AIM

Association for Information and Image Management

1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910

301/587-8202

Centimeter

Inches

MANUFACTURED TO AIM STANDARDS
BY APPLIED IMAGE, INC.

1 of 1

Mixed Waste Management Facility

Monthly Report
June 1994

Ron Streit

July 1994

LAWRENCE LIVERMORE NATIONAL LABORATORY
University of California • Livermore, California • 94550

MASTER

Se

Summary

During June, the outstanding issues of Project guidance and OPEX/CENRTC funding were essentially resolved. A letter from DOE/OAK on June 28 provided the KD-1 decision and provided revised scope and budget guidance for the Project. Prior to this, during June, an agreement with DOE for release of funds to mitigate the OPEX/CENRTC funding levels was also completed. In response to KD-1 guidance, work to provide a revised Project schedule and budget profile began. Preliminary design activities have been on hold since May 1, and schedule impact will be assessed.

Design activities continued to be deferred prior to KD-1 approval. Good progress continued in permitting and regulatory activities, critical engineering development, and in post-Conceptual Design (CD) activities. Preparation of the application for a Research, Development, and Demonstration (RD&D) permit from the State of California for hazardous materials in the MWMF has identified as an extensive technical and documentation activity, requiring early and detailed preliminary operational plans and analysis. The RD&D permitting process for an integrated facility such as the MWMF will be unique for the State, requiring close cooperation between State, Laboratory, and Project personnel. A key objective of the MWMF is to develop the permitting process and the criteria for evaluating and accepting the waste treatment trains for use in California; a successful RD&D permit application process is the first step toward achieving that objective.

Prior to release of the KD-1 approval, the Project continued to operate under DOE reduced-funding guidance to maintain only critical activities. Critical work continued in permitting, regulatory and engineering development activities, but preliminary design activities continued to be deferred pending KD-1. Progress on the related critical path activity to upgrade Building 494 remained on hold during June, but the KD-1/2 approval for this activity was also received July 1. Subsequent to the KD-1 approval, the overall Project schedule is being revised, based on revised scope and funding guidance received from DOE.

During June, activities emphasized permitting and regulatory activities (EA, PSAR, RD&D application), critical development activities, developing an integrated floor plan for Building 494, planning management controls and detailed development activities, and managing Project spending levels pending KD-1. Other significant accomplishments during this June include the following:

- The Environmental Assessment (EA) was submitted to DOE/OAK for review; initial comments were received.
- The effort to organize and prepare the RD&D permit application was significantly expanded to reflect information gained from meetings with State permitting officials. Additional Laboratory permitting staff was secured to support this activity, and the level of technical effort by the Project staff was significantly increased to develop analyses, technology evaluation plans, and preliminary operational information for the permit.
- The preparation of several preliminary operational plans began in support of the RD&D permit, including an integrated operating plan, process evaluation plans, a contingency plan, closure plans, training plans, waste analysis and characterization

**MWMF Monthly Report
June 1994**

plans, and high-level operational procedures. This involves close cooperation with LLNL's Environmental Protection Department (EPD) to incorporate relevant information from the current Part B application.

- A revised integrated floor plan for Building 494 was released, reflecting information gained by doing the CDR for the MWMF and the Building 494 upgrade.
- Plans were prepared to define specific tasks and detailed schedules for engineering development activities following KD-1 approval and guidance.
- Site visits and evaluation of telerobotic systems and controllers occurred in Solids Feed Preparation.
- Trimsol de-emulsification measurements were completed in Liquids Feed Preparation, with results to be reported in July.
- Testing and modification of the turbo-aerator and silver-recovery centrifuge and pumps occurred for the Mediated Electrochemical Oxidation (MEO) process.
- Process modeling and physical flow visualization methods were started for Molten Salt Oxidation (MSO).
- Anticipating KD-1 guidance to terminate Wet Oxidation (WOX) and UV Photolysis (UVP), documentation of work to date and summarizing remaining work began.
- Work began to define the analytical tests to accept feed streams, monitor process operational parameters, and characterize process efficiencies. Discussions were held with vendors for process-monitoring equipment.
- Studies of ceramic waste forms using simulated residues continued in Final Forms, along with process equipment selection.
- The evaluation of supervisory systems was completed and that for front-end-processor and database-management systems continued. Evaluations are expected to be completed in July for all equipment and software required for rapid-prototype testing. Guidelines for preparing Instrumentation and Control (I&C) functional requirements were issued, and a database to support process instrumentation and equipment design was completed.

**MWMF Monthly Report
June 1994**

UCRL-ID-116187-94-6

Project Financial Summary

During June, the Project continued to operate under DOE reduced-funding guidance (see February '94 Report). Funds were provided by DOE to correct the imbalance in the authorized levels of OPEX and CENRTC funding, but were received too late to be reflected in the June charges; adjustments should appear in the July charges. Thus for June, holding accounts under WBS 1.1.5, *Program Support*, continue to be used to collect charges for future adjustment, and both cost and accomplishments for affected activities are reported under WBS 1.1.5.

Based on LLNL cost reports through June, 1994, the total spending rate for June was below the January spending rate and consistent with DOE reduced-funding guidance. Labor spending continued well below the January rate. A plan to adjust OPEX/CENRTC costs, reflecting continued DOE funding guidance, was developed jointly with DOE/OAK and implementation began; adjustments should be reflected in July costs.

OPEX (\$K), cumulative:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	425	820	1231	1628	2039	2423	2539	2655	2766	2905	3044	3160
Rev. Plan**	425	820	1231	1628	2068	2508	2948	3388	3828			
Actual	491	847	1299	1739	2232	2853	3621	4034	4343			
Funding	680*	680	1630	1630	3103	3105	4105	4205	4205			

CENRTC (\$K), cumulative:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	148	273	416	593	846	1417	2154	3147	4087	5000	6332	7620
Rev. Plan**	148	273	416	593	753	913	1073	1233	1393			
Actual	156	275	407	538	676	798	876	1073	1258			
Funding	370*	370	470	470	870	1070	1170	1370	1970			

* FY93 carry-over

** Revised Plan represents funding guidance through April from DOE/OAK (letter, K. King to R. Streit, received Feb. 25, 1994). OPEX rate = \$439K, CENRTC rate = \$(600-440)K = \$160K after February. Actuals are from LLNL Cost Account Reports.

