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Meeting Minutes Transmittal/Approval
Tri-Party Agreement Milestone Review Meeting
Federal Building Room 780
Richland, Washington
August 19, 1992

From/ Appvl.: *SH Wi* Date: 9/23/92
Steven H. Wisness, RL (A5-19)
Hanford Project Manager

Appvl.: *Paul T. Day for* Date: 9/23/92
Paul T. Day, EPA (B5-01)
Hanford Project Manager

Appvl.: *David B. Jansen for* Date: 9/23/92
David B. Jansen
Hanford Project Manager

Prepared by Appvl.: *Tim Veneziano for* Date: 9/23/92
Tim Veneziano, Westinghouse Hanford Company



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| Forehand, GD | WHC | B2-35 | Sanders, GH | RL | A5-16 |
| Giomi, JI | WHC | H4-18 | Senat, EJ | RL | R2-62 |
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| Hernandez, PR | RL | A4-02 | Veneziano TB | WHC | B2-35 |
| Hoertkorn, T | RL | A5-10 | Wisness SH | RL | A5-15 |
| Huffman, L | RL | A5-16 | Yerxa JK | RL | A5-15 |
| Jansen DB | PV-11 | Olympia | EDMC | WHC | H4-22 |

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**TPA Milestone Review
Meeting Minutes Transmittal/Approval
July 22, 1992 (sheet 2 of 4)**

(+ Dave Jansen, Paul Day, Steve Wisness, Recorder - Tim Veneziano)

1. MILESTONE M-03, HWVP

This area will not be reviewed today as there is a detailed review occurring simultaneously at Irvine, California. This was not a problem to Ecology or EPA as there are Ecology personnel at Irvine. A potential change to the design schedule for HWVP was identified to EPA and Ecology as a heads-up.

2. MILESTONE M-01-00, GROUT

The information (attachment 1) was presented by George Sanders of RL. In the area of milestone assessment, the existing Tri-Party Agreement baseline cannot be met. A draft change request is at DOE-HQ at this time for review. At this time, there is no prediction of when it will return from HQ but RL is pressing to move it through HQ. Ecology has been provided the draft change request. The Ecology position is that they still want grout to proceed on schedule but they are evaluating the information provided. RL can expect some feedback within 2-3 weeks. EPA questioned the relationship of the TWRS rebaselining (due in March) and any decision on grout. The RL position was that sufficient information is known in TWRS to allow a decision to proceed on grout. Performance Assessment (PA) was discussed as Ecology wanted to understand whether grout would still be delayed if the NRC petition barrier were removed. RL responded that PA would still cause a delay. Ecology views the delay caused by the PA as an internal DOE process that the regulators are not a part of.

In the area of hydrogen generation, there will be an RL-Ecology meeting later this month to complete all outstanding actions in this area.

EPA asked whether RL had contacted the Region X Office to ensure Land Disposal Restrictions (LDR) issues associated with grout are addressed. RL is preparing a letter on this subject but has not yet made contact with the Seattle EPA Office.

**Action: Make contact with EPA Region X Office in Seattle to
 discuss LDR requirements and their relationship to grout
 and include Ecology in the discussion.**

By: L. Huffman, RL

Due: September 1, 1992

RL agreed to not submit a formal change request on grout until feedback is received from the regulators on the draft.

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**TPA Milestone Review
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3. MILESTONE M-02, PRETREATMENT

The information (attachment 2) was presented by Bill Miller of WHC. In the area of milestone assessment, two target milestones (M-02-00-T3 and T7) are behind schedule but neither will impact any interim or major milestones. RL is at present preparing a Class III Change Request for these two target dates and agreed to discuss the proposed change with Ecology prior to formally sending the change. In the area of budget, M-02 is overrun and lower priority work that does not impact interim milestones is being delayed.

Ecology questioned when pretreatment would be available for grout feed if the NRC decision is not resolved. The RL response was that pretreatment is planned in 1999 in the base case but that work-arounds to allow pretreatment of grout feed are being explored and may be available in 2-4 years.

4. MILESTONE M-31, NEW DOUBLE-SHELL TANK TANKS

The information (attachment 3) was presented by Tom Hoertkorn of RL. In the area of milestone assessment, a potential schedule impact was identified for M-31-02. RL is preparing correspondence to discuss options for this milestone, including the possibility of a change request.

5. MILESTONE M-04, TANK WASTE TREATABILITY STUDIES

The information (attachment 4) was presented by Madon Dev of RL. The annual report, due September, 1992, is on schedule.

6. MILESTONE M-06, SST RETRIEVAL TECHNOLOGY

The information (attachment 5) was presented by Bruce Nicoll of RL. On the open action item, RL expects to brief the regulators in September on technologies to be investigated within M-06. With regard to milestone assessment, RL considers M-06 to be on schedule and on budget.

7. MILESTONE M-07, DEMONSTRATE SST RETRIEVAL TECHNOLOGY

The information (attachment 6) was presented by Bruce Nicoll of RL. The major milestone is still achievable if sluicing is an allowed retrieval method. A study of the potential leakage that could be anticipated during sluicing will be complete within RL in six months and this study will provide data on the potential need for sub-surface barriers during retrieval. RL will begin technical discussions with the Unit Managers early in FY93 on this study.

8. MILESTONE M-08, FULL SCALE FARM CLOSURE

The information (attachment 7) was presented by Bruce Nicoll of RL. No work was planned or budgeted in FY92 for M-08. Work is planned in FY93 and RL's budget will be specifically set-up and reported against M-08 in FY93.

