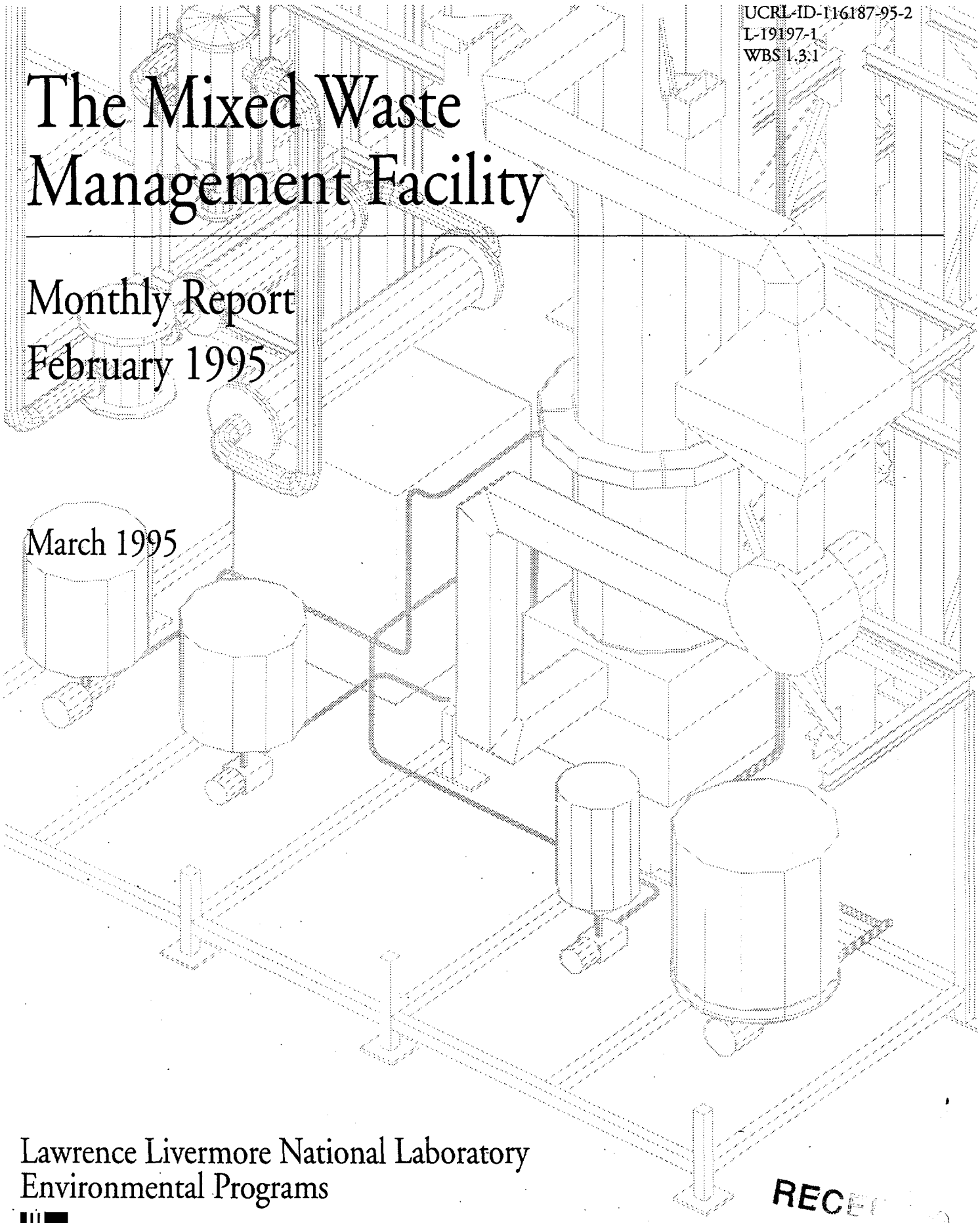
UCRL-ID-116187-95-2
L-19197-1
WBS 1.3.1

The Mixed Waste Management Facility

Monthly Report
February 1995



March 1995

Lawrence Livermore National Laboratory
Environmental Programs

UCRL-ID-116187-95-2

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The Mixed Waste Management Facility

Monthly Report
February 1995

Ronald D. Streit

March1995

Lawrence Livermore National Laboratory
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Contents

Project Summary

Overview

Technical progress continued (see "Accomplishments" below) in general accordance with the *MWMF FY95 Plan*. Engineering development and design continued in support of preliminary design of MWMF major subsystems. Peer reviews have begun in preparation for system preliminary design reviews. Procurements in support of engineering design/development have continued to increase. Significant effort to provide technical and cost trade-off information for the Project Baseline Revision 1.2 (PB1.2) and FY97 Validation was completed.

Management focus during February centered upon addressing the rebaseline for MWMF for the FY97 Validation in March, and upon completing the permitting strategy. We completed a consistent baseline plan for Validation that satisfied the DOE constraints of integration with DWTF, schedule stretchout, overall Project cost, and FY cost profiles. Several iterations, taking most of February, were necessary to review technical impact and options in order to minimize the scope impact of these changes.

The revised permitting strategy was completed and reviewed by a number of stakeholders (LLNL, DOE, State). The proposed strategy involves no RCRA RD&D permit, since all technology demonstrations can be done with surrogates and using limited treatability studies. Any use of MWMF technologies for treatment would require transitioning and separate permitting actions, independent of an RD&D permit. As a result, deployment times are likely to be unaffected whether or not an RD&D Permit is pursued. To date, a favorable response has been received by all parties, but the process is continuing. Closure of this is expected during March.

Cost Status. The expenses for February continue to run somewhat below the plan due to the limited new hiring. This is a result of uncertain DOE funding and guidance to keep personnel to a minimum. However, the spending rate is picking up due to initiation of procurements for engineering development and a minimum of essential new hires. A significant imbalance in the OPEX/CENRTC funding split for FY95 exists (about $2.1M); DOE/OAK began to seek resolution this month.

Schedule Status. Critical-path items are DWTF construction, NEPA, and permitting (for both MWMF and DWTF). Contractual issues have delayed award of the A&E contract for DWTF, but work-arounds are in progress to avoid schedule impact. NEPA and permitting issues are discussed below. Progress on preliminary design for MWMF is close to schedule.

Significant Issues and Planned Corrective Actions

NEPA action for MWMF poses an increasing schedule risk for both MWMF and DWTF. The revised MWMF *Environmental Assessment* (EA), incorporating the decision to co-locate within the DWTF complex, was issued to DOE/OAK in February. The DOE/OAK NEPA Compliance office estimates that the earliest date for the completed FONSI is August; this could impact the MWMF schedule (0–2 months) for Title II work. DWTF Title II design activities in direct support of the MWMF building, e.g., DWTF Phases 1 and 2, are at greater risk due to their earlier start date. This poses a 4–6-month schedule risk if a waiver is not approved or appropriate work-arounds developed. Discussions are in progress with DOE/OAK to resolve this and minimize impacts.

Potential solutions include a waiver for the Title II design activities, or reassessing the phasing of the proposed construction activities.

Uncertainty in permitting strategy poses potential, albeit lessening, schedule risk. The proposed permitting strategy, currently under review, will significantly reduce schedule risk for both MWMF and DWTF (Phases 1 and 2) if implemented. However, if not implemented, significant delays may be possible.

Post FY95 funding uncertainties continue to affect current planning and work during FY95, as well as a concern on uncosted funds (raised during a U.S. General Accounting Office [GAO] audit of LLNL projects). Estimates and plans for the FY97 Validation are being made based on funding estimates from DOE/OAK informally transmitted to the Project Office. However, additional informal guidance is for lower funding than that assumed, with the amount uncertain. Due to this, the Project continues to restrain more aggressive earlier plans for completing certain work during FY95.

The issue regarding the report by the DOE Office of Inspector General (OIG) remains unresolved to date (see October report). A response to the OIG was submitted to DOE/OAK in October, which is being addressed by DOE.

An imbalance exists in the OPEX and CENRTC FY95 BA funding guidance (see October report and *MWMF FY95 Plan*). The imbalance was verbally raised to DOE/OAK during February, and the issue is being addressed.

California DTSC has requested a technical analysis from LLNL regarding the classification of MSO technology as a Miscellaneous Unit versus an incinerator. This has significant permitting implications (see December report). A report on this topic was issued to DTSC on February 8.

A DOE *Project Plan* (PP) needs to be issued to allow the MWMF *Project Management Plan* (PMP) to be finalized. Draft versions of PP and PMP exist. DOE/OAK plans to wait for funding, DWTF, OIG, and other issues to be resolved before issuing the PP. The Project is proceeding to write the PMP, since management and control systems need to be established at this point in the Project.

Summary of Accomplishments

Detailed accomplishments and milestone status are reported in the Task Summaries that follow. A few of the major accomplishments during this reporting period are highlighted below:

- Engineering effort in all WBS elements supported the PB1.2 and provided scope/cost trade-offs to meet DOE funding constraints. Preparation of detailed drawings for preliminary design is in progress in most hardware WBS elements.
- NEPA/CEQA: The MWMF EA was submitted to DOE. A white paper describing why MSO should be categorized as a Miscellaneous Unit was submitted to DTSC.
- Requirements for utilities, office space, etc. were provided to DWTF in support of Phase 1 and 2 design. Continued discussions with HWM in several areas (space, storage, chemical analysis, controls) to develop details for integrating MWMF and DWTF have been conducted.
- MEO: Demonstrated that the high-efficiency silver recovery primary process can be achieved without external heat when the molar concentrations are optimized. Began assembly of a 1/15-scale integrated silver-recovery system (with centrifuge recovery of silver), using existing and borrowed equipment, to evaluate the full process.

- MSO: A peer review was held at LLNL to review a new design concept for the MSO primary station. The new design, employing multiple smaller vessels, offers a number of advantages over the current baseline design, including cost, flexibility, and reliability. Reviewers from other MSO sites participated; a favorable review was obtained. Negotiations began with a potential CRADA partner.
- The DOE-requested Water Treatment Trade Study was issued to DOE during February; KD-1 approval has been requested for this element. A series of meetings with HWM began to implement the MOU that was signed with HWM last month.

Project Financial Summary

Figures 1 and 2 present graphical plots of planned versus actual spending for OPEX and CENRTC. Table 1 presents a more detailed financial summary of the Project for February.

During February some corrective cost transfers continued, as discussed previously. However, the spending rate of the Project increased due to both limited new hires and the initiation of procurements in support of preliminary design activities. The Project continues to run behind the *FY95 Plan*, since the uncertainty in future funding limits our ability for significant commitments in manpower.

Additional OPEX funding was received; however, the existing funds were essentially adequate for FY95. The imbalance in CENRTC/OPEX funding between that requested by MWMF and that planned by DOE/OAK continued, but, after discussions in February, DOE began to seek resolution.

