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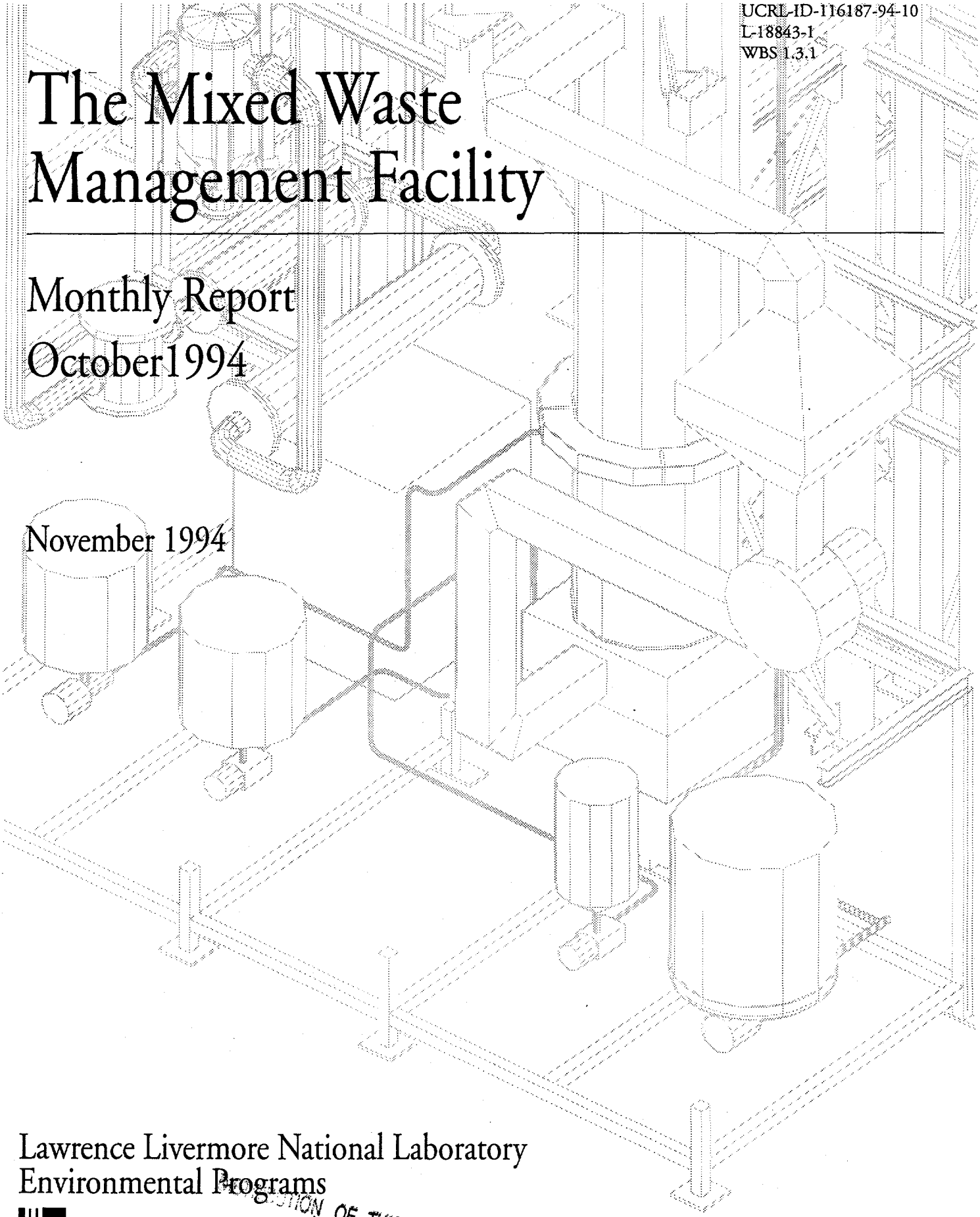
WBS 1.3.1

The Mixed Waste Management Facility

Monthly Report October 1994



November 1994

Lawrence Livermore National Laboratory
Environmental Programs

UCRL-ID-116187-94-10

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The Mixed Waste Management Facility

Monthly Report
October 1994

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November 1994

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Contents

Project Summary

Overview

During October, significant progress was made on both the management and technical activities of the Project (see *Summary of Accomplishments* below). These activities were accomplished within the scope and effort described in the *MWMF FY95 Plan* (currently in draft within the Project), which reflects the reduced DOE FY95 funding guidance received September 29, 1994.

DOE/OAK approved Revision 1 of the MWMF Baseline (reflecting KD-1 guidance), thus providing a basis for Revision 2 (reflecting DWTF/MWMF integration). Considerable management and senior-engineering resources were directed toward addressing the issues that are summarized below.

The proposed technical scope and schedule for the FY95 Plan was largely completed during October, along with consistent (but less detailed) tasks and estimates for the remainder of the project; this latter information will also be used as a basis for the MWMF Rebaseline. However, the FY95 Plan cannot be finalized until mid-November when LLNL tax rates will be established.

MWMF project personnel completed most of the input and draft documentation required by the LLNL permitting group to prepare the modified RD&D permit application that reflects the DWTF/MWMF integration. The PSAR continued through the LLNL approval chain. Revisions to the EA began to reflect the DWTF/MWMF integration.

Two significant reviews of the project were addressed: the DOE Office of the Inspector General (OIG) and the Options Analysis Team (OAT). Draft documents were prepared and discussed with DOE/OAK and HQ to provide for a coordinated response.

Implementation of the Business Planning System (BPS) to provide project estimating and tracking controls was indefinitely deferred to accommodate FY95 funding shortfalls. Instead, existing PC-based applications with manual data transfer were developed and used to prepare the FY95 Plan and will provide the basis for cost management. Preliminary financial capitalization determinations were received from LLNL and DOE/OAK, with final guidance to be received in November and included in the FY95 Plan.

