliverable 4F30B3A</p> <p>Letter, W.E. Ross, LMHC, to A.M. Umek, FDH, <i>Subcontract Number 80232764-9-K001 - Completion of Milestone 4F30B3A</i>, LMHC-9855496, June 29, 1998.</p> <p>FEB-FY98-004-DST/CP, April 9,</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Regulatory compliance with laws and regulations (continued)	X		<p>regulations.</p> <p>Operated RMCS exhauster in compliance with both radioactive air and TAP NOCs.</p>	<p>1998.</p> <p>Memo, D.H. Schford to R.S. Popielarczyk, <i>Completion of Exhauster C Readiness Preparations</i>, 79513-98-023, dated May 11, 1998.</p>
Quality and timeliness	X		<p>TWRS has taken and is involved in several actions to improve the technical environmental foundation for permit negotiations with federal and state regulatory agencies.</p>	<p>Procedure HNF-IP-0842, Volume VI, Section 2.1, "Field Implementation of Environmental Notices of Construction for Air Emission Units Operated by TWRS," was issued in April 1998, to formalize the implementation of radiological/nonradiological air permit conditions and requirements.</p> <p>Procedure HNF-IP-0842, Volume VI, Section 1.3, "Environmental Notification," was issued in July 1998 to standardize TWRS notification requirements to regulatory agencies.</p> <p>A partnering program was begun with Washington State Department of Health in May 1998 to improve air permitting and to address WDOH concerns. Five topical areas are being actively worked, with LMHC having the lead for</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Quality and timeliness (continued)	X			<p>management of routine activities.</p> <p>Participated on the Polychlorinated Biphenyl Task Force (weekly meetings initiated August 1997 and documented via meeting minutes) to develop and issue guidance for PCB waste acceptance.</p> <p>Initiated use of compliance matrices in January 1998 to ensure NOC requirements are implemented. Documentation is maintained in Environmental files. (WDOH is verbally advocating use of the compliance matrices sitewide).</p>

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**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Self-Evaluation - Fiscal Year 1998**

4.3 Training/Quality of Workforce Expectation: Continuously develop employees to ensure quality performance from a technically competent, versatile, and diverse work force. Maintain a training and qualification program for TWRS staff per Contractor procedures (WHC-IP-0842) (currently HNF-IP-0842).

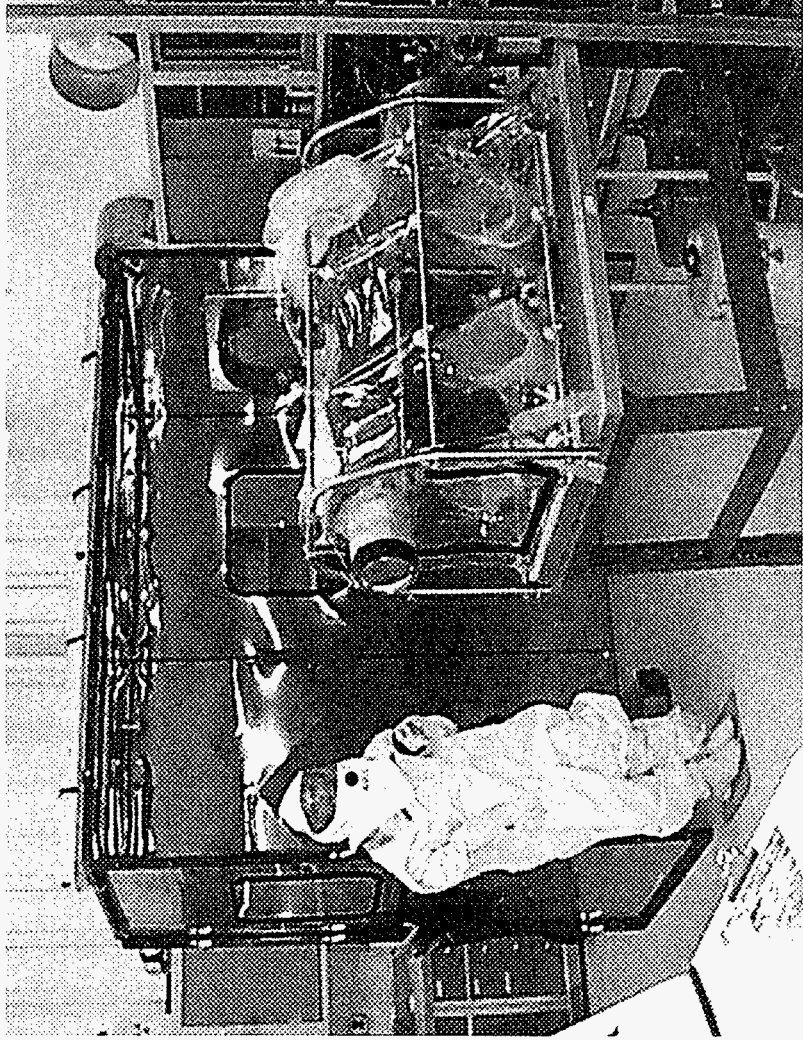
Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory
 Contractor: X
 FDH:
 RL:

Measurement Criteria	Met	Not Met	Supporting Facts	Documented Evidence
Qualification and certification of technical staff per Contractor procedures as determined by training records	X		TWRS has defined the technical staff positions in the training implementation matrix per DOE Order 5480.20A, approved January 5, 1998, as cognizant engineers, design authorities, quality assurance engineers, environmental professionals, and safety professionals. Even though DOE Order 5480.20A does not require any type of formal qualification, TWRS has developed formal qualifications for each of the technical staff positions. All technical staff personnel, with formal signature authority, have completed their respective qualifications according to the TWRS <i>Administrative</i>	The qualified technical staff personnel have their respective qualifications on file and their TMXs, except for safety professionals who qualify by completing HNF-IP-0030, Section SAF-1.2, reflect the respective qualification course numbers as follows: <ul style="list-style-type: none"> • Cognizant engineers, #350860 • Design authorities, #350865 • Quality Assurance engineers, #350885

Measurement Criteria	Met	Not Met	Supporting Facts	Documented Evidence
<p>Qualification and certification of technical staff per Contractor procedures as determined by training records (continued)</p>	<p>X</p>		<p><i>Procedures Manual</i>, HNF-IP-0842, Volume III, "Training," Section 10.3, "Technical Staff Qualification Program Description."</p> <p>TWRS training provides qualification training to operators in 18 distinct areas. These qualifications have been analyzed, designed, developed, implemented, and evaluated using the systematic approach to training as required by DOE Order 5480.20A. The program description in HNF-IP-0842, Volume III, Section 10.5 describes the qualification process for each qualification. TWRS has also in this past year implemented operator training outside of the 18 distinct areas listed in the operator training program description. Examples are W-030, W-058, and more recently W-320. The lessons learned from W-030 and W-058 have been incorporated into Project W-320 to make it a more successful project. TWRS successfully completed the independent/DOE operational readiness review on W-030 and the independent/DOE RA on W-058. The independent W-320 operational readiness review is in progress at this time.</p> <p>HNF-IP-0842, Volume III, Section 10.6, "Maintenance Training Program," was revised in June 1998 to reflect changes in the training implementation matrix which was approved by RL during the second quarter of fiscal year 98.</p>	<ul style="list-style-type: none"> • Environmental professionals, #350875 • Safety Professionals complete HNF-IP-0030, Section SAF-1.2. <p>TWRS maintains an active list of qualified operations staff on the PROCINFO computer database that is accessible to anyone connected to the Hanford Intranet. Training file also maintains a master program file on each of the operator qualifications. The master program file includes items such as the task list, lesson guide, associated OJT, and performance demonstrations. Many of the operator qualifications have also been entered into the VISION training software, which includes dynamic links between the tasks, objectives, OJT, and other lists.</p>

Measurement Criteria	Met	Not Met	Supporting Facts	Documented Evidence
Qualification and certification of technical staff per Contractor procedures as determined by training records (continued)	X		<p>The Hanford Site TMXS has been revised to reflect the training implementation matrix and maintenance training program. Maintenance personnel are scheduled for and attend training consistent with the requirements established in TMXS.</p> <p>The April 1998 FEB assessment rated training for DSTs and characterization as a "2" (Meets Expectations) with positive comments that the program is strong overall and (the organization) exhibits a sincere commitment to customer service, as demonstrated by the development and initial implementation of the TWRS radiological containment basics and advanced radiological practices training courses. The courses were developed to correct deficiencies noted by operations management concerning use of glove bags and containments for contamination control, which were noted as a noteworthy practice by the FEB. The containment course has been verbally praised by R. Ni, FDH, in Radiological Center of Expertise meetings; identified as a noteworthy course by the FDH As Low as Reasonably Achievable Center; and has been attended by several PHMC contractor personnel. Containment course training equipment is shown in Figure 4.3-1.</p> <p>A successful health physics technician biannual requalification support program has been</p>	<p>G.W. Grier and G.A. Harvey, FDH, to M.P. Delozier, LMHC, <i>Facility Evaluation Board Report, Double Shell Tanks and Characterization Project</i>, dated April 30, 1998.</p> <p>Training records listed in the Hanford Site training identification</p>

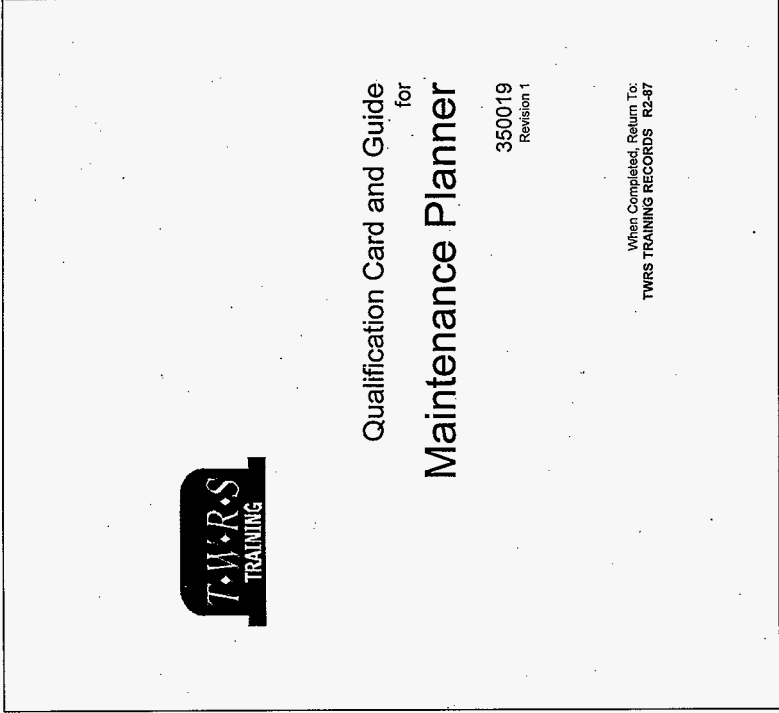
Figure 4.3-1 Containment Course Training Equipment



Measurement Criteria	Met	Not Met	Supporting Facts	Documented Evidence
<p>Qualification and certification of technical staff per Contractor procedures as determined by training records (continued)</p>	X		<p>implemented that has significantly reduced lost time spent for requalification failures. Successful written exam participants have received their oral exams during the same week (as of August 1, 1998, 71 of the 73 TWRS personnel have completed full HPT requalification) and six of nine exam failures retested and completed requalification within five days of their original exam. During the previous requalification cycle, there were more initial failures and retest/requalification took over two weeks per person. Due to this TWRS success, this program is now supporting several PHMC contractor personnel as they prepare for HPT requalification or complete retest/requalification.</p> <p>Radiological training for lead workers that supervise radiological work improved field radiological work practices in SSTs and contributed to a rating of "2" (Meets Expectations) for training during the November 1997 FEB assessment.</p> <p>Radiological worker work practice improvements were identified as "noteworthy practice" in the November 1997 FEB assessment of SSTs. These improvements were a result of the successful completion of the TWRS radiological controls improvement plan (3.0) initiatives related to human factor</p>	<p>and tracking system (TMXS).</p> <p>G.W. Grier and G.A. Harvey, FDH, to L.E. Hall, LMHC, <i>Facility Evaluation Board Report, Single Shell Tanks and Characterization Project</i>, dated December 5, 1997.</p>

