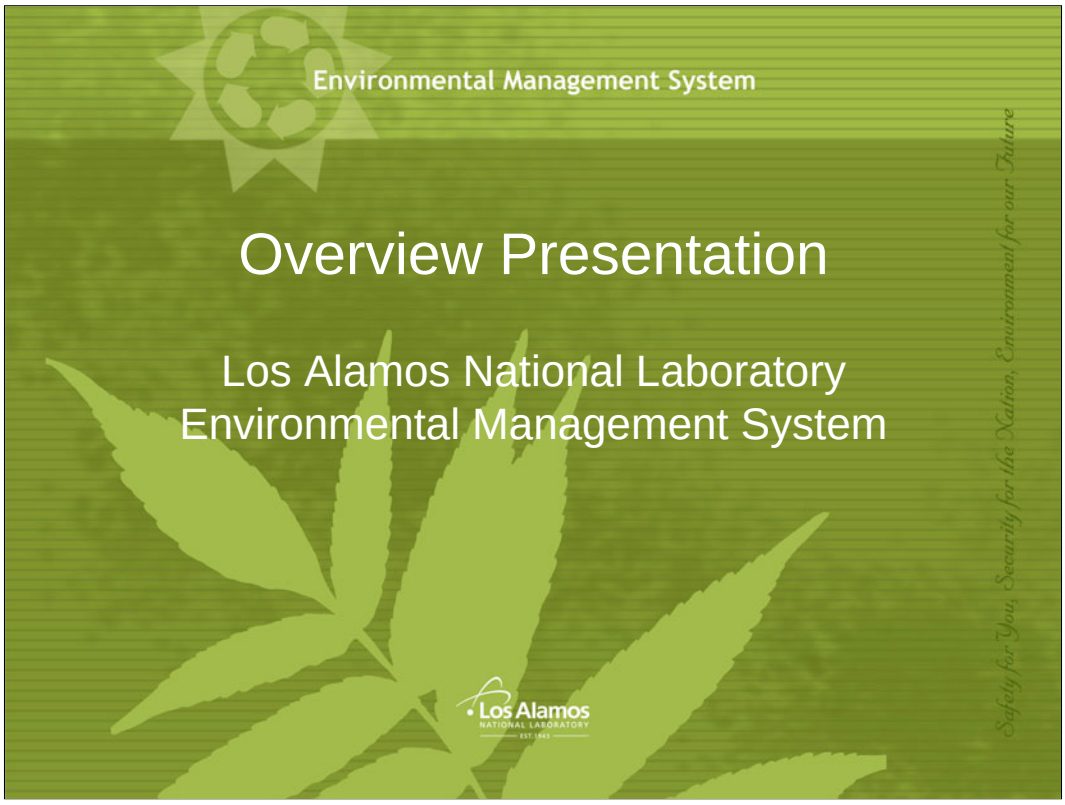
Environmental Management System
Overview Presentation
Los Alamos National Laboratory
Environmental Management System
Los Alamos
NATIONAL LABORATORY
Safety for You, Security for the Nation, Environment for our Future

ems

EMS Overview

- Why an EMS for LANL?
- Organization and Structure
- EMS Toolkit Implementation
- Management Review Process
- Continuous Improvement Project Approach

