The Mixed Waste Management Facility

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FY96 Plan

Lawrence Livermore National Laboratory
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The Mixed Waste Management Facility

FY96 Plan

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October 1995

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Project Summary

During FY96, the Mixed Waste Management Facility (MWMF) Project has the following major objectives:

- Complete Project Preliminary Design Review (PDR).
- Complete final design (Title II) of MWMF major systems.
- Coordinate all final interfaces with the Decontamination and Waste Treatment Facility (DWTF) for facility utilities and facility integration.
- Begin long-lead procurements.
- Issue Project Baseline Revision 2—Preliminary Design (PB2), modifying previous baselines per DOE-requested budget profiles and cost reduction. Delete Mediated Electrochemical Oxidation (MEO) as a treatment process for initial demonstration.
- Complete submittal of, and ongoing support for, applications for air permit.
- Begin detailed planning for start-up, activation, and operational interfaces with the Laboratory's Hazardous Waste Management Division (HWM).

In achieving these objectives during FY96, the Project will incorporate and implement recent DOE directives to maximize the cost savings associated with the DWTF/MWMF integration (initiated in PB1.2); to reduce FY96 new Budget Authority to ~\$10M (reduced from FY97 Validation of \$15.3M); and to keep Project fiscal year funding requirements largely uniform at ~\$10M/yr. A revised Project Baseline (i.e., PB2), to be issued during the second quarter of FY96, will address the implementation and impact of this guidance from an overall Project viewpoint. For FY96, the impact of this guidance is that completion of final design has been delayed relative to previous baselines (resulting from the delay in the completion of preliminary design); ramp-up in staffing has been essentially eliminated; and procurements have been balanced through the Project to help balance budget needs to funding availability.

At the time of completing this *FY96 Plan*, the Federal budget was not in place, so the actual funding availability and distribution of funding (e.g., OPEX vs. CENRTC) is based on the best current estimate. Regardless of the actual funding level, the work planned for FY96 involves primarily CENRTC-related activities. Once actual funding levels are resolved, the proper balance of Capital and Operation funding will need to be determined to assure proper continuity of Project activities during FY96. (See section, "Financial Planning Discussion and Notes.")

The attached Project Task Summaries detail the specific activities, milestones and markers, and budget profiles associated with each third-level WBS element. The schedule for FY96 is contained in Appendix A, which shows the current Integrated Project Schedule (IPS) for the duration of the project. Only the activities shown for FY96 are relevant to this *FY96 Plan*; future work is subject to change and more detailed planning as the Project proceeds. However, the IPS is shown to place planned FY96 activities and milestones in context.

The Milestone Control Log is contained in Appendix B. This log summarizes milestones and markers already completed and those planned for FY96. A subset of these milestones are taken as DOE-level milestones and are additionally reported in DOE/EM's Progress Tracking System (PTS).

The Responsibility Assignment Matrix for the Project is presented in Appendix C.

The projected expenditures for FY96 are summarized in Table 1, which will also be updated monthly and used to summarize and report the financial status of the Project in the Monthly Reports. Table 1 presents a roll-up, by OPEX- and CENRTC-funded activities, of all MWMMF costs contained in the WBS Level 3 Task Summaries, along with the level of DOE funding. It additionally identifies the actual carryover from FY95 (under "DOE funds"), the management reserve budget, and the FY96/97 carryover budget. Since the table will be used to report the monthly financial status, both monthly and cumulative expenses are shown. Liens will be shown only for the current reporting month since cumulative charges are not relevant.

Table 1. MWMF Project monthly financial summary.**OPEX (\$K, monthly expenditures)**

	CO*	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Subtotal*	Undistb #	Total Budget
DOE Funds	301													301		
FY96 Plan		52	37	39	36	50	36	58	64	75	64	64	64	639		639
Actual														0		
Liens**														0		
Mgmt Reserve														0	116	116
96/97 CO														0	100	100
FY96 OPEX budget =																855

OPEX (\$K, cumulative to date)

	CO*	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep			
DOE Funds	301	301												DOE FY96 new-BA, OPEX		
FY96 Plan		52	89	128	165	215	251	309	372	447	511	575	639	budget	guidance	delta
Actual														555	—	—

CENRTC (\$K, monthly expenditures)

	CO*	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total*	Undistb #	Total Budget
DOE Funds	1053	1500												2553		
FY96 Plan		561	1677	621	589	745	575	586	706	580	565	648	721	72		8572
Actual														0		
Liens**														0		
Mgmt Reserve														0	873	873
96/97 CO														0	400	400
FY96 CENRTC budget =																9845

CENRTC (\$K, cumulative to date)

	CO*	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep			
DOE Funds	1053	2553												DOE FY96 new-BA, CENRTC		
FY96 Plan		561	2238	2859	3448	4193	4767	5353	6059	6639	7204	7851	8572	budget	guidance	delta
Actual														9208	—	—

* DOE funds include FY95/96 carryover.

** Shown for current month only.

Financial Planning Discussion and Notes

This section identifies key budgeting issues and discusses in more detail the information contained in Table 1.

Three major budgetary "unknowns" face the MWMM Project as we prepare this FY96 Plan. First, the federal budget for FY96 has not been approved by Congress, and as such, the LLNL's current funding is based on "continuing resolution." The continuing resolution allows LLNL to spend at a given percent of its FY95 approved budget but does not take into account changes to the budget that may be necessary in the changing phases of a project, e.g., procurements. During October and November this should not impose a significant problem. However, for the purpose of this Plan, we are assuming that the federal budget will be approved before the completion of Title I design (Nov 15-16, 1995) and that we may proceed to final design and long-lead procurements unrestrained by the continuing resolution.

Second, the budget and corresponding spending profile developed in this Plan are based on PB2, reflecting the completion of Preliminary Design. This PB2 is to be completed upon finalization of Preliminary Design (November 1995). Guidance for the major changes (e.g., elimination of MEO, the reduction of FY96 funding from the FY97 Validation, and the planned outyear funding profile) has been received from DOE/OAK but is not part of an approved baseline.

Third, recent discussions (September to October, 1995) with DOE/OAK regarding significantly lower DOE EM-30 budgets for LLNL could significantly reduce the funding in FY96 and all outyears. Under this significantly reduced budget, major Project changes will be required to address Project scope and schedule to match funding availability. Should such guidance become a reality, the baseline will be further revised and the corresponding FY96 Plan updated.

The FY96/97 carryover budget is the amount of FY96 budget reserved to cover remaining liens (committed funds) at FY96 year-end closing. This estimate is based on an estimate of planned major liens (contracts, major purchases, etc.) at WBS Level 3, and on prior experience with the level of miscellaneous liens. The carryover budget is not generally available to be distributed during FY96. As major commitments are made during FY96 that are expected to carryover as a lien into FY97, costs will be shown in Table 1 as a monthly expense, and the undistributed portion of the carryover budget shown in the table will be reduced accordingly. In DOE/EM's PTS, this cost has been identified as occurring during the last month of FY96, since PTS has no other way to show carryover budget.