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**TPA Milestone Review
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July 22, 1992 (sheet 4 of 4)**

9. MILESTONE M-09, SINGLE-SHELL TANK CLOSURE

The information (attachment 8) was presented by Bruce Nicoll of RL. There was a discussion as to whether a wording change to the milestone was needed to reflect that an Environmental Impact Statement and not an Supplemental Environmental Impact Statement will be prepared. The Project Manager's agreed that this is not an urgent change and could be made at some time in the future if another change is made to M-09. Although some delay is being experienced in the NOI for the EIS, the milestone for the EIS and Closure Plan are still considered on schedule. The SST System Closure/Corrective Action Work Plan is being delayed until FY93.

10. MILESTONE M-05, SINGLE-SHELL TANK STABILIZATION

The information (attachment 9) was presented by Guy Bishop of RL. There was discussion of the up-coming proposed change to M-05. The draft change request is nearing completion within DOE-RL and will then be sent to DOE-HQ for review. Following HQ review, the change request will be sent to the regulators. DOE forecasts that the regulators should receive the change request within a month. WHC is nearing completion of a safety study of continuing stabilization of watch list tanks and there is some potential that some watch list tanks may be recommended for continued stabilization; however, extensive review and concurrence will be required before the recommendation can be finalized.

11. MILESTONE M-10, SINGLE-SHELL TANK CORE SAMPLING

The information (attachment 10) was presented by Paul Hernandez of RL. Milestone M-10-13 will not be completed in September 1992 as was planned and a new schedule is being developed at this time. The DOE position is that delay in M-10-13 will not impact other TPA milestones. DOE expects to provide the regulators with a change request that will add approximately one year to the schedule. At this time, milestone M-10-06 is expected to be complete in September 1992.

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AGENDA

TRI-PARTY AGREEMENT MAJOR MILESTONE MANAGEMENT REVIEW

Wednesday, August 19, 1992

FED/Room780

<u>TIME</u>	<u>MILESTONE</u>	<u>TITLE</u>	<u>RL DIVISION DIRECTOR</u>	<u>LEVEL 2/3 MANAGER</u>	<u>PRESENTER</u>
9:00 am	M-01-00	Complete 14 Grout Campaigns	Lief Erickson	J. L. Epstein	G. H. Sanders
9:30 am	M-02-00	Pretreatment	Lief Erickson	W. C. Miller	W. C. Miller
10:00 am	M-31-00	Additional DSTs	R. W. Brown	V. R. Dronen	B. A. Kendall
10:30 am	M-04-00	Annual Treatability Studies	Lief Erickson	W. C. Miller	M. Dev
11:00 am	M-06-00	Develop SST Retrieval Tech.	Lief Erickson	M. K. Mahaffy	B. L. Nicoll
	M-07-00	Demonstrate SST Retrieval	Lief Erickson	W. C. Miller	B. L. Nicoll
11:30 am	M-08-00	Full-Scale Farm Closure Demo.	Lief Erickson	W. C. Miller	B. L. Nicoll
	M-09-00	Closure of 149 SST's	E. A. Bracken	R. D. Wojtasek	B. L. Nicoll
12:00 pm		LUNCH			
1:00 pm	M-05-00	SST Stabilization	R. E. Gerton	R. E. Raymond	G. E. Bishop
1:30 pm	M-10-00	SST Core Sample Analysis	R. E. Gerton	J. G. Propson	P. R. Hernandez
2:00 pm		General Discussion			
3:00 pm		Adjourn			

ATTENDEES

TPA MILESTONE MANAGEMENT REVIEW

AUGUST 19, 1992

FED/ROOM 780

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<u>NAME</u>	<u>ORGANIZATION</u>	<u>MAILSTOP</u>
<u>Tim VENEZIANO</u>	<u>WHC</u>	<u>62-35</u>
<u>Dale Lindsay</u>	<u>WHC</u>	<u>132-35</u>
<u>JOE EPSTEIN</u>	<u>WHC</u>	<u>R4-01</u>
<u>Lori Huffman</u>	<u>DOE</u>	<u>A6-55</u>
<u>Rudy Carneon</u>	<u>DOE-RL</u>	<u>A6-55</u>
<u>Paul Day</u>	<u>EPA</u>	<u>B5-01</u>
<u>Dave Jansen</u>	<u>Ecology</u>	<u>PV-11^{oly}</u>
<u>Steve Wisness</u>	<u>DOE</u>	<u>A5-55</u>
<u>Bill Miller</u>	<u>WHC</u>	<u>S4-55</u>
<u>STEVE BARKER</u>	<u>WHC</u>	<u>S4-58</u>
<u>MADAN DEVI</u>	<u>DOE-RL</u>	<u>A5-55</u>
<u>Edwin KENNEDY</u>	<u>WHC</u>	<u>S4-55</u>
<u>Tom HOERTKORN</u>	<u>DOE</u>	<u>A5-10</u>

ATTENDEES

TPA MILESTONE MANAGEMENT REVIEW

AUGUST 19, 1992

FED/ROOM 780

<u>NAME</u>	<u>ORGANIZATION</u>	<u>MAILSTOP</u>
<u>Mike Mahaffey</u>	<u>WHC - TD</u>	<u>LY-73</u>
<u>Mark Henderson</u>	<u>WHC - TWRS</u>	<u>S4-55</u>
<u>JON YERXA</u>	<u>DOE - EAP</u>	<u>A5-15</u>
<u>JIM DAVIS</u>	<u>DOE - Referral</u>	<u>-5-15</u>
<u>Gene Senat</u>	<u>DOE - TFP</u>	<u>R2-62</u>
<u>Guy Bishop</u>	<u>DOE</u>	<u>R2-62</u>
<u>Thomas RANBY</u>	<u>WHC - TWRS</u>	<u>R1-49</u>
<u>Paul Carter</u>	<u>DOE / WMD</u>	<u>A5-21</u>
<u>Curtis Stroup</u>	<u>WHC / LABS</u>	<u>H1-61</u>
<u>STEVEN M. JONES</u>	<u>WHC / LABS</u>	<u>H1-61</u>
<u>John Propson</u>	<u>WHC - TWRS</u>	<u>R2-18</u>

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**Grout Facilities Milestone M-01-00
Complete 14 Double-Shell Tank Grout Campaigns**

presented to

**State of Washington Department of Ecology and
U.S. Environmental Protection Agency**

**Leif Erickson, RL Division Director
George Sanders, RL Branch Chief
Joe Epstein, WHC Level 3 Manager**

August 19, 1992

Milestone Description

MO-01-00

Complete 14 grout campaigns of double-shell tank (DST) waste by December 1996 and maintain currency with feed thereafter.