Major procurements initiated during February are identified in the task summaries. No distribution of Management Reserve or FY95/96 carryover was made.

The major financial issue for FY95 continues to be the imbalance in the OPEX/CENRTC DOE funding levels, as shown in Table 1, versus that required to accomplish the *FY95 Plan*. The imbalance is approximately $2150K.

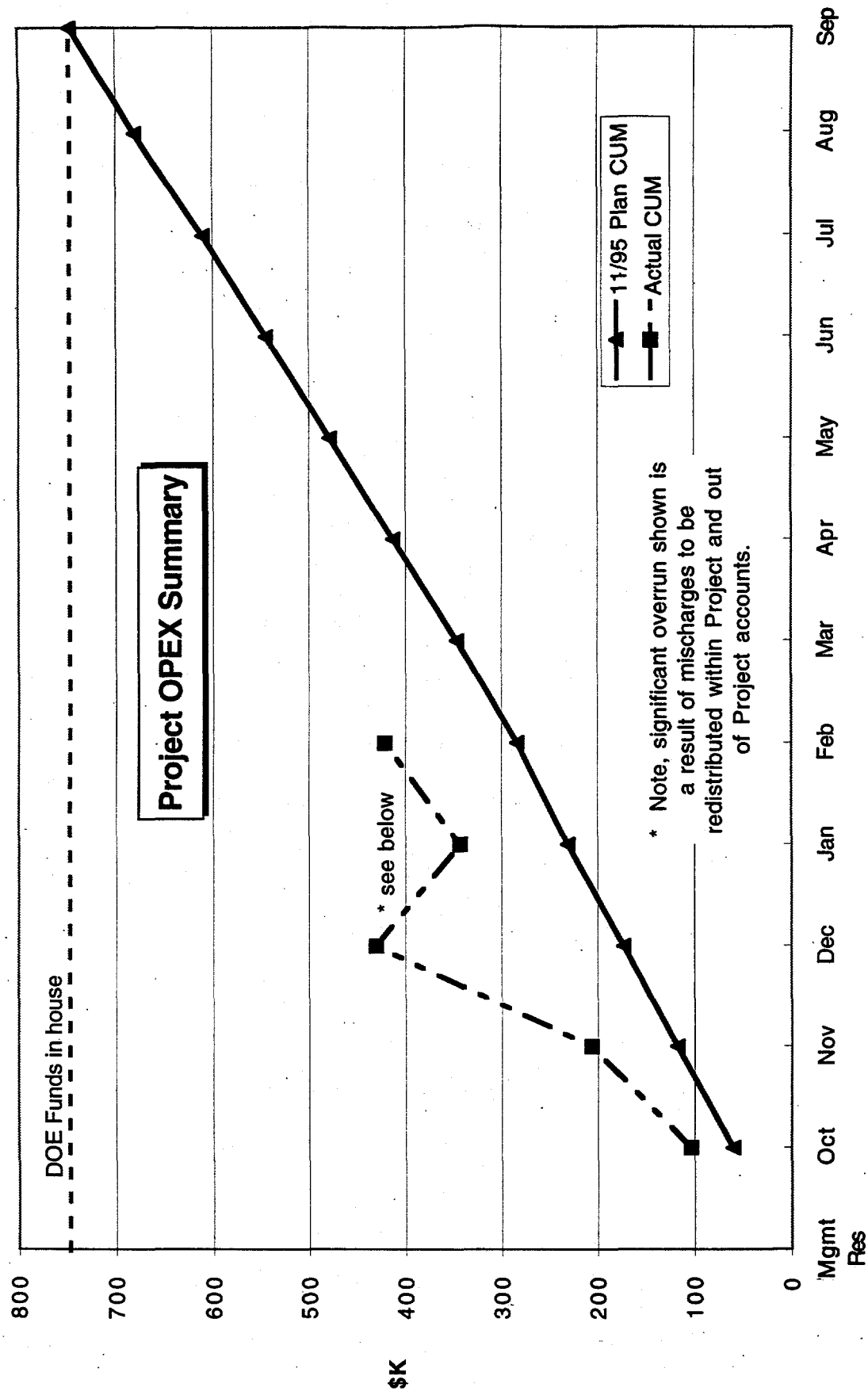
Project OPEX Summary
DOE Funds in house
* see below
* Note, significant overrun shown is a result of mischarges to be redistributed within Project and out of Project accounts.
11/95 Plan CUM
Actual CUM
$K
800
700
600
500
400
300
200
100
0
Mgmt Res
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep

Figure 1.

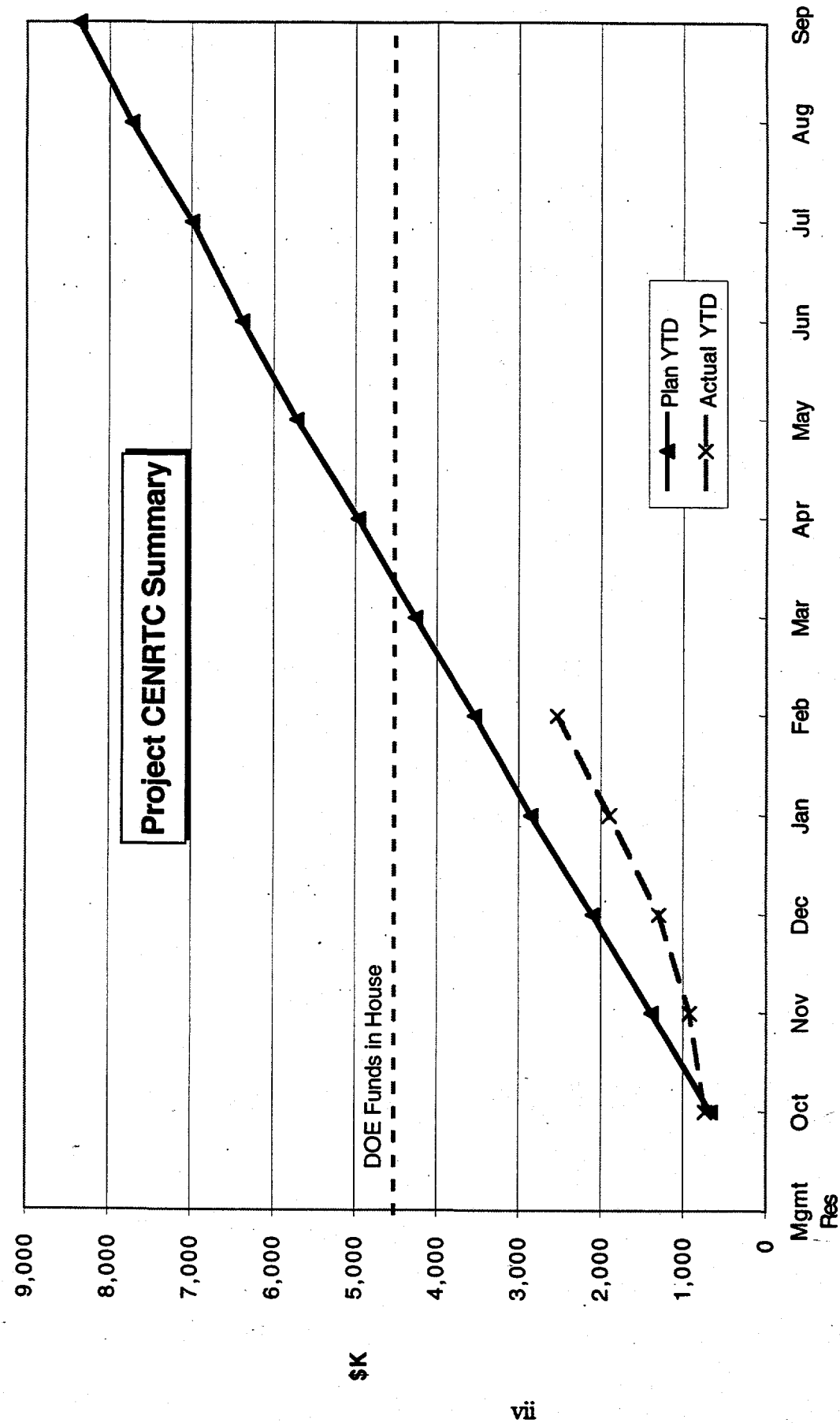
Project CENRTC Summary
DOE Funds in House
Plan YTD
Actual YTD
$K
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Mgmt Res
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep

Figure 2.

DATE: 3/13/95

MWMF Project - Monthly Financial Summary for FY95

FEBRUARY, 1995

OPEX ($K, monthly expenditures)

	CO*	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Subtotal*	Undistb#	Total Budget
DOE Funds*	279	235	235	0	0	301								1050		
FY95 Plan		59	58	56	58	53	63	66	66	66	66	71	66	746		746
Actual		103	103	224	-87	78								421		
Liens**		246	242	285	305	275								NA		
Mgmt Reserve		0	0	0	0	0								0	84	84
95/96 CO		0	0	0	0	0								0	100	100
															FY95 OPEX budget =	930

OPEX ($K, cumulative to date)

	CO*	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
DOE Funds*	279	514	749	749	749	1050							
FY95 Plan		59	117	173	231	284	346	412	478	544	610	681	746
Actual		103	206	430	343	421							

DOE FY95 new-BA, OPEX		
budget	guidance	delta
651	2800	-2149

CENRTC ($K, monthly expenditures)

	CO*	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total*	Undistb#	Total Budget
DOE Funds*	2649	0	0	0	2000	0								4649		
FY95 Plan		657	725	715	748	692	724	700	749	671	606	737	632	8358		8358
Actual		730	188	371	602	640								2531		
Liens**		86	81	85	125	961								NA		
Mgmt Reserve		0	0	0	0	0								0	605	605
95/96 CO		0	0	0	0	0								0	400	400
LDRD-CAP#		0	0	0	0	0								0	291	291
															FY95 CENRTC budget =	9654

CENRTC ($K, cumulative to date)

	CO*	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
DOE Funds*	2649	2649	2649	2649	4649	4649							
FY95 Plan		657	1382	2098	2846	3538	4262	4962	5712	6383	6989	7725	8358
Actual		730	918	1289	1891	2531							

DOE FY95 new-BA, CENRTC		
budget	guidance	delta
7005	4856	2149

TOTAL PROJECT EXPENDITURES ($K, cumulative to date)

	CO*	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
DOE Funds*	2928	3163	3398	3398	5398	5699							
FY95 Plan		717	1499	2271	3077	3821	4608	5375	6190	6927	7599	8406	9104
Actual		833	1124	1719	2234	2952							

DOE FY95 new-BA, TOTAL		
budget	guidance	delta
7656	7656	0

MANPOWER SUMMARY (total project, by month)

	CO*	Oct	Nov	Dec@	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Labor (FTE)		49	47	49	47	46							
Labor ($K)@		409	349	322	390	415							

* DOE funds include FY94/95 carryover

** Relevant for current month only; sum not meaningful

\# Undistributed remaining budget; CE/LDRD values assume 6% of new-BA budget

@ Labor $K value includes non-FTE labor costs (small cost amount); Dec has mischarge corrected.