Contents

Summary	i
Project Financial Summary	iii
1.1.1. Quality Assurance	1
1.1.2. PSAR	2
1.1.3. NEPA/CEQA	3
1.1.4. ES&H	4
1.1.5. Program Support	5
1.1.6. Public Participation	8
1.2.1. Conceptual Design	9
1.2.2. Plant Start-Up Management	10
1.2.3. Activation	11
1.3.1. Project Management	12
1.3.2. Project Control	13
1.3.3. Technical Systems Integration	14
1.4.1. Receiving and Shipping	15
1.4.2. Solids Feed Preparation	16
1.4.3. Liquids Feed Preparation	17
1.5.1. Mediated Electrochemical Oxidation	18
1.5.2. Molten Salt Oxidation	20
1.5.3. Wet Oxidation	21
1.5.4. UV Photolysis	23
1.5.5. Experimental Off-Gas	24
1.6.1. Process Transport and Storage	25
1.6.2. Analytical Laboratory	26
1.6.3. Water Treatment	27
1.6.4. Final Forms	28
1.6.5. Supervisory Instrumentation and Control	29

MWMF Monthly Report
June 1994

UCRL-ID-116187-94-6

WBS Element: 1.1.1. Quality Assurance

Task Description:

Quality Assurance provides quality assurance and safeguards support for and evaluations of the MWMF Project to ensure compliance with applicable DOE regulations, and environment, safety, health, and NEPA/CEQA requirements. This effort includes development of the Project's quality assurance documentation and oversight for conformance to the approved plan.

Summary of Activities:

The QA Manager (1) supported the RD&D permit task by providing input to the *Personnel Policies and Procedures* Section and facilitating input for the *Contingency Plan*, (2) started an update to the *MWMF Documents List*, and (3) worked with Document Services to file MWMF documents submitted for the QA file.

Cost Summary: FY94 Budget: \$180K OPEX

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	9	11	11	13	15	16	17	17	17	18	18	18
Actual	11	11	8	6	3	13	10	13	10			

FY94 Major Procurements:

None

Key Milestones and Markers:

Item		Scheduled Date	Status
L111-1	Develop and issue Quality Assurance Plan	Oct '93	Complete
L111-2	Develop and issue Document Control Plan	Jan '94	Complete

MWMF Monthly Report June 1994

WBS Element: 1.1.2. PSAR

Task Description:

The PSAR provides the integration of safety input, design reviews, and safety analysis for the MWMF Preliminary Safety Analysis Report (PSAR). Safety analysis includes the analysis, generation of documentation, and documentation review and approval. The element includes the generation of the Preliminary Safety Analysis Report and follow-on analysis required prior to the generation of the Final Safety Analysis Report (FSAR). This element provides additional criticality support to resolve safety issues.

Summary of Activities:

Comments collected from review of the second draft of the PSAR were resolved by the contractor. The final copy of the PSAR will be routed for approval in July.

Cost Summary: FY94 Budget: \$230K OPEX

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	59	57	50	31	22	11	0	0	0	0	0	0
Actual	30	9	10	2	24	58	7	164	8			

As discussed in the May report, PSAR costs for FY94 are expected to total about \$350K instead of the \$230K originally expected.

FY94 Major Procurements:

Contract for services to prepare Safety Analysis Report: \$350K. This reflects an increase in OPEX funding and an expected decrease in line item funding for PSAR preparation.

Key Milestones and Markers:

Item	Scheduled Date	Status
L112-1.1 Issue contract	Oct '93	Complete
L112-1.2 Preliminary PSAR review	Feb '94	Complete
L112-1 PSAR to DOE for review	Jul '94 ⁽¹⁾	Open
D112-1 PSAR approved by DOE	Oct '94 ⁽²⁾	Open

(1) Revised originally from March '94.

(2) Revised originally from June '94.

MWMF Monthly Report
June 1994

UCRL-ID-116187-94-6

WBS Element: 1.1.3. NEPA/CEQA

Task Description:

NEPA/CEQA provides for the preparation of input to the Environmental Assessment (EA) and all required follow-up documentation required for the NEPA/CEQA and necessary permitting. The effort includes preliminary evaluations, preparation of an implementation plan, preparation of technical information to support EA preparation, and comment resolution. This element prepares and coordinates approval of State, EPA, and local permits and supports public participation activities associated with the permits approvals.

Summary of Activities:

The EA was submitted to DOE-OAK for review; the DOE project manager subsequently met with LLNL staff to discuss initial comments. The discussion focused on the level of detail and organization of information in the document.

Level of effort to prepare the RD&D and air permit applications has increased. Effort by Project personnel will be reflected in this report. Costs associated with the LLNL permitting staff support will be tracked by the Permits and Regulatory Affairs Group.

Cost Summary: FY94 Budget: \$290K OPEX

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	9	12	36	36	37	21	18	18	13	39	39	12
Actual	8	10	29	11	13	25	26	17	16			

FY94 Major Procurements:

None

Key Milestones and Markers:

Item	Scheduled Date	Status
L113-1 Submit EA to DOE	Jun '94 ⁽¹⁾	Draft Submitted
L113-2 Submit air permit application to BAAQMD	Aug '94 ⁽²⁾	Open
L113-3 Submit Research, Development & Demonstration (RD&D) permit application to DTSC	Aug '94 ⁽³⁾	Open
D113-1 EA approved by DOE	Nov '94 ⁽⁴⁾	Open
C113-2 Authority to Construct issued by BAAQMD	Oct '94	Open

(1) Revised from March '94 to match CDR progress.

(2) Revised from May '94 to match CDR progress.

(3) Revised from July '94.

(4) Revised from August '94 to match CDR progress.

MWMF Monthly Report June 1994

WBS Element: 1.1.4. ES&H

Task Description:

ES&H provides for Environment, Safety, and Health representation to the MWMF Project to ensure that all activities are conducted in a safe and environmentally sound manner and to ensure that ES&H standards have been properly applied. This element provides for conducting and/or monitoring safety-related analyses and the resultant documentation. Specific activities include preparing and implementing various assurance plans; performing hazard evaluations and safety assessments; participating in design reviews to ensure compliance with safety and environmental standards and regulations; preparing safety and environmental procedures; and preparing input for permit applications and other documentation required for compliance with Federal and/or State requirements.

Summary of Activities:

Members of the ES&H team have continued to attend technical meetings to consult with principal investigators and engineers on ES&H issues.

Cost Summary: FY94 Budget: \$120K OPEX

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	8	8	8	8	9	9	9	12	12	12	12	13
Actual	2	10	12	13	16	16	7	13	11			

As discussed in the May report, costs have dropped and now track closely to the plan values.