The management reserve budget is intended to address unplanned costs during FY96, such as Laboratory rate changes, unplanned work, and estimate uncertainties. This budget is available to be spent during FY96 but is reserved to be spent in the latter portion of the fiscal year as work and outside constraints become better defined. This estimate is based on an initial distribution of reserve at WBS Level 3, but has been maintained at a minimal level reflecting DOE reduced funding guidance. As management reserve is used during FY96, these costs will be shown in Table 1 as a monthly expense, and the undistributed portion of the management reserve budget shown in the table will be reduced accordingly. In DOE/EM's PTS, this cost has been spread in a ramped manner over the last six months of FY96.

"DOE funds" show the new Budget Authority contained in the Laboratory Contract Modifications, since this action contains the authority for the Project to allow expenditures. Other funding documents, such as Program Letters and the *Financial Plan*, will be evaluated against the Contract Modification for consistency. The OPEX/CENRTC balance is determined by the type of activity that must be accomplished and financial determinations from DOE orders regarding the proper accounting of capital equipment expenses. The determination and distribution of proper type of funding is outside of the scope and control of the Project.

WBS Element 1.1.1. Quality Assurance**Task Description**

Quality Assurance provides quality assurance (QA) support to the MWMF Project. This effort includes development and implementation of the Project's QA 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 QA effort, with the CENRTC portion contained under WBS 1.3.2, Project Control.

FY96 Plan

This is an on-going activity by the QA Manager. Primary activities for FY96 include continuing implementation of the Project QA Plan, continued development and maintenance of the QA program, and general QA oversight. Also included is planning for quality control activities in Title III.

FY96 Budget

Spending profile (\$K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	2	2	2	2	2	2	2	2	2	2	2	3	28

Total Project Costs to Date: \$121.1K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None; miscellaneous liens only.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
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.

FY96 Plan

No activities are planned for FY96.

FY96 Budget

Spending profile (\$K, CENTRC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Project Costs to Date: \$366.9K.

Actual liens into FY96 (included in FY96 budget): \$64.1K. Lien to be deleted without costing in FY96.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
None	No activity	

WBS Element 1.1.3 NEPA/CEQA**Task Description**

The National Environmental Policy Act (NEPA) portion of this WBS element 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 California Environmental Quality Act (CEQA) and permitting portion of this WBS element 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.

FY96 Plan

Environmental specialists will continue to provide assistance to Project staff to interface with regulatory agencies, prepare necessary documentation such as air permit applications, and advise on hazardous waste management regulations.

FY96 Budget

Spending profile (\$K, OPEX): NEPA

1.1.3.1 (NEPA)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	0	0	0	0	0	0	0	0	0	0	0	0	0

Spending profile (\$K, CENRTC): CEQA, Permitting

1.1.3.2, 1.1.3.3 (CEQA)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	4	5	4	4	4	4	4	4	4	4	4	4	51

Total Project Costs to Date: \$380.1K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L113-2	Submit air permit to BAAQMD	Apr 96
C113-2	Authorization to construct issued by BAAQMD	Jul 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.

FY96 Plan

ES&H specialists will continue to provide review and guidance to MWMF staff on proposed designs to ensure that activities are performed in a safe and compliant manner.

FY96 Budget

Spending profile (\$K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.2	13.2	13.2	13.2	13.2	157.7

Total Project Costs to Date: \$278.6K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
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.

FY96 Plan

FY96 activities will include the following: developing project plans, budgets and schedules; placing personnel; ensuring housing/office requirements for MWMF personnel; developing industrial participation; developing technology evaluation plans; and providing for technical support to the Project office. In addition, key activities will include support to the DOE in response to requests for information relative to the *Site Treatment Plan*, Mixed Waste Focus Area, and other studies as required.

FY96 Budget

Spending profile (\$K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	31	15	15	15	26	15	20	15	26	15	15	15	224

Total Project Costs to Date: \$2,213.5K.

Actual liens into FY96 (included in FY96 budget): \$45.1K. Lien to be deleted without costing in FY96.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
D115-1	DOE issues <i>Project Plan</i>	Jan 95
L115-10	Submit <i>FY96 Plan</i>	Oct 95
L115-11	FY98 Project Validation	Apr 96
L115-12	Submit <i>FY97 Plan</i>	Oct 96

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 (the *MWMF Letter*), and preparation and coordination of press releases and community tours.

FY96 Plan

Public Participation activities will increase public outreach to concerned citizens, industry, and government. The NRP will continue to meet as appropriate to advise the Project before key decisions are made. The *MWMF Letter* and Fact Sheets, as well as press releases, will be issued as appropriate. Information on the Project will be incorporated into the Laboratory's environmental tour.

FY96 Budget

Spending profile (\$K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	6	6	8	6	9	6	6	6	7	6	6	6	78

Total Project Costs to Date: \$102.8K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L116-3	NRP Meeting	Jan 96
L116-3.1	<i>MWMF Letter</i>	Feb 96
L116-4	NRP Meeting	Jun 96
L116-4.1	<i>MWMF Letter</i>	Jul 96

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.

FY96 Plan

Conceptual design activity is complete. No FY96 activities.

FY96 Budget

Spending profile (\$K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Project Costs to Date: \$2,235.3K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
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.

FY96 Plan

Plant start-up activities will begin during the mid-final design phase of the Project when participation in, and review of, final designs of the MWMMF systems from an operational viewpoint commence. Conceptual development of operational methodology, organization, interfaces with HWM, operational and acceptance testing, maintenance, etc., are required to support final design work. Consideration of operational activities to comply with regulatory requirements in support of permitting activities will also occur.

FY96 Budget

Spending profile (\$K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	0	0	0	0	0	0	16	27	27	27	27	27	152

Total Project Costs to Date: None.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L122-1	Issue MWMMF Start-Up and Activation Plan	Sep 96

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 (e.g., utilities, power, etc.) during construction, testing, and activation of the MWMF.

FY96 Plan

There are no activities under this WBS element during FY96.

FY96 Budget

Spending profile (\$K, OPEX)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Project Costs to Date: None.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
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 Project Office, project assurance (including quality assurance, safeguards, environmental, and safety oversight), management overview of information management and technical activities, and interface with DOE.

FY96 Plan

This effort will encompass project management of the CENRTC phase of the MWMF Project. This is essentially a level-of-effort funded activity covering Project management personnel and clerical, administrative, and technical support. Additional support for key Project reviews is also included. The *FY96 Plan* calls for project management oversight of all capital-funded technical and administrative activities, placing personnel, response to DOE requests for information, project scope and budget reassessment, and other management controls to assure effective completion of the milestones and markers of the Project. A key element for the first quarter of FY96 is support of the PDR and PB2.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	64	88	72	61	64	61	61	61	64	61	61	88	807

Total Project Costs to Date: \$708K.