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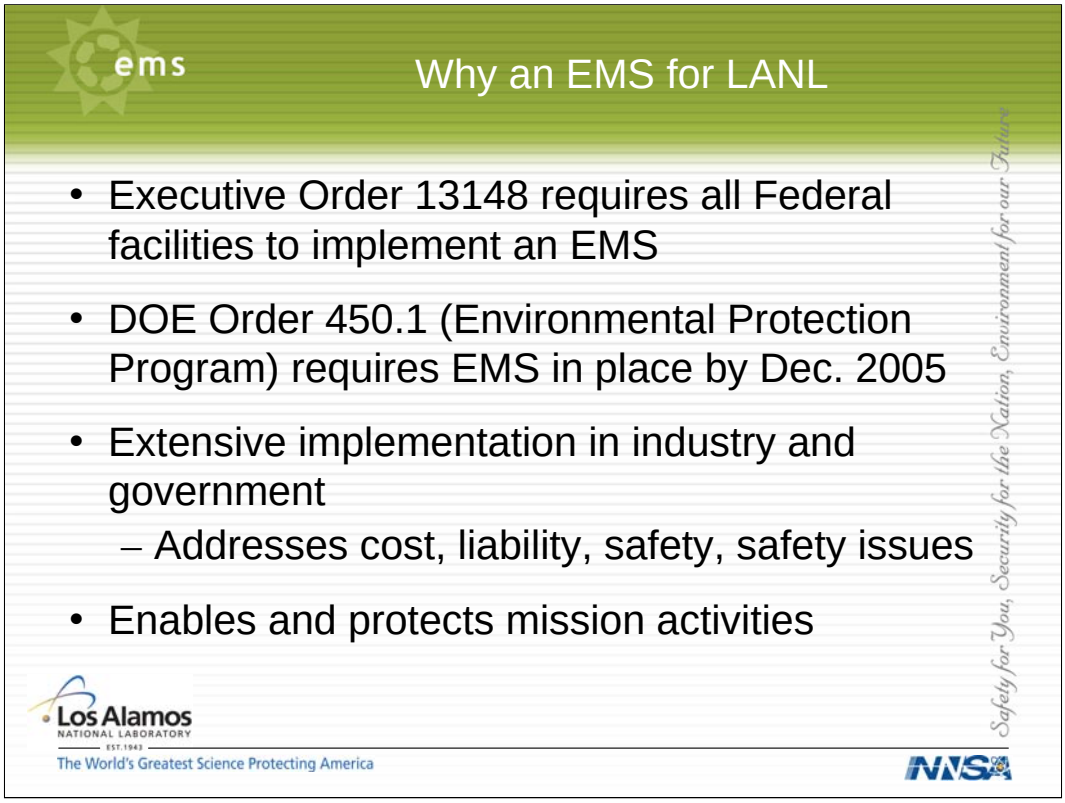
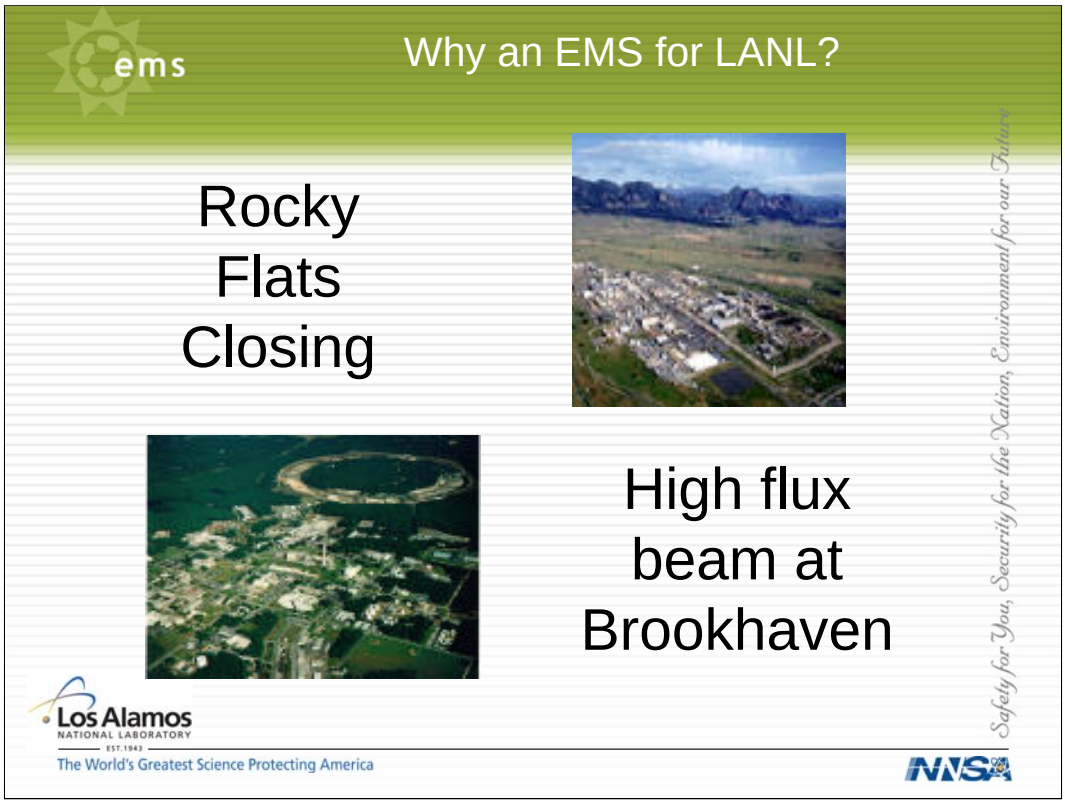


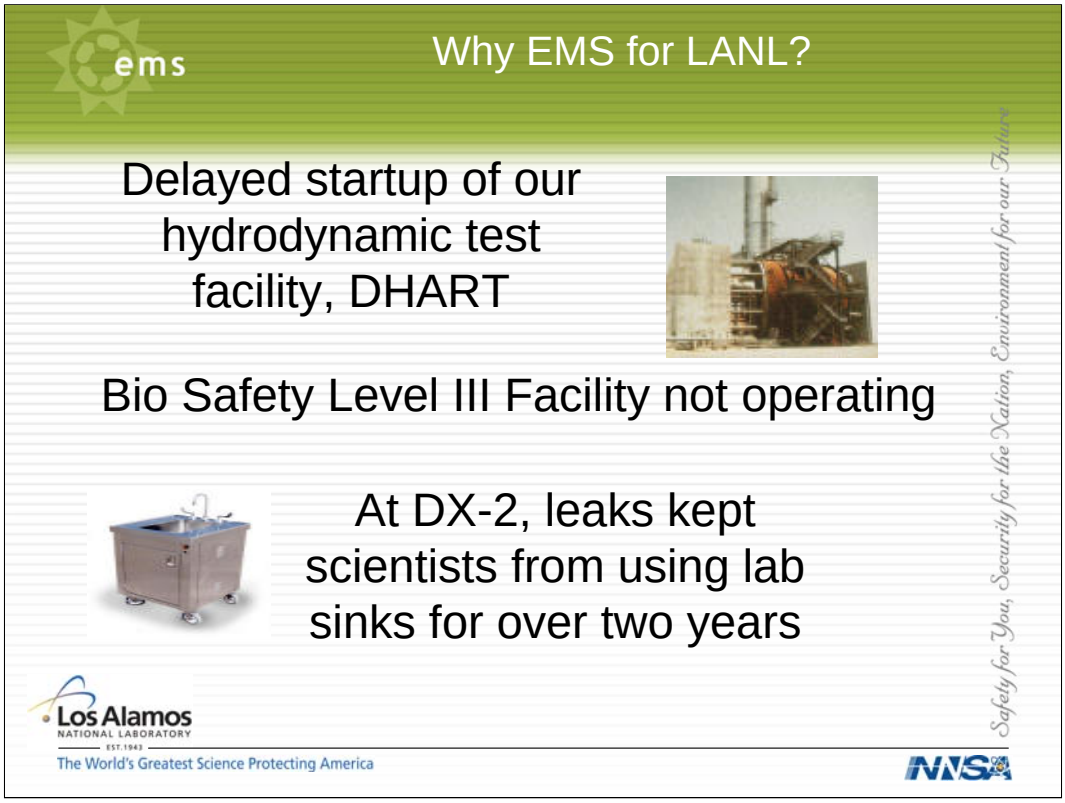
There are a lot of orders and requirements for an EMS but the main reason LANL chose to implement a very comprehensive EMS was to reduce environmental liabilities to mission programs.