Measurement Criteria	Met	Not Met	Supporting Facts	Documented Evidence
<p>Qualification and certification of technical staff per Contractor procedures as determined by training records (continued)</p>	<p>X</p>		<p>contributions to radiological deficiencies.</p> <p>All incumbent (on board as of March 1997) maintenance planners completed the maintenance planner qualification program by November 30, 1997. This action fulfilled a commitment to the March 1997 FEB to have all incumbent planners qualified by the same date. A sample qualification card is shown in Figure 4.3-2.</p> <p>A significant effort was expended on the requalification of cognizant engineers and design authorities.</p> <p>Improvements were made to the USQ qualification program to specify new qualification requirements for USQ screeners, evaluators, and core evaluators and to provide new training material for the USQ training class.</p> <p>Qual Cards were developed for criticality safety specialists and for the criticality safety representative. In order to complete the requirements, comprehensive reviews of the tank farms criticality safety program is necessary.</p>	<p>(1) Letter, R.E. Raymond to M.C. Skriba, <i>Engineering Signature Authority - Rev. 11</i>, dated July 22, 1998.</p> <p>(2) Qual Cards on file with TWRS training.</p> <p>HNF-IP-0842 manual</p> <p>Qual Cards for criticality safety specialist and criticality safety representative</p>

Figure 4.3-2 Sample Qualification Card



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Figure 4.4.1-2 First "10" on a TWRS Facility



Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Involvement of people in work planning (continued)	X		<p>Worked with the regulators on the NOC to successfully keep the 702-AZ ventilation system operating.</p> <p>High-priority work tasks for other major subcontractors on the Hanford Site have been fully supported. Tasks included characterization efforts on the Plutonium Finishing Plant (Z Plant) facility tank Z-361, B Plant transfers to support facility closure, and K Basins statistical work and sludge removal.</p>	<ol style="list-style-type: none"> 1) D.L. Banning, HNF-2176, <i>Tank 241-Z-361 Waste Characterization Data Quality Objective: Headspace Vapor and Tank Structure</i>, Rev. 0, issued June 10, 1998. 2) E-mail, D.G. Baide to W.E. Bryan (forwarded message from Kent Smith [B Plant]), <i>Final B-Plant Transfer to Tank Farms</i>, dated August 3, 1998. 3) Memo, L. Jensen and S.R. Wilmarth to J.P. Sloughter, Numatec Hanford Corporation, <i>Statistical Sampling Plan for Fuel Assemblies in KW Basins</i>, 7A120-98-009, dated March 12, 1998. 4) Memo, L. Jensen and S.R. Wilmarth to J.R. Frederickson, DE&S Hanford, Inc., <i>Selecting Multiple Canister Overpacks for Monitoring Based on Tolerance Limits and Probability Distributions</i>, 7A120-98-029,

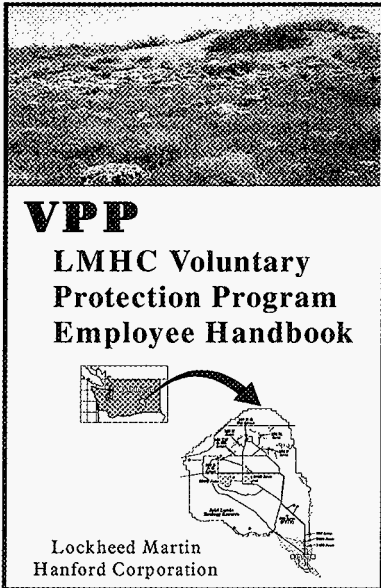
Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Involvement of people in work planning (continued)	X		<p>“All-hands” meetings are used to gain worker involvement and emphasize caution and awareness to emerging problems along with the current status of major activities.</p> <p>Personnel attend pre-job briefings daily, and field performance has improved.</p> <p>Planning teams are assembled for high-risk and high-complexity work and work that is nonroutine in nature.</p>	<p>dated June 29, 1998.</p> <p>FDH-QA-98-014, <i>Quarterly Report of Performance Assurance Group Assessment Results 98-3</i>, dated July 1, 1998.</p> <p>Monthly meeting minutes of participation in and attendance at the FDH site EWP core team meetings.</p>
Quality of work plans	X		<p>Technical procedures have been upgraded to better define anticipated maintenance activities, operations evolutions, testing, and emergency situations.</p> <p>Activities were actively supported in the development of the configuration management S/RIDs template. This template has been used to prepare a revision to the TWRS configuration management S/RIDs, which will be submitted to RL in August 1998.</p> <p>Enhanced work planning (EWP) has been initiated in the tank farms to support single-shell and double-shell tanks and the characterization project.</p>	<p>Technical procedures.</p> <p>Draft D of the TWRS configuration management S/RIDs.</p> <p>TWRS EWP desk instructions issued to production control managers on February 2, 1998.</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>Continuous improvement in the conduct-of-operations indices</p>	<p>X</p>		<p>Developed and successfully implemented a Voluntary Protection Program initiative (License to Succeed). This initiative was a voluntary program that allowed employees to actively participate in the TWRS safety program and to become more familiar with the elements of the Voluntary Protection Program. A brief description of the VPP License to Succeed program is shown in Figure 4.4.1-3.</p> <p>Record copies of compliance activities completed are in Building 2750E, room C128.</p> <p>The surveillance monitoring team was integrated into Process Controls and Process Engineering. This change results in consistent and timely analysis, interpretation, and action response to waste storage condition concerns. Liquid level anomalies in tanks S-110 and BY-103 were resolved promptly.</p> <p>As part of integrated safety management, the EWP process is being refined and expanded to include all work, using the graded approach.</p>	<p>1) License to Succeed packages completed by participating employees.</p> <p>2) The results of the initiative created a workplace free of injuries and illnesses using employee involvement and management leadership</p> <p>Memo, L. Jensen and S.R. Wilmarth to J.S. Durham, B&W Hanford Company, <i>Statistically Based Sampling of Pipes, Tanks and Racks in B-Cell</i>, 7A120-98-026, dated June 1, 1998.</p> <p>1) Memo, D.A. Barnes to C.B. Bryan, <i>Tanks 241-S-110 Liquid Level Anomaly</i>, 7A150-98-029, dated June 25, 1998.</p> <p>2) Memo, N.W. Kirch to C.B. Bryan, <i>241-BY-103 Interstitial Liquid Level Discrepancy</i>, 7A150-98-018, dated May 8, 1998.</p> <p>TWRS EWP desk instructions issued to production control managers on February 2, 1998.</p>

Figure 4.4.1-3 VPP License to Succeed Program



VPP Employee Handbook



Safety Awareness

- Elements of VPP
- Master Safety Rules
- Worker Bill of Rights
- “Stop Work” Responsibility
- Safety Council Structure
- Safety Points of Contact

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>Continuous improvement in the conduct-of-operations indices (continued)</p>	X		<p>Currently, about 50% of all work packages receive EWP.</p> <p>Before the EWP program initiation, an EWP survey was conducted (Oct 1997). Survey responses from 140 personnel were reviewed to establish an initial baseline of perspectives of work control in the field, and to determine specific areas needing focus for TWRS EWP implementation.</p> <p>Maintenance personnel actively participate in the FDH Site EWP core team meetings. These meetings are in the process of establishing a TWRS EWP/ISM core team, and have verbally briefed W.J. Schildknecht of FDH on plans for full membership teams on the implementation of EWP.</p> <p>Performed an assessment for conduct of maintenance follow-up. Corrective actions identified and recommendations for improvement have been documented.</p>	<p>TWRS Maintenance <i>Weekly Report</i>, J.C. Geisbush, LMHC, to Distribution, item, <i>Enhanced Work Planning Survey</i>, dated October 24, 1997.</p> <p>E-mail, W.J. Schildknecht to D.P. Kerwick and M.J. Powers, <i>Core Team at TWRS—EWP/ISMS</i>, dated July 30, 1998.</p> <p>Letter, W.E. Ross, LMHC, to A.M. Umek, FDH, <i>Subcontract Number 80232764-9-K001; Completion of Deliverable 4JI 300A, Complete a Conduct of Maintenance Follow-up Assessment and Schedule Corrective Actions</i>, LMHC-9855534, dated June 30, 1998.</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
			Performed radiological management assessments and scheduled corrective actions based on Facility Evaluation Board criteria.	MYWP deliverable 4F30J3C, due 9/30/98. Letter, TBD