Actual liens into FY96 (included in FY96 budget): \$23.1K. Lien to be deleted without costing in FY96.

Estimated Liens into FY97: SAIC Contract \$23K.

Significant FY96 Procurements

SAIC Contract \$45K.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L131-1	PDR Completed	Nov 95
D131-2	DOE Issues KD-2	Nov 95
L131-5	Issue PB2	Jan 96
L131-6	Final Design Review Complete	Oct 96

WBS Element 1.3.2. Project Control**Task Description**

Project Control provides for the Project integration, configuration management, cost and schedule control, QA (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.).

FY96 Plan

Primary activities during FY96 will include implementation and documentation of project control management systems. Due to reduced funding levels, the planned scope of these planned activities will be reduced to provide essential cost, schedule, and technical baseline control using manual and automated interfaces. Several QA procedures that are necessary for the design phase of the Project will be prepared and implemented, along with a QA self-assessment late in FY96. Significant work will be required to support preparation of Project rebaselines, FY Plans, monthly reports, and other documentation required by DOE.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	40	40	40	40	40	40	40	40	40	40	40	38	478

Total Project Costs to Date: \$605K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L132-8.1	Complete support of Project PDR	Nov 95
L132-10.1	Complete <i>FY96 Budget Plan</i>	Oct 95
L132-11.1	Complete Cost/Schedule Baseline Rev. 2.0	Jan 96
L132-12.1	Complete support of Project Final Design Review	Sep 96
L132-13.1	Engineering Change Control Procedure	Jan 96
L132-13.2	Non-conformance Reporting Procedure	Apr 96
L132-13.3	Complete QA Surveillance/Verification	Aug 96

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 HWM and facility engineering. The element coordinates the System Design Requirements (SDRs), the MWMF floor plan, and the Integrated Operating Plan.

FY96 Plan

Technical Systems Integration will continue to coordinate technical issues that affect all primary and support processes as well as facility interfaces such as SDRs and Design Basis Operations plans. This element will coordinate the review of the facility design documents to ensure that MWMF needs are addressed in the most effective manner.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	35	28	28	32	26	29	30	23	23	27	23	23	329

Total Project Costs to Date: \$344K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L133-10.5	Facility Title I Design Review (80%)	Oct 95
L133-10.6	LLNL Review of Facility Title I Design	Nov 95
L133-6	Revised SDR completed for Title II Design	Nov 95
L133-7.1	Facility Title II Design Review (80%)	Jan 96
L133-7	LLNL Review of Facility Title II Design complete	Apr 96

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. RAS provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, installation of RAS equipment, Title III inspection, and acceptance test procedures (ATP). RAS includes both receiving and shipping equipment and systems integration.

FY96 Plan

After completion of Preliminary Design, Final Design will begin. Design activities will focus on the receiving station and the efficient data entry systems for the material tracking system and the process transport system. Final Design will incorporate any revisions required from the Preliminary Design, and effort will be directed toward final working drawings, specifications, bidding documents, cost estimates, and procurement and construction schedules.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	2	2	2	2	2	5	2	5	2	2	2	2	30

Total Project Cost to Date: \$112K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L141-1.3	RAS LI&C System <i>Functional Requirements Document</i> complete	Sep 95
L141-2.1	RAS LI&C System <i>Design Description</i> (SSD) drafted	Jun 96
L141-2.2	RAS SDD drafted	Sep 96
L141-2	RAS 90% Final Design Review complete	Oct 96

WBS Element 1.4.2. Solids Feed Preparation – Conventional

Task Description

The principal objective of the Conventional Solids Feed Preparation (SFP) system is to provide for the receipt, preparation for processing, and the decontamination of homogeneous and heterogeneous solids received from storage and other processes in the facility. This includes processing the incoming combustible solids waste/surrogate stream into a form required by the treatment processes. The decontamination system provides necessary equipment to ensure materials/containers can be safely transferred out of the facility. 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.

FY96 Plan

After completion of Preliminary Design, Final Design will begin. Final Design will incorporate any revisions required from the Preliminary Design, and the effort will be directed toward final working drawings, specifications, bidding documents, cost estimates, and procurement and construction schedules.

FY96 Budget: Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	17	20	31	30	34	32	33	32	32	31	31	32	354

Total Project Cost to Date: \$124K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L142-1.8	SFP LI&C System <i>Functional Requirements</i> Document complete	Oct 95
L142-3.1	SFP SDD drafted	Sep 96
L142-3.2	SFP LI&C SDD drafted	Oct 96
L142-3	SFP 90% Final Design Review complete	Oct 96

WBS Element 1.4.2. Telerobotics Sorting

Task Description

The principal objective of the Telerobotics Sorting (TRS) system within SFP is (1) to provide remote container and waste handling equipment necessary to demonstrate remote preparation of feed for treatment processes in the MWMF and (2) to evaluate the technology for use at sites across the DOE complex. TRS interfaces with SFP container receiving and conventional size reduction and segregation equipment and replaces manual (hands-on) sorting and container handling operations in the potentially contaminated process room. TRS primary functions include drum movement; waste characterization; segregation of the incoming waste stream into bulk streams containing predominantly organic solids, heterogeneous solids, homogeneous inorganic solids and metals, and liquids not previously identified; and repackaging of reject materials. TRS provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, installation of TRS equipment, Title III inspection, and acceptance test procedures (ATP). TRS includes both solids feed preparation equipment and systems integration.

FY96 Plan

Major thrusts for FY96 include completion of Engineering Development and Final Design. After concluding Preliminary Design, activities will focus on completing Engineering Development prototypes that support definition of final design parameters. High-priority tasks include design of the linear rail and other elements that impact facility design, design and specification of telerobotic system interfaces and performance parameters, and design of the operator interface. Other design elements include conventional material transfer and collection systems, operator access stations, definitive sorting and Local Instrumentation and Control. Final Design will incorporate any revisions required from Preliminary Design, and effort will be directed toward final working drawings, specifications, cost estimates, and procurement and construction schedules.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	59	63	102	75	62	51	48	57	42	40	38	62	699

Total Project Cost to Date: \$1,009.7K.

Actual liens into FY96 (included in FY96 budget): \$154.1K. \$115K of this lien is to be deleted without costing in FY96.

Estimated Liens into FY97: \$24K.

Significant FY96 Procurements

Graphics simulation and control workstation—\$30K.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L1422-2.1	Linear rail facility interface design complete	Dec 95
L1422-2.2	Prototype sorting application operational	Mar 96
L1422-2.3	Operator console prototype complete	Apr 96
L1422-2.4	Telerobot control interface design and performance specification complete	Aug 96
L1425-2	Crane final design (specification) complete	Aug 96
L1422-2	Telerobotics Sorting 90% Final Design Review complete	Sep 96

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, installation of LFP equipment, Title III inspection, and acceptance test procedures (ATP). LFP includes both liquids feed preparation equipment and systems integration.