TABLE 1

WBS Element 1.1.1 Quality Assurance

Task Description
Quality Assurance provides quality assurance support to the MWMF Project. This effort includes development and implementation of the Project's quality assurance program and oversight for conformance to the approved plan and other quality and ES&H requirements. This WBS element covers only a proportional fraction of the OPEX quality assurance effort, with the CENRTC portion contained under WBS 1.3.2, Project Control.

Summary of Monthly Activities
- Prepared a near-final draft of the *Project Configuration Management Plan*.
- Updated the Project key documents list and the action item tracking system.
- Prepared the overall schedule of Project peer and preliminary design reviews.
- Continued working with Project personnel on QA issues and the QA filing system.

FY95 Budget Spending profiles ($34K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	3	3	3	3	3	3	3	3	3	3	3	3
Monthly actual	2	3	12	–4	3							
Plan cumulative	3	6	8	11	13	17	19	22	25	28	31	34
Actual cumulative	2	5	17	13	16							
Current lien	0	0	0	0	0							

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation.

ID no.	Milestone/Marker	Scheduled Date*	Status
None	Level of effort activity		

WBS Element 1.1.2 PSAR

Task Description
The *Preliminary Safety Analysis Report* (PSAR) provides the integration of safety input, design reviews, and safety analysis for Phases I and II of the integrated MWMF/DWTF Project. Safety analysis includes analysis, generation of documentation, and documentation review and approval. The element includes the generation of the PSAR, which must be completed prior to major procurements and follow-on analysis required for the generation of the *Final Safety Analysis Report* (FSAR). The FSAR is required after construction and prior to operation.

Summary of Monthly Activities
There were no significant activities during February on the PSAR as the document was completed and distributed in 1994.

FY95 Budget Spending profiles ($0K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	0	0	0	0	0	0	0	0	0	0	0	0
Monthly actual	14	2	0	–16	0							
Plan cumulative	0	0	0	0	0	0	0	0	0	0	0	0
Actual cumulative	14	16	16	0	0							
Current lien	74	73	73	73	73							

Spending profiles ($20K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	5	5	3	2	2	2	1	0	0	0	0	0
Monthly actual	0	0	2	15	0							
Plan cumulative	5	10	13	15	17	19	20	20	20	20	20	20
Actual cumulative	0	0	2	16	16							
Current lien	0	0	0	0	0							

A CENTRC account was opened and the OPEX charges from the first quarter were transferred appropriately.

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L112-1	PSAR to DOE for review	Dec 94	Completed

WBS Element 1.1.3 NEPA/CEQA

Task Description

The NEPA portion of this WBS provides for the preparation of the *Environmental Assessment* (EA) and all required follow-up documentation required by DOE to make a determination about impacts. The effort includes preliminary evaluations, preparation of technical information, EA preparation, and comment resolution.

The CEQA and permitting portion of this WBS provide for the preparation of permit applications and associated environmental analysis to support the regulatory agency permitting and CEQA review process. The effort includes preliminary evaluations, preparation of technical information to support the agency CEQA document and permit evaluation, and comment resolution. This element prepares and coordinates approval of State and local permits and supports public participation activities associated with the permit approvals.

Summary of Monthly Activities

- We submitted the revised EA to DOE for their consideration.
- Submittal of the RD&D permit application remained on hold in February pending completion of the final review of the overall permitting strategy. Several meetings were held to discuss a proposed change in strategy with representatives from LLNL management, the Environmental Protection Department, and the legal office, as well as local DOE representatives. Preliminary discussions were also held with the DTSC permit writer. A memorandum was written to summarize the options and is under revision based on comments received to date.
- We completed a paper describing why MSO should be categorized as a Miscellaneous Unit rather than as an incinerator. This paper was submitted to Terry Escarda, DTSC in early February. Mr. Escarda is using the paper as background information to develop a better working definition of incineration for consideration by EPA and ultimately for use by DTSC in evaluating alternative technologies.

FY95 Budget Spending profiles ($31K, OPEX): NEPA

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	5	5	5	5	1	5	5	0	0	0	0	0
Monthly actual	14	12	26	-32	7							
Plan cumulative	5	10	15	20	21	26	31	31	31	31	31	31
Actual cumulative	14	26	52	20	27							
Current lien	0	0	0	0	0							

Spending profiles ($216K, CENRTC): CEQA, Permitting

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	40	40	40	40	10	8	8	8	8	6	5	5
Monthly actual	0	0	11	109	34							
Plan cumulative	40	80	120	160	170	178	185	193	200	206	211	216
Actual cumulative	0	0	11	121	155							
Current lien	0	0	0	0	0							

Large variances from monthly plan reflect corrective cost transfers as discussed in prior reports.

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L113-4	Submit revised EA to DOE	Feb 95	Completed
L113-3	Submit RD&D permit application to DTSC	Feb 95	On hold
L113-2	Submit air permit to BAAQMD	Mar 95	
D113-1	EA determination by DOE	Aug 95	
C113-2	Authorization to construct issued by BAAQMD	Jul 95	
C113-1	RD&D permit issued by DTSC	Apr 96	

WBS Element 1.1.4 ES&H

Task Description
ES&H provides for on-going Environment, Safety, and Health (ES&H) representation to the MWMF Project by ES&H specialists 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.

Summary of Monthly Activities
Ongoing ES&H support was provided to the MWMF Project per the activities described above.

FY95 Budget Spending profiles ($162K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	14	14	14	14	14	14	14	14	14	14	14	14
Monthly actual	11	8	14	6	12							
Plan cumulative	14	27	41	54	68	81	95	108	122	135	149	162
Actual cumulative	11	19	32	38	51							
Current lien	0	0	0	0	0							

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
None	Level of effort activity		

WBS Element 1.1.5 Program Support

Task Description

Program Support provides top-level planning, control, and support of MWMF Project 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, facility technical support, and OPEX-funded technical support.

Summary of Monthly Activities

During the month of February, attention continued to be focused on addressing the rebaseline for MWMF for Project Validation, and finalizing the permitting strategy. The FY97 Validation meeting is scheduled for March 21, 1995.

A reevaluation of the permitting requirements and planned operation in MWMF has led to a reassessment of the permitting strategy. The proposed strategy involves no RCRA RD&D permit, since all technology demonstrations can be done with surrogates and using limited treatability studies. Any use of MWMF technologies for treatment would require physical transitioning and separate permitting actions, independent of an RD&D permit. As a result, deployment of technologies, as specified in the *Draft Site Treatment Plan* will likely be unaffected whether or not an RD&D Permit is pursued. To date, a favorable response has been received by all parties, including DOE, LLNL, and the State, but the process is continuing. Closure of this is expected during March.

NEPA for MWMF poses an increasing schedule risk for MWMF and DWTF. The revised MWMF EA, incorporating the decision to co-locate within the DWTF complex, was issued to DOE/OAK in February. The DOE/OAK NEPA Compliance office estimates that the earliest date for the completed Finding of No Significant Impact is August; this could impact MWMF schedule (0–2 months) for Title II work. DWTF Title II design activities in direct support of the MWMF building, e.g., DWTF Phases 1 and 2, are at greater risk due to their earlier start date. This poses a 4–6-month schedule risk if a waiver is not approved or appropriate work-arounds developed. Discussions are in progress with DOE/OAK to resolve this and minimize impacts. The proposed permitting strategy, currently under review, will significantly reduce schedule risk for both MWMF and DWTF (Phases 1 and 2) if implemented. However, if not implemented, significant delays may be possible.

An MSO white paper was prepared to address the categorization of MSO as a Miscellaneous unit. This paper identified the differences, both technical and regulatory, between Miscellaneous unit and incineration, and was distributed early in February.

Current planning calls for the completion of the PMP (Milestone L115-1) during March '95. In general, this document follows the completion of the PP and addresses how LLNL will meet the goals of the PP. Due to the number of rebaselining efforts and the uncertainty in budgets, the PP has not been completed. We have decided to complete the PMP based on available Project guidance to formalize Project management plans and activities.

FY95 Budget Spending profiles ($354K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	30	29	27	29	27	33	27	31	31	29	33	29
Monthly actual	54	76	169	-48	44							
Plan cumulative	30	59	86	114	141	174	201	233	264	293	326	354
Actual cumulative	54	131	300	251	296							
Current lien	140	136	179	198	169							

Note: A number of cost transfers have yet to be completed as discussed in previous monthly reports.

Significant procurement actions this month

A contract was awarded for technical support from SAIC. Although this will be costed on an as-used basis, a lien for the total FY95 allocation will be placed on the account.

Milestones and Markers

*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L115-7	Submit *FY95 Plan*	Dec 94	Complete
L115-1	Submit *Project Management Plan* (Final)	Mar 95	In Progress
D115-1	DOE issues Project Plan	Jan 95	Open
L115-8	*Technology Selection and Implementation Plan, Part II*	Mar 95	In progress
L115-9	FY97 Project Validation	Apr 95	In progress
L115-10	Submit *FY96 Plan*	Oct 95	

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 Review Panel (NRP), a Community Newsletter, and preparation and coordination of press releases and community tours.

Summary of Monthly Activities

Public Participation continued to organize the NRP. Due to permitting reevaluation issues as discussed elsewhere, the first meeting has been somewhat delayed. However, we continue to meet with external individuals and groups regarding MWMF and its interaction with the *Site Treatment Plan*. In addition, preparation of the MWMF newsletter has moved forward.

An MWMF display board has been developed for presenting the MWMF Project to various audiences at conferences, public meetings, and for general support of LLNL's Visitor Center. This exhibit was used at the American Nuclear Society Conference on Robotics during February, and was well received.

FY95 Budget Spending profiles ($96K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	8	8	8	8	8	8	8	8	8	8	8	8
Monthly actual	10	3	3	8	11							
Plan cumulative	8	16	24	32	40	48	56	64	72	80	88	96
Actual cumulative	10	12	15	23	34							
Current lien	28	28	28	29	28							

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L116-1.1	National Review Panel (NRP) formed	Apr 95	In Progress
L116-1	First meeting of NRP	May 95	In Progress
L116-2.1	Issue first public newsletter	Jun 95	
L116-2.2	Receive comments from NRP	Apr 95	Deleted
L116-2	Second meeting of NRP	Nov 95	
L116-3.1	Issue second newsletter	Dec 95	

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 Monthly Activities
Conceptual design activity is complete. No further activities remain in this WBS element.

FY95 Budget Spending profiles ($0K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	0	0	0	0	0	0	0	0	0	0	0	0
Monthly actual	–1	–1	0	0	0							
Plan cumulative	0	0	0	0	0	0	0	0	0	0	0	0
Actual cumulative	–1	–2	–2	–2	-2							
Current lien	4	4	4	4	4							

Charges were transfers from FY94.