Cost Status. This month's cost reports from LLNL Finance are the first using the new LLNL accounting structure. MWMF CENRTC accounts should not be charged G&A; however, October's reports do include $232K General and Administrative (G&A) in error. This will be corrected by transfers. Folding out this error, the Project spent about $40K below its plan of $741K for October.

Schedule Status. Permitting activities continue as an early critical path item for both the MWMF and DWTF, are a key focus for the both projects, and require similar support and focus by DOE to avoid schedule delays and concomitant costs. Task Summaries and the Milestone/Marker log (Appendix A) identify milestone status.

Significant Issues and Planned Corrective Actions

1. The Preparation of the Baseline Change Proposal (BCP) for the DWTF, as directed by DOE, continued to take considerable unplanned effort and resources. Major work to support the issuance of the DWTF BCP was completed during October. However, detailed work to fully integrate the DWTF and MWMF and realize the anticipated cost savings in a consistent and value-added manner will continue during Title I of the DWTF and MWMF.

2. A report and recommendation received from the OIG regarding the DWTF (and therefore the MWMF) contained factual errors, interpretations, and conclusions that required a detailed response and clarification. A response to the OIG report was prepared and issued. We understand that, as a result, DOE/EM/HQ currently intends not to accept the OIG recommendation as presently written.

3. An early draft report of the OAT recommended that the MWMF not be included as a preferred option for organic liquids in the LLNL Draft Site Treatment Plan (DTSP). As with the OIG report, this also required a detailed response. A response pointing out other constraints not considered by the OAT, issues with the recommendation, and stressing the motivation for the inclusions of the MWMF was prepared and issued.

4. Delivery of the FY95 Plan and Revision 2 of the Project Baseline (PB2) was delayed to resolve institutional and reduced-funding constraints. Most issues discussed in the September report have been resolved to allow the FY95 Plan to be issued in November. The detailed tradeoffs required to address the integration of the DWTF and MWMF will delay PB2 until February.

5. FY95 funding constraints required deferring significant technical work beyond FY95 and delay of near-term milestones. Planned activities for many technical areas and management controls during FY95 were deleted from the scope of work during FY95 to meet DOE funding constraints. Whether these activities can or should be included in work beyond FY95 will be addressed during preparation of PB2.

6. Current FY95 budget estimates indicate that an imbalance exists in the OPEX and CENRTC FY95 BA funding guidance that was given to the project (see Financial Summary below). The FY95 Plan will detail the balance of OPEX/CENRTC FY95 funding requirements consistent with planned work and financial capitalization determinations.

Summary of Accomplishments

Detailed accomplishments and milestone status are reported in the Task Summaries that follow. A summary of specific significant accomplishments during this reporting period include the following:

- Input was provided to the technical basis and documentation for the DWTF BCP. Meetings were held to define and eliminate HWM and MWMF duplicated roles, the commonality assessment was updated, and requirements for exhaust systems, chilled water, LCW, etc., were developed. A study of off-gas treatment was also initiated.
- A detailed response was prepared to the OIG report.
- A detailed response was prepared to the OAT report.
- FY94 Year-End Closing briefing materials for DOE/OAK were prepared.

- The contractor responsible for preparing the MWMF PSAR was requested to assess possible changes required due to the new location for the MWMF; initial response indicates that the analysis for the original/previous site (Building 494) bounds the new location (Building 695).
- The EA was revised to address DOE comments and was routed for LLNL approval; this will be used as a baseline document for the revised EA to reflect the new location for the MWMF.
- Good progress continued on preparing the RD&D permit application. Discussions to clarify and detail the permitting strategy prior to meeting with the DTSC began.
- Discussions to obtain capitalization determinations by the Finance Departments at LLNL and DOE/OAK, for both the DWTF and MWMF, were held. As a result, changes in cost accounting were implemented in the MWMF. Changes in the DWTF will be addressed after the BCP after further clarification by DOE/OAK.
- Due to the significant level of replanning (task breakout, time resolution, scope and cost revision) that was necessary to address the DWTF/MWMF integration, the Automated Esimated System (AES) could not be used to prepare the Project Rebaseline as originally planned. The planned use of the Business Planning System (PBS) for cost estimating, tracking, and reporting was discontinued due to FY95 budget constraints. Instead, Primavera (a schedule package already in use by the Project with cost rollup capability) was used to develop budgets for FY95 and the full project. Primavera will be supplemented by Excel spreadsheets to estimate, escalate, report, and manage project costs.
- Estimating sheets, which reflect the new LLNL accounting structure and which are used for preparing the MWMF FY95 Plan and Project Rebaseline, were developed initially for BPS and later for Primavera.
- A QA procedure for "Document Control" was issued.
- Letters were sent to potential members of the MWMF National Advisory Committee, requesting their participation. An associated informational brochure on the MWMF for public participation was prepared.
- A Memo of Understanding was prepared to define requirements and roles of HWM and the MWMF for water treatment.
- Receiving/Shipping: The pilot characterization study of LLNL legacy wastes continued, with evaluation of over thirty containers being completed to date.
- MEO: Tests on materials for shaft seals began. A lab-scale fractionator was set up to evaluate purity of water from acid recovery to meet sewer discharge standards. Development of process control strategy and P&ID drawings continued.
- MSO: The first set of vessel material samples began at ETEC. A material evaluation furnace was designed. Design of a small engineering unit, also being evaluated as a basis for multiple-unit scaleup for the MWMF, was started.
- Transport/Storage: Options for bagless transfer systems, including possible commercial involvement, are being investigated, with an objective of cost savings and minimal waste generation during the transfer process.
- Analytical Lab: Initial off-gas monitoring requirements for MSO and facility systems were identified. A study to integrate and minimize chemical analysis requirements for the DWTF and MWMF in the B695 complex was begun.

- Final Forms: Electron microprobe analysis of wasteforms are being used to corroborate x-ray diffraction analysis. Various ceramic wasteform specimens are being fabricated. Experiments to measure vaporization of inorganic compounds during calcining and sintering began.