Baseline Schedule

Complete 14 campaigns by December 1996.

Open Commitments

Action: RL will finalize the report on Grout hydrogen generation and transmit to Ecology.

Responsibility: G. Sanders

Due Date: February 28, 1992 (preliminary worst case basis)

Status: Letter and response to RL by August 31, 1992.
Reflects realistic analysis.

Action: Provide Ecology with a copy of the draft grout C-2 analysis to the State in parallel with DOE review.

Responsibility: G. Sanders

Due Date: July 31, 1992

Status: C-2 analysis required. Revision to incorporate comments and perform additional population dose calculations to be completed December 1992.

Accomplishments

- **Completed Tank Integrity Assessment (with two open items). May 1992**
- **Technical exchange with NRC and invited guests - update of '88/'89 information. July 1992**
- **Completed draft FY 1993 planning documents. July 1992**
- **Completed resolution of vault 103 leak test. July 1992**
- **Submitted certified Grout Part B Permit Application. July 1992**
- **Submitted FSAR, Revision "O" to RL. July 1992**
- **Preliminary results on hydrogen generation presented to Ecology (follow-up meeting to finalize resolution). July 1992**

Planned Activities

- Issue pilot plant formulation process results. August 1992
- Complete construction of vault 102 with punch list. October 2, 1992
- Complete ORR applicability analysis checklist. November 1992
- Complete tank integrity assessment open items. December 1992
- Complete vault 101 core analysis. December 1992
- Complete C-2 analysis revision. December 1992
- Resubmit PA to DOE-HQ Peer Review Group. March 1993

Milestone Assessment

	<u>Schedule</u>	<u>TPA Baseline</u>	<u>Status</u>
• M-01-01A	Complete and verify 2 campaigns (101, 102).	9/93	Minimum 1 yr delay
• M-01-01B	Complete 1 additional campaign (103).	12/93	TBD
• M-01-02	Complete 3 additional in 1994 (104, 105, 106).	12/94	TBD
• M-01-02A	Initiate construction vaults 106-109.	11/92	TBD
• M-01-03	Complete 4 campaigns in 1995 (107-110).	12/95	TBD
• M-01-03A	Initiate construction of vaults 110-113.	11/93	TBD
• M-01-04/00	Complete 4 campaigns in 1996 (111-114).	12/96	TBD
• M-01-04A	Initiate construction of vault 114.	11/94	TBD

Milestone Assessment (cont.)

- Minimum of one year delay forecasted to near-term milestone (M-01-01A)
 - Performance Assessment - critical path
- Cost versus Budget

	FYTD Budget	FYTD Cost	Variance	FY 1992 Annual Budget	Variance Explanation
Expense Capital	30727 1812	31326 887	(599) 925	35800 2758	* **
TOTAL	32539	32213	326	38558	

*Hydrogen generation analysis, FSAR, Performance Assessment, and the ORR cost more than planned.

**Delay on in-tank mixer pump delivery, implementation of exhauster price savings CAPs, and core drilling truck equipment delivery delays.

Milestone Assessment (cont.)

- **Technical scope - completion/review/approval of program critical documents.**
- **Formulation/vault filling ability.**
- **See Key Issues.**

Special Topics

Key Issues

- **Ecology's concerns on hydrogen generation.**
 - **Generation rate evaluation report - significantly less than Whyatt Report, estimated 120 x less.**
 - **Time Spacial Concentration Profile Report - completing final draft.**
 - **FSAR update planned.**
 - **Discussions/agreement with WDOE.**
 - **Facility mitigation measures.**

- **NRC ruling on petitions of the States of Washington and Oregon along with Yakima Indian Nation with respect to high-level waste definition.**

- **DOE concerns on radionuclides, adequacy of barrier, and land disposal restrictions.**

Special Topics (cont.)

Change Notice Activity

- **Tri-Party Agreement change request, draft in review by DOE prior to submittal to Ecology and EPA (one year delay).**

Action Items

- **WHC to resubmit PA.**
- **RL/HQ approval of PA, FSAR, and ORR.**
- **Ecology/EPA issuance of the Part B Permit.**
- **WHC to resolve hydrogen concerns on 106-AN with Ecology.**

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**INITIATE PRETREATMENT OF
DOUBLE-SHELL TANK WASTES**

Milestone M-02-00

W. C. Miller

Waste Pretreatment

August 19, 1992

Handwritten notes:
H...
M...
R

Milestone Description

- **M-02-00** **Initiate pretreatment of double-shell tank waste**

Double-shell tank waste pretreatment is required prior to disposal of high-activity tank wastes. The pretreatment supports the removal, treatment, and final disposal of wastes subject to land disposal restriction which are stored in double-shell tanks. Removal of the wastes from double-shell tanks and disposal in grout or glass will allow double-shell tank space to be made available for single-shell tank waste

- **DELIVERABLE(S)**
 - **Program documents which define plans to develop, demonstrate, and implement pretreatment processes for tank wastes (M-02-03).**

