



98-0000793

Department of Energy  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

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DNF SAFETY BOARD

DEC 19 1997

97-MSD-294

The Honorable John T. Conway  
Chairman  
Defense Nuclear Facilities Safety Board  
625 Indiana Avenue, N.W., Suite 700  
Washington, D.C. 20004

Dear Mr. Chairman:

DEFENSE NUCLEAR FACILITIES SAFETY BOARD (DNFSB) RECOMMENDATION 92-4  
IMPLEMENTATION PLAN (IP) REVISION 2N, COMPLETION OF COMMITMENT 5.2.2.e,  
"PROVIDE APPLICABLE SECTIONS OF THE TWRS MULTI-YEAR WORK PLAN THAT REFLECT  
TECHNOLOGY DEVELOPMENT ACTIVITIES FOR TWRS"

Sections of the Tank Waste Remediation System (TWRS) Multi-Year Work Plan (MYWP) are listed below in response to DNFSB Recommendation 92-4 IP, Revision 2N, Commitment 5.2.2.e, "Provide Applicable Sections of the TWRS Multi-Year Work Plan that Reflect Technology development Activities for TWRS," due December 31, 1997. The TWRS MYWP ("Tank Waste Remediation System Fiscal Year 1998 Multi-Year Work Plan," HNF-SP-1230, Revision 0, Volume 2, dated September 1997) was transmitted to the DNFSB staff on December 8, 1997. The referenced sections contain either summary scope technology connections or direct mention of site technology activities.

WORK BREAKDOWN SCHEDULE  
ELEMENT DICTIONARY SHEET

<u>TITLE</u>	<u>PAGE</u>
1.1.2.4/IV Tank Waste Characterization Project	TW01.2-9
1.1.2.1.03.68 (INIF70) TMACS Installation	TW03.2-12
1.1.3.1/IV Retrieval Project	TW04.2-5
1.1.3.1.01 Waste Feed Delivery	TW04.2-10
1.1.3.7.01 Privatization Phase II	TW07.2-4,5
1.1.3.4.01 ILAW Storage/Disposal	TW09.2-5
1.1.3.4.03 Cs/Sr Capsule Disposal	TW09.2-10

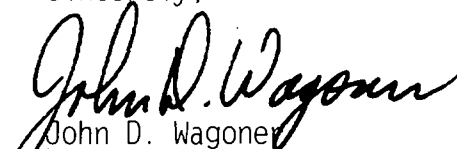
Additionally, the table entitled, "TWRS Technology Map," dated December 8, 1997, is attached. This table reflects linkages between TWRS technology needs, technology activities, and specific planning references to the MYWP planning activities at a more detailed level.

The above information and the attached table have been provided to members of your staff. The U.S. Department of Energy, Richland Operations Office has completed the actions identified under this commitment and proposes closure of the commitment.

DEC 19 1997

If you have any questions regarding this matter, please contact me, or your staff may contact Jon Peschong, Management Systems Division, on (509) 376-9327.

Sincerely,

  
John D. Wagone  
Manager

MSD:CSL

Attachment

cc w/attach:  
J. M. Owendoff, EM-2  
C. A. Peabody, EM-4  
M. W. Frei, EM-30  
R. E. Erickson, EM-38  
K. T. Lang, EM-38  
M. B. Whitaker, S-3.1