FY94 Major Procurements:

None

Key Milestones and Markers:

	Item	Scheduled Date	Status
L-114-1.1	Review 30% Conceptual Design	Dec '93	Complete
L-114-1.2	Review 90% Conceptual Design	Mar '94	Complete
L-114-1.3	Review 90% Preliminary Design	Sep '94	Open

WBS Element: 1.1.5. Program Support

Task Description:

Program Support provides top-level planning, control, and support of the MWMF Project's OPEX-funded activities. Specific activities include management of Project assurances and interface with development activities. This element encompasses support for the Project Office, including organization, schedule and budgeting activities, Project plans and reporting, personnel hiring and housing, Project operations control, Building 494 occupant relocation, and OPEX-funded technical support.

Summary of Activities:

Because the KD-1 decision and revised funding guidance were received in late June, preliminary design could not begin during June. Activities emphasized permitting and regulatory activities (EA, PSAR, RD&D Permit application), critical development activities, developing an integrated floor plan for Building 494, planning management controls and detailed development activities, and managing Project spending levels per DOE interim guidance. In particular, the preparation of conceptual operational documents or plans, required to support the RD&D permit application, began; these included an operating plan, training plan, closure plans, technology evaluation plans, and waste analysis plans. These plans required input and preparation by lead engineering, management, and operational personnel from HWM.

Essential engineering development and advanced CD work continued on a slow track under DOE's reduced-funding guidance. Because DOE funding was not available to open CENRTC accounts by the end of June, costs and activities for several CENRTC activities continue to be reported under this WBS element. Significant accomplishments include include the following:

1.3.1 Project Management

- Heavily involved Project management in moving forward on the RD&D permit application. Meetings were to organize work, define baseline plans, and secure additional Laboratory resources to move this activity forward.

1.3.2 Project Control

- Developed plan for cost adjustments to accommodate DOE OPEX/CENRTC funding imbalance.
- Continued evaluation of technical, cost, and schedule management control systems available at LLNL. This involved meetings and reviews with several groups on-site and senior project staff.

1.3.3 Technical Systems Integration

- Designed and reviewed integrated B494 floor plan.
- Developed preliminary technology evaluation plan for the Preliminary Operating Plan.
- Identified Preliminary Demonstration Plan issues.

1.4.1 Receiving & Shipping

- Provided information and plans for engineering development, operations planning, and building layouts.

MWMF Monthly Report June 1994

1.4.2 Solids Feed Preparation

- Provided information and plans for engineering development, operations planning, and building layouts.
- Completed several site visits and evaluations of telerobotic systems and controllers.

1.6.1 Process Transport and Storage

- Initiated work on developing a standard interface for containers transferring bulk liquids, bulk solids, analytic lab samples, reagents and tools.
- Reviewed vendor design information.
- Developed more detailed set of requirements to establish bounding parameters on the design.

1.6.2 Analytical Lab

- Developed floor plan for analytical laboratory.
- Began definition of analytical tests required to accept feed streams, define process working parameters, and characterize process efficiencies.
- Met with vendors of commercial process monitoring equipment (on-line GC and IR sensors).
- Began definition of analytical requirements in support of RD&D permit application.

1.6.3 Water Treatment

- Continued specification and sizing of water treatment units.
- Compiled acceptance criteria for brine solutions, including RCRA metals and organics content.
- Drafted input for Operating Plan in support of RD&D permit application.

Cost Summary: FY94 Budget: \$1250K OPEX

(NOTE: Revised actual costs reflect revised cost data.)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	230	157	151	145	122	121	56	53	53	53	53	56
Actual	331	161	192	135	191	207	405	49	311			

As discussed previously, the Project continues to operate under the February reduced-funding DOE letter guidance and with an imbalance in OPEX/CENRTC funding. Accounts under 1.1.5 are used as holding accounts for CENRTC-related work, which explains the continuing large charges beyond March. Charges will be transferred to appropriate accounts when corrective CENRTC funds are provided by DOE.

MWMF Monthly Report
June 1994

UCRL-ID-116187-94-6

Key Milestones and Markers:

		Scheduled	
Item		Date	Status
L115-1.1	Project Management Plan (Draft)	Oct '93	Complete
L115-2	Select Project Engineers, Project Control Manager	Dec '93	Complete
L115-3	Submit FY94 Project Plan	Jan '94	Complete
L115-4	Initiate PTS and Monthly reporting	Jan '94	Complete
L115-5	Technology Selection and Implementation Plan, Part I: Primary Processes	Feb '94	Complete
L115-6	Develop Design Basis Operations Plan	Mar '94	Complete
L115-1	Project Management Plan (Final)	Apr '94 ⁽¹⁾	On Hold
L115-7	Submit FY95 Project Plan (OPEX)	Sep '94	Open

⁽¹⁾ Milestone to be delayed pending DOE decision on the MWMF Project.

MWMF Monthly Report
June 1994

WBS Element: 1.1.6. Public Participation

Task Description:

Public Participation provides for public input to the planning and execution phases of the MWMF Project. Included are a National Advisory Committee, a Community Newsletter and preparation and coordination of press releases and community tours.

Summary of Activities:

This activity is on hold by the Project due to DOE uncertainties.

Cost Summary: FY94 Budget: \$150K OPEX

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	0	0	5	14	16	16	16	16	16	17	17	17
Actual	0	1	0	4	0	1	1	0	0			

FY94 Major Procurements:

Contracted support for Public Participation activities

Key Milestones and Markers:

Item	Scheduled Date ⁽¹⁾	Status
L116-1.1 Form National Advisory Committee (NAC)	Feb '94	Planning
L116-2.1 Issue first public newsletter	Mar '94	Draft
L116-1.2 First meeting of NAC	Mar '94	Tentative
L116-1.3 Receive comments on CDR Draft from NAC	Apr '94	Tentative
L116-2.2 Issue second newsletter	Jun '94	Tentative
L116-1.4 Second meeting of NAC	Jul '94	Tentative
L116-2.3 Issue third newsletter	Sep '94	Tentative

⁽¹⁾ All activities on hold to accommodate DOE reduced funding guidance. Dates will be revised upon longer-term funding guidance.

MWMM Monthly Report
June 1994

UCRL-ID-116187-94-6

WBS Element: 1.2.1. Conceptual Design

Task Description:

Conceptual Design provides the Project's technical, cost, and schedule baselines that form the basis for KD-1.

Summary of Activities:

All LLNL activities have been completed on this task. DOE issued KD-1 and funding guidance on June 28, 1994.

Cost Summary: FY94 Budget: \$940K OPEX

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	110	150	150	150	190	190	0	0	0	0	0	0
Actual	111	154	198	268	250	303	313	157	3			

Continued charges in April and May reflect, in part, continued work to issue the CDR and to support the ICV. Significant portions reflect mischarges due to lack of CENRTC accounts, which will be adjusted when necessary CENRTC funds are received. This account will subsequently be closed to further charges.