FY96 Plan

After completion of Preliminary Design, Final Design will begin. Design activities will focus on the drum emptying and the liquid/solid separation systems. Final Design will incorporate any revisions required from the Preliminary Design, and effort will be directed toward final working drawings, specifications, bidding documents, cost estimates, and procurement and construction schedules.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	18	18	18	18	21	21	21	21	21	21	21	21	237

Total Project Cost to Date: \$386K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L143-1.6	LFP LI&C System <i>Functional Requirements</i> Document complete	Oct 95
L143-2.1	LFP SDD drafted	Sep 96
L143-2.2	LFP LI&C SDD drafted	Sep 96
L143-2	LFP 90% Final Design Review complete	Oct 96

WBS Element 1.5.1. Mediated Electrochemical Oxidation

Task Description

The principal objective of Mediated Electrochemical Oxidation (MEO) system 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 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.

FY96 Plan

This task has been closed out per DOE guidance. No FY96 activities.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Project Costs to Date: \$1,437.9K

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
None	No activity	

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 MSO equipment, Title III inspection, and acceptance test procedures (ATP) covering both equipment and system integration activities.

FY96 Plan

The focus of FY96 will be to complete Final Design. This includes the completion of detail and assembly drawings, interface control drawings, P&IDs, and safety notes. Issues resulting from the Final Design Review will be completed and incorporated after that review. We will initiate the acquisition of long-lead items and materials for the MSO system in conjunction with a commercial partner (CRADA) and suppliers.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	215	1315	215	215	215	215	215	330	227	215	215	215	3,807

Total Project Costs to Date: \$2,429.

Actual liens into FY96 (included in FY96 budget): \$149K.

Estimated Liens into FY97: \$877K.

Significant FY96 Procurements

Salt recycle contract—\$1100K.

Vessel and frame—\$115K.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L152-3.5	LI&C <i>Functional Requirements Document</i> complete	Oct 95
L152-3.6	LI&C System Preliminary Design complete	Oct 95
L152-3	MSO System MWMF PDR	Oct 95
L152-5.1	Select Industrial Participation method for Salt Recycle	Nov 95
L152-5.2	MSO Peer Review	Jul 96
L152-5	MSO 90% Final Design Review complete	Sep 96

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.

FY96 Plan

This task has been closed out per DOE guidance. No FY96 activities.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Project Costs to Date: \$98K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
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 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.

FY96 Plan

This task has been closed out per DOE guidance. No FY96 activities.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Project Costs to Date: \$24K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
None	No activity	None

WBS Element 1.5.5. Experimental Off-Gas**Task Description**

The principal objective of the Experimental Off-Gas Treatment (XOGT) element 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 project 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. The XOGT will be backed by the facility off-gas system.

FY96 Plan

This element has been reduced in scope and delayed per DOE guidance. No FY96 activities.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Project Costs to Date: \$223K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
None	No activity	

WBS Element 1.6.1. Process Transport and Storage**Task Description**

The principal objective of the Process Transport and Storage (PT&S) system is to collect, transfer, deposit, store and handle containers, discrete items, dry and wet bulk materials, slurries, and liquids. PT&S 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). PT&S includes both process transport and storage equipment and systems integration.

FY96 Plan

After completion of Preliminary Design, Final Design will begin. Design activities will initially focus on detail design of the transport container interface since the design has the greatest impact on interfacing systems. Other major focus areas include the material receiving and sampling station and the material transport and delivery systems needed for batch makeup. Final Design effort will be directed toward final working drawings, specifications, bidding documents, cost estimates, and procurement and construction schedules. PT&S Final Designs that are needed for incorporation into interfacing system designs will be completed early to allow other designs to proceed.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	1	1	6	10	11	14	12	9	3	2	2	2	72

Total Project Cost to Date: \$96.3K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L161-2.1	Final Design of transport interface complete	Feb 96
L161-2.2	Final Design of batch make-up station complete	May 96
L1615-2.3	LI&C prototype user interface approved	May 96
L1615-2.4	LI&C SDD complete	Jul 96
L161-2	PTS 90% Final Design Review complete	Sep 96

WBS Element 1.6.2. Analytical Services

Task Description

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

FY96 Plan

Upon completion of Title I Design, Analytical Services will finalize the definitions of the chemical analysis measurements required for process control, process development, process characterization, and regulatory compliance for the MSO process (1.5.2) and for supporting processes scheduled for placement in the MWMF. Definition of on- and at-line analysis requirements for MSO will be completed, along with definition of confirmatory lab analysis requirements. Off-gas monitoring equipment and radiation monitoring equipment will be purchased in FY96. Description of the treatment processes associated with the DWTF and the chemical analysis capabilities required in support of the DWTF will be finalized. Initial design of the laboratory database custom test selection and sample tracking functions (information management system) will be completed.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	9	15	24	25	29	29	30	37	35	40	125	145	543

Total Project Costs to Date: \$134.8K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: \$185K.

Significant FY96 Procurements

The Analytical Services off-gas analysis system, tritium monitors, and gas proportional counter are scheduled for selection and initiation of procurement at the end of FY96, and will lien into FY97.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L162-7	90% PDR	Oct 95
L162-8.1	Define MSO on- and at-line measurement methods	Mar 96
L162-8.2	Define off-gas analysis requirements	May 96
L162-8.3	Select vendor for off-gas system procurement	July 96
L162-8.4	Select vendors for tritium and gas proportional counter procurements	Aug 96
L162-8.5	Complete custom test and sample tracking database design	Sep 96
L162-8	LAB 90% Final Design Review complete	Sep 96

WBS Element 1.6.3. Water Treatment

Task Description

Water Treatment 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. The Water Treatment element provides the management, system analysis and support, design and engineering (Title I, II, III), procurement, and installation of the Water Treatment equipment necessary to demonstrate treatment trains, Title III inspection, and acceptance test procedures (ATP) covering both equipment and system integration activities.

FY96 Plan

The focus of FY96 activities will be to finish Final Design for Water Treatment, including the following unit operation subsystems: evaporator and condenser, receivers and blending tanks, carbon adsorber, dryer, and ultraviolet peroxide subsystem.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	10	10	8	8	8	8	15	15	15	11	11	13	133

Total Project Costs to Date: \$54.7K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L163-4	Begin Final Design	Nov 95
L163-5.1	WTR Unit Operation Subsystems Final Design complete	Aug 96
L163-5	WTR 90% Final Design Review complete	Sep 96

WBS Element 1.6.4. Final Forms

Task Description

The Final Forms task is to immobilize (1) the solid residues from the treatment of the mixed waste input streams by the primary processes and (2) wastes resulting from secondary support processes that are integral to the primary treatment processes. The waste form types under investigation in FY96 are ceramics for mineral residues, polymer microencapsulation for salt, and sulfur-polymer microencapsulation for volatile inorganic solids.