Project Financial Summary

Table 1 presents a financial summary of the Project for October. As mentioned above, this is the first month that the LLNL Accounting Department has used the new accounting structure to distribute and report Institutional overhead costs. Certain problems have been noted on MWMF accounts; it is generally expected to take several months for Accounting to identify and resolve the attendant problems usually associated with a change of this magnitude.

The apparent overrun in OPEX is largely due to mischarges for CENRTC work and will be corrected by cost adjustments. The apparent overrun in CENRTC is due to the incorrect charge of the Laboratory G&A tax for MWMF accounts; the actual charges without G&A is about $439K. This has been discussed with the LLNL Finance Department; cost adjustments next month will correct this error and G&A will not be charged in the future.

We received additional BA funding from DOE/OAK in October, with full FY95 funding on hold until the FY95 Plan is issued. Liens as shown are largely carryover from FY94; no major procurements were initiated during October. Additionally, certain liens are being corrected. No distribution of Management Reserve or FY95/96 carryover was made during October.

The major financial issue currently is the imbalance in the OPEX/CENRTC funding levels, versus the FY95 Plan, as shown in Table 1; the imbalance is estimated to be about $2150K. We expect that DOE/OAK will help to resolve this issue after the FY95 Plan is submitted and reviewed.

MWMF Project - Monthly Financial Summary for FY95

OCTOBER, 1994

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												514		
FY95 Plan		59.3	57.8	56.2	57.8	52.6	62.5	66.2	65.9	65.9	65.8	70.5	65.8	746.3		746.3
Actual		103.1												103.1		
Liens**		245.8												NA		
Mgmt Reserve		0												0	84	84
95/96 CO		0												0	100	100
														FY95 OPEX budget =		930.3

OPEX ($K, cumulative to date)

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

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 Bud
DOE Funds*	2649	0														
FY95 Plan		657.2	725.1	715.3	748.2	691.8	724.2	700.3	749.4	671.2	605.9	736.8	632.4	8357.8		8357.8
Actual		729.5												729.5		
Liens**		85.5												NA		
Mgmt Reserve		0												0	605	605
95/96 CO		0												0	400	400
LDRD-CAP#		0												0	291	291
														FY95 CENRTC budget =		9653.8

CENRTC ($K, cumulative to date)

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

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

TOTAL PROJECT ($K, cumulative to date)

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

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

* 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

TABLE 1

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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:
- Established and updated the MWMF file server on a new, dedicated computer system. Mike DeMicco will be the System Operator for this server.
- Prepared FY94 Year End Review briefing materials for the Project Manager.
- Revised the WBS and WBS level 3 dictionaries.
- Prepared the September '94 MWMF Monthly Report.
- Continued work on an MWMF Document Tree, Configuration Control Procedure, and MWMF QA File and Project File.

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											
Plan cumulative	3	6	8	11	13	17	19	22	25	28	31	34
Actual cumulative	2											
Current lien	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: 1.1.2 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:
The PSAR prepared under contract for the MWMF in Building 494 was routed for final LLNL approval in October. Additionally, the contractor was asked to determine whether siting the MWMF at a new location (Building 695) would require revisions to analysis provided in the PSAR.

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											
Plan cumulative	0	0	0	0	0	0	0	0	0	0	0	0
Actual cumulative	14											
Current lien	74											

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											
Plan cumulative	5	10	13	15	17	19	20	20	20	20	20	20
Actual cumulative	0											
Current lien	0											

Costs associated with the PSAR are shown as OPEX; the CENTRC account has not yet been opened. Once this account is opened the charges will be 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	In Progress

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, and 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 permits approvals.

Summary of Monthly Activities:
- The EA was revised to address the initial set of DOE comments and routed for LLNL approval. This revision will serve as a baseline document for additional revisions to reflect the siting of the MWMF in a new location.
- Work progressed on preparation of the RD&D permit application with submittal to the DTSC planned for January 1995.

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											
Plan cumulative	5	10	15	20	21	26	31	31	31	31	31	31
Actual cumulative	14											
Current lien	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											
Plan cumulative	40	80	120	160	170	178	185	193	200	206	211	216
Actual cumulative	0											
Current lien	0											

Costs associated with the CEQA and permitting effort under 1.1.3.2 and 1.1.3.3 are shown as OPEX funding under 1.1.3.1, as the CENTRC accounts have not yet been opened. Once these accounts are opened the charges will be 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
L113-4	Submit revised EA to DOE	Dec 94	In Progress
L113-3	Submit RD&D permit application to DTSC	Jan 95	In Progress
L113-2	Submit air permit to BAAQMD	Mar 95	
D113-1	EA determination by DOE	Mar 95	
C113-2	Authorization to construct issued by BAAQMD	Jul 95	
C113-1	RD&D permit issued by DTSC	Apr 96(1)	

(1) Date changed from July '96 to April '96 to correct error in the FY95 Plan. The present schedule requires April '96 and is still feasible; a better estimate will be available after the DTSC receives the submitted permit application.

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 staff in reviewing proposed designs.

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											
Plan cumulative	14	27	41	54	68	81	95	108	122	135	149	162
Actual cumulative	11											
Current lien	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:

- Considerable effort was spent in support of the DWTF BCP. Issues addressed included: operational and physical interfaces between the DWTF, MWMF, and HWM; permitting; DWTF/MWMF capitalization (with DOE/OAK); floor plan; and responsibility and cost interfaces. While these issues were sufficiently defined to issue the DWTF BCP, the effort will continue to fully integrate the DWTF and MWMF and to realize the anticipated cost savings in a consistent and value-added manner during Title I of both projects.
- Several issues arose regarding the report and recommendation received from the OIG on the continuation of the DWTF (and therefore affecting the MWMF). A detailed response was prepared for DOE/OAK. We understand that, as a result, DOE/EM/HQ currently intends not to accept the OIG recommendation as presently written.
- An early draft report of the OAT recommended that the MWMF not be included as a preferred option for organic liquids in the LLNL DSTP. As with the OIG report, this also required a detailed response. A response was prepared and issued pointing out other constraints not considered by the OAT, issues with the recommendation, and especially the motivation for the inclusions of the MWMF.
- Delivery of the FY95 Plan and PB2 have been delayed to resolve institutional and reduced-funding constraints. Most issues discussed in the September report have been resolved and should allow the FY95 Plan to be issued in November or early December (see WBS 1.3.2). The detailed tradeoffs required to address the integration of the DWTF and MWMF will delay PB2 until March.
- Reviews and discussions continued with DOE/OAK regarding the Water Treatment Study. DOE requested further analysis and additional trade-off studies relative to operational costs. Preliminary design is on hold until approved by DOE/OAK. This additional work was unplanned.