FY94 Major Procurements:

Contracted services for CDR support: \$7K

Key Milestones and Markers:

Item	Scheduled Date	Status
L121-1.1 Initiate Point Design Reviews	Oct '93	Complete
L121-1.2 Complete Point Design Reviews	Nov '93	Complete
L121-1 30% Conceptual Design Review	Dec '93	Complete
L121-2 90% Conceptual Design Review	Mar '94	Complete
L121-3 Issue Conceptual Design Report	Apr '94	Complete
D121-1 Preliminary Approval and Funding to proceed into Preliminary Design	Apr '94 ⁽¹⁾	Complete
D121-2 KD-1/2 approved by DOE	Jun '94	Complete

⁽¹⁾ Actual date was June 28, 1994.

MWMF Monthly Report
June 1994

WBS Element: 1.2.2. Plant Start-Up Management

Task Description:

Plant Start-Up Management provides (1) operations and maintenance review of system designs; (2) the development of top-level plans for staffing, training, testing, and readiness review; (3) task analysis and preparation, review, and revision of site operating plan, maintenance, instrument calibration, and emergency response procedures; (4) recruiting, hiring, clearing, and providing general employee training for the plant staff; and (5) the development of training materials, training the trainers, and special technical and on-the-job training for the plant staff.

Summary of Activities:

No activities are scheduled for this WBS element for FY94.

Cost Summary: FY94 Budget: \$0K OPEX

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	0	0	0	0	0	0	0	0	0	0	0	0
Actual	0	0	0	0	0	0	0	0	0			

FY94 Major Procurements:

None

Key Milestones and Markers:

Item	Scheduled Date	Status
None		

MWMF Monthly Report
June 1994

UCRL-ID-116187-94-6

WBS Element: 1.2.3. Activation

Task Description:

Activation provides (1) the preparation, review, revision, and release of all Operational Test Procedures (OTPs); (2) plant systems activation, integration, and performance of Operational Test Procedures in each of the technology areas including Operational Readiness Reviews; (3) technical support for the preparation of Operational Safety Requirements (OSR) and Facility Safety Requirements (FSR), the identification and resolution of problems during plant operational testing, start-up, and activation, including finalization of design documentation for equipment and process modifications; (4) maintenance support to perform equipment or process modifications during start-up, testing, and activation; (5) all operational spares and the initial stores inventory; and (6) all manpower and materials required to deliver support services (e.g., utilities, power) during construction, testing, and activation of the MWMF.

Summary of Activities:

No activities are scheduled for this WBS element for FY94.

Cost Summary: FY94 Budget: \$0K OPEX

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	0	0	0	0	0	0	0	0	0	0	0	0
Actual	0	0	0	0	0	0	0	0	0			

FY94 Major Procurements:

None

Key Milestones and Markers:

Item	Scheduled Date	Status
None		

MWMF Monthly Report June 1994

WBS Element: 1.3.1. Project Management

Task Description:

Project Management provides top-level Project planning, direction, and control of the MWMF Project's CENRTC-funded systems. Specific activities include Project management and support of Project Office, Project assurance (including quality assurance, safeguards, environmental, and safety oversight), management overview of information management and technical activities, and interface with DOE.

Summary of Activities:

Due to the reduced-funding guidance and imbalance of OPEX/CENRTC funds, only essential activities are being completed. Activities are reported under WBS 1.1.5, *Program Support*.

Cost Summary: FY94 Budget: \$300K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	0	0	0	0	0	0	50	50	50	50	50	50
Actual	0	0	0	0	0	0	0	0	0			

Charges are shown under 1.1.5, and will be adjusted when requested CENRTC funding is received from DOE.

FY94 Major Procurements:

Service contract to SAIC for Project support and independent technical and administrative reviews.

Key Milestones and Markers:

	Item	Scheduled Date ⁽¹⁾	Status
L131-1.1	In-house Point Design Review	Jun '94	Open
L131-1	90% Preliminary Design Review ⁽²⁾	Sep '94	Open
L131-2	Submit FY95 Project Plan (CENRTC)	Sep '94	Open

⁽¹⁾ Milestones on hold pending funding resolution by DOE.

⁽²⁾ Tied to April 1st KD-1/2 decision approval from DOE.

MWMF Monthly Report
June 1994

UCRL-ID-116187-94-6

WBS Element: 1.3.2. Project Control

Task Description:

Project Control provides for the Project integration, configuration management, cost and schedule control, and administration of the CENRTC-funded systems. It develops and maintains the management systems used to monitor progress against the established baselines and to ensure configuration control (drawings, documents, etc.).

Summary of Activities:

Due to the reduced-funding guidance and imbalance of OPEX/CENRTC funds, only essential activities are being completed. Project Control activities are reported under WBS 1.1.5, *Program Support*.

Cost Summary: FY94 Budget: \$300K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	0	0	0	0	28	34	39	39	44	38	39	39
Actual	0	0	0	0	0	0	0	0	0			

Charges are shown under 1.1.5, and will be adjusted when requested CENRTC funding is received from DOE.

FY94 Major Procurements:

None

Key Milestones and Markers:

	Item	Scheduled Date ⁽¹⁾	Status ⁽¹⁾
L132-2.1	Prepare Configuration Control Plan	May '94 ⁽²⁾	In Progress
L132-2.2	Prepare Design Review Procedure	Mar '94	On Hold
L132-1	Implement cost planning/tracking systems	June '94	Open
L132-2	Implement technical baseline control system	May '94	Open
L132-3	Implement schedule control/tracking system	Aug '94	Open

(1) All except essential activities deferred to accommodate DOE reduced funding guidance. Dates will be revised upon longer-term funding guidance.

(2) Revised from February '94.

MWMF Monthly Report June 1994

WBS Element: 1.3.3. Technical Systems Integration

Task Description:

Technical Systems Integration provides the oversight and performance studies intended to verify or document system integration performance, system analysis, special process diagnostics, and planning and analysis of the process aspects of integrated tests. It also includes the responsibility for assuring that the systems aspects of the overall processes are adequately addressed in the integrated design. Includes System Engineering Management Plan and System Design Requirements coordination. Specific topics include the integration of waste-treatment processes and facility, risk assessment, accountability, safety, radiation exposure, and availability.

Summary of Activities:

Due to the reduced-funding guidance and imbalance of OPEX/CENRTC funds, only essential activities are being completed. Systems integration activities are reported under 1.1.5, *Program Support*.