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
None	No activity		

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 Monthly Activities
No activity on this WBS element planned until April 1995. Preliminary discussions began to define requirements for an operations planning position.

FY95 Budget Spending profiles ($69K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	0	0	0	0	0	0	10	10	10	13	13	13
Monthly actual	0	0	0	0	0							
Plan cumulative	0	0	0	0	0	0	10	20	30	43	56	69
Actual cumulative	0	0	0	0	0							
Current lien	0	0	0	0	0							

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L122-1	Issue MWMF Start-Up and Activation Plan	Sep 95	

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 OTPs in each of the technology areas including Operational Readiness Reviews (ORRs); (3) technical support for the preparation of Operational Safety Requirements (OSRs) and Facility Safety Requirements (FSRs), as well as 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 (utilities, power, etc.) during construction, testing, and activation of the MWMF.

Summary of Monthly Activities
There are no activities under this WBS element during FY95.

FY95 Budget Spending profiles ($0K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	0	0	0	0	0	0	0	0	0	0	0	0
Monthly actual	0	0	0	0	0							
Plan cumulative	0	0	0	0	0	0	0	0	0	0	0	0
Actual cumulative	0	0	0	0	0							
Current lien	0	0	0	0	0							

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
None	No activity		

WBS Element 1.3.1 Project Management

Task Description

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

Summary of Monthly Activities

Project management for all elements of the Title I design of CENRTC-funded activities continued. The new Project guidance, distributed in January, was employed to complete the PB1.2 during February. A consistent baseline plan for Validation was completed that satisfied the DOE constraints of integration with DWTF, schedule stretchout, overall Project cost, and FY cost profiles. Several iterations, taking most of February, were necessary to review technical impact and options, in order to minimize scope impact by these changes. The PB1.2 will be completed and reflected in the FY97 Project Validation, scheduled for March, 1995.

Technical progress continued in general accordance with the *MWMF FY95 Plan*. Engineering development and design continued in support of preliminary design of MWMF major subsystems. Peer reviews began in preparation for system preliminary design reviews. Procurements in support of engineering deign/development have continued to increase. We completed considerable engineering effort to provide technical and cost trade-off information for the FY97 Validation.

FY95 Budget Spending profiles ($856K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	59	56	54	56	54	65	54	101	101	92	105	60
Monthly actual	71	12	36	37	44							
Plan cumulative	59	116	169	226	279	344	398	499	599	691	796	856
Actual cumulative	71	83	119	156	200							
Current lien	0	0	0	0	111*							

* Error by LLNL Procurement Dept. Lien will be reduced during March.

Significant procurement actions this month

None

Milestones and Markers

*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L131-2	Input to *FY95 Plan* (see 115-7)	Dec 94	Complete
L131-4	Submit MWMF Rebaseline (MWMF/DWTF/ Merge)	Mar 95	In Progress
L131-1	Preliminary Design Review completed	Jul 95	
D131-2	DOE Issues KD-2	Jul 95	
L131-5	Submit Post-PDR Project Baseline	Sep 95	

WBS Element 1.3.2 Project Control

Task Description

Project Control provides for the Project integration, configuration management, cost and schedule control, quality assurance (see WBS 1.1.1), 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 Monthly Activities

- Work continued on the PB1.2. Task summaries at WBS Level 3 were prepared by Lead Engineers and used to integrate and document scope, technical impact, cost, cost reconciliation, and schedule information for the FY97 Validation. Several iterations were required to satisfy the DOE constraints of DWTF integration, schedule stretchout, overall Project cost, and FY cost profiles. Technical impact and options were reviewed to minimize the scope impact of these changes. Considerable work was required to develop a spreadsheet to integrate, rollup, document, and report base cost estimates, management reserve, escalation, and funding obligation adjustments. The task summaries, with supporting information, will then provide the basis for formally revising the current Project Baseline (Rev. 1).
- Some work continued on developing Project controls. Good progress was made in developing the policies and procedures for control of management reserve.
- In the QA area, work emphasized the planning/scheduling of design reviews and completing the Configuration Control Plan. A review schedule was developed and issued, leading to the Project Preliminary Design Review. A review meeting for the Configuration Control Plan raised several questions that are being addressed (but at a lower priority than Validation/PB1.2).
- A meeting was held with the DOE Project Manager to help resolve outstanding funding issues.
- Other significant activities and accomplishments during February:
  - — Prepared a response to the GAO regarding carryover funds.
  - — Facilities: Coordinated building maintenance and repairs as necessary, along with office moves. Facility Manager training continued. Worked to resolve the return of Graham Court storage facility to LLNL.
  - — MWMF Property Center (PC): Completed a 2.5-day training class. The 1995 Attractive Item Inventory was completed to the 100% level. Continued updates of property records and equipment excess as required.
  - — Issued the DOE PTS monthly report.
  - — Issued the *January Monthly Report*, with additions as requested by DOE/OAK.
- DOE/OAK needs to address the imbalance of the OPEX and CENRTC planned funding, versus that budgeted and required by the Project during FY95. This action remains following the issuing of the *MWMF FY95 Plan* document in December, 1994.

FY95 Budget Spending profiles ($486K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	42	40	37	39	37	45	37	43	43	39	45	39
Monthly Actual	44	9	22	45	66							
Plan cumulative	42	82	119	158	195	240	277	320	363	402	447	486
Actual cumulative	44	53	76	121	187							
Current lien	0	0	0	42	42							

The lien is for manpower support services (project scheduling). The large cost includes contract personnel support (S&W, $33K) and one computer system ($5K).

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L132-4	Input to *FY95 Plan* (see 155-7)	Dec 94	Complete
L132-1	Implement cost planning/tracking systems (document)	Dec 94	Complete
L132-5	Issue Configuration Control System Document	Mar 95	In Progress
L132-6.1	Input to MWMF *Project Management Plan* (see L115-1)	Mar 95	In Progress
L132-7	Performance Management System documented	Apr 95	
L132-9.1	Records Control Procedure	Apr 95	
L132-8.1	Complete support of Project PDR (see L131-1)	Jun 95	
L132-9.2	Assessment/Surveillance Procedure	Jul 95	
L132-9	Complete QA Self Assessment	Aug 95	
L132-10.1	Input to *FY96 Plan* (see L115-10)	Oct 95	

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 covers technical issues that affect all primary and support processes. It also includes the responsibility for assuring that the systems interfaces are addressed in the integrated design, including interfaces with LLNL Hazardous Waste Management and facility engineering. The element coordinates the System Design Requirements, the MWMF floor plan, and the Integrated Operating Plan.

Summary of Monthly Activities

- Held integration meetings to support team efforts in rescoping subsystems to meet the goals of the PB1.2.
- Lead engineers updated HVAC and electrical utility requirements.
- Provided justification for the eight offices requested by MWMF in the Operations Support Building.

FY95 Budget Spending profiles ($328K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	28	26	26	26	26	30	26	29	29	26	30	26
Monthly actual	51	–1	10	18	30							
Plan cumulative	28	54	80	106	132	162	188	217	246	272	302	328
Actual cumulative	51	50	60	78	108							
Current lien	2	0	2	0	1							

Significant procurement actions this month

None

Milestones and Markers

*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L133-1.4	Input to *FY95 Plan* (see 115-7)	Nov 94	Complete
L133-2	Issue Integrated Operations Plan	Jan 95	Complete
L133-3	Issue Title I System Design Requirements	May 95	In Progress
L133-4	Issue Metrication Plan	Feb 95	Complete
L133-5	Input to *FY96 Plan* (see 115-10)	Oct 95	

WBS Element 1.4.1 Receiving and Shipping

Task Description

The principal objective of the Receiving and Shipping (RAS) 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 Monthly Activities

- Activities this month focused on coordination of the design efforts for the RAS areas of MWMF and DWTF. Meetings with the lead DWTF personnel were held and a revised floor plan showing the reduced scope of the MWMF RAS area was used as a platform for continuing discussions. Based upon operational constraints, HWM requests an area for storage of barrels be maintained in MWMF. The resulting reduction in required floor area is approximately 1100 square feet. A letter is being drafted describing the proposed recommendations.

FY95 Budget Spending profile ($175K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	18	17	16	17	16	19	14	15	15	9	10	9
Monthly actual	21	2	4	12	4							
Plan cumulative	18	35	51	68	84	103	117	132	147	156	166	175
Actual cumulative	21	23	27	40	44							
Current lien	0	0	0	0	0							

Significant procurement actions this month

None

Milestones and Markers

*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L141-1.1	Complete pilot characterization studies	Dec 94	Complete
L141-1.2	Identify equipment and define floor plan	Mar 95	Open
L141-1.3	RAS LI&C System Functional Requirements Document complete	Jun 95	Open
L141-1.4	RAS LI&C System Preliminary Design review complete	Jul 95	Open
L141-1	RAS System Preliminary Design Review	Jul 95	Open

WBS Element 1.4.2 Solids Feed Preparation

Task Description

The principal objective of the Solids Feed Preparation (SFP) 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. SFP provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, installation of SFP equipment, Title III inspection, and acceptance test procedures (ATP). SFP includes both solids feed preparation equipment and systems integration.

Summary of Monthly Activities

- Activities this month focused on rebaselining the feed preparation area to meet revised guidelines. A reliable two-way transmission of data between the QNX systems and other UNIX systems has been established. This is the communications necessary between the Robline cell supervisor and the Process Vision database. The in-house peer review of the SFP hardware is scheduled for April 3, 1995, and the SFP System Preliminary Design Review (PDR) on June 29, 1995. The telerobotics peer review is scheduled for April 10, 1995, with the same System PDR date. In progress is the detailing of the equipment and vendor inquiries to firm up cost estimates.
- Engineering development activities focused on a telerobotic shared-control operator interface that will provide an ergonomic procedure for seamless transfer between teleoperated and programmed means of driving the manipulator. SMART is an SNLA-developed low-level control system for telerobotics that will be used in MWMF to avoid redeveloping software. A proposed agreement to obtain SNL support was developed and sent to SNL for review. The first version of the operational collision-detection algorithm was completed and tested in a simulated workcell. The algorithm is an adaptation of the Strenn model-based collision-detection method developed in FY92-93. The development of the RSI non-force reflection (unilateral) hand control module was initiated. It will replace the force ball we are using now and will provide a means of developing the position-position, and position-rate methods of controlling robot movements. The latter method will afford greater dexterity in control of robot movement. Demonstration of the communications between the robot (Robline) host computer and the Supervisory I&C (Process Vision) host computer using the TCP/IP network protocol was completed. MWMF telerobotics developments were demonstrated to the ANS 6th Topical Meeting on Robotics and Remote Systems conference tour groups who visited the lab on February 10.

- A meeting was held with representatives of the LLNL tritium facility to incorporate their comments on the tritium handling strategy. Their comments will be incorporated and a final version generated in the next month. Representatives of the LLNL tritium facility will attempt to obtain additional tritium monitors from the decommissioned SNL facility for use within the MWMF.