 - **Start DST NCAW retrieval system process test (M-02-04)**

 - **Incorporate additional interim milestones to support pretreatment of double-shell tank waste (M-02-05)**

Milestone Description (Cont)

- **BASELINE SCHEDULE (Interim)**
- **Submit tank waste remediation system baseline scope, cost, and schedule by August 1993 (M-02-03)**
- **Start DST retrieval process test by December 1996 (M-02-04)**
- **Incorporate additional milestones for pretreatment by August 1993 (M-02-05)**

Accomplishments (Last three months)

- **Tank Waste Remediation System (TWRS) Decision Plan was revised to refocus the document on critical program decisions and reissued on July 29, 1992**

- **Completed national TWRS Technology Workshop in July 1992**
 - **Identified uncertainties, prioritized technology needs, and prioritized process options to develop a reference program strategy**

- **Letter issued to EPA on proposed schedule for RD&D permits to use B Plant/WESF as an R&D facility (M-02-00-T1)**

- **Several contacts made to evaluate application of foreign technologies to TWRS, including NUMATEC and SGN (French), BNFL (British), and Russian organizations**

Accomplishments (Last three months) (Cont)

- **Short-list process candidates proposed for Initial Pretreatment Module**
 - **Ion exchange for cesium removal**
 - **Oxidation (calcination, ozonation, or wet oxidation) for organic and ferrocyanide destruction**

Planned Actions (Next six months)

- **Revise and reissue TWRS Decision Plan (every 6 weeks)**
- **Initiate definitive design of DST NCAW retrieval system process test (M-02-04)**
- **Issue TWRS Functions and Requirements document**
- **Issue draft TWRS Technology Plan for review**
- **Complete engineering study of Initial Pretreatment Module (M-02-00-T2)**
- **Issue TWRS Fiscal Year 1993 Work Plan**
- **Issue draft TWRS Systems Engineering Management Plan for review**
- **Issue draft TWRS Systems Engineering Study (first 9 options) for review**

Milestone Assessment

- Schedule

MILESTONE	DESCRIPTION	DATE	STATUS
M-02-03	Submit TWRS baseline documents	8/93	On Schedule
M-02-04	Start DST NCAW retrieval system process test	12/96	On Schedule
M-02-05	Incorporate additional interim milestones to support pretreatment	8/93	On Schedule
M-02-00-T1	Request concurrence on use of B Plant/WESF as R&D facility	2/92	Complete
M-02-00-T2	Complete engineering study of Initial Pretreatment Module (Tank Safety Treatment Module)	12/92	On Schedule

Milestone Assessment (Cont)

- Schedule (Cont)

MILESTONE	DESCRIPTION	DATE	STATUS
M-02-00-T3	Publish summary of NCRW TRUEX laboratory development work	12/92	3 months behind schedule
M-02-00-T4	Complete engineering study on Cs ion exchange	3/93	On Schedule
M-02-00-T5	Complete waste treatment feed optionization (blending) study	3/93	On Schedule
M-02-00-T6	Issue Technology Plan for selection of advanced (actinide) separation process	3/93	On Schedule
M-02-00-T7	Initiate settling tests for NCAW in-tank solids washing	12/93	12 months schedule extension required

Milestone Assessment (cont)

- **Technical Scope**

- **Technology Workshop included national expertise to define technology needs and prioritized development of technologies**
- **Technology Plan(s) will document plans to develop and demonstrate candidate technologies**

Milestone Assessment (cont)

- Budget vs. Cost

<u>FYTD Budget</u>	<u>FYTD Cost</u>	<u>Spending Variance</u>	FY 1992 <u>Annual Budget</u>	<u>Variance Explanation</u>
3.1	4.6	1.5	3.7	Overrun caused by cost and scope increases not anticipated in mid-year reductions. Lower priority activities being deferred to fund this work.

Special Topics

- **Change Request in preparation to move dates for M-02-00-T3 and -T7 due to revised program priorities--proposed change will not impact any interim or major milestones**

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**PROVIDE ADDITIONAL DOUBLE-SHELL
TANK CAPACITY**

MILESTONE M-31-00

**T. R. HOERTKORN
RL, TREATMENT PROJECTS BRANCH
AUGUST 19, 1992**

A-17 Mc, A-17 NT 3

TPA Milestone M-31-00

Provide additional double-shell tank capacity

Open Commitments

- **Item**

- **Provide Ecology with approved copy of the FDC by July 17**

- **Status**

- **FDC/CDR have been approved and will be transmitted to Ecology and EPA**

TPA Milestone M-31-00

Provide additional double-shell tank capacity

Milestone Description

- **M-31-01** **Complete Conceptual Design Report -
for up to four tanks
Due 9/30/92**
- **M-31-02** **Recommend additional double-shell
tank milestone(s)
Due 9/30/92**
- **M-31-02-T1** **Complete detailed design for first new
tanks
Due 2/95**

TPA Milestone M-31-00

Provide additional double-shell tank capacity

Milestone Description (continued)

- **M-31-02-T2** **Construction start of first new tanks
Due 10/95**
- **M-31-02-T3** **Provide additional double-shell tank
capacity. Construction complete for
first new tanks.
Due 6/99**

TPA Milestone M-31-00

Provide additional double-shell tank capacity

Accomplishments (Last 3 months)

- **Multi-Function Waste Tank Facility**
 - **Functional Design Criteria has been approved by RL**
 - **Conceptual Design Report has been approved by RL**
 - **Project Validation successfully completed**
 - **Pre-ESAAB successfully completed**

TPA Milestone M-31-00

Provide additional double-shell tank capacity

Planned Actions (next six months [M-31-01])

- **Assist DOE-HQ in an Independent Cost Estimate (ICE) Review to be held September 8, 1992**
- **ESAAB**
- **Complete M-31-01 by providing a CDR & associated change request establishing revised & new target/interim milestones**

