Los Alamos
Waste Management
FY96 and FY97
Tactical Plan

Cost-Effective, Compliant
Management of the
Minimum Amount
of Waste

March 1996

Los Alamos

Los Alamos Waste Management

FY96 and FY97 Tactical Plan

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Waste Management Program Office

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Executive Summary

**Los Alamos National Laboratory
Waste Management Program
Tactical Plan**

EXECUTIVE SUMMARY

The Los Alamos National Laboratory (LANL) Waste Management Program (WMP) began a transition to become a "best of class" waste management program during fiscal year 1995 (FY95). A best of class waste management program means that LANL will provide cost-effective and compliant management of the minimum amount of waste.

In FY94, the WMP could be characterized as a level of effort program requiring several new facilities and new LANL-developed technologies to carry out its waste management responsibilities. By the end of FY95, significant progress had been made in the transition to best of class.

The FY96 WMP is realigned and reorganized. Its budget and scope of work are built upon discrete work packages. It is committed to achieving improved cost-effectiveness, providing significant tangible technical results, and to having its performance measured. During FY95, over \$11,000,000 in facility and operational costs were avoided. The need for three new major facilities was reexamined and lower cost solutions, not requiring the development of new facilities, were agreed to. Technology development activities were terminated and replaced with the use of commercial facilities to achieve aggressive reductions in the Low-Level Mixed Waste legacy inventory. In addition, over \$14,000,000 in improved cost-effectiveness has been included in the FY96 Baseline.

An overall WMP vision, specific milestones, performance measures, and commitments are in place for FY96 to ensure that LANL continues the transition to a best of class waste management program. The following table identifies the overall vision and success indicators for FY96.

Overall Vision	FY96 Success Indicator
Cost-Effective Operations	
LANL is a best of class waste management program as determined by benchmarking and process improvement studies.	Costs to perform FY96 work have been reduced by at least 6%.
Elimination of Legacy Waste	
LLMW By 9/01, <ul style="list-style-type: none">• the 10/95 Site Treatment Plan (STP) inventory (~600 m³) has been eliminated;• newly generated waste has been disposed of within a year of being produced; and• the STP is no longer applicable.	New Mexico Environment Department (NMED)-approved sludge has been disposed of and the 10/95 STP inventory, other than sludge, has been reduced by at least 19%.

Overall Vision	FY96 Success Indicator
Elimination of Legacy Waste (cont)	
<p>TRU By 4/98,</p> <ul style="list-style-type: none"> • at least 3,000 drums of TRU waste is certified and LANL has the full capability to load the waste for shipment to the Waste Isolation Pilot Plant (WIPP); • a schedule for shipment of all LANL TRU to WIPP in 10 to 15 years exists and is being implemented; • generators certify waste for disposal; and • only WIPP-certifiable TRU waste is being generated. 	At least 500 waste package certification determinations have been completed.
Uninterrupted Compliant Mission Services	
WMP supports LANL missions and programs through cost-effective and compliant management of the waste that is generated.	WMP services fully support the accomplishment of LANL's missions.
Manage the Minimum Amount of Waste	
<ul style="list-style-type: none"> • LANL is focused on generator waste minimization rather than "end-of-pipe" waste management and • generators embrace and financially support waste minimization practices in all activities so that the minimum amount of waste is released to the environment. 	The amount of material recycled has increased over FY95 amounts and generation of waste has been avoided through specific waste minimization implementation projects.
Effective Management	
The Waste Management Program Office (WMPO) has driven and is maintaining the program as best of class.	WMPO directs program improvements as information to support changes becomes available through benchmarking, process improvement, etc.
DOE and Stakeholder Confidence	
Stakeholders are engaged in decision-making activities.	Customers and stakeholders report adequate performance improvements and improved credibility.

Chapter 1

Introduction

1.0 INTRODUCTION

The Los Alamos National Laboratory (LANL) Waste Management Program (WMP) is committed to becoming a "best of class" waste management program and is in transition to this end. The characteristics of a best of class waste management program have been identified by the WMP working in concert with the Department of Energy (DOE). This Tactical Plan has been developed to show how the WMP will achieve these characteristics.

The Tactical Plan is a concise presentation of the major activities that directly contribute to the WMP achieving a best of class status. It is not a comprehensive listing of all of the planned activities in the WMP. The activities included in this plan represent those unique activities that are related to the achievement of best of class. In the aggregate, they chart a course of action and identify measurable milestones. Taken as a whole, the plan represents a fundamental change in the way the WMP does business. The Tactical Plan has been developed and is provided so that the DOE can use it to measure our progress and our ability to meet our commitments.