FY95 Budget Spending profiles ($954K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	95	91	86	91	87	104	87	100	100	36	41	36
Monthly actual	83	31	31	76	92							
Plan cumulative	95	186	272	363	450	554	641	741	841	877	918	954
Actual cumulative	83	114	144	220	312							
Current lien	21	0	0	0	639*							

*Error by LLNL's Procurement Dept. Amount will be reduced in March.

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L142-1.2	Identify initial suite of characterization equipment	Jan 95	Complete
L142-1.3	Complete validation of characterization, isolation and segregation methods	Apr 95	Open
L142-1.4	Complete preliminary operator control station design	Mar 95	Open
L142-1.5	Process Vision/Robline bilateral communication link demonstrated	Feb 95	Complete
L142-1.6	Process Vision/Robline bilateral message handling demonstrated	Mar 95	Open
L142-1.7	SFP workcell control architecture designed	May 95	Open
L142-1.8	SFP LI&C System Functional Requirements Document complete	Jun 95	Open
L142-1.9	SFP LI&C System Preliminary Design review complete	Jul 95	Open
L142-1	SFP System Preliminary Design Review	Jul 95	Open

WBS Element 1.4.3. Liquids Feed Preparation

Task Description

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

Summary of Monthly Activities

Design, cost and technical trade-off studies for LFP continue. The floor-plan layout integrating some cost-saving LFP/SFP tasks is complete. Design drawings, P&IDs and other necessary drawings for Title I are in the process of being drawn. Liquid/liquid separation experimental work is complete and the data is being analyzed. This data reduction effort is 75% complete. The liquid/solid separation data analysis is 50% complete.

FY95 Budget Spending profiles ($390K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	38	36	34	36	34	41	34	40	40	18	21	18
Monthly actual	37	6	14	22	28							
Plan cumulative	38	74	108	144	178	219	253	293	333	351	372	390
Actual cumulative	37	43	57	79	108							
Current lien	0	0	0	0	0							

Significant procurement actions this month

None

Milestones and Markers

	Item	Scheduled Date	Status
L143-1.1	Define surrogate feeds	Nov 94	Complete
L143-1.3	Complete validation of characterization and segregation methods	Mar 95	Open
L143-1	90% Preliminary Design Review	Jul 95	Open

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 CO_2 and water, to recycle acid and silver, and to remove ash containing the radioactive constituents. The MEO 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 Monthly Activities

- Continued work to determine the maximum pH distillate that can be achieved in a single fractionating column for acid recovery with greater than 13 *M* nitric in the reboiler. NO_X carry-up and thus distillate pH appears to decrease, possibly to as low as pH=3 as the acid concentration in the reboiler is increased to above 14 *M*. Work is continuing to determine the relationship between bottoms and distillate concentration with and without added air or oxygen. Parallel work is being performed on an ASPEN model of distillation with chemical reactions.
- Demonstrated that the silver recovery process primary reaction (i.e. the conversion of AgCl to Ag by NaOH and H_2O_2) is as efficient without external heat as it is when performed in a heated bath. Heating equipment may not be required in MWMF for this portion of the process.
- Assembled a 1/15 scale silver recovery system (including centrifuge recovery for the Ag) from existing and borrowed equipment. The system will be used to "walk through" the Ag recovery process from AgCl addition to $AgNO_3$ generation in an integrated manner.
- Presented a paper on MEO at WM '95 symposium held in Tucson Arizona, March 1,1995.

Design effort included the following:

1. Completed cost and schedule information for PB1.2 of the MWMF Project.
2. Completed drawings for LLNL requested modifications to UOP guided wave probe. Drawings were submitted to UOP for cost estimate.
3. Provided Fab drawings for acid concentration monitoring system, including pump and valve packaging and sample cell.

FY95 Budget Spending profiles ($1,023K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	79	98	94	113	102	91	81	73	73	73	73	73
Monthly actual	103	32	68	76	82							

Plan cumulative	79	177	271	384	486	577	658	731	804	877	950	1023
Actual cumulative	103	136	203	279	361							
Current lien	22	21	14	9	6							

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L151-1.1	Complete tests on turbo-aerator for nitrous-acid conversion (document)	Jan 95	Complete
L151-1.4	Summarize silver recovery chemistry results to date (document)	Apr 95	In Progress
L151-1.6	Report on NaOH-AgCl recovery (document)	Mar 95	In Progress
L151-1.7	Computer simulation of the combined MEO and Acid Recovery control systems (document)	Mar 95	In Progress
L151-1.8	Final Report on steady-state flow and chemistry balance tests (document)	Apr 95	
L151-1.9	Demonstrate prototype cellulose feeder (document)	Jun 95	
L151-1.12	LI&C Functional Requirements Document complete	Aug 95	
L151-1.10	P&ID drawings (document)	Sep 95	
L151-1.11	Layout drawings of major equipment items (document)	Sep 95	
L151-1.13	LI&C System Preliminary Design review	Sep 95	
L-151-2	MEO System Preliminary Design review	Sep 95	

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 CO_2 and water, to remove ash containing the radioactive constituents, and to recycle/process the spent salt. The MSO element provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, and installation of the MSO equipment, Title III inspection, and acceptance test procedures (ATP) covering both equipment and system integration activities.

Summary of Monthly Activities

Development activities continued:

- Set up and started operational testing of small materials-evaluation furnace.

Preliminary design:

- Held peer review to evaluate new design concept for rebaseline. The consensus of the reviewers was that there are cost and technical incentives to an MSO system that utilizes multiple smaller vessels (over a single large vessel) with common support equipment.
- Revised cost estimate to PB1.2.
- Set date for negotiating scope of work with potential CRADA partner.

FY95 Budget Spending profiles ($2428K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	140	147	194	210	209	196	235	221	153	202	279	242
Monthly actual	139	27	83	101	124							
Plan cumulative	140	287	481	691	900	1096	1331	1552	1705	1907	2186	2428
Actual cumulative	139	166	249	350	474							
Current lien	3	36	47	52	154							

Significant procurement actions this month

None

Milestones and Markers

*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate

ID no.	Milestone/Marker	Scheduled Date*	Status
L152-3.3	Initiate vessel material study	Oct 94	Complete
L152-2.2	Complete Design Specification	Jan 95	Complete
L152-2.3	Conduct Industrial Partner meeting	Jan 95	Complete
L152-3.5	LI&C Functional Requirements Document complete	May 95	
L152-3.6	LI&C System Preliminary Design review	Jun 95	
L152-2	Select Industrial Participation method	Jun 95	
L152-3.4	Install development unit	Jun 95	
L152-3	MSO System MWMF PDR	Jun 95	
L152-5	Start Title II design	Jul 95	

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 CO_2, water, and inorganic ions, leaving ash, salts, metals, and radionuclides in a residual solution/slurry. The WOX 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 Monthly Activities
This activity has been closed out. No FY95 activities.

FY95 Budget Spending profiles ($0K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	0	0	0	0	0	0	0	0	0	0	0	0
Monthly actual	0	0	0	0	0							
Plan cumulative	0	0	0	0	0	0	0	0	0	0	0	0
Actual cumulative	0	0	0	0	0							
Current lien	0	0	0	0	0							

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
None	No activity		

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 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 Monthly Activities
This activity has been closed out. No FY95 activities

FY95 Budget Spending profiles ($0K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	0	0	0	0	0	0	0	0	0	0	0	0
Monthly actual	0	0	0	0	0							
Plan cumulative	0	0	0	0	0	0	0	0	0	0	0	0
Actual cumulative	0	0	0	0	0							
Current lien	0	0	0	0	0							

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
None	No activity		

WBS Element 1.5.5 Experimental Off-Gas

Task Description

The principal objective of Experimental Off-Gas Treatment (XOGT) 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, acidic urea $DeNO_x$ scrubbing, and advanced metal filters. The second objective is to demonstrate feasibility and effectiveness of off-gas treatment at or near to the source of the gas where the treatment can be tailored to that specific source. The XOGT element provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, and installation of XOGT equipment, Title III inspection, and acceptance test procedures (ATP) covering both equipment and system integration activities. XOGT will be backed by the facility off-gas system.

In January '95, FY95 activities for this element were downscoped to reflect future year budget reductions. Activities are to be leveled out in June '95 and restarted late in the Project. The milestones have been updated to reflect this.

Summary of Monthly Activities

- The MWMF-scale advanced gas-liquid contactor for destruction of NO_x with acidic urea is scheduled to be delivered in April 1995.
- The separate enclosure in B161 for the Urea $DeNO_x$ system is being readied.
- The experimental plan and the instrumentation and the utility requirements are being laid out.

FY95 Budget Spending profiles ($158K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	13	13	12	13	12	15	12	14	14	13	14	13
Monthly actual	18	12	19	9	6							
Plan cumulative	13	26	38	51	63	78	90	104	118	131	145	158
Actual cumulative	18	29	49	58	63							
Current lien	0	1	0	4	0							

Significant procurement actions this month

None

Milestones and Markers

*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L155-1.1	Fabricate prototype gas-liquid contactor for acidic urea DeNO$_x$ scrubbing	Jun 95	In Process
L155-3.2	Initiate systematic catalysts testing	Jan 95	Deleted
L155-2.1	Initiate instrumentation and control system test	Feb 95	Deleted
L155-3.3	I&C Functional Requirements Document complete	May 95	Deleted
L155-1	Summarize Gas Liquid Contactor Tests (document)	Jul 95	
L155-3.4	LI&C System Preliminary Design review	Jun 95	Deleted
L155-3	XOG System Preliminary Design review	Jun 95	
L155-3.1	Summarize NO$_x$-urea chemistry to date (document)	Jul 95	

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 Monthly Activities
- Additional information was provided for the rebaseline plan.
- Information was provided to support the FY97 Validation briefing.
- The majority of Title I design activities will begin in March.