TPA Milestone M-31-00

Provide additional double-shell tank capacity

Planned Actions (continued)

- **Study to evaluate additional tank space requirements scheduled to begin upon identification of funding (M-31-02)**
 - **Waste generated during retrieval**
 - **Waste generated during decommissioning**
 - **Waste generated during remediation activities, and**
 - **Additional mission needs as identified**

TPA Milestone M-31-00

Provide additional double-shell tank capacity

Milestone Assessment

- **Schedule**

- **Conceptual Design has been completed (M-31-01)**
- **Potential schedule impact (M-31-02)**

- **Cost vs Budget
(Actuals through end of July)**

<u>FYTD Budget</u>	<u>FYTD Cost</u>	<u>Spending Variance</u>	<u>Annual Budget</u>	<u>FY 1992 EAC</u>	<u>Variance Explanation</u>
2155.5	2395.5	240.0	2239.0	2429.0	Variance due to acceleration effort from 99 to 96 and back to 99

TPA Milestone M-31-00

Provide additional double-shell tank capacity

Special Topics

M-31-02 has problems for completion:

- **Issue has been escalated to RL/WHC senior management, and**
- **Correspondence will be provided within the next 30 days**

Provide Annual Reports of Tank Waste Treatability Studies

Milestone M-04-00

M. Dev

Hanford Tank Waste Disposal Program

August 19, 1992

Milestone Description

- **M-04-00** **Wastes stored in double-shell (DST) and single-shell (SST) tanks, as well as newly generated wastes destined to be stored in double-shell tanks, will be studied to determine the most appropriate treatment/disposal method. Studies to determine the long-term feasibility of grout or glass for disposal of these wastes are included in the scope of this milestone.**

- **DELIVERABLE(S)** **The report is due annually. It is a concise addenda to the previous year's report. It will provide traceability with the activities and developments stated in the previous year's report. The areas which are covered in this report include:**
 - **Treatability of existing and newly generated SSTs and DSTs wastes**
 - **Feasibility of using grout and glass as a final waste form**
 - **Safety issues, such as tank 101-SY, which impact treatment**
 - **Other treatment/disposal technologies, such as intermediate processing, which may have an impact on future disposal**

- **BASELINE SCHEDULE** **Submit report annually in September to the U. S. Environmental Protection Agency, and to the State of Washington Department of Ecology.**

Accomplishments (Last three months)

- Draft contributions received and incorporated into report, August 1, 1992

Planned Actions (Next six months)

- **WHC review comments due August 17, 1992**
- **Report issued to DOE-RL for comments, September 8, 1992**
- **Comments from DOE-RL due, September 18, 1992**
- **Final document released September 30, 1992**

MILESTONE ASSESSMENT

- Schedule

- On schedule

- Budget vs. Cost (\$ in 000's)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
FYTD Budget	0	0	0	5	10	25	40	100	110	125	135	150
FYTD Cost	0	1	2	3	7	11	25	37	53	63		
Spending Variance	0	-1	-2	2	3	14	15	12	17	10		

Variance Explanation: M-04 is currently underrun due to the following:

- Majority of work is being performed by outside consultant, Los Alamos Technical Associates, and billing is running 1 month behind.
- Costs required to support contributing authors is less than anticipated.

**SINGLE-SHELL TANK RETRIEVAL
TECHNOLOGY DEVELOPMENT**

Milestone M-06-00

B. L. Nicoll, DOE

Tank Waste Remediation System

August 19, 1992

Milestone Description

- **M-06-00** **Develop single-shell tank waste retrieval technology and complete scale model testing.**

- **DELIVERABLE(S)** **Demonstrate retrieval technology for single-shell tank waste forms including sludge, saltcake and in-tank hardware. Show technology for support, control and deployment systems. Demonstrations to be performed in scale model tank, using simulated waste.**

- **BASELINE SCHEDULE** **Initiate testing October 1992 (M-06-02) and complete demonstrations in June 1994.**

Open Commitments

- **ACTION ITEM - Set up meeting that provides a detailed briefing to the regulators on M-06-00.**

Responsibility - B. L. Nicoll, DOE

Due Date - February 26, 1992

Status - A TWRS Retrieval Technology Workshop was held in July to identify retrieval technology. M-06 plan is being revised to consider additional technologies. Meeting will be set following DOE approval of the revised plan.

Accomplishments (Last three months)

- **TWRS Retrieval Technology Workshop Completed June 29-July 1, 1992**
- **M-06 Planning Broadened to Include Sluicing and Hydraulic Methods with Barriers for Leak Mitigation**
- **Planning for Test Start (M-06-02) in October 1992 Completed by WHC.**
- **End Effector and Conveyance System Test Plan and Procedure completed and issued within WHC.**
- **End Effector Test Units and Test Bed Fabrication Completed for 337 Building**
- **Set up of Test Assemblies Started in 337**

Planned Actions (Next six months)

- **DOE to review and approve M-06-00 Plan and Procedures.**
- **Provide technical briefing to State and EPA.**
- **Confirm Performing Organizations (WHC, PNL, Sandia, Livermore, Others)**
- **Complete Tests of End Effectors for Sludge and Air Conveyance System**
- **Upgrade Robotics Systems and Test Bed and Prepare for October 1992 Demonstration with End Effectors for Sludge and Conveyance System, Saltcake Water Cannon and Pipe Cutter for In-Tank Hardware**
- **Complete M-06-02 -- Initiate waste retrieval testing in scale-model tank.**

MILESTONE ASSESSMENT

- **Schedule**

- **M-06-01 "Identify Technologies" Completed October 1990**
- **M-06-02 on Track for October 1992**
- **Planning based on June 1994 Completion for M-06-00**