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											
Plan cumulative	30	59	86	114	141	174	201	233	264	293	326	354
Actual cumulative	54											
Current lien	140											

The majority of the cost overrun in October is attributed to the Water Treatment Trade Study.

Significant procurements 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
L115-7	Submit FY95 Plan	Nov 94	In Progress
L115-1	Submit Project Management Plan (Final)	Jan 95	
D115-1	DOE issues Project Plan	Jan 95	
L115-8	Technology Selection and Implementation Plan, Part II	Mar 95	
L115-9	FY97 Project Validation	Apr 95	
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)[1], a Community Newsletter, and preparation and coordination of press releases and community tours.

Summary of Monthly Activities:
Letters were sent to potential members of the MWMF NRP, requesting their participation. An associated informational brochure for the MWMF for public participation use was prepared. Currently, the first meeting of the NRP is planned for January, 1995, to allow time to address key items raised by the MWMF/DWTF integration and funding constraints such as baseline scope, schedule, costs, and permitting strategy.

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											
Plan cumulative	8	16	24	32	40	48	56	64	72	80	88	96
Actual cumulative	10											
Current lien	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	Dec 94	In Progress
L116-1	First meeting of NRP	Feb 95	In Progress
L116-2.1	Issue first public newsletter	Mar 95	
L116-2.2	Receive comments from NRP	Apr 95	
L116-2	Second meeting of NRP	Aug 95	
L116-3.1	Issue second newsletter	Sep 95	

[1] A number of names have been used in the various documents for the Public Participation review panel, including National Advisory Committee (NAC), National Advisory Panel (NAP), and National Review Panel (NRP). For consistency in all future documentation, the "official" title will be National Review Panel (NRP).

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 activitiy 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											
Plan cumulative	0	0	0	0	0	0	0	0	0	0	0	0
Actual cumulative	–1											
Current lien	4											

Charges are 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.

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											
Plan cumulative	0	0	0	0	0	0	10	20	30	43	56	69
Actual cumulative	0											
Current lien	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 (e.g., 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											
Plan cumulative	0	0	0	0	0	0	0	0	0	0	0	0
Actual cumulative	0											
Current lien	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 Project Office, project assurance (including quality assurance, safeguards, environmental, and safety oversight), management overview of information management and technical activities, and interface with DOE.

Summary of Monthly Activities:
Work supporting this area is also discussed under WBS 1.1.5 and WBS 1.3.2. As noted in WBS 1.3.2, per discussions with DOE/OAK, the delivery date for the PB2, which will reflect the integration of the DWTF and MWMF buildings and capabilities, will be delayed from the original November date. This is to allow a well-conceived and understood integration of DWTF and MWMF capabilities and functions, and to provide for an "austere" facility consistent with the direction given by DOE/OAK. The objective of the rebaseline effort will be to provide a basis for cost savings estimated in earlier discussions, but in a consistent and value-added manner. The integration impacts three groups (MWMF, DWTF, and HWM Operations), and detailed considerations and discussions are required that are not allowed by a November delivery date. The proposed milestone for delivering the final document in the FY95 Plan is March, 1995, although it is expected that initial results will be available for early informal discussions with DOE well before that date.

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											
Plan cumulative	59	116	169	226	279	344	398	499	599	691	796	856
Actual cumulative	71											
Current lien	0											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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)	Nov 94	In Progress
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:
During October, the major effort was directed toward preparing the FY95 Plan, PB2, and implementation of a cost management system. Revision 1 of the Project Baseline, which reflected the KD-1 guidance, was approved by DOE/OAK during October. Revision 1 will provide the basis for PB2, which will reflect the integration of the DWTF and MWMF into a common building complex.

As discussed last month, we received budget guidance for FY95 on September 29 that was significantly reduced from earlier guidance. In addition, during FY94 year-end closing, an unforeseen takeback of $811K in DOE CENRTC funding for FY94 significantly reduced the carryover funding that had been assumed in preliminary planning for FY95. Laboratory guidance for Institutional overhead taxes and implementation methodology continued to evolve through most of October, with final rates expected by mid-November.

During October, project scope, schedule, and budget guidance was issued that included necessary holdbacks for Laboratory LDRD-CAP, FY95/96 carryover for liens, and management reserve.

Detailed workplans, milestones, and cost estimates for FY95 activities were prepared, along with consistent (but less detailed) tasks, schedule, and estimates for the remainder of the project; this latter information will also be used as a basis for the MWMF Rebaseline. These estimates were and are being iterated to balance scope and budget for FY95 and to reflect current Institutional taxes and FY96 MWMF tasks; however, project priority is being given to supporting the DWTF BCP. Verbal guidance from DOE allowed the PB2 to be delayed beyond November 4, with the final date currently under discussion (see WBS 1.3.1). While we expect that the FY95 Plan will be sufficiently developed in time to provide FY95 input to DOE/EM Progress Tracking System (PTS) in mid-November, the final document with detailed milestones, cost profiles, final carryover, etc., is expected in late-November.