FY96 Plan

Preliminary Design of all three waste forms (mineral residues, salt, and volatile inorganics) will be completed early in the fiscal year, at which point we will initiate Final Design activities. Development and Final Design of the ceramic waste form material, process, and facility will continue into FY97. This includes determining the effects of waste constituents, loading levels and lab-scale process parameters on the phase formation, leach resistance, and in-process volatility of the ceramic. The rotary calciner to be installed in the MWMF, together with supporting equipment, will be procured and operated to determine process parameters and equipment design modifications, if any. The polymer microencapsulation portion of Final Forms' scope of salt has been put on hold. In the process of completing the Preliminary Design, we will reassess the value of polymer encapsulation relative to other potential final forms, and the direct disposition of the salt via Water Treatment and HWM. Final Design of the sulfur-polymer cement waste form for volatile inorganics, a very minor effort, will be completed in the summer of 1996. Final Design of the Final Forms' process off-gas system, which is relatively simple in the absence of the (non-thermal) MEO process, will be completed. General design of the Final Forms facility will continue.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	54	35	36	35	198	34	35	34	34	34	34	35	598

Total Project Costs to Date: \$759K.

Actual liens into FY96 (included in FY96 budget): None.

Estimated Liens into FY97: None.

Significant FY96 Procurements

Polymer microencapsulation work at Rocky Flats—\$20K.

Rotary calciner and related equipment—\$163K (est.).

Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L164-3	Report: Design of polymer microencapsulation system	Oct 95
L164-4.1	Report: Volatile residue components and the design of ceramic waste form system	Oct 95
L164-4.2	Report: Interim status of ceramic waste form compositions and process parameters	Jan 96
L164-5.1	Rotary calciner design procurement complete	Jun 96
L164-5	Rotary calciner operational	Sep 96
L164-6.1	Final Design of sulfur-polymer cement system complete	Aug 96
L164-6.2	Final Design of ceramic recipe-writer complete	Sep 96
L164-6.3	Final Design of local process off-gas system complete	Jun 96
L164-6	FFM 90% Final Design Review complete	Jan 97

WBS Element 1.6.5. Supervisory Instrumentation and Control**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.

FY96 Plan

Following completion of the Preliminary Design, Final Design will begin. Preliminary design activities will focus on completing responses to design review action items and completing and documenting rapid prototype evaluations. Final design activities will first focus on providing Process I&C Standards and the Instrumentation and Equipment database required for Local Process I&C design. Other thrust areas include facility database management, safety control, and supervisory control. Secondary focus will be given to ancillary systems design.

FY96 Budget

Spending profile (\$K, CENRTC)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
10/96 Plan	34	39	36	34	30	31	39	37	37	37	40	40	434

Total Project Costs to Date: \$998.6K.

Actual liens into FY96 (included in FY96 budget): \$12.0K.

Estimated Liens into FY97: None.

Significant FY96 Procurements

None.

Key Milestones and Markers

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

ID No.	Milestone/Marker	Scheduled Date
L165-1.12	SI&C <i>Functional Requirements Document</i> complete	Oct 95
L165-1.13	Engineering Development tasks complete and documented	Oct 95
L165-2.3	Container Tracking and Material Accounting requirements document approved	Nov 95
L165-2.4	Facility Monitoring and Safety Control System task analysis complete/documented	Feb 96
L165-2.5	Instrumentation and Equipment Database complete	Mar 96
L165-2.6	Final Design Process I&C Standards complete	Apr 96
L165-2.7	Control Room and Equipment Room design complete	May 96
L165-2.8	Supervisory Control System SDD drafted	Jun 96
L165-2	SI&C 90% Final Design Review complete	Oct 96

Appendix A: Schedule

FY96												FY97												FY98												FY99												FY00											
OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1.1.5 PROGRAM SUPPORT																																																											
																																																Technology Trans											
																																																TID Support											
1.1.6 PUBLIC PARTICIPATION																																																											
WBS 1.2 OPERATIONS SUPPORT																																																											
1.2.2 PLANT START UP MANAGEMENT																																																											
												Task D: Design Monitor & Support Planning																																															
																								Task H: Training Development & Implementation																																			
																																				Task N: Prepare OTP's																							
1.2.3 ACTIVATION																																																											
																																																Activation Suppo											
																								Task B: Detailed Ops Plans & Procedures																																			
																																				Task A: Operations Testing																							
												Tasks A1 / L1: Transition & Activation Support																																															
WBS 1.3 PROJECT INTEGRATION																																																											
1.3.1 PROJECT MANAGEMENT																																																											
																																																Project Manageme											
																																																Technical Suppor											
												TASK 4: FDR Support																																															
																								TASK 5: Assembly Acceptance Design Review																																			
1.3.2 PROJECT CONTROL																																																											
												TASK A: Project Control - FY96																																															
TASK B: Project Control																																																											
1.3.3 TECHNICAL SYSTEMS INTEGRATION																																																											
												Systems Integration - FY 96																																															
Systems Integration																																																											
WBS 1.4 FEED PREPARATION SYSTEMS																																																											
1.4.1 RECEIVING & SHIPPING (RAS)																																																											
Title I - Preliminary Design																																																											
												Title II - Final Design																																															
																																				Title III - Engineering Support

FY96												FY97												FY98												FY99												FY00		
OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC												
1.6.3 WATER TREATMENT (WTR)																																																		
Title I - Preliminary Design												Title II - Final Design												Title III - Engineering Support																										
												Fabrication / Procurement												Installation & Checkout																										
1.6.4 FINAL FORMS (FFM)																																																		
Title I - Preliminary Design												Title II - Final Design												Title III - Engineering Support																										
												Fabrication / Procurement												Installation & Checkout																										
1.6.5 SUPERVISORY INSTR & CONTROL (SIC)																																																		
Title I - Final Design												Title II - Final Design												Title III - Engineering Support																										
												Fabrication / Procurement												Installation & Checkout																										