Cost Summary: FY94 Budget: \$300K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	0	0	0	0	0	0	50	50	50	50	50	50
Actual	0	0	0	0	0	0	0	0	0			

Charges are shown under 1.1.5, and will be adjusted when requested CENRTC funding is received from DOE.

FY94 Major Procurements:

None

Key Milestones and Markers:

Item	Scheduled Date	Status
L133-1.1 Draft System Engineering Management Plan	Sep '94	Open

MWMF Monthly Report
June 1994

UCRL-ID-116187-94-6

WBS Element: 1.4.1. Receiving and Shipping

Task Description:

The principal objective of the Receiving and Shipping system is to provide for the receiving, logging, identification and characterization of all incoming waste containers and to determine the acceptability for processing the waste. Receiving and Shipping provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, installation of Receiving and Shipping equipment, Title III inspection, and acceptance test procedures (ATP). Receiving and Shipping includes both receiving and shipping equipment and systems integration.

Summary of Activities:

Due to the reduced-funding guidance and imbalance of OPEX/CENRTC funds, only essential activities are being completed. Activities are reported under WBS 1.1.5, *Program Support*.

Cost Summary: FY94 Budget: \$200K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	0	0	0	0	0	20	30	30	30	30	30	30
Actual	0	0	0	0	0	0	0	0	0			

Charges are shown under 1.1.5, and will be adjusted when requested CENRTC funding is received from DOE.

FY94 Major Procurements:

None

Key Milestones and Markers:

	Item	Scheduled Date ⁽¹⁾	Status
L141-1.1	Complete pilot characterization studies	Jun '94	Open
L141-1.2	Identify equipment and define floor plan	Sep '94	Open
L141-1	90% Preliminary Design Review	Sep '94	Open

(1) All except essential activities deferred to accommodate DOE reduced funding guidance. Dates will be revised upon longer-term funding guidance.

MWMF Monthly Report June 1994

WBS Element: 1.4.2. Solids Feed Preparation

Task Description:

The principal objective of the Solids Feed Preparation system is to provide for the receipt, characterization, preparation for processing, and handling of homogeneous and heterogeneous solids received from storage and other processes in the facility. This includes segregating the incoming waste stream into combustible solids, heterogeneous solids, homogeneous inorganic solids and metals, and liquids not previously identified. Solids Feed Preparation provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, installation of Solids Feed Preparation equipment, Title III inspection, and acceptance test procedures (ATP). Solids Feed Preparation includes both solids feed preparation equipment and systems integration.

Summary of Activities:

Due to reduced-funding guidance and imbalance of OPEX/CENRTC funds, only essential activities are being completed. Activities are reported under WBS 1.1.5, *Program Support*.

Cost Summary: FY94 Budget: \$600K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	0	0	0	0	0	130	70	90	90	70	70	80
Actual	0	0	0	0	0	0	0	0	0			

Charges are shown under 1.1.5, and will be adjusted when requested CENRTC funding is received from DOE.

FY94 Major Procurements:

Support contracts to NWC sites: \$100K

Mechanical segregation test equipment: \$100K

Prototype equipment for waste handling evaluations: \$100K

Key Milestones and Markers:

	Item	Scheduled Date ⁽¹⁾	Status
L142-1.1	Define surrogate feeds	May '94	Open
L142-1.2	Identify initial suite of characterization equipment	Jun '94	Open
L142-1.3	Complete validation of characterization, isolation and segregation methods	Sep '94	Open
L142-1.4	Complete preliminary operator control station design	Sep '94	Open
L142-1	90% Preliminary Design Review	Sep '94	Open

⁽¹⁾ All except essential activities deferred to accommodate DOE reduced funding guidance. Dates will be revised upon longer-term funding guidance.

MWMF Monthly Report
June 1994

UCRL-ID-116187-94-6

WBS Element: 1.4.3. Liquids Feed Preparation

Task Description:

The principal objective of the Liquids Feed Preparation system is to provide for the receipt, characterization, preparation for processing and handling of homogeneous and heterogeneous liquids and solids/liquids mixtures from storage and other processes in the treatment system. This includes segregating the incoming waste stream into aqueous with Trimsol, chlorinated organic liquids, oils, scintillation cocktails and solvents. Liquids Feed Preparation provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, installation of Liquids Feed Preparation equipment, Title III inspection, and acceptance test procedures (ATP). Liquids Feed Preparation includes both liquids feed preparation equipment and systems integration.

Summary of Activities:

During June, the Trimsol de-emulsification (liquid/liquid) measurements were completed; the results are to be written up. Floor plan layout for LFP was finalized. Work continued on advanced conceptual design areas.

Cost Summary: FY94 Budget: \$400K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	0	0	0	0	0	75	75	50	50	50	50	50
Actual	12	5	1	0	1	8	11	18	24			

FY94 Major Procurements:

Support contracts to NWC sites: \$50K

Liquid/liquid and liquid/solid separation test equipment: \$80K

Key Milestones and Markers:

Item	Scheduled Date ⁽¹⁾	Status
L143-1.1 Define surrogate feeds	May '94	Open
L143-1.2 Finalize Liquids Feed Prep general arrangement plan	Jul '94	Open
L143-1.3 Complete validation of liquid/liquid and liquid/solid separation methods	Sep '94	Open
L143-1 90% Preliminary Design Review	Sep '94	Open

⁽¹⁾ All except essential activities deferred to accommodate DOE reduced funding guidance. Dates will be revised upon longer-term funding guidance.

MWMF Monthly Report
June 1994

WBS Element: 1.5.1. Mediated Electrochemical Oxidation

Task Description:

The principal objective of Mediated Electrochemical Oxidation (MEO) is to receive appropriately characterized mixed waste streams, and completely convert the organic portions to CO₂ and water, to recycle acid and silver, and to remove ash containing the radioactive constituents. The MEO Project element provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, and installation of the MEO equipment, Title III inspection, and acceptance test procedures (ATP) covering both equipment and system integration activities.

Summary of Activities:

Tests were performed to determine the nature and cause of liquid-level fluctuations in the turbo-aerator, which were discovered during set-up for steady-state flow and chemistry balance tests. These tests revealed that the fluctuations did not appear before because the turbo-aerator had been operated only at low liquid levels. When levels were increased, instabilities developed. Additional baffling was installed, tested and appears to have cured the problem to such a degree that it may be possible to eliminate the catholyte reservoir. Additional tests will be required to verify this.

Small centrifuges of the type to be used in the MWMF for MEO silver recovery are typically not equipped with cake-detection instruments. Experiments were performed to determine if cake level could be detected by monitoring for rotor inertia. Results indicated a factor-of-two difference in inertia between empty and full, a large enough difference to determine when the bowl is near full. Designing this monitor into the MWMF MEO computer control is being investigated.