There is no shortage of examples



For example,

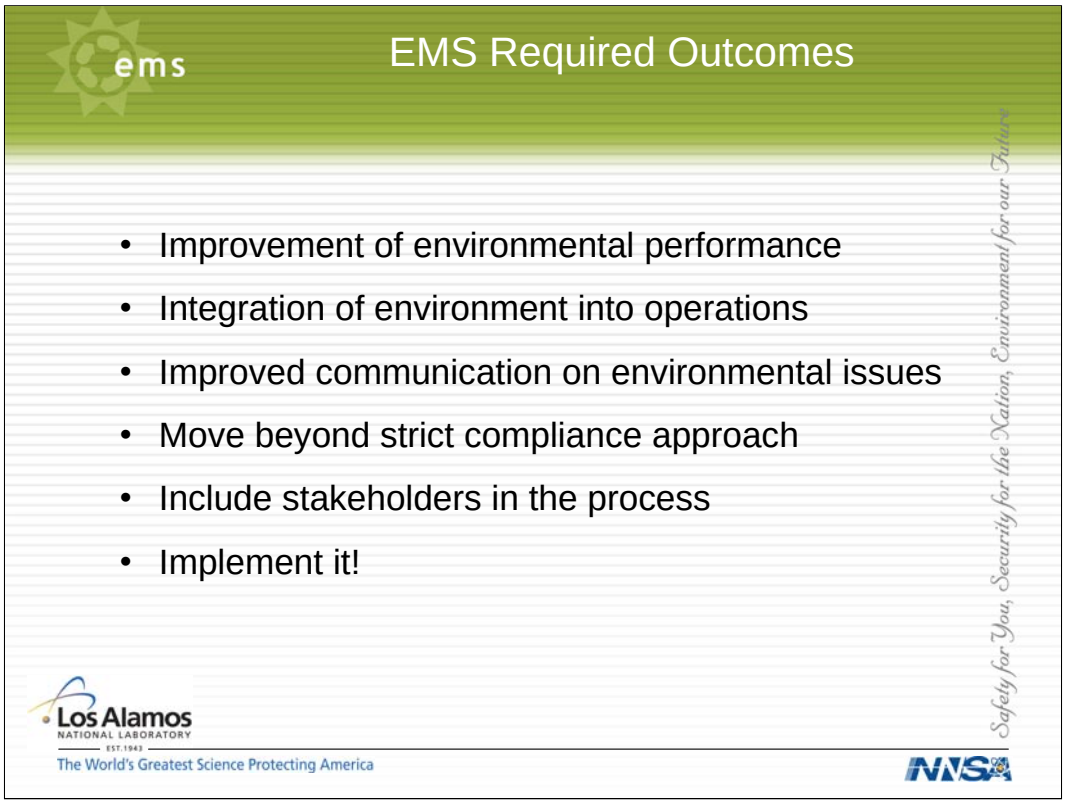
The closing of Rocky Flats and the high flux beam facility at Brookhaven were both based on environmental issues.



At Los Alamos, environmental issues delayed the startup of our hydrodynamic test facility costing over $10 M in delay fees

Our BioSafety Level 3 lab is still not operating, suffering over two years of delays over environmental impact statements

And, repairing leaking wastes lines and the process of setting up new high explosive wastewater tanks at DX-2 kept scientists from using their lab sinks for over two years.



Lab management chartered an Environmental Management System team with the following requirements

LANL EMS Approach

- Implemented as part of work by all workers
  - EMS Core Team provides framework, procedures and technical assistance.
- Engage Divisions from beginning
  - 43 people, 15 Divisions on initial team
  - ISO 14001 certification training for Core Team
  - ISO 14001 Audit training for Core Team
- Listen to and incorporate feedback
- Benchmark
  - INEEL, SRS, Honeywell Kansas City contributed
- Use the LANL culture