FY95 Budget Spending profiles ($89K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	6	6	5	6	8	10	9	10	10	6	7	6
Monthly actual	15	6	3	4	4							
Plan cumulative	6	12	17	23	31	41	50	60	70	76	83	89
Actual cumulative	15	21	24	27	31							
Current lien	0	0	0	0	0							

Significant procurement actions this month
None

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L161-1.1	Select standard transport container designs	May 95	In process
L161-1.2	Floor plan layout complete	Jun 95	
L161-1.3	LI&C Functional Requirements Document complete	Jun 95	
L161-1.4	PTS LI&C System Preliminary Design review	Jul 95	
L161-1	PTS System Preliminary Design Review	Jul 95	

WBS Element 1.6.2. Analytical Laboratory

Task Description

The principal objective of the Analytical Laboratory is to provide chemical analysis support for process control and characterization, 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 Monthly Activities

- Toured the Building 514 (DWTF) treatment yard; identified current process analysis needs and potential future analysis needs. Contacted Kerry Cadwell regarding current and proposed analytical instrumentation identified for purchase and required by DWTF. Contacted other personnel associated with DWTF regarding proposed move in schedule, off-gas analysis requirements, and potential analysis needs. The off-gas monitoring requirements (permit) for an indoor DWTF have not yet been determined. We are in the process of preparing a document that summarizes DWTF's analysis needs. Because the schedule for occupancy and operation of DWTF is offset from the MWMF schedule by approximately 2 years (MWMF is scheduled for occupancy/operation FY98; DWTF occupancy and operation is not scheduled until FY2000), DWTF will not be moving some routinely used instrumentation into the Building 695 facility until DWTF takes occupancy. This will have a serious impact on radiation screening/rad analysis and metals determination in support of MWMF.
- Reviewed initial draft of *Analytical Laboratory Functional Requirements* document. Made suggestions for changes and raised questions regarding various aspects of the proposed requirements.
- Collected off-gas samples for analysis by Fourier transform infrared spectrometry (FTIR) and gas mass spectrometry for chlorinated species in support of MEO (Co/H_2SO_4 system).
- Supported MSO salt recycle for analysis of liquid and filtrate for metals and chloride. Discussed need for x-ray fluorescence (XRF) methods development with Erica Von Holtz for quantitative determination of metals and chloride in support of salt recycle.
- Assisted LFP in interpretation of waste requisitions and analytical data.
- Facility off-gas requirements have been finalized for preliminary design. Until permit monitoring requirements are finalized and additional monitoring information is received, Analytical Services will plan to provide monitoring for CO, CO_2, NO_X, SO_X, VOCs and O_2 using standard, EPA-approved Continuous Emission Monitoring equipment. We will also be equipped to continuously monitor tritium in the facility off-gas.

FY95 Budget Spending profiles ($140K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	10	9	9	9	9	11	9	10	10	9	27	18
Monthly actual	19	–2	8	8	9							
Plan cumulative	10	19	28	37	46	57	66	76	86	95	122	140
Actual cumulative	19	16	24	32	41							
Current lien	0	0	0	0	0							

Significant procurement actions this month

None

Milestones and Markers

*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L162-4	Define MEO on-line analysis requirements	Feb 95	Complete
L162-3	Define facility off-gas monitoring requirements	Feb 95	Complete
L162-6	Define DWTF analysis requirements	Feb 95	Complete
L162-2	Define analysis tests based on process acceptance criteria	Mar 95	Partial
L162-5	Define MSO on-line analysis requirements	Mar 95	Partial
L162-7.1	LI&C Functional Requirements Document complete	Jul 95	
L162-7.2	LI&C System Preliminary Design review	Aug 95	
L162-7	Analytical Lab System Preliminary Design review	Aug 95	

WBS Element 1.6.3. Water Treatment

Task Description
Water Treatment (WT) is an integral part of treatment train demonstrations, continuing treatment of aqueous byproducts as part of demonstration tests to produce solid residuals suitable for Final Forms and fully treated water that meets treatment standards and sewer limits. WT provides the management, system analysis and support, design and engineering (Title I, II, III), procurement, and installation of the WT equipment necessary to demonstrate treatment trains, Title III inspection, and acceptance test procedures (ATP) covering both equipment and system integration activities.

Summary of Monthly Activities
The DOE letter authorizing Title I design for MWMF requested a trade-off study to evaluate the alternative of transporting aqueous waste to HWM for treatment instead of treating all aqueous streams by WBS 1.6.3 within MWMF. The report was distributed during February, completing Marker L163-1.1. A request has been made to DOE for approval to initiate Title I design of the rebaselined WT scope.

A series of briefing sessions with the HWM water treatment design team began. The purposes of these sessions are (1) to implement the Memorandum of Understanding with HWM that was approved last month, (2) to inform the HWM design team of MWMF's requirements, and (3) to establish a schedule for the HWM team to support Title I design.

FY95 Budget Spending profiles ($126K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	0	14	13	14	13	16	13	15	5	5	10	8
Monthly actual	0	0	2	3	3							
Plan cumulative	0	14	27	41	54	70	83	98	103	108	117	126
Actual cumulative	0	0	2	5	7							
Current lien	0	0	0	0	0							

Significant procurement actions this month
None

Milestones and Markers

*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L163-1.1	Water Treatment Trade-off Study Revision	Feb 95	Complete
L163-2	Memorandum of Understanding with HWM	Jan 95	Complete
163-3.1	LI&C Functional Requirements Document complete	Jun 95	
L163-3.2	LI&C System Preliminary Design review	Jul 95	
L163-3	Water Treatment System Preliminary Design Review	Jul 95	
L163-4	Begin Final Design	Jul 95	

WBS Element 1.6.4 Final Forms

Task Description

The Final Forms task is to immobilize the residues from the treatment of the mixed waste input streams by the primary processes, and residue resulting from secondary support processes that are integral to the primary treatment processes. The final form types are (1) ceramics for mineral residues, (2) polymer microencapsulation for salt, and (3) sulfur-polymer microencapsulation for volatile inorganic solids.

Summary of Monthly Activities

- Our study of vaporization of inorganic constituents during ceramic waste form processing is continues. Principal concerns are compounds of Pb (fairly ubiquitous), and AgCl and $AgNO_3$ in MEO residues. Substantial quantities of Tl, Ag and Cl have been found in the condensed vapors when AgCl and Tl_2O are included in the formulation. Experiments with additions of Pb_2O_3, $AgNO_3$ and Ag_2O are in progress.
- The effect of slurry pH on the zirconolite phase distribution (cf. January report) is profound. Adjusting to pH = 4 (unadjusted pH ~ 12) eliminates the problematic agglomeration of the zirconia precursor, but other problems then develop including gross nonuniformities and shrinkage cracks. These can probably be avoided by modifying the sintering temperature cycle.
- A peer review of the polymer microencapsulation immobilization of salt has been scheduled for mid-March. The major purpose is to present for comment the issues associated with the choice of polymer type—cast thermoset vs. extruded thermoplastic. As noted previously, the trade-offs are complicated, involving cost, technical, and regulatory issues. Final preparation and publication of Marker L164-1.3 has been postponed until after this review.

FY95 Budget Spending profiles ($399K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	34	33	33	33	33	34	33	33	33	33	33	34
Monthly actual	59	13	23	26	38							
Plan cumulative	34	67	100	133	166	200	233	266	299	332	365	399
Actual cumulative	59	72	95	120	158							
Current lien	1	1	2	1	1							

Significant procurement actions this month

None

Milestones and Markers

*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L164-1.3	Report status of immobilization evaluations	Mar 95	In Progress
L164-2.1	Final Forms subsystem design status peer review	Mar 95	In Progress
L164-1	Evaluations of immobilization technologies complete	May 95	
L164-2.2	LI&C Functional Requirements Document complete	May 95	
L164-2.3	LI&C System Preliminary Design review	Jun 95	
L164-2	Final Forms System Preliminary Design review	Jun 95	
L164-3	Report: Design of polymer microencapsulation system	Jun 95	
L164-4.1	Report: Volatile residue components and the design of ceramic waste form system	Jul 95	
L164-4.2	Report: Interim status of ceramic waste form compositions and process parameters	Aug 95	

WBS Element 1.6.5 Supervisory Instrumentation and Control (SI&C)

Task Description

Supervisory Instrumentation and Control (I&C) systems will be provided and integrated to 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: Facility database management, safety control, process I&C standards, supervisory control, and ancillary systems and equipment including the instrumentation and equipment database, intercom communication, process and surveillance CCTV, cable and power distribution and grounding, and control room facilities.

Summary of Monthly Activities

- Increased SI&C staffing level by one Electronics Technologist.
- Continued MWMF/DWTF integration activities with HWM personal. Held discussions regarding HWM's Total Waste Management System (TWMS) and Waste Inventory System (WIS). Have determined DWTF supervisory I&C needs.
- Preparations have been underway for the Integrated Control System (ICS) Peer Review to be conducted on March 9, 1995.
- Continued evaluation testing of the ProcessVision-to-DBMS software (Engr. Dev. Phase 2B).
- Continued testing activities for the integrated control system.
- Continued design of the engineering prototype/strawman integrated system; implementation has started. Functional components will include one feed preparation system, one treatment system, and one process facility safety/monitoring and supervisory control system.
- Completed Marker *L142.1-5 — ProcessVision/Robline bilateral communications link demonstrated*.
- Documented the evaluation of the appropriate level of automation to implement at the facility supervisory level. This completes Marker *L165-1.10 — Rapid prototype Engineering Development testing complete, report written*.
- A document summarizing the results of all trade-off studies supporting I&C subsystem component selection is in preparation.
- Started functional requirements determination and preliminary design of the Facility Monitoring System and the Facility Safety Control System.
- Initiated the organization of a two-day on-site workshop on Human Factors Engineering (HFE). This workshop will provide participants the fundamental concepts of HFE and Ergonomics as applied to total systems quality and performance in equipment operability, training, procedures, maintenance, and design. Special emphasis will be given to the application of HFE principles on graphical user interface (GUI) design.
- Drafted the *Functional Requirements Document for the MWMF CCTV System*.

- Finalized the Data Model for the Instrumentation and Equipment Database. Finalized visual design and GUI implementation for the EDVDS Mosaic-based browser.
- Activities are underway to revise ME specification MEL-709-D. This specification is routinely referenced in mechanical system specifications, such as for the MSO Salt Crystallizer.
- Made progress in convincing LLNL Stores to stock cables that have been selected as standards for the MWMF. To date, Stores' stocked cable selection has been extremely poor (and no longer meets code).

FY95 Budget Spending profiles ($571K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
11/95 Plan	50	94	60	43	40	38	48	38	38	40	37	45
Monthly actual	70	41	35	43	75							
Plan cumulative	50	144	204	247	287	325	373	411	449	489	526	571
Actual cumulative	70	112	146	189	264							
Current lien	37	23	19	18	8							

Significant procurement actions this month
None.

Milestones and Markers
*See "Milestone/Marker Log" for original dates and reconciliation, if appropriate.