MILESTONE ASSESSMENT (cont'd)

- **Technical Scope**

- **1/8 Sector, Full-Scale Tank Mockup in 337 High Bay to be used for all Robotics Demonstrations**
- **Multi-Laboratory Approach to End Effector Development for Various Waste Forms**
 - **WHC Sludge**
 - **Lawrence Livermore Saltcake**
 - **Sandia In-Tank Hardware**
- **Scale Model Tests for Hydraulic Method Demonstration Added**

MILESTONE ASSESSMENT (cont'd)

- Budget vs. Cost (\$ in 000's)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
FYTD Budget	220	576	898	1,208	1,565	2,043	2,582	2,997	3,372	3,719	4,331	5,049
FYTD Cost	47	220	434	765	1,039	1,558	1,909	2,376	2,879	3,407		
Spending Variance	173	356	454	443	426	485	673	621	493	312		

Variance Explanation: Delayed billings, delay in contractor charges, and procurement delay. No underrun anticipated

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**FULL-SCALE DEMONSTRATION
OF WASTE RETRIEVAL TECHNOLOGY**

Milestone M-07-00

B. L. Nicoll

Treatment Program Branch

August 1992

ATTACHMENT 6

Milestone Description

- **M-07-00** **Initiate full-scale demonstration of waste retrieval technology**

- **DELIVERABLES** **Demonstration Initiation is defined as startup of the waste retrieval equipment in the selected single-shell tank**

- **BASELINE SCHEDULE** **Initiate retrieval operations - October 1997**

OPEN COMMITMENTS

- None

Accomplishments (Last three months)

- **Initiated development of M-07 Tank Selection criteria and recommendations (M-07-01)**
 - **Selection criteria (top level):**
 - **Resolution of tank safety issues**
 - **Compliance with regulatory requirements**
 - **Proceed with waste disposal**
 - **Tank space logistics**
 - **Full size SST for demonstration of reference SST retrieval technologies**

Accomplishments (Last three months) (Cont)

- **Prepared draft Tank C-106 Early Retrieval Plan (July, 1992)**
 - **Plan addressed:**
 - **Six retrieval options using sluicing**
 - **Identification of receipt DST**
 - **Transfer routing**
 - **Tank space impacts**
 - **Pretreatment options**
 - **Project execution recommendations**
 - **Preliminary cost estimates and schedules for 2 options**
 - **Plan under review by DOE**
 - **Plan to be provided to Regulators in Sept 1992.**

Accomplishments (Last three months) (Cont)

- **Completed Retrieval Technology Workshop (June 29 - July 1, 1992)**
 - **Identified reference SST retrieval techniques**
 - **Sluicing**
 - **Long Reach Manipulator systems**
 - **Strawman retrieval strategy developed**
 - **Apply sluicing to soft waste in non-leaking tanks or high priority safety tanks.**
 - **Apply Long Reach Manipulator systems on other tanks when available, and to achieve closure requirements for waste retrieval if sluicing ineffective.**

Accomplishments (Last three months) (Cont)

- **Identified and ranked technical uncertainties and needs by retrieval function**
- **Identified and ranked specific technologies to meet each issue or need.**

Planned Actions (Next six months)

- **Complete M-07 tank selection (M-07-01 and 02)**
- **Submit C-106 Early Retrieval Plan to Regulators**
- **Complete initial tank leak study**

Milestone Assessment

- **Schedule**

- **If sluicing is allowed for SST waste retrieval, initiation of retrieval by 10/97 possible**
 - **May require fast-track design/construction approach with concurrent environmental and safety documentation**
- **Retrieval operations must coincide with other TWRS operations.**

Milestone Assessment (Cont)

- **Technical Scope**

- **Retrieval options for M-07 tank include both sluicing and long reach manipulator systems (reference technologies)**
- **Propose to initiate retrieval demonstration with sluicing**
- **Complete 95% waste retrieval with long reach manipulator system, if required**

Milestone Assessment (Cont)

- Budget vs. Cost (\$ in 000's)

	<u>July</u> [*]	<u>Aug</u>	<u>Sept</u>
FY Budget [*]	325	375	415
FY Costs [*]	325		
Spending Variance [*]	0		

^{*} Budget for FY92 M-07 work established 7/92

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**FULL-SCALE SINGLE-SHELL TANK
FARM CLOSURE DEMONSTRATION**

Milestone M-08-00

B. L. Nicoll

Treatment Program Branch

August 1992

H-77Ac14Mev 7

Milestone Description

- **M-08-00** **Initiate full-scale tank farm closure demonstration project**

- **DELIVERABLES** **Initiation is defined as full-scale waste retrieval**

- **BASELINE SCHEDULE** **Initiate full-scale closure demonstration - June 2004**

OPEN COMMITMENTS

- None

Accomplishments (Last three months)

- **Continuation of planning for infrastructure upgrades required for waste retrieval**

Planned Actions (Next six months)

- **Initiate studies on selection of the tank farm for the M-08 demonstration**
- **Initiate upgrade engineering studies on tank farm upgrades to support retrieval for M-08**
- **Perform retrieval-closure interface planning**

Milestone Assessment

- **Schedule**

- **Activities planned for FY 1993-1994 will support M-08 demonstration**
 - **Engineering studies and functional design criteria development**
 - **Technology evaluations**
 - **Initiation of conceptual design**
 - **Detailed planning and scheduling**
 - **Support to NEPA documentation preparation for the SST EIS**

Milestone Assessment (cont)

- **Technical Scope**

- **Current TWRS plans are to demonstrate retrieval of waste for entire tank farm as part of closure demonstration**
- **M-08 schedule may require:**
 - **Early preparation of closure plan**
 - **Early selection of M-08 tank farm**