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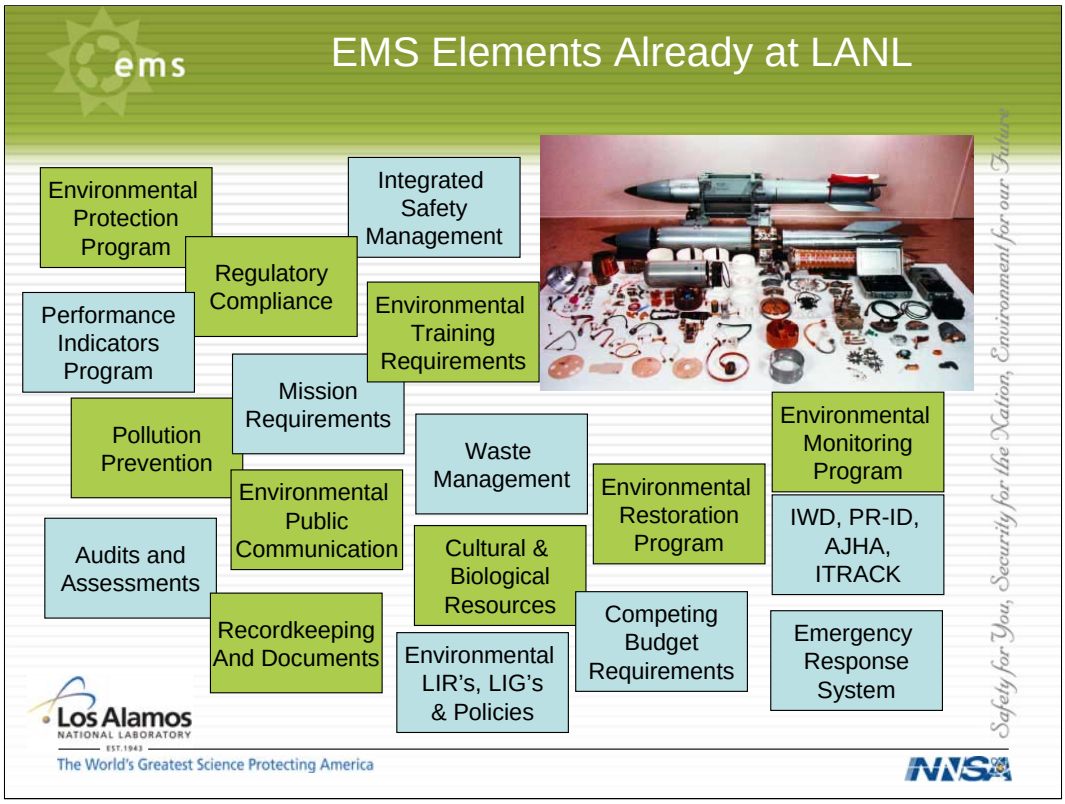
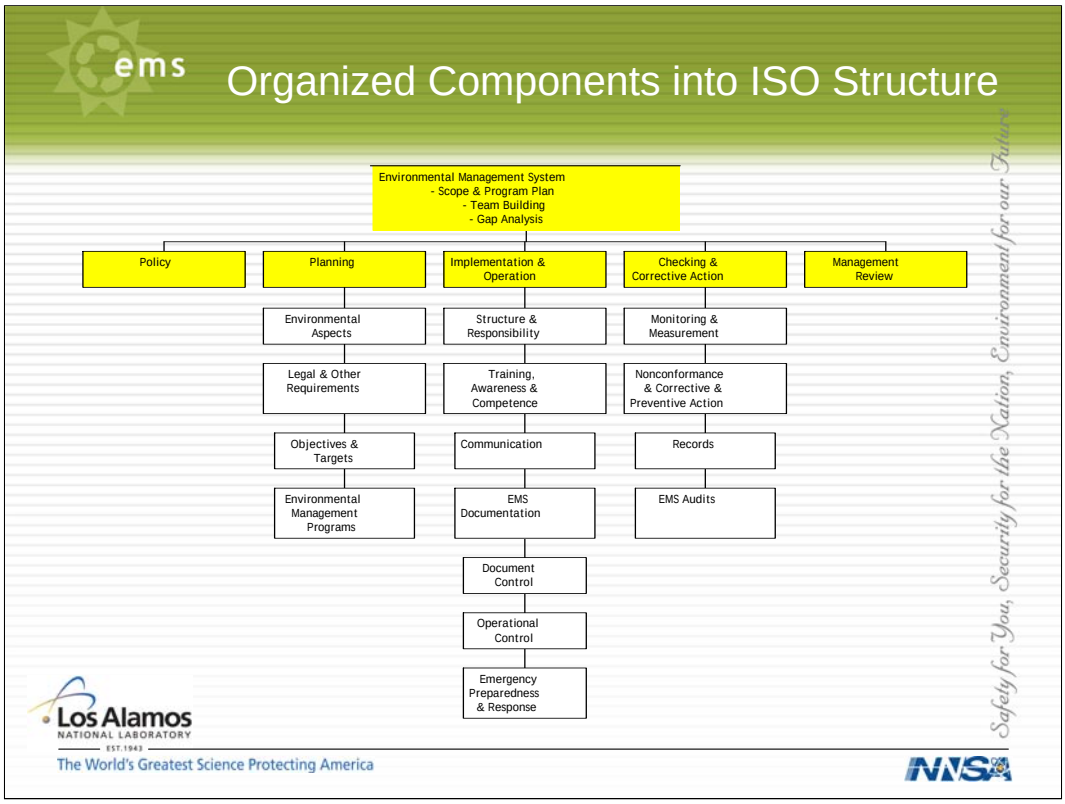
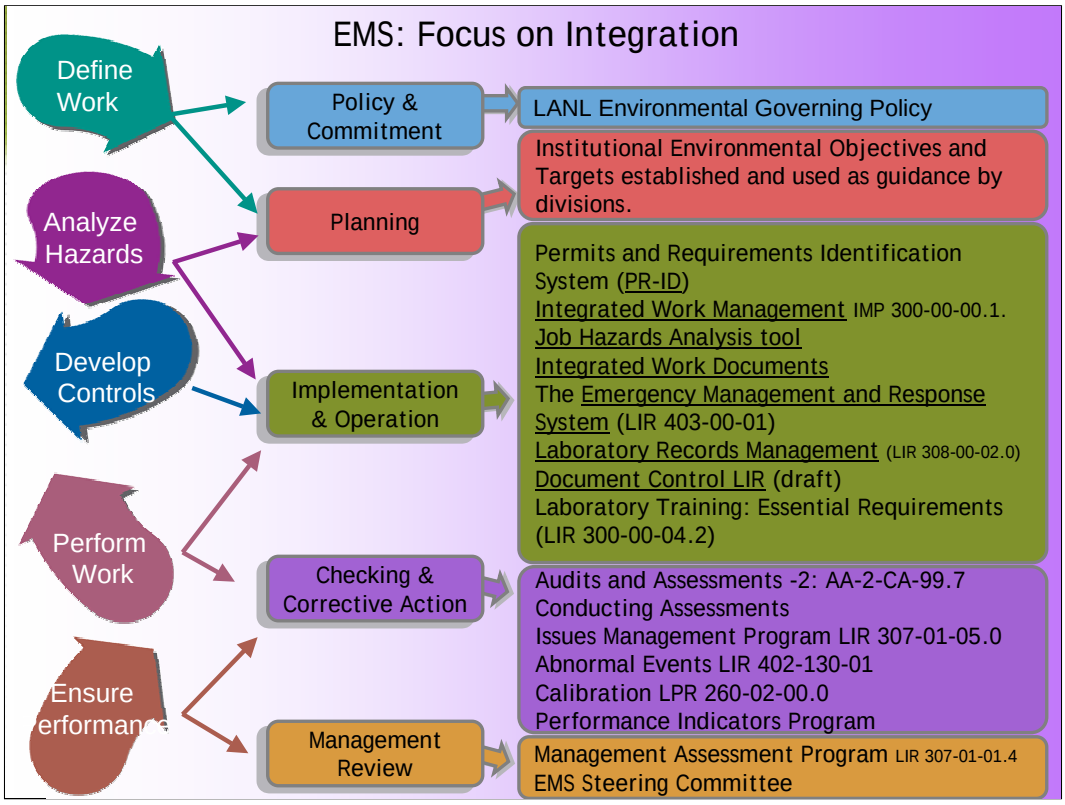