Appendix B: Milestone Control Log

MWMF Milestones and Markers			Sorted by Number			
Number	Item	PTS	Orig. Date	Date	Status	Comments
Rev. Date: 10/31/95; Doc. Resp. Person: M. Hussey						
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-96		Schedule change as a result of permitting strategy change.
D112-1	PSAR Approved by DOE	X	Jun-94	Nov-94	deleted	facility categorized Low Hazard; DOE approval not req'd
D113-1	EA determination by DOE	X	Aug-94	Sep-95		EA draft submitted for comments. Final determination and issue of FONSI by DOE Compliance Office now expected in September.
D115-1	DOE issues Project Plan	X		Jan-95		
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	received KD-1 only
D131-2	DOE issues KD-2	X	Jun-94	Nov-95		Delayed due to reduced DOE funding.
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	Apr-96		Schedule change as a result of permitting strategy change.
L113-3	Submit RD&D permit application to DTSC	X	Jul-94	Feb-95	on hold	Draft application complete. Permit application may not be submitted if revised strategy is approved.
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	May-95	complete	Delayed due to unavailability of DOE Project Plan.
L115-1.1	Project Management Plan (Draft)			Oct-93	complete	
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	Apr-95	complete	Document in TID for publication. Release expected in Apr-95.
L115-9	FY97 Project Validation			Apr-95	complete	
L115-10	Submit FY96 Plan	X		Oct-95		
L115-11	FY98 Project Validation			Apr-96		
L115-12	Submit FY97 Plan	X		Oct-96		

MWMF Milestones and Markers			Sorted by Number			Comments
Number	Item	PTS	Orig. Date	Date	Status	
L116-1	First meeting of NRP	X	Feb-95	Jun-95	complete	Delayed while key regulatory issues were resolved and the detail strategy for NEPA and CEQA finalized. Now scheduled for 8/20/95.
L116-1.1	National Review Panel (NRP) formed		Dec-94	Apr-95	Complete	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	Aug-95	Complete	Date affected by review of EA by DOE and State(Ca.).
L116-2.1	Issue first public newsletter		Mar-95	Sep-95		Date affected by review of EA by DOE and State(Ca.).
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	NRP Meeting			Jan-96		
L116-3.1	MWMF Letter			Feb-96		
L116-4	NRP Meeting			Jun-96		
L116-4.1	MWMF Letter			Jul-96		
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	Feb-96		Delayed due to 4/95 budget cut.
L131-1	Preliminary Design Review Completed	X	Sep-94	Nov-95		Delayed due to reduced DOE funding.
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	May-95	complete	Delayed due to FY97 field submittals and other higher priority work.
L131-5	Issue Project Baseline Rev. 2.0		Sep-95	Jan-96		Delayed due to reduced DOE funding.
L131-6	Final Design Review Complete	X		Oct-96		
L132-1	Implement Cost planning/tracking systems (document)		Sep-94	Dec-94	complete	activity stretched-out due to reduced funding guidance
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
L132-5	Issue Configuration Control System Document		Jan-95	Mar-95	complete	Delayed to allow discussion and review and due to higher priorities.
L132-6.1	Input to MWMF Project Management Plan (see L115-1)		Feb-95	Apr-95	complete	Delayed due to higher priority work.
L132-7	Performance Management System documented		Apr-95	Aug-95	complete	Delayed due to requests for unplanned work from DOE.
L132-8.1	Complete support of Project PDR		Jun-95	Nov-95		Delayed due to reduced DOE funding.
L132-9	Complete QA Self Assessment			Aug-95	Complete	
L132-9.1	Records Control Procedure issued			Apr-95	complete	
L132-9.2	Assessment/Surveillance Procedure issued			Jul-95	complete	
L132-10.1	Complete FY96 Budget Plan			Oct-95		
L132-11.1	Complete Cost/Schedule Baseline Rev. 2.0			Jan-96		
L132-12.1	Complete support of Project Final Design Review			Sep-96		
L132-13.1	Engineering Change Control Procedure			Jan-96		
L132-13.2	Non-conformance Reporting Procedure			Apr-96		
L132-13.3	Complete QA Surveillance/Verification			Aug-96		

MWMF Milestones and Markers			Sorted by Number			Comments
Number	Item	PTS	Orig. Date	Date	Status	
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	
L133-3	Issue Title I System Design Requirements		Feb-95	Aug-95	complete	Delayed due to reduced DOE funding.
L133-4	Issue Metrication Plan			Feb-95	complete	
L133-5	Input to FY96 Plan (see 115-10)			Oct-95		
L133-6	Revised SDR completed for Title II Design	X		Nov-95		
L133-7	LLNL Review of Facility Title II Design Complete	X		Apr-96		
L133-7.1	Facility Title II Design Review (80%)			Jan-96		
L133-10.1	Identify emissions for air permit			Jun-95	complete	New marker
L133-10.2	Review floorplan layout and personnel egress			Jul-95	complete	New marker
L133-10.3	Review facility Process Flow Diagrams		Aug-95	Sep-95	complete	Delayed due to higher priority activities.
L133-10.4	Facility preliminary design (20%)		Aug-95	Sep-95	complete	Delayed due to higher priority activities.
L133-10.5	Facility Title I Design Review (80%)		Sep-95	Oct-95	late	Review of drawings in progress. Completion expected in October.
L133-10.6	LLNL Review of Facility Title I Design			Nov-95		
L141-1	RAS System Preliminary Design Review		Sep-94	Sep-95	complete	Delayed due to reduced DOE funding.
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	complete	activity stretched-out due to reduced funding guidance
L141-1.3	RAS LI&C System Functional Requirements Document complete		Jun-95	Sep-95	late	Delayed due to higher priority activities.
L141-1.4	RAS LI&C Preliminary Design Review		Jul-95	Sep-95	complete	Delayed due to reduced DOE funding.
L141-2	RAS 90% Final Design Review complete			Oct-96		
L141-2.1	RAS LI&C System Design Description drafted			Jun-96		
L141-2.2	RAS System Design Description drafted	X		Sep-96		
L142-1	SFP System Preliminary Design Review		Jul-95	Sep-95	complete	Delayed due to reduced DOE funding.
L142-1.1	SFP surrogate feeds defined			May-94	complete	
L142-1.2	Identify initial suite of characterization equipment		Jun-94	Jan-95	complete	studies and reduced manpower and funding guidance received after
L142-1.3	Complete validation of characterization, isolation, and segregation		Sep-94	Apr-95	complete	manpower/funding guidance, rebaselining activities, and project delay of
L142-1.4	Complete preliminary operator control station design		Mar-95	Apr-95	complete	Delayed due to project rebaseline activities.
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	complete	
L142-1.7	SFP workcell control architecture designed			May-95	complete	
L142-1.8	SFP LI&C System Functional Requirements Document complete		Jun-95	Oct-95	late	Delayed due to higher priority activities.
L142-1.9	LI&C Preliminary Design Review		Jul-95	Sep-95	complete	Delayed due to reduced DOE funding.
L142-1.10	Locate user interface stations and required functionality		Aug-95	Sep-95	complete	Delayed due to higher priority activities.
L142-1.11	Draft FP control console layout		Aug-95	Sep-95	complete	Delayed due to higher priority activities.
L142-2	Telerobotics Preliminary Design Review			Sep-95	complete	New milestone.
L142-3	SFP 90% Final Design Review complete			Oct-96		
L142-3.1	SFP System Design Description drafted	X		Sep-96		