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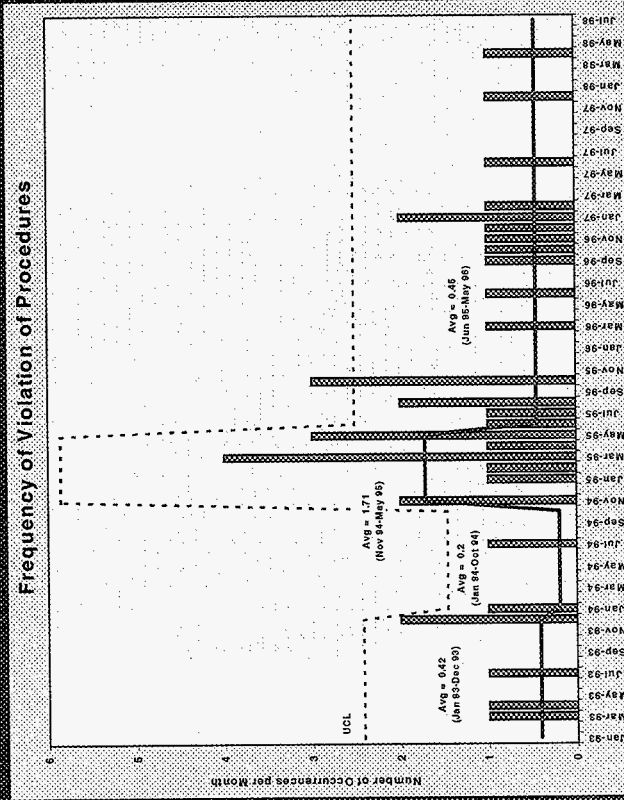
Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>Involvement of people in work planning (continued)</p>	<p>X</p>		<p>Safety documentation improvements were made to resolve employee safety concerns and RL safety concerns.</p> <p>The TWRS preventive maintenance optimization (PMO) team comprised of craft, maintenance, engineering, and operations personnel completed implementation of the PMO program within single-shell and double-shell tank farms. This effort built upon initial efforts that eliminated more than 7,000 preventive maintenance items for nonoperating equipment and sent more than 3,500 infrequently performed activities to an inactive file. The team's efforts resulted in a further reduction of 1,859 required preventive maintenance work activities for a cost avoidance of \$555,000 in FY 98 and each subsequent year.</p> <p>All of the preventive maintenance activities that have been reviewed and retained as "active" have a current technical basis to support their performance.</p> <p>The PMO program was recognized as a "noteworthy practice" by the FEB and the RL Director of Tank Waste Operations during the FY 98 FEB assessment of double-shell tanks. The FEB noted that other contractors and facilities across the Site should be encouraged</p>	<p>Recorded changes to and noted in the TWRS job control system preventive maintenance system database. In addition, the TWRS preventive maintenance system instruction, HNF-IP-0842, Volume V, Section 7.3, "Preventive Maintenance Program," was revised in FY 98 to clarify roles and responsibilities for effective administration and control of the maintenance program.</p> <p>Documentation is contained in the TWRS Engineering "maintenance optimization file" and in the TWRS Procedures "maintenance procedures history file."</p> <p>G.W. Grier and G.A. Harvey, FDH, to M.P. Delozier, LMHC, <i>Facility Evaluation Board Report, Double-Shell Tanks and Characterization Project</i>, Part 1.5.5, "Maintenance," page 10.</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Involvement of people in work planning (continued)	X		to perform a similar disciplined technical review of the existing preventive maintenance programs.	
Quality of work plans	X		<p>Quality management program plan identifies and describes specific areas of improvement, plan action, and schedule performance.</p> <p>Operating techniques for core sampling were improved to permit higher than expected waste sample recovery while maintaining compliance with a narrow operating envelope. Some of the more interesting improvements were related to (1) the deployment of new samplers (finger samplers) and (2) the rotary drilling of a hole through hardened material followed by push sampling of the waste.</p> <p>Improvements in waste sampling equipment permitted early completion of waste sample collections. These improvements enhanced sample system availability and waste sample recovery.</p>	<p>MYWP deliverable, 4J1 300B, due 9/30/98. Letter, TBD</p> <p>Characterization engineering performance metrics—core sampling availability and sample recovery charts. Tracking and reporting of this performance is documented in monthly performance indicator reports and deliverables within the MYWP.</p> <p>(1) Acceptance for beneficial use for liquid nitrogen vaporizer. (2) Engineering change notice (ECN) for improved calibration tool for load hoist cells. (3) ECN for the electrical compatibility improvements.</p>
Continuous improvement in the conduct-of-operations indices	X		Good work practices in the areas of procedures, training, work control, and lockout/tagout continue. Emphasis on work practices in the areas of skin and clothing contamination continues.	<p>TMX is monitored to ensure personnel are trained and aware of procedure changes.</p> <p>A health and safety self-assessment was conducted on lockout/tagout for</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Continuous improvement in the conduct-of-operations indices (continued)	X		<p>Personnel contamination trends continue to improve because of proactive leadership and involvement of workers in addressing problems and developing solutions.</p> <p>Very low rate of events attributed to procedure index violations continues. Figure 4.4.2-1 shows the monthly frequency of violation of procedure.</p> <p>Zero lockout/tagout errors this year.</p> <p>Conduct-of-operations status is reported monthly. Occurrence reports are monitored and</p>	<p>Characterization on July 9, 1998. Memo, C.N. Hogan, to D.I. Allen, <i>Transmittal of the 1998 Periodic Inspection of Lockheed Martin Hanford Corporation's Hazardous Energy Control Program</i>, 7B400-98-008.</p> <p>A performance indicator chart is trended monthly for skin/clothing contaminations (monthly performance indicator package).</p> <p>Performance indicator on skin and clothing contaminations, Correspondence No. 71500-98-032, <i>Performance Indicators</i>, dated July 29, 1998.</p> <p>Conduct-of-operations index, Correspondence No.71500-98-032, <i>Performance Indicators</i>, dated July 29, 1998.</p> <p>LO/TO surveillance records and FEB-FY98-004-DST/CP, April 9, 1998.</p> <p>Monthly performance indicator charts are provided to management</p>

Figure 4.4.2-1 Frequency of Violation of Procedures

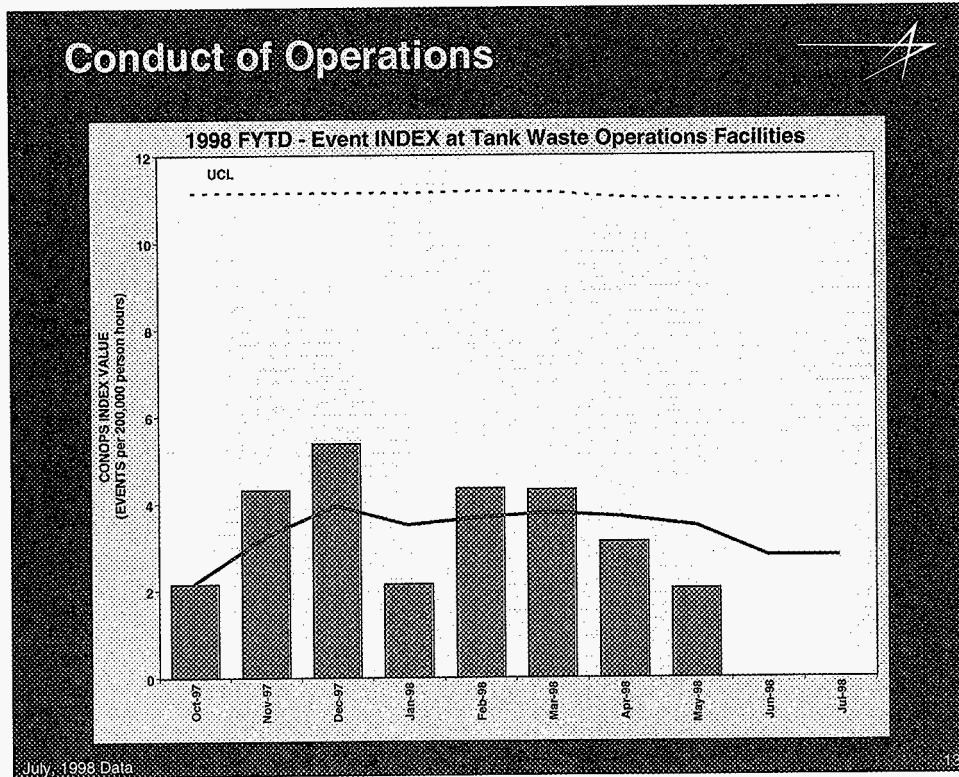
Procedures



July, 1998 Data 18

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>Continuous improvement in the conduct-of-operations indices (continued)</p>	<p>X</p>		<p>follow-up reporting for corrective actions is provided. The monthly CONOPS Event Index is shown in Figure 4.4.2-2.</p> <p>Preventive maintenance optimization program implemented. This graded approach to optimization increases equipment reliability and availability while reducing maintenance costs.</p> <p>An effective path forward was established and a work plan developed and initiated for single-shell interim stabilization (saltwell pumping).</p>	<p>and posted on display boards.</p> <p>Events are discussed at pre-job meetings, and plans from weekly meetings are discussed.</p> <p>FDH-QA-98-014, <i>Quarterly Report of Performance Assurance Group Assessments Results 98-3</i>, dated July 1, 1998.</p> <p>HNF 2358, <i>Single-Shell Tank Interim Stabilization Project Plan</i>, Rev. 1, dated May 11, 1998.</p> <p>Technical support in response to the intent to sue for saltwell pumping.</p>

Figure 4.4.2-2 Monthly CONOPS Event Index



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Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>Dates milestones and schedules met as compared to MYWP (continued)</p>		X	<p>delays to completion of the FSAR due to higher priority scope in FY 1997/1998. Overall milestone performance is superior.</p> <p>From an overall schedule performance through July, TWRS PHMC performance equated to a 5.3% negative schedule variance and 5.7% positive cost variance. The year-end forecast is a 3.1% negative schedule variance and a 6.4% positive cost variance. The majority of schedule and cost performance is superior and is well within the performance agreement parameters of -7.5% SV and -5.0% CV. See Figure 4.5-1 for performance indicators through July 1998.</p> <p>Two areas of FY 1999 workscope acceleration are under way. First, the characterization project has completed all FY 1998 core sampling a month early and are progressing with the FY 1999 requirements. Secondly, all characterization corrective maintenance for FY 1998 was completed the end of June 1998, resulting in the ability to complete approximately 25% of the FY 1999 planned activities.</p>	
<p>Quality of Schedules</p>	X		<p>Significant improvements have been made during FY 1998 in the quality of schedules. A rigorous system engineering TBR process has been applied to the planning that takes the site</p>	<p>TBR process. Baseline schedules. Baseline TBRs/CEIS. HANDI reporting.</p>

Figure 4.5-1

Project Review	Lockheed Martin Hanford Corporation Tank Waste Remediation System	JULY 1998
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COST/SCHEDULE PERFORMANCE - ALL FUND TYPES

PHMÇ ONLY

(Dollars in Millions)