A preliminary version of the PB2 was required during October to establish major workscope and schedule guidance for FY95 and to initially respond to the DOE request for delivery of the PB2 by November 4. Due to the significant level of replanning (task breakout, time resolution, scope and cost revision) that was necessary to address the DWTF/MWMF integration, the Automated Estimating System (AES) could not be used to prepare the PB2 as originally planned. The planned use of the Business Planning System (BPS) for cost estimating, tracking, and reporting was discontinued due to FY95 budget constraints. Instead, Primavera (PV), a schedule package already in use by the Project with cost rollup capability, was used to develop budgets for FY95 and a

preliminary version of the PB2. PV will be supplemented by Excel spreadsheets to estimate, escalate, report, and manage project costs, but will require manual transfer of information and have reduced rollup and documentation.

The following significant tasks were accomplished during October:

- Completed baseline methodology for handling LLNL accounting changes in project estimates.
- Completed most work to prepare BPS for project cost estimating and management. Developed BPS input estimate sheets to reflect new LLNL accounting structure. Completed resource information, organization, and job/task levels. As a time- and cost-saving measure for FY95, it was decided not to implement BPS but instead to use PV for cost estimating and rollup.
- Completed work to prepare estimates in PV, including estimate forms and summary rollup sheets.
- Managed and integrated development of the FY95 Plan: developed cost and schedule guidance; rolled up proposed budgets; reviewed proposed tasks and budgets; prioritized FY95 work, based on available funds; tracked & implemented LLNL rate changes.
- Managed and integrated development of preliminary PB2, with activities similar to that for the FY95 Plan, but more strongly focused upon schedule issues that affect FY95 activities.
- Provided input for sections of FY95 Plan and preliminary PB2.
- Supported FY94 year-end closing activities.
- Prepared several project reports: PTS September Report, input for MWMF September Monthly Report.
- Addressed capitalization costing for MWMF with LLNL Finance Department and DOE/OAK. Some changes in OPEX/CENRTC costing for FY95 will result from the expected determination.
- Issued two QA Procedures: "Design Review" and "Document Control."

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											
Plan cumulative	42	82	119	158	195	240	277	320	363	402	447	486
Actual cumulative	44											
Current lien	0											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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)	Nov 94	In Progress
L132-1	Implement cost planning/tracking systems (document)	Dec 94	In Progress
L132-5	Issue Configuration Control System Document	Jan 95	
L132-6.1	Input to MWMF Project Management Plan (see L115-1)	Feb 95	
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:
- The DWTF/MWMF commonality assessment was updated with more clarifications.
- A Memorandum of Understanding was drafted defining the role of HWM services and MWMF water treatment.
- The DWTF rebaseline was supported by collecting data on exhaust systems, chilled water, LCW, power, vacuum, HVAC, and other facility requirements.
- The DWTF Rebaseline document was reviewed.
- A study of off-gas treatment systems was initiated.
- A MWMF draft Integrated Operating Plan (IOP) was distributed for final review.

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											
Plan cumulative	28	54	80	106	132	162	188	217	246	272	302	328
Actual cumulative	51											
Current lien	2											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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	In Progress
L133-2	Issue Integrated Operations Plan	Jan 95	In Progress
L133-3	Issue Title I System Design Requirements	Feb 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 continuation of a pilot characterization study of LLNL legacy wastes expected to be used in MWMF demonstrations. Evaluation of over thirty solid containers using real-time radiographic (RTR) scanning of the drum has been completed. The scanned drum information is in the form of still radiographs, approximately ten minutes of video, data sheets showing information from the requisition and notes and calculated inert object volumes. The video tape information will be transferred to optical disk for ease in playback and searching. About six drums a day can be processed in the RTR and the information obtained will be used to confirm selected equipment for RAS and SFP. Effort was provided for FY95 planning activities.
- Meetings with DWTF personnel continued to be pursued to minimize duplication of resources in the MWMF and DWTF.

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											

Plan cumulative	18	35	51	68	84	103	117	132	147	156	166	175
Actual cumulative	21											
Current lien	0											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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	In Progress
L141-1.2	Identify equipment and define floor plan	Mar 95	
L141-1.3	RAS LI&C System Functional Requirements Document complete	Jun 95	
L141-1.4	RAS LI&C System Preliminary Design review complete	Jul 95	
L141-1	RAS System Preliminary Design Review	Jul 95	

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

Summary of Monthly Activities:
- A detailed test plan to accomplish development issues that must be completed to support the Title I design effort was generated. Literature searches have been completed to validate the abilities of other companies to provide the required hardware and software required in this area. This report was completed the first week in October and provided the basis for the development plan.
- Work continued in potential layouts of equipment for the SFP areas, as well as in discussions with potential vendors of material handling equipment.
- Effort was provided for FY95 planning activities.
- Additional comments on the tritium handling strategy were received and are being incorporated. Important to the strategy is the use of the Tritium Legacy Waste system currently under development to perform as much precharacterization and sorting as possible, prior to receipt of materials in the MWMF for processing.

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											
Plan cumulative	95	186	272	363	450	554	641	741	841	877	918	954
Actual cumulative	83											
Current lien	21											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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	Dec 94	In progress
L142-1.3	Complete validation of characterization, isolation and segregation methods	Jan 95	
L142-1.5	Process Vision/Robline bilateral communication link demonstrated	Feb 95	
L142-1.4	Complete preliminary operator control station design	Mar 95	
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	SFP LI&C System Functional Requirements Document complete	Jun 95	
L142-1.9	SFP LI&C System Preliminary Design review complete	Jul 95	
L142-1	SFP System Preliminary Design Review	Jul 95	

WBS Element: 1.4.3 Liquids Feed Preparation

Task Description:
The principal objective of the Liquids Feed Preparation system is to provide for the receipt, characterization, preparation for processing, and handling of homogeneous and heterogeneous liquids and solids/liquids mixtures 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. Liquids Feed Preparation provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, installation of Liquids Feed Preparation equipment, Title III inspection, and acceptance test procedures (ATP). Liquids Feed Preparation includes both liquids feed preparation equipment and systems integration.