## Tank Waste Remediation System - Technology Map

TWRS Project Number	Level 0 Logic Block #	RL-WT Need Tracking Number	Technology Need Title	TWRS Manager	PHMC Point of Contact	Task ID, if included FY98 Multi-Year Work Plan (MYWP)	FY98 Planned Funding from EM-30 (\$000)	FY98 Planned Funding from EM-50 (\$000)	FY98 Total Funding (\$000)	Notes
TW01	10	2	Technetium-99 Analysis in Low Level Waste Feed	Kelley	David Dodd	4K8B33	150	550	700	Contained in the TWRS FY98 Characterization schedule.
TW01	8	4	In-Tank Core Sampling...off-Riser Capability	Kelley	David Dodd		0 (see note)	0 (see note)	0	This technology was originally targeted at safety issue characterization activities. Emphasis has shifted to support to closure (Hanford Tanks Initiative) for characterization of AX-104. See RL-WT23.
TW01	10	5	Large Volume (3-5 l) Sludge and Supernate Sampler	Kelley	David Dodd	4H40D03	600	0 (see note)	600	Savannah River funded through EM-50 to install fluidic sampling equipment. Data from this installation is expected this year.
TW03	20	6	Corrosion Probe Development	Wicks	Jim Nelson	WBS 1.1.2.1.03.68		592	592	FY98 EM-30 scope funded with carryover. Data analysis and additional probe installation needed. TWRS MYWP Work Breakdown structure element 1.1.2.1.03.68
TW03	20	7	Remote Inspection of High-Level Waste Tanks	Wicks	Jim Nelson			400	400	Retrieval Project is proceeding (at risk) with baseline sluicing technology without tank integrity assessment. Tank integrity assessments needed for inspection in anticipation of closure (Hanford Tanks Initiative).
TW05	40		ILAW Product Acceptance Inspection and Test Methods	Murkowski	Steve Schaus			600	600	None.
TW04	15	10	Identification and Management of Chromium and Other Problem Constituents for High-Level Waste Vitrification	Treat	Steve Schaus	WBS 1.1.3.1.01.02.03.05 R123511	283	400	683	EM-50 Task Response is combined with Savannah River Waste Optimization Studies. Part of the \$400K addresses Hanford need.
TW05	35	20	IHLW Product Acceptance Inspection and Test Methods	Murkowski	Steve Schaus			0 (see note)	0	The EM-50 response to this activity is included in response to RL-WT10.
TW05	35	21	Secondary Waste Product Acceptance Inspection and Test Methods	Murkowski	Steve Schaus			0 (see note)	0	The EM-50 response to this activity is included in response to RL-WT10.
TW04	49	22	Small-Scale Radioactive Demonstration of Phase 1 Sludge Washing	Treat	Steve Schaus	R12394 WBS 1.1.3.1.01.02.03.03	525	0 (see note)	525	Need wash/settle/decant data to reduce uncertainty - link to large sample need. Supports Phase 2 Request for Proposal preparation. Acquisition Schedule = FY98.
TW05	49	11	Hanford Capsule Initiative (HCI): A Processing Demonstration of Ca/Sr Capsules for Final Disposition	Murkowski	Steve Schaus			0 (see note)	0	This need is not a high priority for TWRS. This is being discussed with the Facilities group to determine a path forward.
TW05	49	12	Advanced Methods for Achieving Low-level waste volume minimization	Murkowski	Steve Schaus	R12392	675	800	1475	None.

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TW09	49	14	Standard Method for Determining Waste Form Release Rate	Murkowski	Steve Schaus	WBS 1.1.3.4.01.03.02.06		200	200	None.
TW04	12,15	15	Avoidance of Formation of Solids in Phase 1 Liquid Tank Wastes	Murkowski Treat	Steve Schaus			550	550	Linked to large sampler and settle decant issues supporting feed staging-See 1.1.3.1.01.02.03.04, related to activity R123902 in the FY98 TWRS MYWP.
TW04	49	16	Prediction of Gel and Precipitate Formation in Hanford Tank Waste Solutions	Treat	Steve Schaus			630	630	Related to activity R123413 in the TWRS MYWP. Linked to Need RL-WT15.
TW04	16,49	17	Provide Enhanced Sludge Wash Process Data for extended operations of Phase I and for Phase II RFP and Contract Award	Murkowski Treat	Steve Schaus			2250	2250	Support Phase 2 Request for Proposals. Comparable work under activity 1.1.2.1.01.02.03.03 in the TWRS MYWP. Linked to RL-WT15.
TW04	23	18	Representative Sampling and Associated Analysis to Support Operations and Disposal	Treat	Steve Schaus			750	750	This activity supports feed certification.
TW04	12	26	Alternative to Baseline Tank Waste Mixing Systems	Treat				0	0	Need for Phase 2 facilities alternative study. Related to activity R126421.
TW04	12	27	High Accuracy Psychometric/Flow Measurements	Wicks	Ryan Dodd			0	0	This technology need still exists. Technologies identified to date are not beneficial over baseline.
TW04	06B	23	Establish Retrieval Performance Evaluation Criteria	Treat		06B.XXX	1330	7000	8330	Funded by EM-30 and EM-50 on a basis of a 40/60 % budget split in FY98. Outyear budget split is 50/50 %.
TW04	06B	23a	Vadose Zone Contaminant Distribution			R2550VX	720	0 (see note)	720	Funded by EM-30 and EM-50 on a basis of a 40/60 % budget split in FY98. Outyear budget split is 50/50 %. EM-50 budget for this task is included in the overall \$7M response for Hanford Tank Initiative (RL-WT23).
TW04	06A	23b	Single-Shell Tank Retrieval Equipment/Systems			06A.140	2380	0 (see note)	2380	Funded by EM-30 and EM-50 on a basis of a 40/60 % budget split in FY98. Outyear budget split is 50/50 %. EM-50 budget for this task is included in the overall \$7M response for Hanford Tank Initiative (RL-WT23).
TW04	06A	23c	Waste Conditioning for Heel Transfer			06A.190	0	0 (see note)	0	Funded by EM-30 and EM-50 on a basis of a 40/60 % budget split in FY98. Outyear budget split is 50/50 %. EM-50 budget for this task is included in the overall \$7M response for Hanford Tank Initiative (RL-WT23).
TW04	06B	23d	Waste Heel Volume Determination			R2550KCX	155	0 (see note)	155	Funded by EM-30 and EM-50 on a basis of a 40/60 % budget split in FY98. Outyear budget split is 50/50 %. EM-50 budget for this task is included in the overall \$7M response for Hanford Tank Initiative (RL-WT23).