ID no.	Milestone/Marker	Scheduled Date*	Status
L165-1.9	Engineering Development System operational	Jan 95	Complete
L165-1.10	Rapid prototype Engineering Development testing complete, report written	Feb 95	Complete
L165-1.11	Integrated control system design peer review	Mar 95	In Progress
L165-2.1	Instrumentation and Equipment Database operational	Mar 95	In Progress
L165-1.12	SI&C Functional Requirements Document complete	Apr 95	
L165-1	SI&C System Preliminary Design Review	May 95	
L165-1.13	Engineering Development tasks complete, documented	Jun 95	
L165-1.14	Preliminary Design activities complete, documented	Jun 95	
L165-2.2	Process I&C Standards established	Sep 95	

Appendix A:

Milestone/Marker Log

MWMF Milestone / Marker Log

Sorted by number

For Feb. 95 Report

	Number	Item	PTS	Orig. Date	Date	Status	Comments
	Doc. Resp. Person: M. De Micco, A. Throop (alt.); Rev. date: 3/22/95						
X = changes in this revision							
	C113-1	RD&D permit issued by DTSC	X		Apr-96		date required by DWTF schedule. Better est. after DTSC review applic.
	C113-2	Authorization to construct issued by BAAQMD	X	Oct-94	Jul-95		permit submission delayed pending rebaseline
	D112-1	PSAR Approved by DOE	X	Jun-94	Nov-94	deleted	facility categorized Low Hazard; DOE approval not req'd
X	D113-1	EA determination by DOE	X	Aug-94	Aug-95		EA draft submitted. Rev. due to MWMF/DWTF merge. Rev. EA 2/95. Aug-95 is earliest date for EA review and FONSI issue per DOE Compliance Office.
	D115-1	DOE issue Project Plan	X		Jan-95	Open	No revised date available from DOE. LLNL preparing PMP w/o PP.
	D121-1	Preliminary approval and funding for Preliminary Design	X	Apr-94	Jun-94	complete	delayed decision by DOE
	D121-2	KD 1/2 Approval by DOE	X		Jun-94	complete	recieved KD-1 only
	D131-2	DOE issues KD-2	X	Jun-94	Jul-95		Delayed due to reduce funding guidance by DOE
	L111-1	Develop and issue Quality Assurance Plan			Oct-93	complete	
	L111-2	Develop and issue Document Control Plan			Jan-94	complete	
	L111-3	Issue Design Review Procedure			Sep-94	complete	
	L112-1	PSAR to DOE for Review	X	Mar-94	Dec-94	complete	delayed to include CDR information and due to DOE decision to merge MWMF & DWTF
	L112-1.1	Issue PSAR Contract			Oct-93	complete	
	L112-1.2	Preliminary PSAR Review			Feb-94	complete	
	L113-1	Environmental Assessment (EA) submitted to DOE	X	Mar-94	Jun-94	complete	delayed to include CDR information, draft submitted
	L113-2	Submit air permit to BAAQMD	X	May-94	Mar-95		date changed to agree with extended project schedule
X	L113-3	Submit RD&D permit application to DTSC	X	Jul-94	Feb-95	on hold	Continues to be delayed to allow a final evaluation of permitting needs/strategy. Draft application complete.
X	L113-4	Submit revised EA to DOE (for MWMF/DWTF merge)	X	Dec-94	Feb-95	complete	Delayed to allow coordination with permitting efforts (L113-3).
	L114-1.1	ES&H review of 30% CDR			Dec-93	complete	
	L114-1.2	ES&H review of 90% CDR			Mar-94	complete	
	L114-1.3	ES&H review of 90% PDR		Sep-94	Jan-95	deleted	changed to reflect level of effort work
	L114-2	Complete review of PSAR			Aug-94	complete	
	L115-1	Submit Project Management Plan (Final)	X	Jan-95	Mar-95	In Progress	Delayed due to unavailability of DOE Project Plan.
	L115-1.1	Project Management Plan (Draft)			Oct-93	complete	
	L115-10	Submit FY96 Plan	X		Oct-95		
	L115-2	Select Project Engineers and Project Control Manager			Dec-93	complete	
	L115-3	Submit FY94 Plan	X		Jan-94	complete	
	L115-4	Initiate PTS and Monthly reporting			Jan-94	complete	
	L115-5	Technology Selection and Implementation Plan	X		Feb-94	complete	
	L115-6	Develop Design Basis Operations Plan			Mar-94	complete	
	L115-7	Submit FY95 Plan	X	Sep-94	Dec-94	complete	delayed due to LLNL accounting changes and higher DOE priorities
	L115-8	Technology Selection and Implementation Plan, Part II			Mar-95		
	L115-9	FY97 Project Validation			Apr-95		
	L116-1	First meeting of NRP	X	Feb-95	May-95		Activity delayed while key regulatory issues relative to MSO are resolved and the detail strategy for NEPA and CEQA finalized.
	L116-1.1	National Review Panel (NRP) formed		Dec-94	Apr-95	In Progress	Activity delayed while key regulatory issues relative to MSO are resolved and the detail strategy for NEPA and CEQA finalized.
	L116-2	Second meeting of NRP		Aug-95	Nov-95		Activity delayed while key regulatory issues relative to MSO are resolved and the detail strategy for NEPA and CEQA finalized.
	L116-2.1	Issue first public newsletter		Mar-95	Jun-95		Activity delayed while key regulatory issues relative to MSO are resolved and the detail strategy for NEPA and CEQA finalized.

	MWMF Milestone / Marker Log			Sorted by number			For Feb. 95 Report
	Number	Item	PTS	Orig. Date	Date	Status	Comments
	L116-2.2	Receive comments from NRP			Apr-95	Deleted	Comments and action items will be received as part of NRP meeting minutes.
	L116-3.1	Issue second newsletter		Sep-95	Dec-95		Activity delayed while key regulatory issues relative to MSO are resolved and the detail strategy for NEPA and CEQA finalized.
	L121-1	30% CDR Review			Dec-93	complete	
	L121-1.1	Initiate Point Design Reviews			Oct-93	complete	
	L121-1.2	Complete Point Design Reviews			Nov-93	complete	
	L121-2	90% CDR Review			Mar-94	complete	
	L121-3	CD Report issued	X		Apr-94	complete	
	L122-1	Issue MWMF Start-Up and Activation Plan			Sep-95		
	L131-1	Preliminary Design Review (Overall Project) completed	X	Sep-94	Jul-95		delayed due to funding limitations per DOE guidance
	L131-2	Input to FY95 Plan (see 115-7)	X	Sep-94	Dec-94	complete	delayed due to LLNL accounting changes and higher DOE priorities
	L131-3	Submit MWMF Rebaseline (KD-1)	X		Sep-94	complete	
	L131-4	Submit MWMF Rebaseline (MWMF/DWTF Merge)	X		Mar-95	in progress	
	L131-5	Submit Post-PDR Project Baseline	X		Sep-95		
	L132-1	Implement Cost planning/tracking systems (document)		Sep-94	Dec-94	complete	activity stretched-out due to reduced funding guidance
	L132-10.1	Input to FY96 Plan (see L115-10)			Oct-95		
	L132-2	Implement Technical baseline control system		May-94	Nov-94		see 132-7
	L132-3	Implement Schedule control/tracking system			Aug-94		see 132-7
	L132-4	Input to FY95 Plan (see L115-7)		Nov-94	Dec-94	complete	delayed due to LLNL accounting changes and higher DOE priorities
X	L132-5	Issue Configuration Control System Document		Jan-95	Mar-95	in progress	Delayed to allow discussion and review and due to higher priorities.
X	L132-6.1	Input to MWMF Project Management Plan (see L115-1)		Feb-95	Mar-95	in progress	Delayed due to higher priorities.
	L132-7	Performance Management System documented			Apr-95		
	L132-8.1	Complete support of Project PDR (see L131-1)			Jun-95		
	L132-9	Complete QA Self Assessment			Aug-95		
	L132-9.1	Records Control Procedure issued			Apr-95		
	L132-9.2	Assessment/Surveillance Procedure issued			Jul-95		
	L133-1.1	Draft System Engineering Management Plan			Sep-94	deleted	information in other documents
	L133-1.2	Issue MWMF development plan			Jul-94	complete	
	L133-1.3	Complete MWMF floor plan			Jul-94	complete	
	L133-1.4	Input to FY95 Plan (see 115-7)			Nov-94	complete	
	L133-2	Issue Integrated Operations Plan			Jan-95	complete	
X	L133-3	Issue Title I System Design Requirements		Feb-95	May-95	In Progress	Rebaselining activities require more extensive changes to SDRs than originally anticipated.
	L133-4	Issue Metrication Plan			Feb-95	Complete	
	L133-5	Input to FY96 Plan (see 115-10)			Oct-95		
	L141-1	RAS System Preliminary Design Review		Sep-94	Jul-95		PDR delayed due to funding limitations per DOE guidance
	L141-1.1	Complete pilot characterization studies		Jun-94	Dec-94	complete	activity stretched-out due to reduced funding guidance
	L141-1.2	Identify equipment and define floor plan		Sep-94	Mar-95		activity stretched-out due to reduced funding guidance
	L141-1.3	RAS LI&C System Functional Requirements Document complete			Jun-95		
	L141-1.4	RAS LI&C Preliminary Design Review			Jul-95		
	L142-1	SFP System Preliminary Design Review			Jul-95		
	L142-1.1	SFP surrogate feeds defined			May-94	complete	
	L142-1.2	Identify initial suite of characterization equipment		Jun-94	Jan-95	complete	Delayed due to later than scheduled completion of pilot characterization studies and reduced manpower and funding guidance received after original schedule was established.