Summary of Monthly Activities:
Design, cost, and technical trade-off studies for LFP continue with equipment layout and sizing being compared to the system design requirements. In light of new DOE budget guidance, the FY95 Fiscal Plan and the Project Plan, both for LFP, were developed and submitted to the project office.

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											
Plan cumulative	38	74	108	144	178	219	253	293	333	351	372	390
Actual cumulative	37											
Current lien	0											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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
L143-1.1	Define surrogate feeds	Nov 94	In Progress
L143-1.2	LFP general arrangement plan finalized	Dec. 94	
L143-1.3	Complete validation of characterization and segregation methods	Mar 95	
L143-1.4	LI&C Functional Requirements Document complete	Jun 95	
L143-1.5	LI&C System Preliminary Design review	July 95	
L143-1	LFP System Preliminary Design Review	Jul 95	

WBS Element: 1.5.1. Mediated Electrochemical Oxidation

Task Description:
The principal objective of Mediated Electrochemical Oxidation (MEO) Systemis 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:
- We initiated tests on Silicon Carbide, Tungsten Carbide, Carbon and "John Crane" Chemical Grade Carbon to determine the ability of these materials to withstand exposure to Ag^{++}. These tests are still in progress at this time. These materials are common to virtually all standard mechanical shaft seals.
- A lab-scale fractionator has been set up and made operational in B161. Its purpose is to verify the purity of distilled water produced by the MEO Acid Recovery System. It is intended this water be able to meet sewer discharge standards without further treatment. At issue is the carryover of acid into the distillate if NO_X were to by-pass the packing. Operation with acid is expected to begin this coming month.
- We determined by experiment that Ag^{++} immediately decomposes by reaction with water at temperatures above 85°C in 10*M* nitric acid. This result verifies that the Acid Recovery System intended for the MWMF will not be required to be corrosion resistant to Ag^{++} at locations downstream of the flash evaporator. Such locations will still have to be resistant to boiling 10*M* nitric acid, however.

Design effort included the following:
1. Developed the FY95 plan, milestones and spending profile.
2. Continued development of the process control strategy and its P&ID drawings.

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											
Plan cumulative	79	177	271	384	486	577	658	731	804	877	950	1023
Actual cumulative	103											
Current lien	22											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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)	Dec 94	Writing Report
L151-1.4	Summarize silver recovery chemistry results to date (document)	Dec 94	Writing Report
L151-1.6	Report on NaOH-AgCl recovery (document)	Feb 95	In Progress
L151-1.7	Computer simulation of the combined MEO and Acid Recovery control systems (document)	Feb 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 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.

Summary of Monthly Activities:
Development activities:
- First set of vessel material samples are in a salt test at ETEC.
- Materials evaluation furnace design complete, parts ordered.
- Small Engineering Unit design started.

Preliminary design:
- Design Specification draft complete.
- FY-95 MSO planning complete.

FY95 Budget: Spending profiles ($2,428K, 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											
Plan cumulative	140	287	481	691	900	1096	1331	1552	1705	1907	2186	2428
Actual cumulative	139											
Current lien	3											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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	Dec 94	In Process
L152-2.3	Conduct Industrial Partner meeting	Dec 94	In Process
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 Project element provides the management, system analysis and support, design (Title I, II, III) engineering, procurement, and installation of the WOX equipment, Title III inspection, and acceptance test procedures (ATP) covering both equipment and system integration activities.

Summary of 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											
Plan cumulative	0	0	0	0	0	0	0	0	0	0	0	0
Actual cumulative	0											
Current lien	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 activitiy		

WBS Element: 1.5.4 UV Photolysis

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

Summary of 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											
Plan cumulative	0	0	0	0	0	0	0	0	0	0	0	0
Actual cumulative	0											
Current lien	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 the 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 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.

Summary of Monthly Activities:
The FY95 and Project Plans for XOGT were developed and submitted to the project office, as a result of new DOE budget guidance. The MWMF-scale advanced gas-liquid contactor for destruction of No_X with acidic urea is being designed. The common design and scale-up procedure for acidic urea $DeNO_X$ scrubbing and conversion of nitrous acid to nitric involving the use of advanced gas-liquid contactor is being documented and formally written.

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											
Plan cumulative	13	26	38	51	63	78	90	104	118	131	145	158
Actual cumulative	18											
Current lien	0											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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	Jan 95	In Process
L155-3.2	Initiate systematic catalysts testing	Jan 95	
L155-2.1	Initiate instrumentation and control system test	Feb 95	
L155-3.3	I&C Functional Requirements Document complete	May 95	
L155-1	Summarize Gas Liquid Contactor Tests (document)	Jun 95	
L155-3.4	LI&C System Preliminary Design review	Jun 95	
L155-3	XOG System Preliminary Design review	Jun 95	
L155-3.1	Summarize NO_X-urea chemistry to date (document)	Sep 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:
In support of the FY95 plan, the cost and schedule were reviewed and revised to be consistent with the revised scope. Milestones were established for the fiscal year. Several container interfaces that were purchased as part of the SIS program were collected for possible future MWMF use. An engineering development setup funded through another program was also discovered and acquired free of charge. The hardware may be adaptable to bagless transfer of materials between contaminated areas and is valued in excess of $100K. A vendor of special containment systems for hazardous materials visited LLNL and expressed the company's interest in adapting and applying its technology to the transfer and handling of mixed wastes. The interfaces, coupled with this vendor's equipment, may provide a good basis for the design of the material delivery system. The possibility of a CRADA to simplify the system and reduce the cost was discussed. There is potential for very large savings in both cost and waste generation across the DOE complex and industry by merging these two ideas.