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TW04	06B	23e	Sampling for Residual Heels			R2550KX	610	0 (see note)	610	Funded by EM-30 and EM-50 on a basis of a 40/60 % budget split in FY98. Outyear budget split is 50/50 %. EM-50 budget for this task is included in the overall \$7M response for Hanford Tank Initiative (RL-WT23).
TW04	06A	23f	Dilution Lab Tests			R123413	290	0 (see note)	290	Funded by EM-30 and EM-50 on a basis of a 40/60 % budget split in FY98. Outyear budget split is 50/50 %. EM-50 budget for this task is included in the overall \$7M response for Hanford Tank Initiative (RL-WT23).
TW04	12	24	Initial Waste Mobilization Methods Needed to Enhance Advanced Design Mixer Pump Retrieval for DST Waste Not Affected by Existing Mding Pump Performance	Treat				0		Required for Initial Tank Retrieval System (ITRS) (W-211) definitive design. Successor activities are 1334(X) which are contained in the Retrieval Project (TW04) baseline.
TW04	06A	25	Tank Leak Mitigation Systems for Underground Single-Shell Waste SSTs	Treat				0		Required for Tri-Party Agreement Milestone M-45-09, Progress Report on Leak Monitoring and Detection (R1346210A).
TW09, W-520, W-465	46,47, 60,64	37	Distribution of Recharge Rates	Murkowski	Jeff Voogd Fred Mann	S1W03500 - S1W03560	424	0 (see note)	424	This is one of several needs linked with Performance Assessment.
TW09 W-520, W-465	46,47, 60,64	29	Standard Method for Determining Waste Form Release Rate	Murkowski	Jeff Voogd Fred Mann	S1W03400 - S1W03410	50	0 (see note)	50	This is one of several needs linked with Performance Assessment.
TW09 W-520, W-465	46,47, 60,64	30	Glass Monolith Surface Area	Murkowski	Jeff Voogd Fred Mann			0		This is one of several needs linked with Performance Assessment.
TW09 W-520, W-465	46,47, 60,64	31	Long-Term Testing of Surface Barrier	Murkowski	Jeff Voogd Fred Mann			0		This is one of several needs linked with Performance Assessment. Funded by EM-40 for Hanford Barrier tie to ILAW design S1W047XX and PA S1W030XX.
TW09 W-520, W-465	46,47, 60,64	32	Testing of Sand-Gravel Capillary Barrier	Murkowski	Jeff Voogd Fred Mann			0		This is one of several needs linked with Performance Assessment. Dependent on waste form testing.
TW09 W-520, W-465	46,47, 60,64	33	Moisture Dependence of Kd	Murkowski	Jeff Voogd Fred Mann	S1W03700	199	0	199	This is one of several needs linked with Performance Assessment.
TW09 W-520, W-465	46,47, 60,64	34	Getter Materials	Murkowski	Jeff Voogd Fred Mann	S1W03720 - S1W03750	309	0	309	This is one of several needs linked with Performance Assessment. Scheduled in outyears.
TW09 W-520, W-465	46,47, 60,64	36	Field Measurements of Vadose Zone Hydraulic Properties	Murkowski	Jeff Voogd Fred Mann	S1W03570 - S1W03640	431	0	431	This is one of several needs linked with Performance Assessment.
TW04	65	xx	Contaminant Mobility Beneath Tank Farms			G7P01- G7P09	4180	0	4180	This is one of several needs linked with Performance Assessment. This is a new need identified for FY99.

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TW04	06A	xx	Waste Mobilization Enhancement			06A-140			0	
TW03	19	xx	Volumetric Leak Testing of High-Level Waste Tanks and Piping						0	This work is not funded in the MYWP. Without funding, the project will continue to use baseline technology for leak detection, which puts the project at risk for increased leaks to the environment and false alarms.
TW09	46	xx	Data and Tools for Performance Assessments			S1W03780	50		50	Need still exists. Activities associated with this technology are funded by EM-30 and contained in the WBS 1.1.3.4.01.03 in the FY98 baseline.
TW04	19	xx	Cleaning and Decontamination of Hanford Pits			R255OS305 R255OS403	8255		8255	EM-30 funded activities supporting the deployment of this technology is planned beginning in FY99. EM-50 funding is required for development of the technology.
TW03	19	xx	Tank Knuckle NDE						0	This work is not funded and is not in the MYWP. This would augment the Integrity Assessment program described in the MYWP. The project will pursue a fixed price contract on EM-30 funds to obtain this capability.
Notes:										
			Number assigned and complete technology need description contained in DOE/RL-97-25, "Hanford Science and Technology Needs Statements, 1997", April 30, 1997							
	xx		New for FY98. Number yet to be assigned.							