	MWMF Milestone / Marker Log			Sorted by number			For Feb. 95 Report
	Number	Item	PTS	Orig. Date	Date	Status	Comments
X	L142-1.3	Complete validation of characterization, isolation, and segregation methods		Sep-94	Apr-95	in progress	Delayed by late completion of pilot characterization studies, reduced manpower/funding guidance, rebaselining activities, and project delay of procurements of engineering development equipment.
	L142-1.4	Complete preliminary operator control station design			Mar-95		
X	L142-1.5	Process Vision/Robline bilateral communication link demonstrated			Feb-95	complete	
	L142-1.6	Process Vision/Robline bilateral message handling demonstrated			Mar-95		
	L142-1.7	SFP workcell control architecture designed			May-95		
	L142-1.8	LI&C Functional Requirements Document complete			Jun-95		
	L142-1.9	LI&C Preliminary Design complete			Jul-95		
	L143-1	LFP System Preliminary Design Review			Jul-95		
	L143-1.1	Define surrogate feeds		May-94	Nov-94	complete	date changed to agree with extended project schedule
	L143-1.2	LFP general arrangement plan finalized		Jul-94	Dec-94	deleted	
	L143-1.3	Complete validation of characterization and segregation methods		Sep-94	Mar-95		date changed to agree with extended project schedule
	L143-1.4	LI&C Functional Requirements Document complete			Jun-95		
	L143-1.5	LI&C Preliminary Design complete			Jul-95		
	L151-1.1	Complete tests on turbo-aerator for nitrous acid conversion (document issued)		Mar-94	Jan-95	complete	Release of report delayed due to slower than expected review cycle.
	L151-1.10	P&ID drawings (document)			Sep-95		
	L151-1.11	Layout drawings of major equipment items (document)			Sep-95		
	L151-1.12	LI&C Functional Requirements Document complete			Aug-95		
	L151-1.13	LI&C Preliminary Design Review			Sep-95		
	L151-1.2	Initiate steady-state flow and chemistry balance tests			Apr-94	complete	
	L151-1.3	Initiate instrumentation and control system tests for MEO			Aug-94	complete	
X	L151-1.4	Summarize silver recovery chemistry results to date (document)		Sep-94	Apr-95	in progress	Release of report delayed because PI was involved with higher priority tasks. Task has been assigned to another engineer.
	L151-1.5	Fabricate and set-up cellulose Feeder		Sep-94	Dec-94	complete	activity stretched-out due to reduced funding guidance
X	L151-1.6	Report on NaOH-AgCl recovery (document)		Feb-95	Mar-95	In progress	Delayed to allow patent disclosure to be filed.
X	L151-1.7	Computer simulation of the combined MEO and Acid Recovery control systems (document)		Feb-95	Mar-95	In progress	Delayed due to higher priority tasks.
	L151-1.8	Final Report on steady-state flow and chemistry balance tests (document issued)			Apr-95		
	L151-1.9	Demonstrate prototype cellulose feeder (document)			Jun-95		
	L151-2	MEO System Preliminary Design Review			Sep-95		
	L151-2.1	Preliminary Process Flow Diagram for MEO			Jun-94	complete	
	L151-2.2	Preliminary equipment layout for MEO			Sep-94	complete	
	L152-1	Complete MSO bench scale rubber destruction tests			Dec-93	complete	
	L152-2	Select Industrial Participation method			Jun-95		
	L152-2.1	MSO advertise in the CBD		Apr-94	Jun-94	complete	delayed due to funding limitations per DOE guidance
	L152-2.2	Complete Design Specification		May-94	Jan-95	complete	delayed for incorporation of reviewer's comments
	L152-2.3	Conduct Industrial Partner meeting		Jul-94	Jan-95	complete	Delayed due to funding limitations per DOE guidance and unavailability of participants due to hollidays. Scheduled for January 5th.
	L152-3	MSO System MWMF PDR			Jun-95		
	L152-3.1	Preliminary Process Flow Diagram complete for MSO		Jun-94	Sep-94	complete	
	L152-3.2	Initiate MSO Preliminary Design			Jul-94	complete	
	L152-3.3	Initiate vessel material study			Oct-94	Complete	
	L152-3.4	Install development unit			Jun-95		
	L152-3.5	LI&C Functional Requirements Document complete			May-95		

	MWMF Milestone / Marker Log			Sorted by number			For Feb. 95 Report
	Number	Item	PTS	Orig. Date	Date	Status	Comments
	L152-3.6	LI&C Preliminary Design Review			Jun-95		
	L152-4	Start Development Activities			Aug-94	complete	
	L152-5	Start Title II design			Jul-95		
	L153-1	Award WOX contract			Sep-94	deleted	WBS element deleted per DOE guidance
	L153-1.1	Complete and document work to date			Jul-94	complete	
	L153-1.2	Issue RFQ for WOX treatment unit w/ completed specification			Jun-94	deleted	WBS element deleted per DOE guidance
	L153-2	30% Preliminary Design Review for WOX			Sep-94	deleted	WBS element deleted per DOE guidance
	L153-2.1	WOX dispersion system test and design recommendation complete			May-94	deleted	WBS element deleted per DOE guidance
	L153-2.2	Preliminary WOX treatability tests complete			Jun-94	deleted	WBS element deleted per DOE guidance
	L153-2.3	Preliminary WOX Process Flow Diagram complete			Jun-94	deleted	WBS element deleted per DOE guidance
	L153-2.4	Preliminary P&ID for WOXSupport System complete			Jul-94	deleted	WBS element deleted per DOE guidance
	L154-1	Complete and document UVP work to date			Jul-94	complete	
	L154-2	UVP System Preliminary Design Review			Sep-94	deleted	WBS element deleted per DOE guidance
	L154-2.1	UVP Process Flow Diagram			Jul-94	deleted	WBS element deleted per DOE guidance
	L154-2.2	P&ID for UVP Support System			Jul-94	deleted	WBS element deleted per DOE guidance
	L154-2.2	EOG preliminary Equipment Layout			Sep-94	deleted	WBS element deleted per DOE guidance
	L154-2.3	UVP Equipment Layout			Aug-94	deleted	WBS element deleted per DOE guidance
X	L155-1	Summarize Gas Liquid Contactor Tests (document)		Jun-95	Jul-95	In progress	Delayed due to vacation schedule.
	L155-1.1	Fab prototype gas-liquid contactor for acidic urea NOx destruction		Jun-94	Jun-95	in progress	Delayed due to DOE stretchout & peer review action item(s). Design/fabrication package currently out for bid.
	L155-1.2	Complete XOG tests on urea and SCR DeNOx			Jul-94	deleted	break up into other markers
	L155-2	Urea DeNOx: peer review			Aug-94	complete	
X	L155-2.1	Initiate instrumentation and control system test		Aug-94	Feb-95	deleted	Deleted from scope due to budget reductions. (1/95)
	L155-3	XOG System Preliminary Design Review		Sep-94	Jun-95		PDR delayed due to funding limitations per DOE guidance
X	L155-3.1	Summarize NOx-urea chemistry to date (document)		Sep-95	Jul-95		Will be included in L155-1.
X	L155-3.2	Initiate systematic catalysts testing			Jan-95	deleted	Deleted from scope due to budget reductions. (1/95)
X	L155-3.3	LI&C Functional Requirements Document complete			May-95	deleted	Deleted from scope due to budget reductions. (1/95)
X	L155-3.4	LI&C Preliminary Design complete			Jun-95	deleted	Deleted from scope due to budget reductions. (1/95)
	L161-1	Process Transport & Storage System Preliminary Design Review		Sep-94	Jul-95		PDR delayed due to funding limitations per DOE guidance
	L161-1.1	Select standard transport container designs		Jun-94	May-95		activity stretched-out due to reduced funding guidance
	L161-1.2	Floor plan layout complete		Jul-94	Jun-95		activity stretched-out due to reduced funding guidance
	L161-1.3	LI&C Functional Requirements Document complete			Jun-95		
	L161-1.4	PTS LI&C System Preliminary Design review			Jul-95		
	L162-1	Complete preliminary floor plan layout			Jun-94	complete	
	L162-1.1	Select ATS standard transport container designs			Jun-94	deleted	WBS content revised to "Analytical Lab"
	L162-1.2	Finalize ATS transport handling capacity			Jun-94	deleted	WBS content revised to "Analytical Lab"
	L162-1.3	Finalize ATS transport equipment selection			Aug-94	deleted	WBS content revised to "Analytical Lab"
	L162-2	Define analysis tests based on process acceptance criteria		Sep-94	Mar-95	partial	Waiting for process acceptance criteria to be finalized. Completion expected in Mar-95.
X	L162-3	Define facility off-gas monitoring requirements		Sep-94	Feb-95	complete	Completed for preliminary design.
X	L162-4	Define MEO on-line analysis requirements		Dec-94	Feb-95	complete	Completed for preliminary design.
	L162-5	Define MSO on-line analysis requirements		Jan-95	Mar-95	partial	Waiting for salt analysis to be defined. Completion expected in Mar-95.
X	L162-6	Define DWTF analysis requirements			Feb-95	complete	Completed for preliminary design.
	L162-7	Analytical Lab System Preliminary Design review			Aug-95		
	L162-7.1	LI&C Functional Requirements Document complete			Jul-95		

	MWMF Milestone / Marker Log			Sorted by number			For Feb. 95 Report
	Number	Item	PTS	Orig. Date	Date	Status	Comments
	L162-7.2	LI&C Preliminary Design Review			Aug-95		
	L163-1	Water Treatment trade-off study		Jun-94	Sep-94	complete	
X	L163-1.1	Water Treatment trade-off study revision		Dec-94	Feb-95	complete	Delayed due to previously unplanned decision to have TID edit document. Presently out for signatures. Release expected in Feb 95.
	L163-2	Memorandum of Understanding with HWM			Jan-95	complete	
	L163-3	WTR System Preliminary Design Review			Jul-95		was L163-2.1
	L163-3.1	LI&C Functional Requirements Document complete			Jun-95		was L163-2
	L163-3.2	LI&C Preliminary Design Review			Jul-95		was L163-2.2
	L163-4	Begin Final Design			Jul-95		was L163-2.3
	L164-1	Evaluations of immobilization technologies complete			May-95		
	L164-1.1	Preliminary process flow diagram complete for FF			Jul-94	complete	
	L164-1.2	Preliminary equipment layout complete for FF			Aug-94	complete	
X	L164-1.3	Report status of immobilization evaluations		Sep-94	Mar-95	In progress	Lead engineer temporarily diverted to urgent MSO work. Postponed until after mid-March peer review of polymer microencapsulation.
	L164-2	Final Forms System Preliminary Design Review			Jun-95		
X	L164-2.1	Final Forms subsystem design status peer review		Feb-95	Mar-95	In progress	Delayed due to higher priority tasks.
	L164-2.2	LI&C Functional Requirements Document complete			May-95		
	L164-2.3	LI&C Preliminary Design complete			Jun-95		
	L164-3	Report: Design of polymer microencapsulation system			Jun-95		
	L164-4.1	Report issued: Volitile residue components and the design of creamic waste form system			Jul-95		
	L164-4.2	Report issued: Interim status of ceramic waste form compositions and process parameters			Aug-95		
	L165-1	SI&C System Preliminary Design Review			May-95		
	L165-1.1	I/C general arrangement plan complete			Mar-94	complete	
X	L165-1.10	Rapid prototype Engineering Development testing complete and report written		Jan-95	Feb-95	complete	Delayed because of late delivery of MinnovEX DBMS software driver. See Jan 95 WMMF Monthly Report.
	L165-1.11	Integrated control system design peer review		Feb-95	Mar-95	In progress	Completion expected in early Mar 95. Key participants are unavailable in February.
	L165-1.12	SI&C Functional Requirements Document complete			Apr-95		
	L165-1.13	Engineering Development tasks complete, documented			Jun-95		
	L165-1.14	Preliminary Design activities complete, documented			Jun-95		
	L165-1.2	Process Control System FEP hardware/software selected			Apr-94	complete	
	L165-1.3	Supervisory Control System hardware/software selected			Apr-94	complete	
	L165-1.4	Handling Systems open architecture controller selected			Jul-94	deleted	to WBS 1.4.2
	L165-1.5	Analytical laboratory LIMS selected			Jul-94	deleted	LIMS may not be used in system design
	L165-1.6	Telerobotics platform selected			Aug-94	deleted	to WBS 1.4.2
	L165-1.7	Teleoperator controller selected			Sep-94	deleted	to WBS 1.4.2
	L165-1.8	Database Management System hardware/software selected			Jul-94	complete	
	L165-1.9	Engineering Development System operational		Dec-94	Jan-95	complete	Delayed because of late delivery of MinnovEX DBMS software driver.
	L165-2.1	Instrumentation and Equipment Database operational			Mar-95		
	L165-2.2	Process I&C Standards established			Sep-95		
	end						