This plan identifies the overall strategic objectives for the WMP. It presents the planned activities and their related milestones and relates the activities to the overall strategic objectives. Section 2.0 contains a brief background statement about the WMP. Section 3.0 describes recent successes in transitioning towards best of class and lists the strategic objectives for the WMP. The tactical activities being conducted to achieve the best of class status and the relationship of these activities to the strategic objectives are also presented in this section.

Chapter 2

Background

2.0 BACKGROUND

The LANL WMP manages Hazardous and Toxic Waste (Chemical Waste), Low-Level Waste (LLW), Low-Level Mixed Waste (LLMW), Radioactive liquid Waste, and Transuranic (TRU) and Mixed TRU Waste. The WMP also implements a waste minimization program for these five types of wastes plus industrial waste.

The WMP provides services and facilities to manage wastes generated by ongoing LANL programs and operational facilities and by environmental restoration and facility decommissioning and decontamination activities. The wastes generated by these activities are "mission wastes" and the WMP provides "mission services" to treat or dispose, or when necessary, store these wastes. The WMP also conducts activities to reduce the amount of "legacy waste" that is in storage. Legacy waste is waste that must be placed in storage because, at the time of generation, there were no approved treatment or disposal methods available. The past annual generation rates and the amounts of legacy waste in storage as of the beginning of FY96 are as follows.

Waste Type	Amount Generated During FY95	Legacy Inventory in Storage
Chemical	1,156 metric tons	none
LLW	3,828 m ³	none
LLMW	96 m ³	870 m ³
Radioactive liquid	21,000,000 L	none
TRU & Mixed TRU	73 m ³	12,700 m ³

The Waste Management Program Office (WMPO) is responsible for managing a compliant and cost-effective program. The WMPO makes use of several line organizations for the execution of program activities and the safe operation of waste management facilities. The facilities (located at technical areas 50 and 54 [TA-50 and TA-54]) essential to the safe and compliant management of waste at LANL are in the following table.

Waste Type	Facility	Service Provided/Operations Conducted
Chemical	TA-54, Area L	• Accumulation, repackaging, and shipment
	TA-54, Area J	• Disposal and staging for shipment
LLW	TA-54, Area G	• Compaction and disposal
LLMW	TA-54, Areas L and G	• Storage, preparation, and shipment off site
Radioactive liquid	TA-50, Bldg. 1	• Treatment and solidification
TRU and Mixed TRU	TA-54, Area G and West	• Storage, retrieval, characterization/ certification, shipment off site
	TA-50 Bldg. 69	• Characterization, size reduction, and certification

The FY96 and FY97 WMP budgets are \$61,200,000 and \$55,044,000, respectively. The basis for the activities presented in this plan are within the accepted FY96 Baseline and the anticipated FY97 scope of work.

Chapter 3

Transitioning to Best of Class Waste Management

3.0 TRANSITIONING TO A BEST OF CLASS WASTE MANAGEMENT PROGRAM

In mid-FY95, LANL started efforts to transition to a best of class waste management program. This means that LANL will provide cost-effective, compliant management of the minimum amount of waste. A three-part strategy for the transition was developed and continues to be followed. The parts of the strategy are to

1. identify and make immediate improvements upon which to start the transition;
2. apply new techniques or tactics to identify additional near-term improvements; and
3. develop strategic objectives and develop and execute plans to achieve and maintain a best of class waste management program.

3.1 Immediate Improvements

By the end of FY95, significant progress had been made toward achieving best of class status, including

- reorganizing to eliminate duplicative functions, organizations, and personnel—resulting in a 19% staff reduction;
- defining key management roles, responsibilities, and relationships;
- identifying the “base” waste management program;
- prioritizing all WMP activities;
- renewing our commitment to and vigorous application of business techniques to planning, executing, tracking, and reporting program activities;
- committing to producing tangible results; and
- revising the DOE/LANL basis for measuring the WMP’s performance (University of California [UC], Appendix F, performance measures).

3.2 Additional Near-Term Improvements

Starting in the third quarter of FY95, concerted and focused efforts were made by both LANL and DOE to identify improvements which would contribute to achieving best of class status. LANL’s activities included

- a management commitment to run the WMP in a business-like manner;
- individual group leader, project leader, and facility manager initiatives to reduce costs;
- a conduct of productivity improvement assessment on all the programmatic and operational elements of waste management; and
- replacement of new facility development activities with lower cost solutions, not requiring the development of new facilities

DOE's efforts included

- conducting an Independent Technical Review of the WMP;
- participating in the LANL reassessment of new facility needs; and
- guiding and encouraging the execution of LANL's improvement efforts.