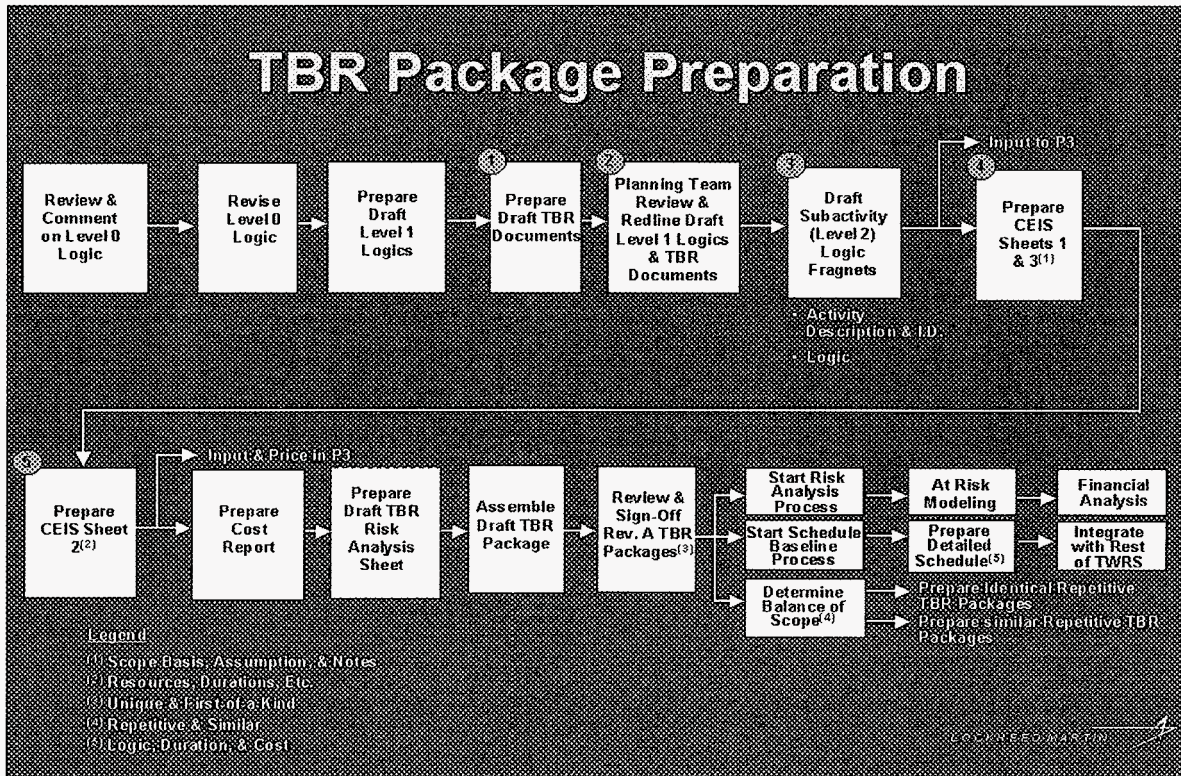
RBS / TITLE		FISCAL YEAR TO DATE								ANNUAL DATA				
		BUDGET COST		ACTUAL COST	VARIANCE				BAC	EXPTD FUNDS FY98 **1	JULY FY98	FORECAST		
		WORK SCHED	WORK PERF	WORK PERF	SCHED	SCHED %	COST	COST %				YE SV	YE CV	
ALL FUND TYPES														
TW10	MANAGEMENT SYSTEMS	30.4	29.3	27.5	(1.1)	(3.6) %	1.8	6.1 %	37.5	35.8	36.0	(0.8)	0.5	
TW03	OPER'NS & MAINT-EX/CE	73.3	70.5	75.8	(2.8)	(3.8) %	(5.3)	(7.5) %	89.7	96.1	96.2	(4.2)	4.1	
	W-314 - LI	14.1	8.6	7.5	(5.5)	(39.0) %	1.1	12.8 %	22.1	17.7	10.2	(2.2)	3.1	
	W-030 - LI	3.0	3.4	3.1	0.4	13.3 %	0.3	8.8 %	3.0	3.4	3.2	0.4	0.2	
	W-058 - LI	<u>2.3</u>	<u>2.3</u>	<u>2.5</u>	<u>0.0</u>	<u>0.0</u> %	<u>(0.2)</u>	<u>(8.7) %</u>	<u>2.3</u>	<u>3.4</u>	<u>3.4</u>	<u>0.0</u>	<u>(1.1)</u>	
	TOTAL OPS	92.7	84.8	88.9	(7.9)	(8.5) %	(4.1)	(4.8) %	117.1	120.6	113.0	(6.0)	6.3	
TW02	SAFETY	22.5	22.0	19.5	(0.5)	(2.2) %	2.5	11.4 %	25.9	24.5	23.9	(0.7)	1.2	
TW01	CHARACTERIZATION	39.5	39.5	32.8	0.0	0.0 %	6.7	17.0 %	47.4	42.1	41.1	0.0	6.5	
TW04	RETRIEVAL PROJ. EX/CE	35.5	32.2	34.7	(3.3)	(9.3) %	(2.6)	(7.8) %	43.2	43.5	43.4	(1.6)	(2.1)	
	W-151 - LI	0.0	0.0	(0.3)	0.0	0.0 %	0.3	0.0 %	0.0	0.0	(0.2)	0.0	0.2	
	W-211 - LI	<u>10.9</u>	<u>11.3</u>	<u>5.8</u>	<u>0.4</u>	<u>3.7</u> %	<u>5.5</u>	<u>48.7</u> %	<u>15.2</u>	<u>15.1</u>	<u>8.9</u>	<u>0.0</u>	<u>6.2</u>	
	TOTAL RETRIEVAL	46.4	43.5	40.2	(2.9)	(6.2) %	3.3	7.6 %	58.4	58.6	52.1	(1.6)	4.3	
TW05	PROCESS WASTE SUPPORT	0.6	0.5	0.2	(0.1)	(16.7) %	0.3	60.0 %	0.9	0.6	0.6	(0.1)	0.1	
TW08	PRIVATZN INFRASTRUCTURE	4.8	4.9	3.4	0.1	2.1 %	1.5	30.6 %	6.1	5.4	5.4	(0.2)	0.6	
TW09	STORAGE & DISPOSAL	8.8	8.5	7.4	(0.3)	(3.4) %	1.1	12.9 %	10.9	10.2	10.1	(0.1)	0.2	
	HANFORD TANK INITIATIVE	4.2	3.7	3.2	(0.5)	(11.9) %	0.5	13.5 %	6.4	6.5	6.3	(0.3)	(0.1)	
	PROGRAM RESERVE	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u> %	<u>0.0</u>	<u>0.0</u> %	<u>0.0</u>	<u>0.2</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	
	TOTAL TWRS	<u>249.9</u>	<u>236.7</u>	<u>223.1</u>	<u>(13.2)</u>	<u>(5.3)</u> %	<u>13.6</u>	<u>5.7</u> %	<u>310.6</u>	<u>304.5</u>	<u>288.5</u>	<u>(9.8)</u>	<u>19.6</u>	

** Expected funds are defined as the total funding guidance expected at fiscal year end (includes anticipated approval of change requests, carryover, reprogramming actions, and reserve hold backs)

1 Expected Funds and FY98 include all pending BCRs.

Measurement Criteria	Met	Not Met	Supporting Facts	Documented Evidence
Quality of schedules (continued)	X		<p>mission end-states and technical requirements and decomposes them into logical work flows that are resource loaded and cost estimated. The TBR Package Preparation Process flow chart is illustrated in Figure 4.5-2. Schedules are tied to technical work, contain solid cost estimates, have no open ends, and are tied to the Hanford Site technical database (HSTD). Risk analysis has also been performed on the retrieval and saltwell pumping baselines to substantiate executability. Finally, TWRS has initiated the use of these schedules as the official reporting mechanism which provides high quality and confidence in accuracy and integrity. Overall scheduling is excellent.</p>	

Figure 4.5-2 TBR Package Preparation



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**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Self-Evaluation - Fiscal Year 1998**

- 4.6 **Cost Performance Expectation:** Complete work scope within budget as defined in the MYWP. Develop realistic cost estimates for work activities (neither too high nor too low and with adequate detail).

Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory
 Contractor: X
 FDH:
 RL:

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Cost of completing work scope as compared to the MYWP estimated cost	X		<p><u>Overall</u> – TWRS is forecasting to complete \$308.1M of equivalent MYWP estimated scope for \$288.4M. Of the underrun, \$8.5M is attributable to aggressive indirect rate savings. If you add the \$8.5M to the \$288.4M you get a “normalized estimated” cost of \$296.9M or within ~3.5% of the budgeted estimate. The baseline was also reviewed by a third party to validate basis of estimating at the beginning of the fiscal year with no significant findings. TWRS has prepared a detailed executability probabilistic risk analysis for RTP and SWP, providing quantified requirements for an 80% executable plan. Overall estimates are superior.</p>	Audited year-end cost and schedule variance analysis. See July forecast, attached.

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Quality of new cost estimates.	X		<p>The quality of new cost estimates is superior. Professional cost estimators prepared detail cost estimates by cost element by activity, utilizing interviews, historical records, engineering judgement, parametrics, etc. Third-party reviews have been conducted with positive results.</p> <p>TWRS has continued to find cost efficiencies (e.g., characterization) and process improvements, resulting in effective funds management initiatives to maximize cleanup progress while funding critical initiatives such as BNFL contract extension.</p>	<p>TBR process and FY 1999 estimates. PT&C reviews. Corp of Engineering reviews. FDH reviews (e.g., BOE).</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Amount and seriousness of rework required (continued)	X			<i>Recommendation 92-4, Commitments 5.2.1.a and 5.2.1.b, Technical Basis for Project W-211, LMHC-9850-461 R2, dated February 2, 1998.</i>

**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Self-Evaluation - Fiscal Year 1998**

- 4.8 Energy Efficiency and Pollution Prevention Performance Expectation:** Identify and implement energy efficiency improvements (independent of the Johnson Controls contract effort). Identify and implement pollution prevention improvements.

Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory

Contractor:

FDH:

RL:

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Number of energy efficiency improvements implemented	N/A		N/A for TWRS Project.	
Number of pollution prevention improvements funded from the pollution prevention account.	N/A		N/A for TWRS Project.	

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**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Self-Evaluation - Fiscal Year 1998**

- 4.9 Project Management Performance Expectation:** Project managers understand, plan, manage and control their projects; provide timely, focused, project status reports and briefings; and support the DOE project managers in a cooperative manner.

Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory
 Contractor: X
 FDH:
 RL:

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Project manager performance in conducting projects - Planning	X		<p>RL looks to the prime Contractor to provide strategic approaches to planning, solve funding problems, control performance baselines, drive business processes, and migrate to new business systems.</p> <p>Management Support Systems (MSP) manages and controls the project through quality budget planning, IPL development and integration, detailed status analysis, monthly briefings, funds control, instilling sound system engineering principles, and supporting all requests. As an example, MSP drives the integration of the HSTD into the FY 1999</p>	<p>MYWP guidance letters Monthly reports TBR process Baseline change control HSTD integration HANDI 2000 migration in October 1998 MRM project briefings PERF/HANDI reporting</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Project manager performance in conducting projects – Planning (continued)	X		<p>WBS, providing traceability between technical and programmatic baselines.</p> <p>Use of the technical baseline review (TBR) packages, developed under the Phase 1B privatization readiness-to-proceed activity, have been applied across TWRS to more effectively describe the scope, schedule, and resources required for performance of TWRS tasks.</p> <p>Provided re-validation of Project W-519 information to RL.</p>	<p>HNF-2017, <i>Tank Waste Remediation System Retrieval and Disposal Mission Phase 1 Financial Analysis</i>, Rev. 1,” dated January 1998.</p> <p>Letter, P.R. Angelier, LMHC/NHC, to A.M. Umek, FDH, “<i>Subcontract Number 80232764-9-K001; Validation Books for Tank Waste Remediation System Construction Projects Requesting Fiscal Year 2000 Funding</i>, LMHC-9852317, dated March 17, 1998.</p>
Project manager performance in conducting projects – Management and Control	X		<p>Effectively utilized funding efficiencies within the TWRS program to initiate emerging high-priority work. An excellent example is the tank 101-SY path forward.</p> <p>Significant cost efficiencies were obtained by completing actions that allowed standard hydrogen monitoring systems to be installed and accepted for beneficial use. These units will allow tank farms to greatly increase the database of flammable gas information available to support resolution of the flammable gas safety issue.</p>	<p>Baseline change request log</p> <p>Letter, A.M. Umek, FDH, to C.L. Sohn, RL, <i>Contract Number DE-AC06-96RL13200, Notification of Completion of Increased Performance Level of PA TWR 1.1.4</i>, FDH-9854655, dated May 28, 1998.</p>