We had many components of an environmental management system at Los Alamos but as the picture illustrates, having the components doesn't mean that they work together as a system.

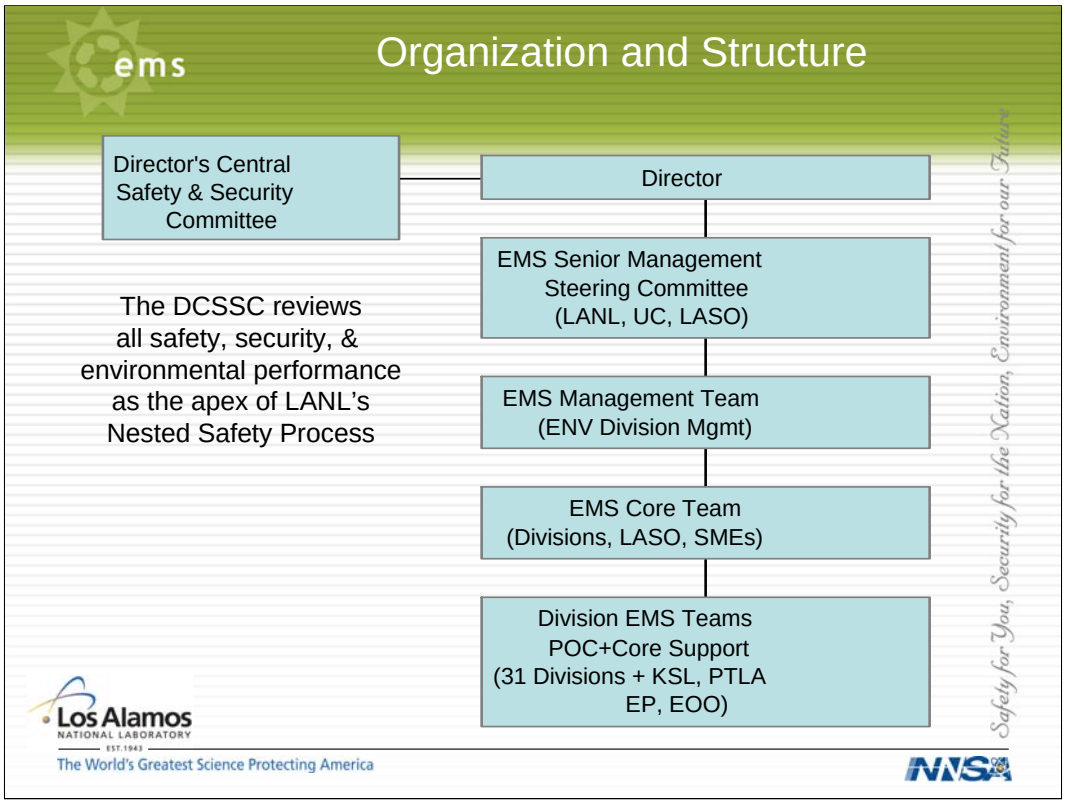


The Structure of the ISO 14001 EMS simply coordinates all of those required components into a system that is repeatable and continuously improves.



An initial step was to match EMS and ISO requirements to existing ISM systems and use them where ever possible.

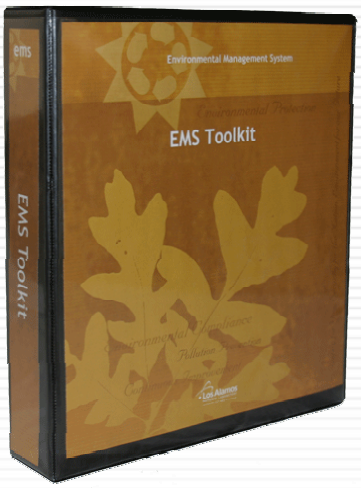
This reduced redundancy and created ties between these systems



The organizational structure of the LANL EMS relied on teams built from the working level up but with strong management involvement.

ems

Essential Tools



Toolkit as a formative approach to system design

- Target Audience
  - Division EMS Points of Contact
- Purpose
  - To make deployment easy by providing the recipe and tools
- Full review of process scheduled during this audit