These efforts both contributed to the immediate changes listed above and identified additional opportunities for improvement. These additional opportunities included

- task order contracts managed by the WMPO;
- optimized use of commercial and other DOE capabilities to avoid facility development costs; and
- increased cost-effectiveness in facility operations.

By the end of FY95, the facility development needs had been totally revised resulting in a total cost avoidance of over \$8,000,000. Improved operating efficiencies produced avoided costs totaling over \$2,900,000 in FY95. These FY95 avoided costs and cost efficiencies resulted in a reduced FY96 Baseline, including over \$14,000,000 in improved cost effectiveness. Additional activities to improve cost effectiveness, such as the streamlining of the waste management information management system and benchmarking of specific waste management operations, continue in FY96.

3.3 Objectives and Plans for Attaining and Maintaining Best of Class Status

The mission for the WMP is to aggressively avoid new waste generation and responsibly manage legacy waste by cost-effectively treating or disposing, and when necessary, storing waste in a safe manner. This mission must be achieved without compromising the DOE's and LANL's missions, programs, or priorities. With the WMP mission clearly understood, objectives defining best of class and plans to attain these objectives were developed.

Objectives and Success Indicators

The goal of the WMP is to provide cost-effective and compliant management of the minimum amount of waste. Within the framework of the DOE Environmental Management Strategic Goals, LANL defined specific strategic objectives.

DOE Strategic Goal for Environmental Management	LANL WMP Objective
Establish a system that is managerially and financially in control.	Cost-Effective Operations: The WMP provides the services and operates the facilities required to support LANL's missions and DOE's goals at a life-cycle cost comparable to the lowest commercial sector's life-cycle cost for similar waste management services and operations.
Demonstrate tangible results.	<p>Elimination of Legacy Waste: Inventory of legacy waste is eliminated and partnerships with generators ensure that WMP services and facilities are capable and available to treat and dispose of all future waste at the time it is generated.</p> <p>Uninterrupted Compliant Mission Services: Services and facilities required to support Laboratory activities are provided in a timely and customer-focused manner.</p> <p>Manage the Minimum Amount of Waste: Partnerships with Laboratory programs and facilities established to avoid the generation of waste and minimize the volume of waste that must be generated.</p> <p>Effective Management: The WMP plans, executes, tracks, and reports its activities in a manner that demonstrates managerial and financial control.</p>
Establish strong partnerships between DOE and its stakeholders.	DOE and Stakeholder Confidence: Stakeholder concerns are considered, the DOE is involved in decision making, and both are confident that the WMP will meet its commitments.

Success indicators were developed to ensure that the strategic objectives are obtained in a timely and cost-effective manner. The strategic objectives and the associated overall FY96 and FY97 success indicators are as follows (indicators in italic type agree with Appendix F, UC performance measures).

Cost-Effective Operations

Overall Vision	FY96 Success Indicator	FY97 Success Indicator
LANL is a best of class waste management program as determined by benchmarking and process improvement studies.	<ul style="list-style-type: none"> Costs to perform FY96 work are reduced by at least 6%. Benchmarking or process improvements are applied to at least two program elements (e.g., Chemical Waste Operations or LLW Disposal). Closure of the Controlled Air Incinerator is complete. LANL/DOE reach agreement on base program costs and waste to cost relationships. 	<ul style="list-style-type: none"> Costs to perform FY97 work are reduced by at least 3%. Benchmarking or process improvements are applied to all program elements. FY96-identified improvements are implemented and improved cost-effectiveness are included in the FY98 Baseline. WMP is fully supporting DOE indirect-cost comparability efforts. WMP-directed investment of productivity savings to achieve long-range waste minimization and environmental stewardship is accomplished.

Elimination of Legacy Waste

Overall Vision	FY96 Success Indicator	FY97 Success Indicator
<p>LLMW By Sept. 2001,</p> <ul style="list-style-type: none"> the 10/95 Site Treatment Plan (STP) inventory (~600 m³) has been eliminated; newly generated waste is disposed of within a year of being produced; and the STP is no longer applicable. 	<ul style="list-style-type: none"> Sludge approved by New Mexico Environmental Department (NMED) for administrative removal is disposed of, potentially reducing the inventory by ~42% of the 10/95 STP inventory. <i>The 10/95 STP inventory, other than sludge, is reduced by at least 19%.</i> 61% of 10/95 STP inventory is characterized. 	<ul style="list-style-type: none"> The remaining 10/95 STP inventory is reduced by at least 20%. 80% of 10/95 STP inventory is characterized. WMP and generator partnerships are established and the responsibility for characterizing newly generated waste for treatment and disposal is shifted to the generators.
<p>TRU By Apr. 1998,</p> <ul style="list-style-type: none"> at least 3,000 drums of TRU is certified and LANL has the full capability to load waste for shipment to the Waste Isolation Pilot Plant (WIPP); a schedule for shipment of all LANL TRU to WIPP in 10 to 15 years exists and is being implemented; generators certify waste for disposal; and only WIPP certifiable TRU waste is being generated. 	<ul style="list-style-type: none"> TRU Certification Plan is submitted for approval. <i>At least 500 waste package certification determinations are complete.</i> Pad 1 retrieval operations are started. Accelerated work-off plan is developed. TRU to LLW decontamination capability for waste in storage at TA-54 is developed. 	<ul style="list-style-type: none"> 500 to 1,500 waste package certification determinations are complete. LANL TRUPACT-II loading facility is outfitted. TRU to LLW decontamination for waste in storage at TA-54 is operational. Accelerated work-off plan is implemented.