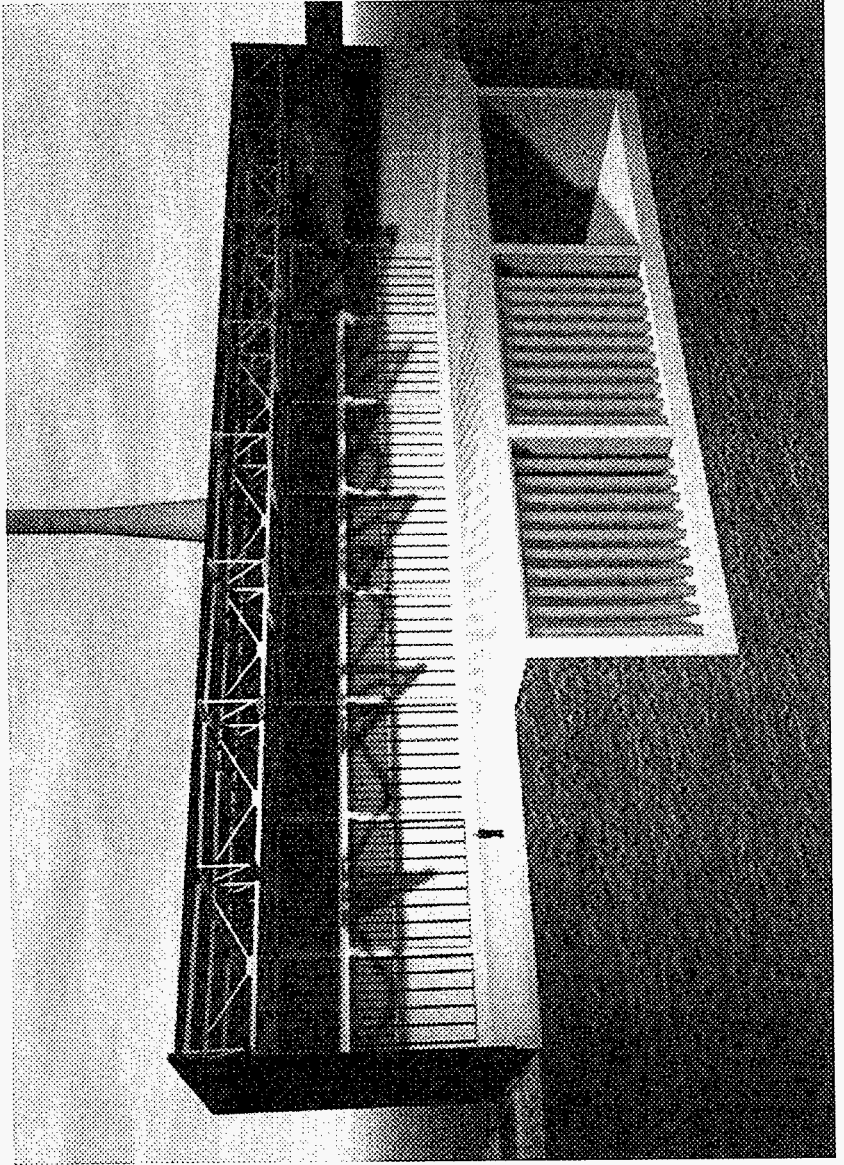
Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Project manager performance in conducting projects – Management and Control (continued)	X		<p>TWRS provided the leadership for the development and implementation of the PHMC engineering metrics. These metrics provide monthly information on the number of engineering drawing categories and engineering change notices for all major subcontractors.</p> <p>Improvements were made to the temporary ECN (engineering change notice) status. This has resulted in a significant reduction of temporary ECNs.</p> <p>Work was initiated to incorporate ECNs into essential drawings. In addition, a goal was established to have all drawings with outstanding ECNs updated by 10/1/98.</p>	<p>Letter, FDH to RL, Re: PEP 14.1</p> <p>(1) Weekly reports from Single-Shell Tanks (SST) Engineering, Double-Shell Tanks (DST) Engineering, and Characterization Engineering show a reduction of overdue temporary ECNs from 52 to less than 10.</p> <p>(2) E-mail, from W.E. Bryan dated 8/3/98.</p> <p>Results of these efforts will be apparent in the FDH engineering drawing metrics in the August/September/October reports.</p> <p>Tri-Party Agreement change request M-44-97-03 to revise the strategy and refine the tank waste characterization process of collecting tank data/information was approved by Ecology on December 10, 1997 and EPA on December 18, 1997.</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Project manager performance in conducting projects – Management and Control (continued)	X		<p>Established a formal method to complete design reviews of all modifications to safety related (SC and SS) equipment. This is a significant improvement over past performance.</p> <p>Improvements to the Plant Review Committee (PRC) were made to optimize the technical review process on critical TWRS issues and/or concerns. These improvements allowed work to continue with close management involvement.</p>	<p>(1) 647656/B.K. Everett, <i>Pit Supplemental Covers</i>, dated 4/14/98.</p> <p>(2) ECN-645480/B.K. Everett, <i>Pit Supplemental Covers</i> dated 3/2/98.</p> <p>(3) ECN-647657/B.K. Everett, <i>Pit Supplemental Covers</i>, dated 4/22/98.</p> <p>(4) ECN-645479/B.K. Everett, <i>COB Enclosure/NF2C1</i>, dated 3/2/98.</p> <p>(5) ECN-645484/B.K. Everett, <i>241-AY-02D Oiler Air Gap</i>, dated 7/7/98.</p> <p>(6) ECN-649020 /M.L. Alexander, <i>Tank Farm Ventilation Upgrade W-030/CR1132</i>, dated 6/29/98.</p> <p>(1) HNF-IP-0842, Volume IV, <i>Engineering</i>, Section 5.1, "Plant Review Committee Charter Procedure."</p> <p>(2) PRC meeting minutes.</p> <p>(3) RL Letter #9850429 A, J.K. McClusky to H.J. Hatch, <i>Contract Number DE-AC06-96RL13200 – Recommendation for Declaring an Unreviewed Safety Question (USQ) Regarding Transfer Structure Size Assumptions</i>,</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Project manager performance in conducting projects – Management and Control (continued)	X		<p>Facilitated a change in strategy for the Organic Safety Program that allowed for early closure of the organic complexant USQ and safety issue.</p> <p>An analysis framework was developed by a team of flammable gas experts to quantify risk and uncertainty of combustion accidents for Hanford Site tanks and the change in risk from applying different flammable gas control strategies. A refined safety analysis will be performed using the analysis framework for the Hanford Site tanks to update the existing TWRS Authorization Basis.</p> <p>A strategy was developed to close the criticality safety issue earlier than planned.</p>	<p>dated January 16, 1998.</p> <p>(1) Completed sampling, analysis and reporting activities as requested by safety issues. Resolution by July 15, 1998, to support closure of the organic complexant USQ.</p> <p>(2) Letter, J.E. Meacham, DESH, to W.E. Ross, LMHC, <i>Organic Safety Project: Completion of Characterization to Support Closure of the Organic Complexant Unreviewed Safety Question</i>, DESH-9855539, dated July 7, 1998.</p> <p>Report HNF-SD-WM-ES-410, <i>Refined Safety Analysis Methodology for Flammable Gas Risk Assessment in Hanford Site Tanks</i>.</p> <p>(1) Contractor self-assessment. (2) Corrective action plan. (3) Requirements traceability matrix for criticality.</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Project manager performance in conducting projects – Management and Control (continued)	X		TW04 completed FY-98 within the “L” Chart thresholds for schedule and cost variances.	Year-end SV, CV variance charts.
Project manager performance in conducting projects – Technical Interface	X		<p>Successfully developed a vadose zone program plan, which provides the basis of integrating the vadose zone program with SST retrieval, tank farm closure, interim storage and other site-wide efforts. Successfully supported the concerted effort between RL, Ecology, Oregon Department of Energy, and Indian Tribal Nations.</p> <p>Established comprehensive agreement-in-principle documents with Waste Management Hanford and DynCorp to define roles and responsibilities for privatization Phase 1B. These documents have become models within TWRS.</p> <p>Completed TWRS projects ICD associated with interfaces between W-519 and W-211, W-314, W-464, W-465, and W-520.</p> <p>Completed a memorandum of understanding between W-464 and the SNF program to facilitate project coordination. An artist’s rendering of the W-464 Storage Facility is shown in Figure 4.9-1.</p>	<p>Letter, H.L. Boston, LMHC, to A.M. Umek, FDH, <i>Subcontract Number 80232764-9-K001, Transmittal of Tank Waste Remediation System Vadose Zone Program Plan, DOE/RL-98-49, LMHC-9856254</i>, dated July 27, 1998.</p> <p>Agreement-in-principle documents dated July 31, 1998 are in process of execution by WMH and DynCorp.</p> <p>Issued as HNF-2588, <i>ICD for TWRS Privatization Phase 1 Infrastructure Support Project W-519, Rev. 0</i>, dated April 23, 1998.</p> <p>Letter, H.L. Boston, LMHC, to A.M. Umek, FDH, <i>Subcontract Number 80232764-9-K001, W-464 and W-379 Technical Integration, LMHC 9855423</i>, dated</p>

Figure 4.9-1 W-464 Storage Facility



Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Project manager performance in conducting projects – Technical Interface (continued)	X		<p>All interface control document (ICD) reviews were conducted with trained and approved personnel (regarding proprietary/business sensitive information and organizational conflicts of interest). Key staff were made available to support this task while other critically important activities such as readiness-to-proceed and alternative case analyses were being conducted.</p> <p>Timely use of characterization data on tanks AX-101 and SX-104 allowed for the movement of the tanks to the appropriate flammable gas facility groups and provided a basis for evaluation of data against the Authorization Basis.</p> <p>Extensive efforts were completed to support early closure of DNFSB 93-5 and DNFSB 92-4. A path forward was established to effectively close the respective recommendations.</p> <p>Extensive work was performed in support of the resolution of the high-heat safety issue for waste tank 241-C-106. A report was developed that describes the thermal hydraulic computer models, the computer model benchmarking,</p>	<p>June 30, 1998.</p> <p>E-mail, Ken Gasper, LMHC, to Rudy Carreon, RL, <i>PHMC Informal Review of BNFL ICDs</i>, dated June 3, 1998, dated June 19, 1998.</p> <p>Weekly report for week ending 8/9/98. Refers to a presentation, "Facility Groupings Associated with Flammable Gas," prepared and presented to DNFSB.</p> <p>(1) DNFSB board meetings. (2) Extensive communications with the DNFSB board staff (weekly telephone conversations, trips to Washington D.C.). Support for public meetings.</p> <p>Technical report HNF-2152, <i>Thermal Hydraulic Computer Models</i>.</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Project manager performance in conducting projects – Technical Interface (continued)	X		<p>and methodology to be used in performing the analysis necessary for resolution of the safety issue.</p> <p>Personnel in both the LHMC and Duke Engineering criticality safety programs were brought together organizationally and physically to provide better coordination of activities.</p> <p>Effectively worked with National Laboratories (PNNL, Los Alamos National Laboratory, and Sandia National Laboratories) on technical issues associated with the closure of the safety issues for organic complexants, organic solvents, and flammable gas. Technical reports were prepared. In addition, several of these reports will provide part of the technical bases for the development of operational controls for the tank farms.</p>	<p>Internal Assessment Report, Observation #6.3.a.</p> <p>(1) Monthly reports, J.W. Brothers (PNNL) to R.J. Cash (DESH), <i>PNNL Tank Waste Safety Program Monthly Progress Reports</i>.</p> <p>(2) LANL technical report, <i>Combustion within Porous Waste</i>, dated February 23, 1998.</p> <p>(3) LANL technical report, <i>Waste Compatibility Criteria for Preventing Flammable Gas Hazards at the Hanford Site</i>, dated August 1998.</p> <p>(4) Organic solvent topical report closure package.</p> <p>Working sessions continue with the Ecology/RL/Contractor partnering team for the development of the FY 1999 Waste Information Requirements Document (WIRD) to meet Tri-Party Agreement</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Project manager performance in conducting projects – Technical Interface (continued)	X		Conduct operations, laboratory, and technical interfaces.	<p>commitments. Establishment of an effective “change control/ notification procedure” was accomplished.”</p> <p>Support input for Tri-Party Agreement commitments for Interagency Management Integration System meetings.</p> <p>Provide support to Chemical Reactions Sub-Tank Advisory Panel as requested.</p> <p>Provide Tier III review of SAD-035 revision.</p> <p>Provide facilitators for partnering team meetings.</p> <p>Maintain field sampling schedule, sample analyses schedule, and perform technical activities, including the preparation and issuance of DNFSB 93-5 quarterly status reports; coordinate and participate in DNFSB presentations, support unit manager’s meetings and site management systems reports; provide technical support to RL/FDH.</p>