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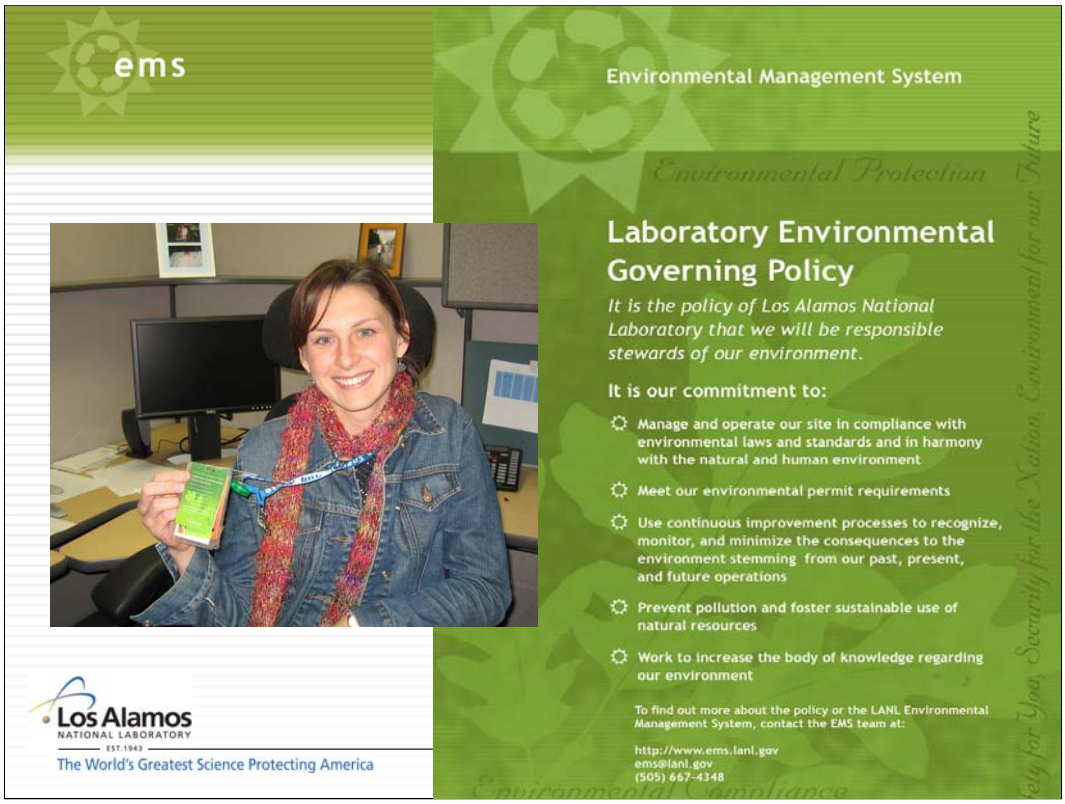
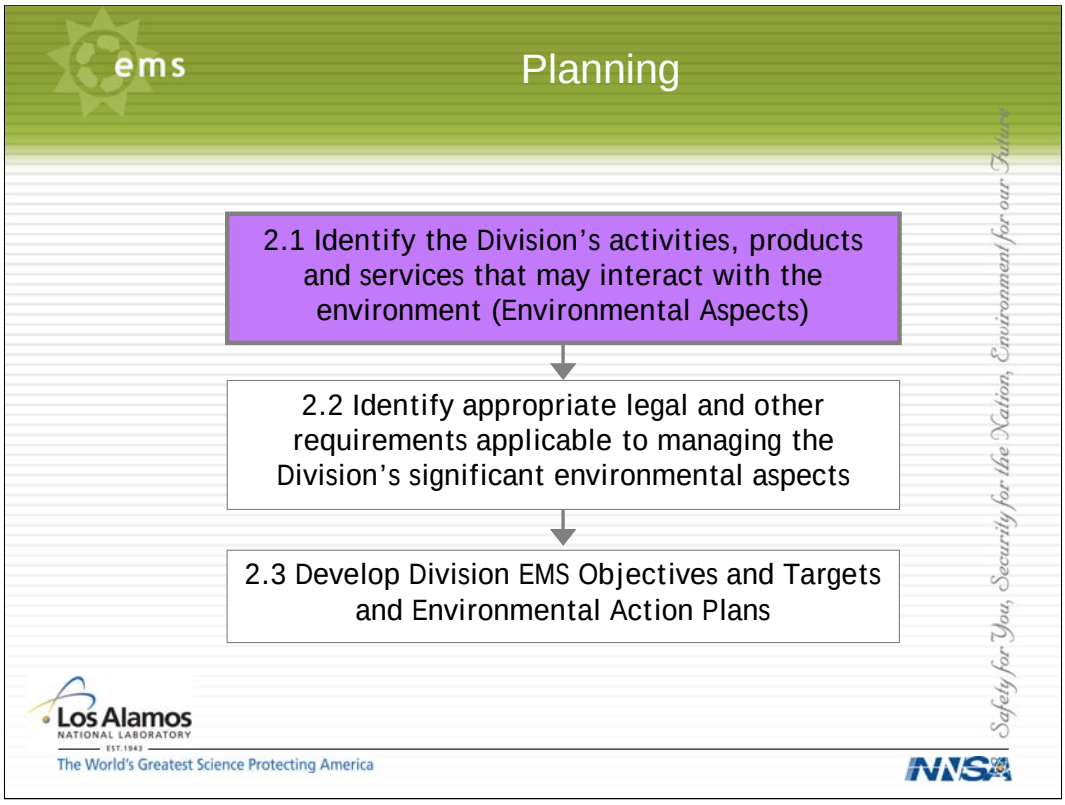
A critical implementation process was the development and use of a toolkit to explain how ISO processes work, to guide workers on implementing the process and to collect results.