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											
Plan cumulative	6	12	17	23	31	41	50	60	70	76	83	89
Actual cumulative	15											
Current lien	0											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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	
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:
- Initial off-gas monitoring analysis requirements for MSO have been identified.
- The floor plan for a combined MWMF/DWTF analytical laboratory has been designed.
- We are in the process of preparing a document that describes the minimum chemical analysis capabilitiy necessary within the MWMF/DWTF. This document will take into account equipment already purchased by the DWTF.
- A budget for FY95 and continuing on to the FY97/98 time frame (building occupancy) has been developed.
- The definition of analysis tests based upon process acceptance criteria has been partially completed; definition will be completed once process acceptance criteria have been finalized.
- A preliminary definition of the facility off-gas monitoring requirements has been done. Species to be monitored include CO, CO_2, SO_X, NO_X, and VOCs.
- We have reviewed two existing sample management databases in use at LLNL. One was developed entirely on site, while the other is a purchased system substantially modified to fit the desired use. Personnel support for the systems runs at a rate of approximately 1 FTE per 1000 "samples."

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											
Plan cumulative	10	19	28	37	46	57	66	76	86	95	122	140
Actual cumulative	19											
Current lien	0											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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
L162-2	Define analysis tests based on process acceptance criteria	Jan 95	Partial
L162-5	Define MSO on-line analysis requirements	Jan 95	In Progress
L162-3	Define facility off-gas monitoring requirements	Feb 95	Partial
L162-6	Define DWTF analysis requirements	Feb 95	
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	
L162-4	Define MEO on-line analysis requirements	Nov 95	

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.

Summary of Monthly Activities:
- Activity in this area was charged to WBS 1.1.5.4.10 *Treatment Process Support (Water)*, pending the decision on Title I scope decision for Water Treatment.
- The DOE letter authorizing Title I design for the 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 the MWMF. A draft of that report was completed that explicitly considered the co-location of the MWMF and DWTF, and that draft was forwarded to DOE/OAK for comment. DOE comments were received at the end of October.

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											
Plan cumulative	0	14	27	41	54	70	83	98	103	108	117	126
Actual cumulative	0											
Current lien	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	Dec 94	In Progress
L163-2	Memorandum of Understanding with HWM	Jan 95	In Progress
L163-3.1	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 ash residues, (2) polymer microencapsulation for salt, and (3) sulfur-polymer microencapsulation for volatile inorganic solids.

Summary of Monthly Activities:
- Considerable effort was devoted to revising Final Forms' plans.
- Relocation of the ceramics fabrication operations is complete.
- Recent electron microprobe analysis seemed to indicate (*cf.* 9/94) that a phase having the magnetoplumbite structure may form instead of spinel. Though not conclusive, re-examination of prior x-ray diffraction results indicate the phase is indeed spinel. Further microprobe and diffraction analysis is scheduled. It is not known at this time whether the formation of a magnetoplumbite phase would result in an inferior waste form.
- A ceramic formulation, based on our high-ash ceramic waste form, was designed for the immobilization of "MWIP 3111: Ash" (*cf.* 9/94). Specimens are being fabricated.
- Experiments on the vaporization of inorganic compounds during calcining and sintering, using the new equipment, are underway. Of particular interest are chloride (for its possible effect on our ceramics), silver (because of its use in MEO), and lead. Other elements are relatively unimportant, being only minimally present in our waste streams.
- Owing to reduced funding, experiments supporting Final Forms design of polyethylene microencapsulation of salt will be carried out only at Rocky Flats Plant, and at a reduced level: Only the minimum work necessary for the Preliminary Design will be undertaken.

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											
Plan cumulative	34	67	100	133	166	200	233	266	299	332	365	399
Actual cumulative	59											
Current lien	1											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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	Dec 94	In Progress
L164-2.1	Final Forms subsystem design status peer review	Feb 95	
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:
- Project planning activities have focused on developing PB2.
- System integration activities for the SCADA and FEP hardware and software continue. An unreliable Pentium processor (marginally operable at 66 MHz) has been replaced in one computer. Incompatibilities between the QNX operating system and the SCSI interface module, as well as interrupt conflicts between the SCSI interface and the ATI monitor interface, have been resolved. Activities are again proceeding in preparation for phase 2A and 2B testing (FEP/SCADA communications and SCADA/DBMS communications respectively). All configuration data and test results are documented.
- Initial testing of the FEP ICOM software has been accomplished via a serial link connection to a borrowed PLC5/40. We have also been successful in borrowing a single PLC5/40E processor, which will now allow testing via the Ethernet connection. As reported last month, our FEP PLC5/40E processors are not scheduled to be shipped by Allen-Bradley until November 11th. Consequently marker L165-1.9: *Engineering Development system operational* has been rescheduled for December. Similarly, marker L165-1.10: *Rapid prototype Engineering Development testing complete, report written* has been rescheduled for completion in January.
- The DBMS server has been set up, configured and preliminarily tested. Activities are now underway to install the Oracle software and associated system drivers.
- We developed a new control room and equipment room layout per the B695 floor plan. The control room is now configured with office furniture for process control and consoles for robot control.
- We continued investigative activities into digital CCTV.
- A Project documentation tree has been completed as part of the MWMF Information Retrieval System. Documents are accessed electronically via a Mosaic-based front-end user interface. Network communications have been configured to make the system accessible from office computers. The DBMS server (Facility Database Management System computer) is the host computer.

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											
Plan cumulative	50	144	204	247	287	325	373	411	449	489	526	571
Actual cumulative	70											
Current lien	37											

This month's "actual" includes an erroneous G&A charge, which will be subtracted in November.