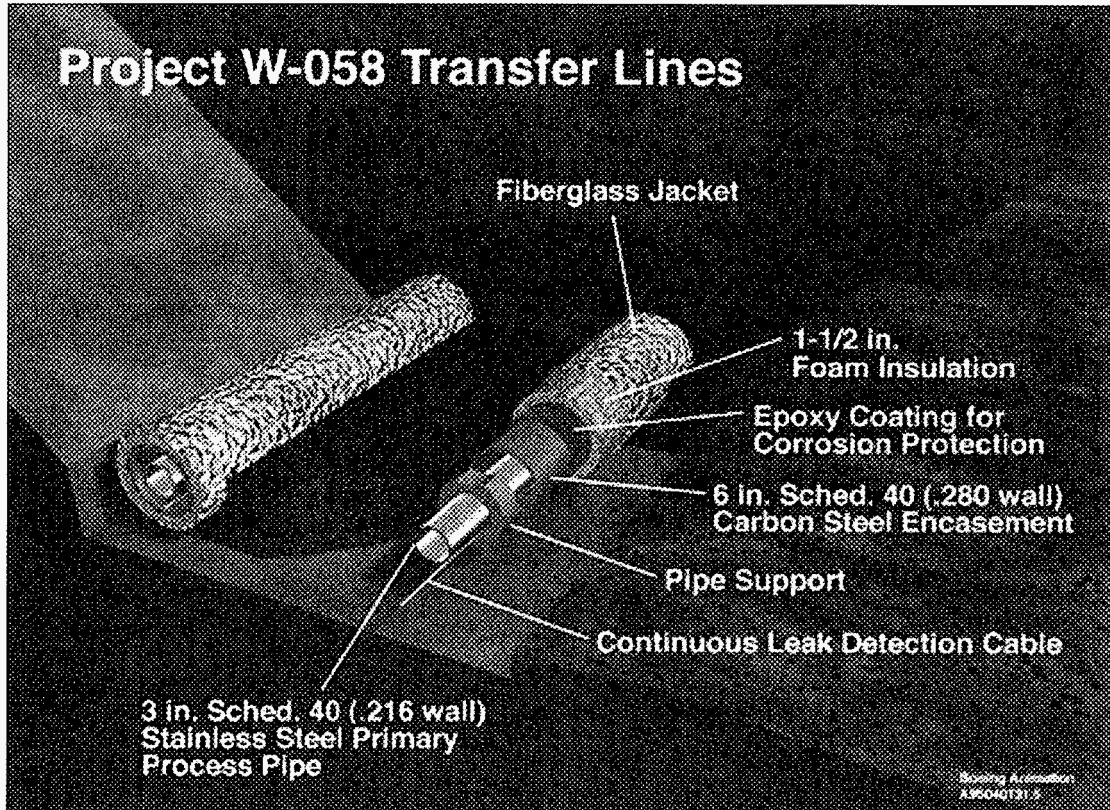
Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Quality of project reporting	X		<p>Well-documented quarterly reports were issued that facilitated equipment improvements by equipment engineering. These reports documented performance metrics, equipment changes, planned activities, and open issues.</p> <p>All construction projects prepare monthly reports addressing accomplishments, issues, and cost and schedule performance. These reports are provided to RL two days in advance of the scheduled management review meeting and are the basis of the discussion at the meetings. The reports are routinely completed on time and provide accurate information regarding project status.</p>	<p>Monthly review meetings are viewed as an efficient and effective means of communication in conveying project status.</p> <p>(1) HNF-2060, <i>Characterization Engineering Status Report October 1997 – December 1997</i>, dated February 2, 1998. (2) HNF-2694, <i>Characterization Engineering Status Report January 1998 - March 1998</i>, dated May 8, 1998</p> <p>Management review reports</p>
Cooperation of the project manager in supporting the DOE project manager	X		Project managers are very cooperative with their customers and take a proactive approach to project management and control.	<p>Monthly project reports to FDH.</p> <p>Weekly interface meetings are held to discuss overall status of project work and any upcoming issues or</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Cooperation of the project manager in supporting the DOE project manager (continued)	X		<p>Support communication activities</p> <p>Good support was provided to DOE in supporting the privatization contractor's ICDS.</p> <p>Participation in an expedited response to RL on a General Accounting Office (GAO) inquiry on the readiness of disposal to support privatization.</p>	<p>concerns.</p> <p>Weekly DNFSB conference calls are supported.</p> <p>Weekly DNFSB teleconference calls</p> <p>E-mail, Ken Gasper, LMHC, to Rudy Carreon, RL, <i>PHMC Informal Review of BNFL ICDS, dated June 3, 1998</i>, dated June 19, 1998.</p> <p>Met with RL on July 16, 1998 and July 20, 1998 to develop a prompt coordinated response. No formal documentation.</p>
Timeliness of the project manager in supporting the DOE project manager	X		<p>The timeliness of support provided to the DOE project manager is critical to success of TWRS projects and to the overall mission of the site. TWRS project managers work closely to support their DOE counterparts to ensure that accurate and timely status is provided on an ongoing basis and that information requests and problem resolutions are dealt with promptly.</p> <p>Completion and readiness of Project W-058, "Cross-Site Transfer System." John Wagoner, manager Richland Operations, is shown in Figure 4.9-2, speaking at the W-058 completion ceremony. Figure 4.9-3 illustrates the W-058 Cross-Site Transfer System piping.</p>	<p>Monthly project reports, briefing meetings, and daily communications with customer project managers.</p> <p>Project W-058, TPA milestone M-43-07 was completed two days early on May 29, 1998.</p>

Figure 4.9-2 John Wagoner Speaking at the W-058 Completion Ceremony



Figure 4.9-3 W-058 Cross-Site Transfer System Piping



Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Timeliness of the project manager in supporting the DOE project manager (continued)	X		<p>Two alternate case analyses were conducted with a quick turn-around time in response to RL project managers' need for information in performing and conducting privatization contract negotiations. Quality products were delivered in a timely fashion with the RL project manager kept abreast of the products as they evolved. The RL project managers' comments, concerns, and general input were addressed as the products were developed.</p> <p>The SST mission analysis report was successfully completed and transmitted to FDH on August 5, 1998. The report was developed in response to an RL request for an alternative SST waste retrieval logic and scoping analysis (mission analysis) driven by program needs rather than by Tri-Party Agreement milestones.</p> <p>The DST system specification development effort encountered some miscommunication and the early product did not meet RL expectations.</p>	<p>Letter, A.M. Umek, FDH, to W.J. Taylor, RL, <i>Contract Number DE-AC06-96RL13200: Evaluation of Tank Waste Disposal Alternative Within Privatization</i>, FDH-985-02058A R1, dated March 27, 1998.</p> <p>Letter, A.M. Umek, FDH, to W.J. Taylor, RL, <i>Contract Number DE-AC06-96RL13200: Evaluation of Tank Waste Disposal Alternative Within Privatization</i>, FDH-9854671 R1, dated June 15, 1998.</p> <p>Letter, H. L. Boston, LMHC, to A.M. Umek, FDH, <i>Subcontract Number 80232764-9-K001, U.S. Department of Energy, Richland Operations Office Guidance for the Tank Waste Remediation System Single Shell Tank Retrieval Logic and Scoping Analysis</i>, LMHC-9761599A R3, dated August 5, 1998.</p> <p>Letter, H.L. Boston, LMHC, to A.M. Umek, FDH, <i>Subcontract Number 80232764-9-K001; Defense Nuclear Facility Safety Board</i></p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Timeliness of the project manager in supporting the DOE project manager (continued)	X		BNFL treatability study waste liquids were received from the Savannah River Technology Center in a timely fashion, which prevented a potential out-of-compliance situation at that center.	<p><i>Recommendation 92-4, Commitments 5.2.1.a and 5.2.1.b, Technical Basis for Project W-211, LMHC-9850-461 R2, dated February 2, 1998.</i></p> <p>Letter, M.N. Roske, RL, to H.J. Hatch, FDH, <i>Contract No. DE-AC06-96RL13200 – Receipt of Treatability Residues and Waste Returns From BNFL Inc.</i>, 98-WDD-044, dated March 27, 1998.</p>

**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Self-Evaluation - Fiscal Year 1998**

4.10 Overall Performance Expectation: TWRS performance will be perceived by others as being good and getting better.

Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory
 Contractor: X
 FDH:
 RL:

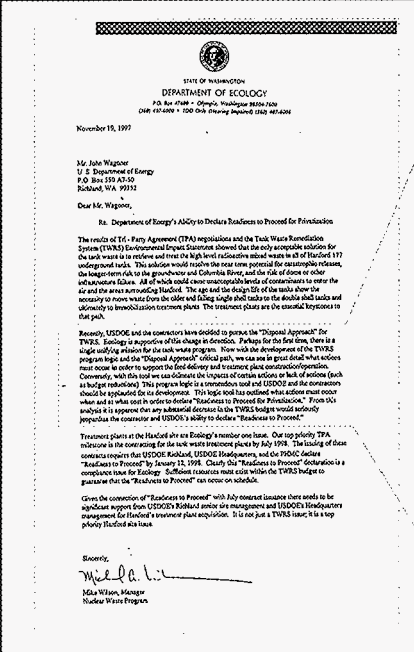
Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Perception of outside groups including:				
Congress	X		Congress supported the authorization-to-proceed with privatization demonstrating its confidence that the TWRS contractor would support the effort.	Congressional response to DOE's report to Congress. DOE signed contract with BNFL to immobilize tank waste in August 1998.
DOE-HQ	X		The DOE-HQ report to congress supported TWRS readiness-to-proceed with privatization.	<i>Report To Congress: Treatment and Immobilization of Hanford Radioactive Tank Waste</i> , July 1998.

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
DOE-HQ (continued)	X		<p>February 1998 presentation to EM-1 on RTP.</p> <p>Project W-519 revalidation</p>	<p>HQ forwards TWRS-P to Congress.</p> <p>According to RL, validation correspondence from DOE-HQ is expected by the end of August 1998.</p>
RL senior staff	X		<p>The RL manager of the TWRS Waste Disposal Division has said that the PHMC team has made remarkable progress in its planning efforts, that the effort expended in developing the detail logic and the corresponding schedule is particularly commendable, and that the financial analysis, the Program Management Plan, Mission Analysis Report, and the baseline products demonstrate a rigorous systems-based approach to planning.</p> <p>Project W-211 revalidation.</p> <p>The low-activity tank waste performance assessment received favorable responses from stakeholders, Washington State Department of Ecology, and RL.</p> <p>Workplace ethics training (computer-based) Has been completed by employees in the areas of time charging practices, sexual harassment, and drug-free work place.</p>	<p>Letter, W.J. Taylor, RL, to H.J. Hatch, FDH, <i>Contract Number DE-AC06-96RL13200: Evaluation of Tank Waste Remediation System (TWRS) Readiness-To-Proceed With Privatization Phase 1B</i>, 98-WDD-032, dated March 16, 1998.</p> <p>According to RL, validation correspondence from DOE-HQ is expected by the end of August 1998.</p> <p>DOE/RL-97-69, <i>Hanford Immobilized Low-Activity Tank Waste Performance Assessment</i>, dated March 1998.</p> <p>Signed training rosters and employee training records.</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
RL senior staff (continued)	X		<p>Hanford Data Integrator 2000 is being proactively implemented as an improved business tool.</p> <p>Management Systems Project (MSP) has made significant progress in instilling a system engineering approach to planning (TBR process), disciplined configuration management plans, quality estimating, solid IPL development, financial risk analysis to qualify executability of plans, and drove implementation of HANDI 2000 Business Systems and Y2K critical system conversion. Also developed defensible work management business case. The DNFSB is also looking to close 92-4 safety management findings.</p>	<ol style="list-style-type: none"> 1) Financial data, purchasing, and human resources systems replaced by commercial off-the-shelf software Peoplesoft/INDUS based on systems October 1, 1998. 2) Pentiums purchased to run platform. 3) Systems requirement specifications documented. 4) Power users trained by October. 5) Procedure impacts analyzed. 6) Source documents coded. 7) Smooth fiscal year startup accomplished. <p>TBR 99 planning. Traceability of baseline changes. IPL units of analysis. RTP risk analysis. Saltwell pumping risk analysis.</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Washington Department of Ecology	X		<p>Continued to support a successful partnering team with the Washington State Department of Ecology and with RL.</p> <p>Successfully completed a state compliance inspection on W-058; completed an operational readiness review with no deficiencies.</p> <p>The Washington State Department of Ecology applauded DOE and its contractors for the development of the TWRS program logic and the disposal approach critical path. See Figure 4.10-1. Ecology viewed this logic as a tremendous tool, and the critical path can see in great detail what actions must occur to support feed delivery and treatment plan, construction, and operation.</p> <p>Significant efforts were completed to assess the chemicals within TWRS facilities following the Plutonium Finishing Plant chemical occurrence. All concerns were eliminated.</p>	<p>Partnering team meeting minutes.</p> <p>Letter, Washington State Department of Ecology, to John Wagoner, RL, no subject, dated November 19, 1997.</p> <ol style="list-style-type: none"> 1) Presentation / T. Laney "244-AR Vault," dated January 29, 1998. 2) Presentation / T. Laney "204-AR Vault," dated March 17, 1998. 3) Presentation / T. Laney "Closure of Stack 296-A-12 at 244-AR." <p>Presentation / G.R. Tardiff "241-AX Ion Exchange Column Briefing," dated December 11, 1997.</p>