MWMF Milestones and Markers			Sorted by Number			Comments
Number	Item	PTS	Orig. Date	Date	Status	
L142-3.2	SFP LI&C System Design Description drafted			Oct-96		
L1422-2	Telerobotics Sorting 90% Final Design Review complete	X		Sep-96		
L1422-2.1	Linear rail facility interface design complete			Dec-95		
L1422-2.2	Prototype sorting application operational			Mar-96		
L1422-2.3	Operator console prototype complete			Apr-96		
L1422-2.4	Telerobot control interface design and performance specification complete			Aug-96		
L1425-2	Crane final design (specification) complete			Aug-96		
L143-1	LFP System Preliminary Design Review		Jul-95	Sep-95	complete	Delayed due to reduced DOE funding.
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	Apr-95	complete	Delayed by technical difficulties which have since been resolved.
L143-1.4	LI&C Functional Requirements Document complete		Jun-95	Sep-95	late	Delayed due to higher priority activities.
L143-1.5	LI&C Preliminary Design Review		Jul-95	Sep-95	complete	Delayed due to reduced DOE funding.
L143-1.6	LFP LI&C System Functional Requirements Document complete			Oct-95		
L143-2	LFP 90% Final Design Review complete			Oct-96		
L143-2.1	LFP System Design Description drafted	X		Sep-96		
L143-2.2	LFP LI&C System Design Description drafted			Sep-96		
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.
L151-1.2	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	
L151-1.4	Summarize silver recovery chemistry results to date (document)		Sep-94	Apr-95	complete	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
L151-1.6	Report on NaOH-AgCl recovery (document)		Feb-95	Apr-95	complete	Delayed to allow patent disclosure to be filed. Document is in review cycle with release expected in Apr-95.
L151-1.7	Computer simulation of the combined MEO and Acid Recovery control systems (document)		Feb-95	Mar-95	complete	Delayed due to higher priority tasks.
L151-1.8	Final Report on steady-state flow and chemistry balance tests (document issued)		Apr-95	Sep-95	complete	Document delayed while waiting for chemical analysis results.
L151-1.9	Demonstrate prototype cellulose feeder (document)			Jun-95	deleted	Deleted per Rebaseline 1.2 as cost savings measure.
L151-1.10	P&ID drawings (document)			Sep-95	complete	Incorporated into L151-3.
L151-1.11	Layout drawings of major equipment items (document)			Sep-95	complete	Incorporated into L151-3.
L151-1.12	LI&C Functional Requirements Document complete		Aug-95	Sep-95	complete	Delayed due to higher priority activities.
L151-1.13	LI&C Preliminary Design Review			Sep-95	deleted	Replaced by L151-3.
L151-2	MEO System Preliminary Design Review			Sep-95	deleted	Replaced by L151-3.
L151-2.1	Preliminary Process Flow Diagram for MEO			Jun-94	complete	
L151-2.2	Preliminary equipment layout for MEO			Sep-94	complete	
L151-3	MEO System Design Description (document)			Jul-95	complete	New milestones. Replaces L151-1.13 and L151-2.
L152-1	Complete MSO bench scale rubber destruction tests			Dec-93	complete	
L152-2	Select Industrial Participation method for Primary Unit			Jun-95	complete	

MWMF Milestones and Markers			Sorted by Number			
Number	Item	PTS	Orig. Date	Date	Status	Comments
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 holidays. Scheduled for January 5th.
L152-3	MSO System MWMF PDR	X	Jun-95	Oct-95		Delayed due to reduced DOE funding.
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	Complete	
L152-3.5	LI&C Functional Requirements Document complete		May-95	Oct-95		Delayed due to reduced DOE funding.
L152-3.6	LI&C Preliminary Design Review complete		Jun-95	Oct-95		Delayed due to reduced DOE funding.
L152-4	Start Development Activities			Aug-94	complete	
L152-5	MSO 90% Final Design Review complete	X		Sep-96		
L152-5.1	Select Industrial Participation method for Salt Recycle			Nov-95		
L152-5.2	MSO Peer Review			Jul-96		
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 WOX Support 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
L155-1	Summarize Gas Liquid Contactor Tests (document)		Jun-95	Aug-95	Complete	Delayed due to testing difficulties. Corrections have been made.
L155-1.1	Fab prototype gas-liquid contactor for acidic urea NOx destruction		Jun-94	Jun-95	complete	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	
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	deleted	Deleted from scope due to budget reductions. (1/95)
L155-3.1	Summarize NOx-urea chemistry to date (document)		Sep-95	Sep-95	late	Delayed awaiting completion of Milestone L155-1. Work in progress.
L155-3.2	Initiate systematic catalysts testing			Jan-95	deleted	Deleted from scope due to budget reductions. (1/95)
L155-3.3	LI&C Functional Requirements Document complete			May-95	deleted	Deleted from scope due to budget reductions. (1/95)
L155-3.4	LI&C Preliminary Design Review			Jun-95	deleted	Deleted from scope due to budget reductions. (1/95) Title correction.
L161-1	Process Transport & Storage System Preliminary Design Review		Sep-94	Sep-95	complete	Delayed due to reduced DOE funding.

MWMF Milestones and Markers			Sorted by Number			Comments
Number	Item	PTS	Orig. Date	Date	Status	
L161-1.1	Select standard transport container designs		Jun-94	Jul-95		Delayed due to reduced DOE funding.
L161-1.2	Floor plan layout complete		Jul-94	Aug-95	Complete	Delayed due to reduced DOE funding.
L161-1.3	LI&C Functional Requirements Document complete		Jun-95	Sep-95	late	Delayed due to higher priority activities.
L161-1.4	PTS LI&C System Preliminary Design review		Jul-95	Sep-95	complete	Delayed due to reduced DOE funding.
L161-2	PTS 90% Final Design Review complete	X		Sep-96		
L161-2.1	Final Design of transport interface complete			Feb-96		
L161-2.2	Final Design of batch make-up station complete			May-96		
L1615-2.3	LI&C prototype user interface approved			May-96		
L1615-2.4	LI&C System Design description complete			Jul-96		
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	Oct-95	partial	Delayed due to reduced DOE funding. First issue expected in October.
L162-3	Define facility off-gas monitoring requirements		Sep-94	Feb-95	complete	Completed for preliminary design.
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	complete	Waiting for salt analysis to be defined. Completion expected in Mar-95.
L162-6	Define DWTF analysis requirements			Feb-95	complete	Completed for preliminary design.
L162-7	Analytical Lab System Preliminary Design review		Aug-95	Sep-95	late	Rescheduled to Oct. 12, 1995, due to programmatic conflicts.
L162-7.1	LI&C Functional Requirements Document complete		Jul-95	Aug-95	Complete	Delayed while document is in review cycle.
L162-7.2	LI&C Preliminary Design Review		Aug-95	Sep-95	late	Rescheduled to Oct. 12, 1995, due to programmatic conflicts.
L162-8	LAB 90% Final Design Review complete	X		Sep-96		
L162-8.1	Define MSO on- and at-line measurement methods			Mar-96		
L162-8.2	Define offgas analysis requirements			May-96		
L162-8.3	Select vendor for offgas system procurement			Jul-96		
L162-8.4	Select vendors for tritium and gas proportional counter procurements			Aug-96		
L162-8.5	Complete custom test and sample tracking database design			Sep-96		
L163-1	Water Treatment trade-off study		Jun-94	Sep-94	complete	
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	Oct-95		Delayed due to reduced DOE funding.
L163-3.1	LI&C Functional Requirements Document complete		Jun-95	Oct-95		Delayed due to reduced DOE funding.
L163-3.2	LI&C Preliminary Design Review		Jul-95	Oct-95		Delayed due to reduced DOE funding.
L163-4	Begin Final Design		Jul-95	Nov-95		Delayed due to reduced DOE funding.
L163-5	WTR 90% Final Design Review complete	X		Sep-96		
L163-5.1	WTR Unit Operation Subsystems Final Design complete			Aug-96		
L164-1	Evaluations of Immobilization technologies complete		May-95	Jun-95	complete	Delayed pending decision on most cost effective technology for the project.
L164-1.1	Preliminary process flow diagram complete for FF			Jul-94	complete	