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	Dec 94	In Progress
L165-1.10	Rapid prototype Engineering Development testing complete, report written	Jan 95	In Progress
L165-1.11	Integrated control system design peer review	Feb 95	
L165-2.1	Instrumentation and Equipment Database operational	Mar 95	
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

	MWMF Milestone / Marker Log			Sorted by number			For Oct 94 Report
	Number	Item	PTS	Orig. Date	Date	Status	Comments
	Doc. Resp. Person: M. De Micco, A. Throop (alt.); Rev. date: 12/15/94						
x = changes in this revision							
x	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
	D113-1	EA determination by DOE	X	Aug-94	Mar-95		EA draft submitted. Rev. due to MWMF/DWTF merge req'd.
	D115-1	DOE issue 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	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	
x	L112-1	PSAR to DOE for Review	X	Mar-94	Dec-94	In Progress	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
	L113-3	Submit RD&D permit application to DTSC	X	Jul-94	Jan-95	in progress	date changed to agree with extended project schedule
	L113-4	Submit revised EA to DOE (for MWMF/DWTF merge)	X		Dec-94	in progress	
	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	Project Management Plan (Final)	X		Jan-95		1 month after DOE Project Plan (D115-1)
	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	Nov-94	in progress	revised FY95 funding guidance rec'd 9/30/94
	L115-8	Technology Selection and Implementation Plan, Part II			Mar-95		
	L115-9	FY97 Project Validation			Apr-95		
	L116-1	First meeting of NAC	X	Mar-94	Feb-95	In Progress	delayed pending DOE confirmation of project scope/schedule
x	L116-1.1	National Advisory Council (NAC) formed			Dec-94	In Progress	
x	L116-2	Second meeting of NAC			Aug-95		
	L116-2.1	Issue first public newsletter			Mar-95		
	L116-2.2	Receive comments from NAC			Apr-95		
	L116-3.1	Issue second newsletter			Sep-95		
	L121-1	30% CDR Review			Dec-93	complete	
	L121-1.1	Initiate Point Design Reviews			Oct-93	complete	

	MWMF Milestone / Marker Log			Sorted by number			For Oct 94 Report
	Number	Item	PTS	Orig. Date	Date	Status	Comments
	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
x	L131-2	Input to FY95 Plan (see 115-7)	X	Sep-94	Nov-94	In Progress	revised FY95 funding guidance rec'd 9/30/94
	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		
x	L132-1	Implement Cost planning/tracking systems (document)		Sep-94	Dec-94	In Progress	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		
	L132-5	Issue Configuration Control System Document			Jan-95		
	L132-6.1	Input to MWMF Project Management Plan (see L115-1)			Feb-95		
	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	
x	L133-1.4	Input to FY95 Plan (see 115-7)			Nov-94	In Progress	
x	L133-2	Issue Integrated Operations Plan			Jan-95	In Progress	
x	L133-3	Issue Title I System Design Requirements			Feb-95	In Progress	
x	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	in progress	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	Dec-94	in progress	activity stretched-out due to reduced funding guidance
	L142-1.3	Complete validation of characterization, isolation, and segregation methods		Sep-94	Jan-95		date changed to agree with extended project schedule
	L142-1.4	Complete preliminary operator control station design			Mar-95		
	L142-1.5	Process Vision/Robline bilateral communication link demonstrated			Feb-95		
	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		

	MWMF Milestone / Marker Log			Sorted by number			For Oct 94 Report
	Number	Item	PTS	Orig. Date	Date	Status	Comments
	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	in progress	date changed to agree with extended project schedule
	L143-1.2	LFP general arrangement plan finalized		Jul-94	Dec-94		date changed to agree with extended project schedule
	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	Dec-94	writing report	activity stretched-out due to reduced funding guidance
	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	
	L151-1.4	Summarize silver recovery chemistry results to date (document)		Sep-94	Dec-94	writing report	activity stretched-out due to reduced funding guidance
	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	In progress	
x	L151-1.7	Computer simulation of the combined MEO and Acid Recovery control systems (document)			Feb-95	In progress	
	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	Dec-94	In progress	activity stretched-out due to reduced funding guidance
x	L152-2.3	Conduct Industrial Partner meeting		Jul-94	Dec-94	In progress	delayed due to funding limitations per DOE guidance
	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	
x	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		
	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

	MWMF Milestone / Marker Log			Sorted by number			For Oct 94 Report
	Number	Item	PTS	Orig. Date	Date	Status	Comments
	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	In progress	
	L155-1.1	Fab prototype gas-liquid contactor for acidic urea NOx destruction		Jun-94	Jan-95	in progress	delayed due to DOE stretchout & peer review action item(s)
	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		delayed due to DOE stretchout & peer review action item(s)
	L155-3	XOG System Preliminary Design Review		Sep-94	Jun-95		PDR delayed due to funding limitations per DOE guidance
	L155-3.1	Summarize NOx-urea chemistry to date (document)			Sep-95		
	L155-3.2	Initiate systematic catalysts testing			Jan-95		
	L155-3.3	LI&C Functional Requirements Document complete			May-95		
	L155-3.4	LI&C Preliminary Design complete			Jun-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	Jan-95	partial	date changed to agree with extended project schedule
	L162-3	Define facility off-gas monitoring requirements		Sep-94	Feb-95	partial	date changed to agree with extended project schedule
	L162-4	Define MEO on-line analysis requirements			Nov-95		
x	L162-5	Define MSO on-line analysis requirements			Jan-95	In progress	
	L162-6	Define DWTF analysis requirements			Feb-95		
	L162-7	Analytical Lab System Preliminary Design review			Aug-95		
	L162-7.1	LI&C Functional Requirements Document complete			Jul-95		
	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	In progress	
x	L163-2	Memorandum of Understanding with HWM			Jan-95	In progress	
	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		

	MWMF Milestone / Marker Log			Sorted by number			For Oct 94 Report
	Number	Item	PTS	Orig. Date	Date	Status	Comments
	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	Dec-94	In progress	date changed to agree with extended project schedule
	L164-2	Final Forms System Preliminary Design Review			Jun-95		
	L164-2.1	Final Forms subsystem design status peer review			Feb-95		
	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	In progress	
	L165-1.11	Integrated control system design peer review			Feb-95		
	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	in progress	
	L165-2.1	Instrumentation and Equipment Database operational			Mar-95		
	L165-2.2	Process I&C Standards established			Sep-95		
	end						