- **Budget vs. Cost**

- **No budget in FY 1992**

Milestone Description

- o **M-09-00** **Complete Closure of all 149 single-shell tanks by June 2018**

- o **Deliverables** **Closure and removal of required waste from the 149 single-shell tanks will be effected in accordance with the approved closure plan(s). As stated in the Hanford Defense Waste-Environmental Impact Statement Record of Decision, a supplemental EIS will be prepared prior to making any final decisions regarding disposal of single-shell tank waste. The final closure plan(s) will address the recommendations of the supplemental EIS**

- o **Baseline Schedule**
 - **Complete preparation of supplemental environmental impact statement (SEIS) and issue draft for public review by June 2002 (M-9-01)**

 - **Submit closure plan to Ecology for approval by December 2003 (M-09-02)**

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Open Commitments

None

Accomplishments (last three months)

- o TWRS EIS NOI was approved by Leo P. Duffy, Director of Office of Restoration and Waste Management**
- o Draft Field Characterization work plan to support GAO Audit (GAO-RCED-89-157) submitted to DOE-RL for review and comment.**

Planned Actions (next six months)

- o Tank Waste Remediation System (TWRS) System Engineering Study will be revised to include all tank waste. Draft scheduled for issuance in 10/92
- o Revise the SST System Closure/Corrective Action Work Plan and submit to Ecology for review
- o Issue TWRS EIS NOI to the Federal Register
- o Issue field characterization work plan to support GAO Audit item (GAO-RCED-89-157) to DOE-RL

Milestone Assessment

o Schedule

- Issue Draft TWRS System Engineering Study (Rev 1) - on schedule
- Issue to Federal Register TWRS SEIS NOI - Delayed
- Issue SST System Closure/Corrective Action Work Plan (Rev 1) to Ecology-
FY92 work scope deferred until FY93
- SEIS (M-09-01) - on schedule
- Closure Plan (M-09-02) - on schedule
- SST Closure (M-09-00) - Depends on successful development of closure
technology

MILESTONE ASSESSMENT (cont'd)● **Budget vs. Cost (\$ in 000's)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
FYTD Budget	293	607	928	1,305	1,739	2,092	2,274	2,354	2,626	2,920	3,150	3,600
FYTD Cost	196	470	785	1,144	1,575	1,915	2,126	2,354	2,633	2,969		
Spending Variance	97	137	143	161	167	177	148	(0)	(7)	(49)		

INVALID - REPLACE
WITH ATTACHED
KBA
8/19/92

Special Topics

- o **Revision to the SST System Closure/Corrective Action Work Plan being deferred**
 - **Revision initiated in FY1992**
 - **Completion deferred until FY1993 because of higher priority "up-front" TWRS work scope needing to be accomplished, including preparation of TWRS Systems Engineering Study, TWRS Decision Model and TWRS NOI Technical Support Document**
 - **Action has no impact to TPA schedule**

MILESTONE ASSESSMENT (cont'd)

M-09

● **Budget vs. Cost (\$ in 000's)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
FYTD Bud.	59	98	704	1,135	1,467	1,819	2,072	2,393	2,626	2,920	3,219	3,601
FYTD Cost	196	470	785	1,144	1,575	1,915	2,126	2,354	2,633	2,969		
Spend Var.	(137)	(372)	(81)	(9)	(108)	(96)	(54)	(39)	(7)	(49)		

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Complete Single-Shell Tank Interim Stabilization

Milestone M-05-00

**G. E. Bishop
Tank Farms Project Office**

August 19, 1992

MILESTONE DESCRIPTION

- o M-05-00** **Complete single-shell tank interim stabilization on all tanks except C-105 and C-106 by September, 1995. Complete interim stabilization on all tanks by September, 1996.**

- o Deliverable(s)** **Interim stabilization will be considered complete when pumping of each tank is complete. Pumping will be complete when as much liquid as practical is removed to a double-shell tank. This occurs when pumping rate drops to 0.05 gpm. At this point, only 5000 gallons of supernatant and 50,000 gallons of interstitial liquid remain in the tank.**

- o Baseline Schedule** **Interim stabilize single-shell tanks annually beginning in FY-1989.**

ACCOMPLISHMENTS (LAST 3 MONTHS)

- o Pumping suspended in January 1992, due to noxious gas issues. Pumping since delayed by criticality issue (all tanks).**
- o Completed a draft of safety study of nonwatchlist tanks to appraise safety concerns on interim stabilization of these tanks.**
- o Safety study examing safety concerns that could occur during stabilization of the remaining nonwatchlist tanks not currently available for pumping has been completed.**
- o Organic issue with tank C-102 has been resolved.**

PLANNED ACTIONS (NEXT 6 MONTHS)

- o Resume after outstanding safety issues are addressed:
 - Continue interim stabilization of 4 tanks (BY-102, C-102, C-107, and C-110). Milestone M-05-03.**
 - Continue interim stabilization of 1 additional tank (BY-109). Milestone M-05-04.****

- o Continue investigation of safety issues involved with watchlist tanks.**

- o Complete the safety study of nonwatchlist tanks to appraise safety concerns on stabilization of these tanks.**

- o Negotiate changes to interim stabilization milestones M-05.**

MILESTONE ASSESSMENT

o Cost vs Budget (\$M) (through July 31)

<u>FYTD Budget</u>	<u>FYTD Cost</u>	<u>Spending Variance</u>	<u>FY-92 Annual Budget</u>	<u>Variance Explanation</u>
5.6	4.7	0.9	6.2	Delays in pumping have resulted in an under-run on the budget.

o Schedule Performance

- o Pumping suspended on January 28, 1992, due to incident involving unidentified toxic fumes. Criticality concerns have since delayed restart of pumping.