An evaluation of potential pumps for handling the wiped film evaporator bottoms was made. This pump must survive Ag++ at 120°C, handle viscous slurries, and provide a non-pulsating flow. A modified progressive cavity barrel pump was tentatively selected as the primary candidate. Some stainless steel part will have to be cloned to accommodate AG++ service.

Cost Summary: FY94 Budget: \$950K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	67	67	67	69	70	70	90	90	90	90	90	90
Actual	57	56	70	54	47	45	24	73	56			

FY94 Major Procurements:

None

Key Milestones and Markers:

Item	Scheduled Date ⁽¹⁾	Status
L151-1.1 Complete tests on turbo-aerator for nitrous-acid conversion	May '94	In Progress
L151-1.2 Initiate steady-state flow, chemistry balance tests	Apr '94	Starting
L151-2.1 Preliminary Process Flow Diagram	Jun '94	Open
L151-1.3 Initiate instrumentation, control system tests	Jul '94	Open
L151-2.2 Preliminary Equipment Layout	Sep '94	Starting
L151-1.4 Complete tests for silver recovery	Sep '94	In Progress
L151-1 Complete engineering characterization tests	Sep '94	Open
L151-2 90% Preliminary Design Review	Sep '94	Open

⁽¹⁾ Milestones have been delayed due to DOE reduced funding guidance.

MWMF Monthly Report June 1994

WBS Element: 1.5.2. Molten Salt Oxidation

Task Description:

The principal objectives of Molten Salt Oxidation (MSO) are to receive appropriately characterized mixed waste streams and completely convert the organic portions to CO₂ and water, to remove ash containing the radioactive constituents, and to recycle/process the spent salt. The MSO Project element provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, and installation of the MEO equipment, Title III inspection, and acceptance test procedures (ATP) covering both equipment and system integration activities.

Summary of Activities:

Schedule and staffing needs were reviewed to meet Title I. Staffing was initiated. Process modeling and the design of a flow visualization physical model were started. As noted below, there have been delays due to reduced resources. These will be mitigated as the Project proceeds by staffing and leveraging labor on similar activities.

Cost Summary: FY94 Budget: \$1260K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	29	15	17	22	25	24	34	34	56	83	431	490
Actual	16	12	6	18	22	27	15	22	15			

FY94 Major Procurements:

Contract for MSO system definitive design: \$750K

Key Milestones and Markers:

Item	Scheduled Date ⁽¹⁾	Status
L152-1 Complete bench-scale rubber-destruction tests	Dec '93	Complete
L152-2.1 Advertise in the CBD	Jun '94 ⁽²⁾	In Progress
L152-2.2 Complete specification	May '94	In Progress
L152-3.1 Complete Preliminary Process Flow Diagram	Jun '94	Open
L152-2.3 Select industrial partner	Jul '94	Open
L152-2 Award contract	Aug '94	Open
L152-3.2 Initiate Preliminary Design	Aug '94	Open
L152-3 30% Preliminary Design Review	Sep '94	Open

⁽¹⁾ Milestones have been delayed due to DOE reduced funding guidance.

⁽²⁾ Revised from April '94.

MWMF Monthly Report
June 1994

UCRL-ID-116187-94-6

WBS Element: 1.5.3. Wet Oxidation

Task Description:

The principal objective of Wet Oxidation (WOX) is to demonstrate treatment of organic mixed wastes using a wet oxidation process to convert the organic portions to CO₂, water, and inorganic ions, leaving ash, salts, metals, and radionuclides in a residual solution/slurry. The WOX Project element provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, and installation of the WOX equipment, Title III inspection, and acceptance test procedures (ATP) covering both equipment and system integration activities.

Summary of Activities:

The work remained on a slow track due to reduced-funding guidance; key work is done on a priority basis. In anticipation of a possible termination of WOX, the emphasis was on documenting the work to date and summarizing the future work required.

Support was provided for facility space allocation and equipment-location planning.

Internal reports were completed to document the history of dispersion system testing, recommend the future direction of dispersion system design, and summarize additional dispersion system development work needed. These represent partial completion of Milestone/Marker L153-2.1.

The selection of anion for added acid and iron was studied; sulfate was chosen as the anion of choice for WOX. Acceptance limits were documented for ash and soluble salt content in the waste feed to WOX. This included acceptance limits for magnesium sulfate, which Liquids Feed Preparation is contemplating using for Trimsol oil and water separation. An Engineering Development Plan was developed to support the WOX engineering development cost estimate described in the CDR.

A partial demonstration plan was drafted for WOX/UVP that described the type of runs that WOX/UVP would want to do in the MWMF. The emphasis was on those things that would impact the Operating Plan for the facility and the design of upstream and downstream systems.

Cost Summary: FY94 Budget: \$560K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	7	7	7	7	16	32	76	56	60	67	165	60
Actual	21	8	5	10	6	7	1	7	14			

FY94 Major Procurements:

Treatability Tests, if commissioned from vendor (incl. analytical costs): \$90K

Dispersion test equipment: \$30K

Key Milestones and Markers:

Item		Scheduled Date ⁽¹⁾	Status
L153-1.1	Advertise in the CBD	Apr '94	Deferred
L153-2.1	Complete dispersion system test and design	May '94	Partial
L153-2.2	Complete preliminary treatability tests	Jun '94	Open
L153-1.2	Issue RFQ for treatment unit w/completed specification	Jun '94	Open
L153-2.3	Complete preliminary Process Flow Diagram	Jun '94	Open
L153-2.4	Complete preliminary P&ID for Support System	Jul '94	Open
L153-1	Award contract	Sep '94	Open
L153-2	30% Preliminary Design Review	Sep '94	Open

(1) All except essential activities deferred to accommodate DOE reduced funding guidance. Dates will be revised upon longer-term funding guidance.

MWMF Monthly Report
June 1994

UCRL-ID-116187-94-6

WBS Element: 1.5.4. UV Photolysis

Task Description:

The principal objective of UV Photolysis (UVP) is to demonstrate ultraviolet-driven treatment of the hazardous and toxic organic constituents in the condensate from the Wet Oxidation process (WBS 1.5.3) to produce a sewerable water stream. The UVP Project element provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, and installation of the UVP equipment, Title III inspection, and acceptance test procedures (ATP) covering both equipment and system integration activities.