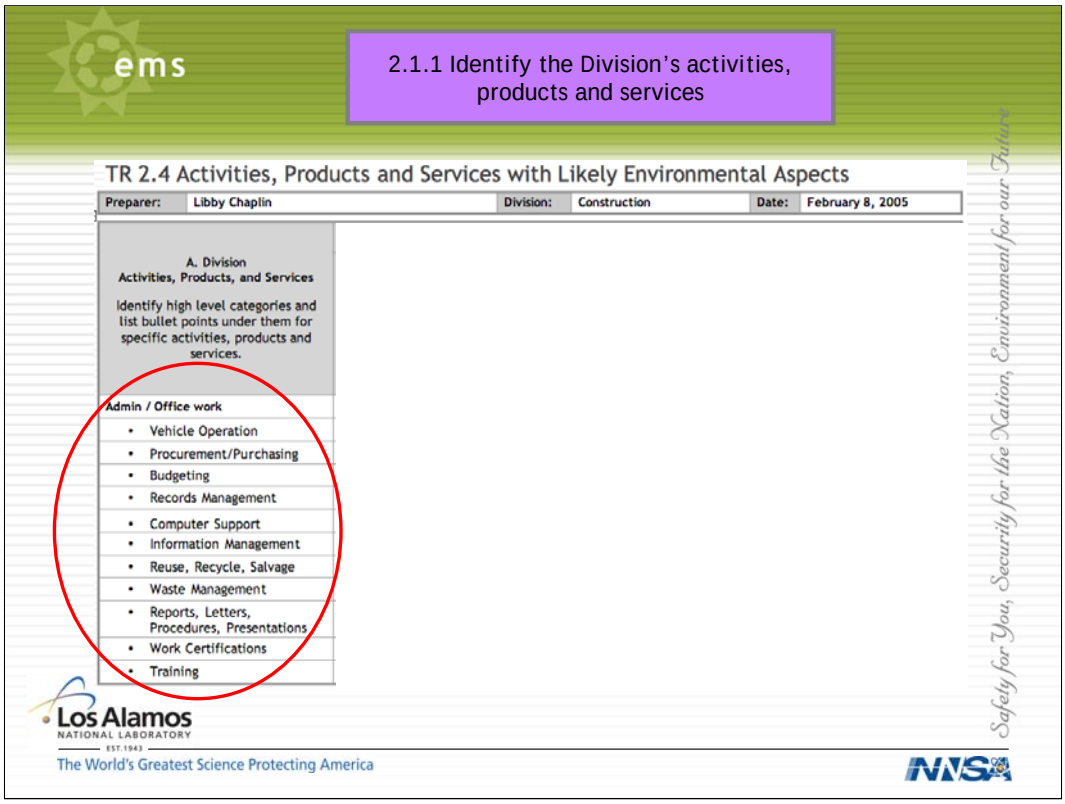


Another critical element was a marketing plan to communicate environmental policy to all employees along with training and new environmental improvement tools.

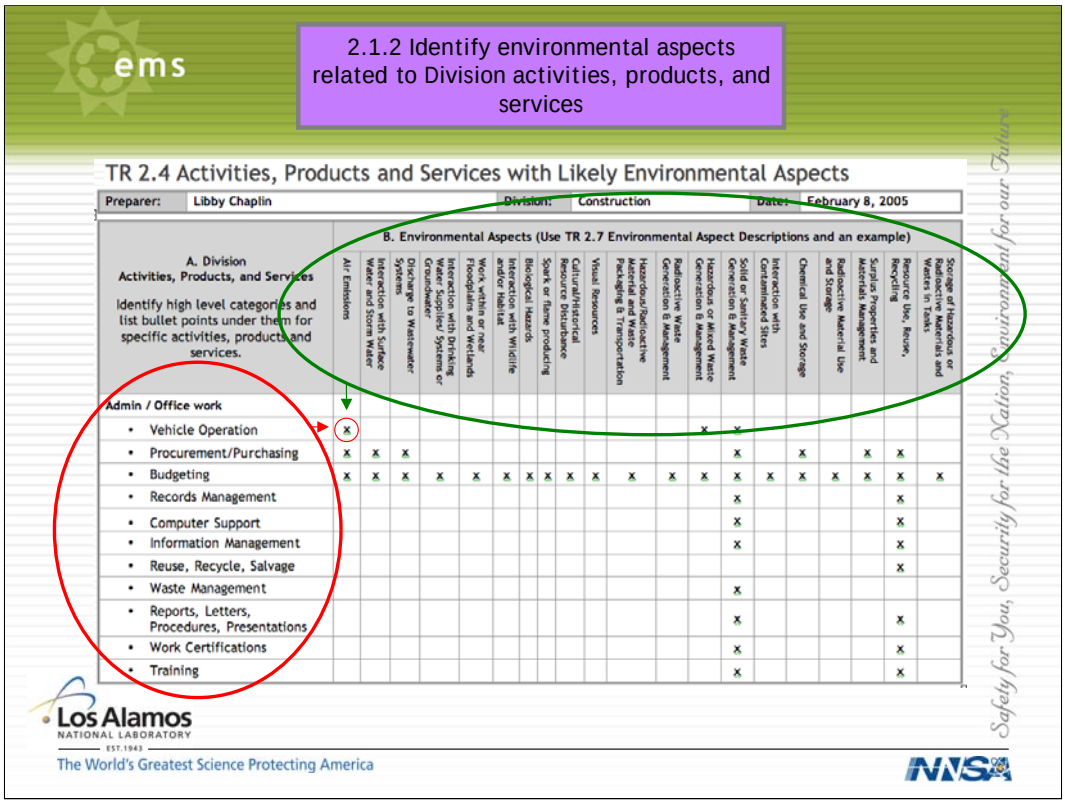


Each Laboratory division individually went through the basic EMS process using forms and guidance from the toolkit