Uninterrupted Compliant Mission Services

Overall Vision	FY96 Success Indicator	FY97 Success Indicator
WMP supports LANL missions and programs through cost-effective and compliant management of the waste generated.	<ul style="list-style-type: none"> WMP services fully support the accomplishment of LANL's missions. Noncompliances, incidents, or accidents are as low as or less than in the previous year. Regulatory requirements and terms of compliance orders and agreements are met. Installation of new radioactive liquid waste treatment technology to meet derived concentration guides (DCGs) is started. Pre-1988 LLW inventory is addressed in Area G Disposal Facility Performance Assessment (PA). 	<ul style="list-style-type: none"> New radioactive liquid waste treatment technology to DCGs is on line and operational. Final Area G Disposal Facility PA is submitted. LLW disposal capacity is extended through at least 2000.

Manage the Minimum Amount of Waste

Overall Vision	FY96 Success Indicator	FY97 Success Indicator
<ul style="list-style-type: none"> LANL is focused on generator waste minimization rather than "end-of-pipe" waste management and generators embrace and financially support waste minimization practices in all activities so that the minimum amount of waste is released to the environment. 	<ul style="list-style-type: none"> Increase over FY95 the amount of material recycled by at least 5%. Avoid through specific waste minimization implementation projects at least 5 m³ TRU, 380 m³ LLW, 50,000 kg Resource Conservation and Recovery Act (RCRA) waste, and 350 metric tons industrial. Segregation and release program is successfully demonstrated. Comprehensive return on investment (ROI) and Environmental Stewardship strategy for all types of waste is developed. A closed-loop recycle process is implemented at SIGMA facility. Identify and fund, using set aside program funding, cost-effective generator waste minimization implementation projects. 	<ul style="list-style-type: none"> Increase over FY96, the amount of material recycled by at least 5%. Waste minimization is required as part of all upgrade and new facility or process planning. Segregation and release program is operational at one or more facilities. Avoided waste identified and committed to as each ROI or Environmental Stewardship project is funded. Generators' operational vulnerabilities related to waste management are identified and addressed through stewardship projects.

Effective Management

Overall Vision	FY96 Success Indicator	FY97 Success Indicator
The WMPO has driven and is maintaining the program as best of class.	<ul style="list-style-type: none"> WMPO directs program improvements as information to support changes becomes available through benchmarking, process improvement, etc. Budget request is on time, conforms to guidance, and requires minimal revision. End year uncosted obligations are 8% or less of available funds. Quarterly cost variance for all quarters is less than ±10%. 	

DOE and Stakeholder Confidence

Overall Vision	FY96 Success Indicator	FY97 Success Indicator
Stakeholders are engaged in decision-making activities.	<ul style="list-style-type: none"> Customers and stakeholders report adequate performance improvements and improved credibility. 	

3.4 Tracking and Reporting Progress to Best of Class Status

Each of the success indicators for FY96 and FY97 are supported by identified activities, the accomplishment of which will contribute to attaining the success indicator. For each of the 40-plus activities identified as supporting the success indicators, a scope, schedule, and deliverables or end points are defined. The progress will be tracked and performance measured based on the degree to which the defined activities are completed or accomplished. Once all of the defined activities related to a success indicator are completed, that success has been attained.

Established management reports and meetings will be used to report on the progress to achieve the success indicators, the overall waste management vision, and a best of class waste management program status. LANL's progress to attain each success indicator will be reported in both the monthly Performance Tracking System and the quarterly Program Controls System reports. Performance will also be reported as part of the monthly DOE Los Alamos Area Office, DOE Albuquerque Operations Office, and LANL WMP and Environmental Management review meetings. Significant progress or results will be reported during each monthly meeting. Progress made in achieving best of class status will be a specific agenda item for every other monthly review meeting.