Summary of Activities:

Work remained on a slow track due to reduced-funding guidance; key work is done on a priority basis. In anticipation of a possible termination of UVP, emphasis was on documenting work to date and summarizing future work required. Support was provided for facility space allocation and equipment-location planning. An Engineering Development Plan was developed to support the UVP engineering development cost estimate described in the CDR. The UV absorption of several anions was researched: the use of these in WOX should not be a problem for UVP.

A partial demonstration plan was drafted for WOX/UVP that described the type of runs that WOX/UVP would want to do in the MWMF. The emphasis was on those things that would impact the Operating Plan for the facility and the design of upstream and downstream systems.

Cost Summary: FY94 Budget: \$300K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	2	2	2	5	6	12	26	33	99	42	36	35
Actual	3	3	2	-2	0	0	0	5	7			

FY94 Major Procurements:

Treatability Tests, commissioned from vendor (including analytical costs): \$55K

Key Milestones and Markers:

Item		Scheduled Date ⁽¹⁾	Status
L154-1	Complete preliminary treatability tests	Jul '94	Open
L154-2.1	UVP Process Flow Diagram	Jul '94	Open
L154-2.2	Complete piping and instrumentation drawings for UVP support system	Jul '94	Open
L154-2.3	UVP equipment layout	Aug '94	Open
L154-2	UVP 90% Preliminary Design Review	Sep '94	Open

⁽¹⁾ All except essential activities deferred to accommodate DOE reduced funding guidance. Dates will be revised upon longer-term funding guidance

MWMF Monthly Report

June 1994

WBS Element: 1.5.5. Experimental Off-Gas

Task Description:

The objective of the Experimental Off-Gas (XOG) treatment is to demonstrate advanced, more effective off-gas treatment technologies that minimize secondary waste. These are: improved Selective Catalytic Reduction (SCR) of NO_x to nitrogen in gaseous phase, conversion of NO_x to nitrogen in aqueous urea, and use of cleanable metal HEPA filters. The XOG Project element provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, and installation of XOG equipment, Title III inspection, and acceptance test procedures (ATP) covering both equipment and system integration activities. The XOG will be backed by the Process off-gas system representing best available control technology (BACT).

Summary of Activities:

The existing bench-scale MEO gas-liquid contactor is being readied for the experiment to determine the "gasification factor" providing 98% conversion efficiency.

Cost Summary: FY94 Budget: \$250K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	5	5	5	12	22	32	28	29	30	29	27	26
Actual	9	7	4	2	4	-1	0	8	1			

FY94 Major Procurements:

Catalyst blocks: \$6K

Gas/liquid contactor: \$13K

Gas analyzer lease: \$25K

Key Milestones and Markers:

Item	Scheduled Date ⁽¹⁾	Status
L155-1.1 Fabricate prototype gas-liquid contactor for acidic urea NO _x destruction	Jun '94	Open
L155-1.2 Complete tests on urea and SCR DeNO _x	Jul '94	Open
L155-1 Complete engineering characterization tests	Jul '94	Open
L155-2.1 Initiate instrumentation and control system test	Aug '94	Open
L154-2.2 Preliminary Equipment Layout	Sep '94	Open
L155-2 90% Preliminary Design Review	Sep '94	Open

(1) All except essential activities deferred to accommodate DOE reduced funding guidance. Dates will be revised upon longer-term funding guidance.

MWMF Monthly Report
June 1994

UCRL-ID-116187-94-6

WBS Element: 1.6.1. Process Transport and Storage

Task Description:

The principal objective of the Process Transport and Storage system is to collect, transfer, deposit, store and handle containers, discrete items, dry and wet bulk materials, slurries, and liquids. Process Transport and Storage provides management, system analysis and support, design (Title I, II, and III) engineering, procurement, installation of Process Support Systems equipment, Title III inspection, and acceptance test procedures (ATP). Process Transport and Storage includes both process transport and storage equipment and systems integration.

Summary of Activities:

Due to the reduced-funding guidance and imbalance of OPEX/CENRTC funds, only essential activities are being completed. Activities are reported under WBS 1.1.5, *Program Support*.

Cost Summary: FY94 Budget: \$250K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	0	0	0	0	0	25	30	55	55	35	25	25
Actual	0	0	0	0	0	0	0	0	0			

Charges are shown under 1.1.5, and will be adjusted when requested CENRTC funding is received from DOE.

FY94 Major Procurements:

Equipment for material transport interface development: \$75K

Key Milestones and Markers:

	Item	Scheduled Date ⁽¹⁾	Status
L161-1.1	Select standard transport container designs	Jun '94	Open
L161-1.2	Finalize transport handling capacity	Jul '94	Open
L161-1.3	Finalize transport equipment selection	Aug '94	Open
L161-1.4	Complete validation of bagless interface	Sep '94	Open
L161-1	60% Preliminary Design Review	Sep '94	Open

⁽¹⁾ All except essential activities deferred to accommodate DOE reduced funding guidance. Dates will be revised upon longer-term funding guidance.

MWMF Monthly Report June 1994

WBS Element: 1.6.2. Analytical Laboratory

Task Description:

The principal objective of the Analytical Laboratory is to provide analysis for process control, material control, and regulatory requirements. Analytical Laboratory provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, installation of Analytical Laboratory equipment, Title III inspection, and acceptance test procedures (ATP). Analytical Laboratory includes Analytical Laboratory Equipment, Local Process I&C, and Process Off-Gas.

Summary of Activities:

Due to the reduced-funding guidance and imbalance of OPEX/CENRTC funds, only essential activities are being completed. Activities are reported under WBS 1.1.5, *Program Support*.

Cost Summary: FY94 Budget: \$50K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	0	0	0	0	0	7	7	7	7	7	7	8
Actual	0	0	0	0	0	0	0	0	9			

Charges are shown under 1.1.5, and will be adjusted when requested CENRTC funding is received from DOE.

Major Procurements:

None

Key Milestones and Markers:

As part of the CDR activities, the title and description for this WBS element was revised from "Analytical Laboratory Transport and Storage" to better reflect this Project work element. Milestones and markers will be revised to reflect detailed tasks the month of July.

	Item	Scheduled Date	Status
L162-1	Complete preliminary floor plan layout	Jun '94	Complete
L162-2	Define analysis tests based on process acceptance criteria	Sep '94	Open
L162-3	Define off-gas monitoring requirements	Sep'94	Open

MWMF Monthly Report
June 1994

UCRL-ID-116187-94-6

WBS Element: 1.6.3. Water Treatment

Task Description:

The principal objectives of Water Treatment are to manage aqueous streams to meet discharge requirements and address future waste water management regulations that would affect an operating mixed waste treatment facility. The Water Treatment Project element provides the management, system analysis and support, design (Title I, II, III), engineering, procurement, and installation of the Water Treatment equipment, Title III inspection, and acceptance test procedures (ATP) covering both equipment and system integration activities.