MILESTONE ASSESSMENT (continued)

o Schedule Performance (continued)

o M-05-03 - (4 tanks by 9-30-91)

Missed completion date. Pumping suspended for six weeks at end of August due to concerns over compliance with Wyden Amendment. Pumping restarted in 241-BY farm and 241-C farm in November.

- Four (4) tanks will be pumped following resolution of safety issues (e.g., criticality) and pressure testing of transfer lines.**

o M-05-04 - (9 tanks by 9-30-92)

Milestone will not be met as currently written.

- One (1) tank will be pumped following resolution of safety (criticality) issues, and pressure testing of transfer piping.**

MILESTONE ASSESSMENT (continued)

o Schedule Performance (continued)

- **For 12 remaining nonwatchlist tanks, physical and material condition of farms impact schedule and will likely pace stabilization work of remaining tanks. A detailed scope of this work has been prepared. Safety issues that have been identified also must be addressed (e.g., criticality).**
- **For 27 remaining watchlist tanks, unresolved safety issues (hydrogen generation, ferrocyanide, organic and high temperature) must be addressed prior to proceeding with stabilization.**

MILESTONE ASSESSMENT (continued)

o Technical Scope

- o The milestone completion remains dependent on removal of current pumping restrictions. When this will occur is unknown.**

- o 44 tanks remain to be stabilized.**
 - 17 nonwatchlist tanks**
 - 27 watchlist tanks**

- o Watchlist tanks designated by public law 101-510, section 3137 (Wyden Amendment). Most have unreviewed safety concerns over hydrogen generation or ferrocyanide content. Others contain potentially flammable organics, or high temperature.**

MILESTONE ASSESSMENT (continued)

o Technical Scope (continued)

- o Resolution of unresolved safety issues may require presently unanticipated modifications or alterations to the affected tanks, which could delay stabilization even further.**

SPECIAL TOPICS

o Issue

- o Due to restrictions of transfers within tank farms due to criticality concerns, the restart of pumping has been delayed.**
- o Achievement of M-05 milestone is uncertain.**

o Corrective Action

- o Technical issues require discussion for renegotiation of the M-05 milestone.**

SINGLE-SHELL TANK CHARACTERIZATION

MILESTONE M-10-00

Paul Hernandez - USDOE/RL

John Propson - WHC

Waste Characterization Program

August 19, 1992

Milestone Description

- o **M-10-00** **Sample and analyze at least two complete core samples from each single-shell tank.**

- o **DELIVERABLE(S)** **Obtain and analyze a minimum of two core samples from each single-shell tank. Samples will be collected and analyzed to determine the characteristics of significant waste strata to support timely development of tank waste retrieval technology and to assist in preparation of single-shell tank closure plans and the supplemental EIS. Samples will be collected and analyzed in accordance with a single-shell tank waste analysis plan.**

- o **BASELINE SCHEDULE** **Complete single-shell tank waste characterization by September 1998.**

Accomplishments (Last three months)

- **Received concurrence from the Technical Advisory Panel (TAP) on the Hard Salt Cake Envelope Operating Method**
- **Issued technical reports documenting NPH cleanup development**
- **Received the statistical analysis of the revised 241-U-110 data package**
- **Completed core sampling of 241-S-104 (16 of 20 cores required to meet Milestone M-10-06 have been taken as of August 2, 1992)**
- **Hosted the Characterization Technology Development National Workshop**

Planned Actions

- Obtain remaining 4 of 20 core samples from single-shell tanks (M-10-06) September 1992
- Issue Waste Characterization Plan - Combining DST and SST September 1992
- Continue development of Rotary Mode Core Sampling System
- Continue analysis and data package preparation of previously taken cores

MILESTONE ASSESSMENT

● Schedule Performance

- M-10-05-T1 Issue draft Integrated Sampling Plan to Ecology - completed on schedule
- M-10-05 Issue Integrated Sampling and Analysis Plan - completed on schedule
- M-10-13-T1 Complete improved organic clean-up analytical method - completed on schedule
- M-10-13-T2 Installation of hard salt cake sampler and hydrostatic balance system, scheduled for completion in June, 1992. Milestone has been missed - new schedule under development
- M-10-13 Core sampling truck ready for hard salt cake sampling, September 30, 1992. Milestone is behind schedule - new schedule under development
- M-10-06 Obtain a total of 20 core samples - expected to complete on schedule*

*Possible Window "G" impact

MILESTONE ASSESSMENT (cont'd)

- Budget vs. Cost (\$ in 000's)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	EAC
FYTD Budget	1172	2413	3118	4269	5525	6875	8429	8916	9878	11137	12514	13667	16490
FYTD Cost	439	1924	2907	3829	4989	6308	7720	9343	10312	11679			
Spending Variance	733	489	211	440	536	567	709	(427)	(434)	(542)			

Variance Explanation: The cost profile reflects delays in core analysis early in the year resulting from a laboratory emphasis on higher priority, safety-related work. Beginning in May, the laboratory has directed substantial resources toward core analysis, generating substantial cost escalation.

SPECIAL TOPICS

- **M-10-13, Hard Salt Cake Sampling - Schedule slippage**
 - **Work associated with completion of M-10-13 will extend into FY 93**
 - **Scope of development work**
 - **Operation method**
 - **Research and development requirements**
 - **Design requirements**
 - **Procurement complexities**
 - **Expediting actions have been taken where possible**
 - **Schedule revision under development**

SPECIAL TOPICS (con't)

- **M-10-13, Hard Salt Cake Sampling - Project Complexities**
 - **New and extensive equipment modifications**
 - **Gas purging**
 - **Drill bit temperature monitoring**
 - **Instrumentation for depth, pressure, purge gas rate, and RPM**
 - **Procedure development**
 - **Extensive training requirements**
 - **Readiness review**
 - **Sampling Operations will require documented monitoring**