MWMF Milestones and Markers			Sorted by Number			Comments
Number	Item	PTS	Orig. Date	Date	Status	
L164-1.2	Preliminary equipment layout complete for FF			Aug-94	complete	
L164-1.3	Report status of immobilization evaluations		Sep-94	May-95	complete	Delayed until after peer review of polymer microencapsulation. Peer Review activities finalized on 4/24/95. Report expected in May 95.
L164-2	Final Forms System Preliminary Design Review		Jun-95	Aug-95	Complete	Delayed due to reduced DOE funding.
L164-2.1	Final Forms subsystem design status peer review		Feb-95	May-95	complete	Peer Review activities finalized on 4/24/95. Report to be completed in May 95.
L164-2.2	LI&C Functional Requirements Document complete		May-95	Sep-95	complete	Document in review cycle.
L164-2.3	LI&C Preliminary Design Review		Jun-95	Aug-95	Complete	Delayed due to reduced DOE funding.
L164-3	Report: Design of polymer microencapsulation system		Jun-95	Oct-95		Delayed due to reduced DOE funding.
L164-4.1	Report: Volatile residue components and the design of ceramic waste form system		Jul-95	Oct-95	late	Delayed due to higher priority activities.
L164-4.2	Report: Interim status of ceramic waste form compositions and process parameters		Aug-95	Jan-96	late	Delayed due to higher priority activities.
L164-5	Rotary calciner operational	X		Sep-96		
L164-5.1	Rotary calciner design procurement complete			Jun-96		
L164-6	FFM 90% Final Design Review complete			Jan-97		
L164-6.1	Final Design of sulfur-polymer cement system complete			Aug-96		
L164-6.2	Final Design of ceramic recipe-writer complete			Sep-96		
L164-6.3	Final Design of local process off-gas system complete			Jun-96		
L165-1	SI&C System Preliminary Design Review		May-95	Jun-95	complete	Delayed due to scheduling conflicts.
L165-1.1	I/C general arrangement plan complete			Mar-94	complete	
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.
L165-1.10	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	complete	Completion expected in early Mar 95. Key participants are unavailable in February.
L165-1.12	SI&C Functional Requirements Document complete		Apr-95	Oct-95	late	Delayed due to higher priority work on Local I&C.
L165-1.13	Engineering Development tasks complete and documented		Jun-95	Oct-95	late	Delayed due to higher priority work on Local I&C.
L165-1.14	Preliminary Design activities complete, documented		Jun-95	Sep-95	complete	Delayed due to reduced DOE funding.
L165-2	SI&C 90% Final Design Review complete			Oct-96		
L165-2.1	Instrumentation and Equipment Database operational		Mar-95	Apr-95	complete	Delayed pending I&C design team review scheduled for 4/7/95.
L165-2.2	Process I&C Standards established			Sep-95	complete	
L165-2.3	Container Tracking and Material Accounting requirements document approved	X		Nov-95		

MWMF Milestones and Markers					
Number	Item	PTS	Sorted by Number		
			Orig. Date	Date	Status
L165-2.4	Facility Monitoring and Safety Control System task analysis complete / documented			Feb-96	
L165-2.5	Instrumentation and Equipment Database complete			Mar-96	
L165-2.6	Final Design Process I&C Standards complete	X		Apr-96	
L165-2.7	Control Room and Equipment Room design complete			May-96	
L165-2.8	Supervisory Control System SDD drafted	X		Jun-96	
end					

Appendix C: Responsibility Assignment Matrix

Mixed Waste Management Project Responsibility Assignment Matrix

Work Elements			Cost Account Managers	Organizational Elements													
				Assurances		Project Office		Demonstration Feed Preparation		Molten Salt Oxidation		Integration and Operations		Facility and Infrastructure			
				Judy Steenhoven		Ronald Streit		Scott Couture		William Brummond		Robert Nyholm		Paul Densley			
				Judy Steenhoven		Ronald Streit		Scott Couture		William Brummond		Robert Nyholm	Ruth Hawley-Fedder	Paul Densley	David Hipple	Robert Hopper	John Reed
WBS	Title	Status															
1.1	Program Support & Assurances																
1.1.1	Quality Assurance				X												
1.1.2	PSAR	No FY96 tasks	X														
1.1.3	NEPA/CEQA		X														
1.1.4	ES&H		X														
1.1.5	Program Support				X												
1.1.6	Public Participation				X												
1.2	Operations Support																
1.2.1	Conceptual Design	Tasks completed, inactive			X												
1.2.2	Start-Up Management										X						
1.2.3	Activation	No FY96 tasks									X						
1.3	Project Integration																
1.3.1	Project Management				X												
1.3.2	Project Control				X												
1.3.3	System Integration													X			
1.4	Feed Preparation Systems																
1.4.1	Receiving & Shipping													X			
1.4.2	Solids Feed Preparation (Conven.)													X			
1.4.2	Solids Feed Preparation (Demo.)						X							X			
1.4.3	Liquids Feed Preparation															X	
1.5	Waste Processing Systems																
1.5.1	Mediated Electrochemical Oxidation	Deleted from project scope			X					X							
1.5.2	Molten Salt Oxidation																
1.5.3	Wet Oxidation	Deleted from project scope			X												
1.5.4	UV Photolysis	Deleted from project scope			X												
1.5.5	Experimental Off-Gas	No FY96 tasks															X
1.6	Process Support Systems																
1.6.1	Transport & Storage													X			
1.6.2	Analytical Services											X					
1.6.3	Water Treatment														X		
1.6.4	Final Forms															X	
1.6.5	Supervisory I & C										X						