Summary of Activities:

Due to the reduced-funding guidance and imbalance of OPEX/CENRTC funds, only essential activities are being completed. Activities are reported under WBS 1.1.5, *Program Support*.

Cost Summary: FY94 Budget: \$150K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	0	0	0	0	0	11	11	21	25	23	31	28
Actual	0	0	0	0	0	0	0	0	0			

Charges are shown under 1.1.5, and will be adjusted when requested CENRTC funding is received from DOE.

FY94 Major Procurements:

None for this reporting period.

Key Milestones and Markers:

	Item	Scheduled Date ⁽¹⁾	Status
L163-1	Complete Water Treatment process flow diagram	Jun '94	Open
L163-2.1	Complete P& ID for Water Treatment	Jul '94	Open
L163-2.2	Complete Tanks and Water Treatment units layout	Aug '94	Open
L163-2	90% Preliminary Design Review	Sep '94	Open

⁽¹⁾ All except essential activities have been deferred to accommodate DOE reduced funding guidance. Dates will be revised upon longer-term funding guidance.

MWMF Monthly Report

June 1994

WBS Element: 1.6.4. Final Forms

Task Description:

The Final Forms task will immobilize the solid residues from the primary treatment processes as solid waste forms. Final Forms will also condition the wastes resulting from secondary support processes that are integral to the primary treatment processes. The waste forms types are (1) ceramics for ash, (2) thermosetting-polymer encapsulation for salt, and (3) sulfur-polymer cement for volatiles.

Summary of Activities:

Studies of ceramic waste forms simulating residues from the primary treatments are continuing. Analyses, previously backlogged, and their interpretation are in progress. The presence of chloride increases the volatility of some elements, including lead and cobalt. The study of the effect of particle size revealed that the main problem would be with large alumina particles. This is not expected of MWMF residues but would be handled by adjusting the formulation or by comminution. Further experiments are in progress. Equipment selection is proceeding. Re-evaluation and final selection of the salt encapsulation technology is currently the most urgent Final Forms issue.

Cost Summary: FY94 Budget: \$550K CENRTC
(NOTE: revised actual costs reflect revised cost data.)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	18	9	25	27	31	29	31	44	114	109	61	52
Actual	18	9	19	38	36	21	20	40	38			

FY94 Major Procurements:

Polymer immobilization evaluation for NaCl wastes: \$20K

Blender/granular (trial unit): \$20K

Furnace (trial unit): \$20K

Rotary calciner (trial unit): \$20K

Key Milestones and Markers:

Item	Scheduled Date	Status
L164-1.1 Complete preliminary process flow diagram	Jul '94	Complete
L164-1.2 Complete preliminary equipment layout	Aug '94	Complete
L164-1.1 Complete preliminary process parameters for ceramic forms	Sep '94	In Progress
L164-1 90% Preliminary Design Review	Sep '94	Open
L164-2 Complete NaCl encapsulation evaluation	Sep '94	Proposal in hand

WBS Element: 1.6.5. Supervisory Instrumentation and Control

Task Description:

Instrumentation and Control (I&C) systems will provide and integrate controls to develop, demonstrate, test, and evaluate mixed waste destruction technologies in a safe, environmentally acceptable, reliable, and cost-effective manner. I&C systems provide the management, system analysis and support, design (Title I, II, III) engineering, procurement, equipment installation, Title III inspection, and acceptance test procedures (ATP) covering equipment and system integration activities for Central Monitoring and Control, Safety Control Systems, Standard Process I&C, Analytical Laboratory I&C, and intercom communication, surveillance CCTV, and telepresence systems.

Summary of Activities:

- The evaluation and selection of SCADA (Supervisory Control and Data Acquisition process control environments) systems was completed in June. A follow-up visit was made to INEL to see a Comdale Technologies, Inc. Process Vision installation, and to discuss integration issues with INEL's controls engineers. A purchase requisition is now being processed to acquire the necessary software components for Engineering Development rapid-prototype testing. The related hardware order will be processed in July.
- The evaluation of FEPs (front-end-processors) was continued in June. Vendor visits were conducted for GE9070/GE-Fanuc. Evaluation criteria and selection-weighting factors have been established—performance ranking is in progress. This evaluation and selection process will be concluded in July, at which time we will be prepared to purchase system hardware and software to conduct Engineering Development rapid-prototype testing.
- The evaluation of database management systems (DBMSs) was continued as a background activity in June. Evaluation criteria and selection-weighting factors have been established—performance ranking is in progress and will proceed rapidly because the SCADA system has been selected. This evaluation and selection process will be concluded in July, at which time we will be prepared to purchase system hardware and software to conduct Engineering Development rapid-prototype testing.
- The MWMF — *Guideline for the Preparation of I&C Functional Requirements Documents* document was completed and issued.
- The MWMF Instrumentation and Equipment Database implementation is complete. Several design/operational issues were identified and resolved as a result of hands-on testing with I&C team engineers. The system is now ready for use by MWMF system designers and engineers as they begin Title I design.
- An I&C Engineering Development Plan was established and documented as part of the MWMF Engineering Development Plan.

MWMF Monthly Report
June 1994

Cost Summary: FY94 Budget: \$1200K CENRTC

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Plan	20	20	20	35	55	70	90	315	90	140	170	175
Actual	19	21	25	11	22	17	6	32	31			

FY94 Major Procurements:

Process Control System FEP hardware/software, fast prototype: \$45K

Supervisory Control System hardware/software, fast prototype components: \$135K

Handling system open architecture controller, fast prototype components: \$30K

Telerobotics platform, fast prototype components: \$60K

Teleoperator controller, fast prototype components: \$60K

Key Milestones and Markers:

	Item	Scheduled Date ⁽¹⁾	Status
L165-1.1	Complete general arrangement plan	Mar '94	Complete
L165-1.2	Select process Control System FEP hardware, software	Apr '94	In Progress
L165-1.3	Select supervisory Control System hardware, software	Apr '94	In Progress
L165-1.4	Select Handling System's open architecture controller	Jul '94	Open
L165-1.5	Select Analytical Laboratory LIMS	Jul '94	Open
L165-1.6	Select telerobotics platform	Aug '94	Open
L165-1.7	Select teleoperator controller	Sep '94	Open
L165-1	90% Preliminary Design Review	Sep '94	Open

⁽¹⁾ All except essential activities have been deferred to accommodate DOE reduced funding guidance. Dates will be revised upon longer-term funding guidance.

DATE

FILMED

9/30/94

END