Figure 4.10-1 Letter, WDOE to John Wagoner, RL, no subject, dated November 19, 1997



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. Box 48000 • Olympia, Washington 98542-8000
ONE EPHRAIM • 2000 Oak (during business) 360-356-2424

November 19, 1997

Mr. John Wagoner
U. S. Department of Energy
P.O. Box 155 AS-50
Richland, WA 99124

Dear Mr. Wagoner,

Re: Department of Energy's Ability to Declare Readiness to Proceed for Privatization

The results of U.S. Energy Agreement (EPA) negotiations and the Tank Waste Remediation System (TWRS) Environmental Impact Statement showed that the only acceptable solution for the tank waste is to remove and treat the high-level radioactive mixed waste in all of Hanford's 177 underground tanks. This solution would resolve the near term potential for atmospheric releases, the longer term risk to the groundwater and Columbia River, and the risk of done or older infrastructure failure. All of which would cause unacceptable levels of contamination to enter the air and the area surrounding Hanford. The report and the findings of the study show the necessity to move waste from the older and aging single tank technology to the double shell tanks and ultimately to immobilization treatment plants. The treatment plants are the essential keystones to that path.

Recently, USDOE and the contractors have decided to pursue the "Disposal Approach" for TWRS. Ecology is supportive of this change in direction. Perhaps for the first time, there is a single unifying mission for the tank waste program. Now with the development of the TWRS program logic and the "Disposal Approach" critical path, we can see in great detail what actions must occur in order to support the feed delivery and treatment plant construction/operation. Conversely, with this tool we can delineate the impacts of certain actions or lack of actions (such as as budget reductions). **This program logic is a tremendous tool and USDOE and the contractors should be applauded for its development.** This logic tool has outlined what actions must occur when and at what cost in order to declare "Readiness to Proceed."

Treatment plants at the Hanford site are Ecology's number one issue. Our top priority TPA milestone is the construction for the new waste treatment plants by July 1998. The timing of these contracts requires that USDOE Richland, USDOE Headquarters, and the PWSOC facilities "Readiness to Proceed" by January 31, 1998. Clearly, the "Readiness to Proceed" milestone is a compliance issue for Ecology. It does not mean that the TWRS budget would seriously jeopardize the contractor and USDOE's ability to declare "Readiness to Proceed."

Given the connection of "Readiness to Proceed" with July contract issuance there needs to be significant support from USDOE's Richland center in management and USDOE's Headquarters management for Hanford's equipment acquisition. It is not just a TWRS issue; it is a top priority Hanford issue.

Sincerely,
Mike Wilson
Mike Wilson, Manager
Nuclear Waste Program

Results

"Recently, USDOE and the contractors have decided to pursue the "Disposal Approach" for TWRS. Ecology is supportive of this change in direction. Perhaps for the first time, there is a single unifying mission for the tank waste program. Now with the development of the TWRS program logic and the "Disposal Approach" critical path, we can see in great detail what actions must occur in order to support the feed delivery and treatment plant construction/operation. Conversely, with this tool we can delineate the impacts of certain actions or lack of actions (such as as budget reductions). **This program logic is a tremendous tool and USDOE and the contractors should be applauded for its development.** This logic tool has outlined what actions must occur when and at what cost in order to declare "Readiness to Proceed."

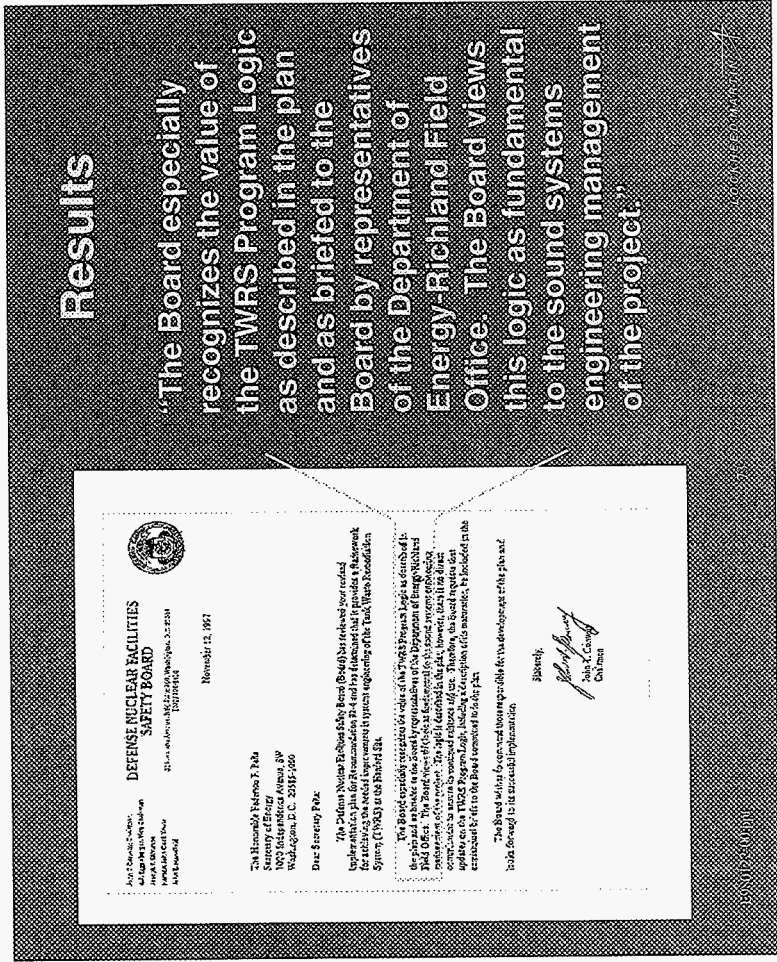
Treatment plants at the Hanford site are Ecology's number one issue. Our top priority TPA milestone is the construction for the new waste treatment plants by July 1998. The timing of these contracts requires that USDOE Richland, USDOE Headquarters, and the PWSOC facilities "Readiness to Proceed" by January 31, 1998. Clearly, the "Readiness to Proceed" milestone is a compliance issue for Ecology. It does not mean that the TWRS budget would seriously jeopardize the contractor and USDOE's ability to declare "Readiness to Proceed."

Given the connection of "Readiness to Proceed" with July contract issuance there needs to be significant support from USDOE's Richland center in management and USDOE's Headquarters management for Hanford's equipment acquisition. It is not just a TWRS issue; it is a top priority Hanford issue.

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Washington Department of Ecology (continued)	X		<p>The ILAW and IHLW project management plans were favorably received by the Washington State Department of Ecology.</p> <p>Participation in core team logic presentations.</p>	<p>HNF-1751, <i>TWRS Retrieval and Disposal Mission, Immobilized High-Level Waste Storage Plan</i>, Rev. 0, dated December 1997.</p> <p>HNF-1517, <i>TWRS Retrieval and Disposal Mission Immobilized Low-Activity Waste Disposal Plan</i>, Rev. 0, dated December 1997.</p> <p>Washington State Department of Ecology letter on logic and proceeding with retrieval path.</p>
Hanford Advisory Board	X		<p>Support was provided for presentations to the Hanford Advisory Board, <i>Time Magazine</i>, and DNFSB to enhance the understanding of TWRS.</p> <p>Presented two-day briefing in March 1998 to the Hanford Advisory Board on TWRS operations and RTP, which was well received. Similar presentation given to Oregon Waste Board in April 1998.</p>	<p>Hanford Advisory Board meetings are supported on an "as needed" basis.</p> <p>Hanford Advisory Board unanimously recommended to DOE and Washington State Department of Ecology to proceed with TWRS-P based on Contractor performance board letter on SE/Logic.</p>
DNFSB and stakeholders	X		<p>The DNFSB recognized the value of the TWRS program logic and viewed this logic as fundamental to the sound systems engineering</p>	<p>Letter, J.T. Conway, DNFSB, to F.F. Pena, DOE-HQ, no subject, dated November 12, 1997.</p>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>DNFSB and stakeholders (continued)</p>	<p>X</p>		<p>management of the project. See Figure 4.10-2.</p> <p>DNFSB provided favorable comments to W-465 as an example of the maturing of systems engineering in TWRS.</p> <p>DNFSB staff reviewed Project W-320, "Tank 241-C-106 Sluicing," in February 1998 and July 1998 with no adverse findings.</p> <p>Full board briefing in November 1997 on SE and 93-5—well received.</p>	<p>Letter, J. D. Wagoner, RL, to J.T. Conway, DNFSB, <i>DNFSB Recommendation 92-4 Implementation Plan, Revision 2N, Completion of Commitment 5.2.2(c), Evaluate 1997 Systems Engineering Processes Existing on the TWRS ILAW Interim Storage Project (Project W-465)</i>, 98-WDD-045, dated April 27, 1998.</p> <p>DNFSB internal meeting notes and weekly reports. No formal documentation.</p> <p>SE/Logic presentation.</p>

Figure 4.10-2 Letter, J. T. Conway, DNFSB, to F. F. Pena, DOE-HQ, no subject, dated November 12, 1997



**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Self-Evaluation - Fiscal Year 1998**

4.11 Significant Evaluation Items

4.11.1 Expectation: Issue a DOE reviewed and approved report on flammable gas issues in double-contained receiver tanks by June 23, 1998. This report is being prepared for the contractor by PNNL.

This report shall complete a technical basis document for the flammable gas issue related to DCRTs during saltwell pumping. It will include, for example, identification, understanding, validation, and quantification of gas carryover and release mechanisms for both dissolved and free gas; estimation of vapor-liquid equilibrium constants; identification, understanding, validation, and quantification of potential compatibility issues that could lead to gas generation; estimation of gas generation rates; simple dome space modeling to estimate resulting flammable gas concentrations; comparison to lower flammability limit estimates for mixtures of gases; and documentation sufficient to be a referenced document for safety issue resolution.

Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory

Contractor: X

FDH:

RL:

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Expectation will be met when a final report, that has been reviewed	X		The reviewed and finished report was submitted on August 19, 1998.	Due date moved to August 23, 1998 by RL. Letter, M.N. Roske, RL, to R.F. Green, FDH, <i>Contract Number DE-AC06-96RL13200 - Change in Performance Evaluation Plan</i>

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Commented on by DOE	X		Comments received 5/31/98.	<p><i>Milestone Due Date for Flammable Gas Issues in Double-Contained Receiver Tanks, 98-SCD-079, 9855413, dated June 22, 1998.</i></p> <p>Letter, C.L. Sohn, RL, to R.F. Green, FDH, <i>Contract Number DE-AC06-96RL13200 – Transmittal of the U.S. Department of Energy, Richland Operations Office (RL) Review Comment Records on Flammable Gas Issues in Double-Contained Receiver Tanks, 98-SCD-056, 9854261A, dated May 13, 1998.</i></p>
<p>Comments resolved, submitted to DOE.</p> <p>Time DOE will take to review the document and method of comment resolution shall be agreed to by DOE and the contractor</p>	X			<p>Letter, A.M. Umek, FDH, to C.L. Sohn, RL, <i>Contract Number DE-AC06-96RL13200 – Tank Waste Remediation System Performance Expectation Plan, Significant Evaluation Item (MEGA 4.11), Issue a U.S. Department of Energy Reviewed and Approved Report on Flammable Gas Issues in Double-Contained Receiver Tanks by June 23, 1998</i>, FDH 9856563A RL, dated August 19, 1998.</p>

**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Self-Evaluation - Fiscal Year 1998**

4.11 Significant Evaluation Items

4.11.2 Expectation: By July 1, 1998, provide U.S. Department of Energy (Richland Operations)-Tank Waste Remediation System with an interim stabilization program restructuring recommendation.

Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory

Contractor: X

FDH:

RL:

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>Enable completion of the remaining TPA Milestone M-41 scope of work</p> <p>within the target total provided <u>or</u> within an optimized budget and schedule profile that does not exceed the baseline total, commencing October 1, 1998.</p>	X		<p><i>Single-Shell Tank Interim Stabilization Project Plan, Rev. 1, issued May 8, 1998, presents a set of assumptions and a funding scenario mutually agreed to be the "most realistic and aggressive plan for completing the stabilization program."</i></p>	<p>Letter, D.I. Allen to A.M. Umek, LHMC-9854008, dated May 14, 1998.</p> <p>Letter from FDH to RL.</p>

HNF-3314 REV 0

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**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Self-Evaluation - Fiscal Year 1998**

4.11 Significant Evaluation Items

4.11.3 Expectation: By May 15, 1998, provide the proposed RL "Implementing Actions" list for RL approval.

The interim stabilization program restructuring recommendation shall be supported by "Implementing Actions" lists for RL, the Contractor, and the Contractor subs, and a summary "Recommendation Basis" report that captures the operational constraints evaluated (for example, impacts on double-shell tank waste volumes) and provides the basis for the three implementing actions lists.

Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory
Contractor: X
FDH:
RL:

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
It is expected that the contractor will perform a documented analysis of the existing tank farms practices used to interim stabilize, and then isolate, single-shell tanks that are included within the scope of TPA Milestone M-41.	X		<i>Single-Shell Tank Interim Stabilization Project Plan</i> , Rev. 1, issued on May 8, 1998. Appendix B of Reference 2 of this project plan lists the enabling assumptions, and Attachment 2 of Reference 2 lists the critical risk management list. This document provides deliverables to this measurement criteria.	Letter, D.I. Allen to A.M. Umek, LMHC-9854008, dated May 14, 1998. Letter from FDH to RL

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>The analysis shall be the basis of an interim stabilization program restructuring recommendation that enables the scope, schedule, and cost targets (which follow) to be achieved.</p> <p>A restructuring recommendation that does not meet the schedule and/or cost targets but does identify a restructured program based on an optimized schedule and cost profile, which does not exceed the baseline, is a less desirable (but acceptable) alternative deliverable.</p> <p>The estimated October 1, 1998, baseline data points (extracted from the draft path forward plan for TPA Milestone M-41-00, dated September 19, 1997) are as follow:</p> <p>Scope—26 SSTs are not yet interim stabilized. Initial startup of saltwell pumping of 24 of the 26 must be accomplished. Isolation (intrusion prevention) also must be completed on a total of 40 tanks.</p>			<p>These target conditions were superceded and have their bases in Case 4.</p>	

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>Schedule—Complete all of the above scope (and the FY 98 scope) by September 30, 2003.</p> <p>Costs— FY-99 = 10,692 K FY-00 = 10,000 K FY-01 = 10,000 K FY-02 = 10,000 K FY-03 = 5,000 K</p> <p>(10-1-98 Baseline) = 45,692 K - 4,692 K (reengineering efficiencies) Baseline total = 41,000 K</p> <p>Restructuring recommendation target data (assuming implementation on October 1998) are as follow:</p> <p>Scope—Identical to baseline scope</p> <p>Schedule—Identical to baseline schedule</p> <p>Costs—Not to exceed the per year budgets in the baseline and .</p>				

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
<p>Initial startup = 700 K (average) x 24 tanks = 16,800 K</p> <p>Operate to completion = 200 K (average) x 26 tanks = 5,200 K</p> <p>Complete isolation = 50 K (average) x 40 tanks = 2,000 K</p> <p>All other costs = 250 K (average) x 40 tanks = 10,000 K</p> <p>Subtotal = 34,000 K</p> <p>Total additional capital equipment not related to construction = 1,000 K</p> <p>(10-1-98 target total) = 35,000 K</p>				

**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Self-Evaluation - Fiscal Year 1998**

4.11 Significant Evaluation Items

4.11.4 Expectation: By August 30, 1998, prepare and issue an annual operational waste volume projection report.

Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory
 Contractor: X
 FDH:
 RL:

Measurement Criteria	Met	Not Met	Supporting Facts	Documented Evidence
This report must be formally submitted by FDH and received by the appropriate RL TWRS project manager by August 30, 1998.	X		Report number HNF-IP-0842, Rev. 24, has been completed.	Report number HNF-IP-0842, Rev. 24, issued in August 1998.
Prior to formal submittal of the report, all contractor reviews shall have occurred and comments shall have been dispositioned.	X		Report was reviewed by all appropriate contractor personnel and all comments were dispositioned by July 31, 1998.	

Measurement Criteria	Met	Not Met	Supporting Facts	Documented Evidence
<p>Format and scope of the report shall be similar to past OWVP reports and shall include a summary recommendation regarding the construction of any new double-shell storage tanks and any appropriate measures to take in the efficient management of double-shell tank waste volumes.</p>	X		<p>Format is the same as previous reports.</p>	<p>Report number HNF-IP-0842, Rev. 24, issued in August 1998.</p>
<p>In addition, a special case shall be provided in the report that will identify the maximum amount of single-shell tank saltwell pumping activity that can be conducted to ensure that new tank capacity will not be needed before FY 2002.</p>	X		<p>Revision 24 of this report includes the base case for the single-shell tank saltwell pumping schedule.</p>	<p>Report number HNF-IP-0842, Rev. 24, issued in August 1998.</p>

**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Fiscal Year 1998
Self-Evaluation**

4.11 Significant Evaluation Items

4.11.5 Expectation: By February 17, 1998, award tank C-106 heel removal contract.

Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory
 Contractor: X
 FDH:
 RL:

Measurement Criteria	Met	Not Met	Supporting Facts	Documented Evidence
Successfully complete all activities necessary for developing and issuing the request-for-proposal package.	X		RFP issued on the Internet on August 6, 1997: Solicitation No. WA31512.	http://www.hanford.gov/tanks/hti/business/c106rfp/updates.htm
Receive contractor bids	X		Contractor bids received on October 8, 1997.	Copies of the bids are not publicly available.
Review and rank bids according to established, technically objective, metric criteria	X		Selection evaluation board (SEB) reviewed and ranked the bids in accordance with the established procurement procedure.	Selection evaluation board information is not publicly available.

Measurement Criteria	Met	Not Met	Supporting Facts	Documented Evidence
<p>Award the contract to remove tank 241-C-106 residue wastes that are expected to remain after sluicing</p> <p>Contractor shall provide RL with a copy of official documentation stating, at a minimum, the award date and the name of the contractor receiving the award no later than close of business Thursday, February 19, 1998.</p> <p>Special note: If award exceeds \$10M, current contract precludes FDH award of contract; in this case, FDH shall recommend to RL awardee by February 17, 1998.</p>	X		<p>Two contracts were awarded: Foster Wheeler Environmental Inc. Los Alamos Technical Associates</p>	<p>Contract No. MSG-SBD-A42135 Contract No. MSG-SBD-A42163</p>
	X		<p>PHMC notified RL that the contracts were awarded on February 13, 1998.</p>	<p>Letter, A.M. Umek, FDH, to W.J. Taylor, RL, <i>Contract Number DE-AC06-96RL13200; Tank Waste Remediation System Performance Expectation Plan Section 4.11, Significant Objective Evaluation Item (MEGA411**), 'By February 17, 1998 Award Tank C-106 Heel Removal Contract,' Hanford Tanks Initiative, Milestone Control Number T04-98-513, FDH-9850892, dated February 18, 1998.</i></p>
	N/A		<p>Award did not exceed \$10M.</p>	

**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Self-Evaluation - Fiscal Year 1998**

4.11 Significant Evaluation Items

4.11.6 Expectation: By September 30, 1998, demonstrate 30-day single-shell tank emergency pumping preparation capability.

Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory
 Contractor: X
 FDH:
 RL:

TW03 Operations

Measurement Criteria	Met	Not Met	Examples	Documented Evidence
Issue update to the Single-Shell Tank Emergency Pumping Guide by May 31, 1998	X		The updated saltwell pumping guide was released on May 20, 1998.	Letter, D.I. Allen to A.M. Umek, LMHC-9854430, dated May 28, 1998. Letter from FDH to RL.
Complete a readiness assessment confirming readiness for pumping.	X		Readiness assessment confirmed readiness to emergency pump.	Letter from LMHC to FDH. Letter from FDH to RL.

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**PHMC - Tank Waste Remediation System
Performance Expectation Plan
Self-Evaluation - Fiscal Year 1998**

4.11 Significant Evaluation Items

4.11.7 Expectation: By August 30, 1998, complete installation and signal acquisition of Tank Monitoring and Control Systems on five tanks in AW Tank Farm (AW-102, AW-103, AW-104, AW-105, and AW-106).

Overall Evaluation: Superior Excellent Good Marginal Unsatisfactory
 Contractor: X
 FDH:
 RL:

Measurement Criteria	Met	Not Met	Supporting Facts	Documented Evidence
AW-102 TMACS installation and signal acquisition AW-103 TMACS installation and signal acquisition AW-104 TMACS installation and signal acquisition AW-105 TMACS installation and signal acquisition	X		Installed software on July 22, 1998, to receive the signal. The ATPs for the installations in the Measurement Criteria column will be completed in August 1998. The expectation will be met in September.	Signals are being received in TMACS control room. Letter, D.I. Allen, LMHC, to A.M. Umek, FDH.

Measurement Criteria	Met	Not Met	Supporting Facts	Documented Evidence
AW-106 TMACS installation and signal acquisition				

DISTRIBUTION SHEET

To	From	Page 1 of 1
TWRS FDS Project Office	TWRS CFO	Date 9/1/98
Project Title/Work Order		EDT No. 625595
Tank Waste Remediation System (HNF-3314)		ECN No.

Name	MSIN	Text With All Attach.	Text Only	Attach. / Appendi x Only	EDT/ECN Only
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L. E. Hall	H7-07	X			
D. I. Allen	R2-50	X			
P. R. Angelier	S7-82	X			
H. L. Boston	R2-53	X			
M. P. Delozier	R2-58	X			
A. C. Etheridge	H7-07	X			
E. E. Mayer	R2-50	X			
S. J. Montgomery	S7-81	X			
M. A. Payne	R2-58	X			
P. E. Ray	S7-80	X			
A. M. Umek	S7-40	X			
R. F. Wood	H7-07	X			
M. D. Ebben	H7-07	X			
S. D. Brinkley	H7-07	X			
L. R. Dunbar	H7-07	X			
D. M. McDaniel	H7-06	X			
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