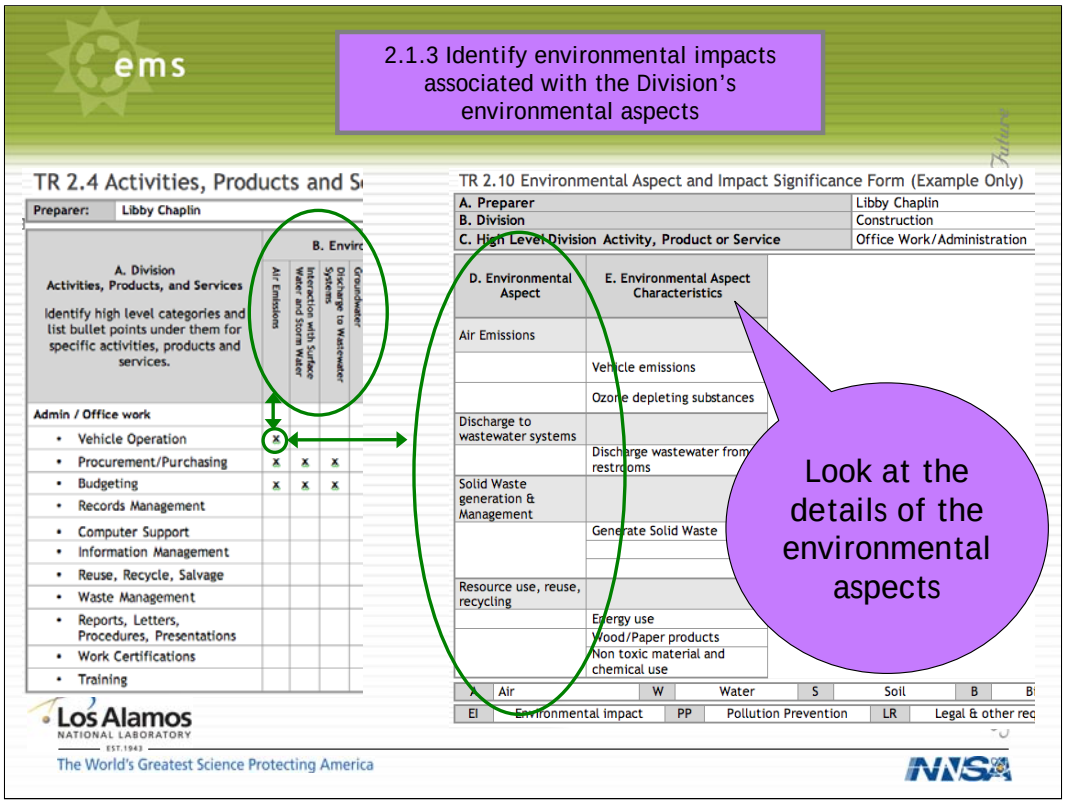
What follows is an example of the steps they took:



- Identify activities products and services: what do you do for a living?



Aspects: how does what you do for a living relate to the environment?



How are these aspects significant: what are the vulnerabilities?

ems

2.1.3 Identify environmental impacts associated with the Division's environmental aspects

TR 2.10 Environmental Aspect and Impact Significance Form (Example Only)

A. Preparer	Libby Chaplin
B. Division	Construction
C. High Level Division Activity, Product or Service	Office Work/Administration

D. Environmental Aspect	E. Environmental Aspect Characteristics	F. Impact (Check those that apply) Assume no controls or controls fail for negative impacts											
		Negative						Positive					
		A	W	S	B	C	N	A	W	S	B	C	N
Air Emissions		X											
	Vehicle emissions	x											
	Ozone depleting substances	x											
Discharge to wastewater systems			X	X	X								
	Discharge wastewater from restrooms		x	x	x								
Solid Waste generation & Management							X						
	Generate Solid Waste						x						
Resource use, reuse, recycling													
	Energy use	x					x						
	Wood/Paper products				x		x						x
	Non toxic material and chemical use							x	x	x	x		x

A	Air	W	Water	S	Soil	B	Biota	C	
EI	Environmental impact	PP	Pollution Prevention	LR	Legal & other requirements				

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Where can we impact the environment?

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2.1.4 Determine the Division's draft Significant Environmental Aspects

TR 2.10 Environmental Aspect and Impact Significance Form (Example Only)

A. Preparer	Libby Chaplin	Date	February 28, 2005
B. Division	Construction		
C. High Level Division Activity, Product or Service	Office Work/Administration		

D. Environmental Aspect	E. Environmental Aspect Characteristics	F. Impact (Check those that apply) Assume no controls or controls fail for negative impacts												G. Significance (Write Yes if significant)					H. Explanation/ supporting information
		Negative						Positive											
		A	W	S	B	C	N	A	W	S	B	C	N	EI	PP	LR	SC	MI	
Air Emissions		X																	
	Vehicle emissions	X																	Little or no increase in vehicle emissions one car used infrequently
	Ozone depleting substances	X																	Little or no increase in ozone depleting substances
Discharge to wastewater systems			X	X	X				X					YES		YES			
	Discharge wastewater from restrooms		X	X	X				X					X		X			Reduction in water use due to installation of low flow toilets.
Solid Waste generation & Management							X								YES	YES			
	Generate Solid Waste						X								X	X			Potential for increased waste generation. Actual amount unknown, may need to benchmark
Resource use, reuse, recycling		X			X		X	X	X	X	X		X	YES	YES	YES			
	Energy use	X					X							X		X			Potential for inefficient use of resources
	Wood/Paper products				X		X						X	X	X	X			Potential for use of recycled or resource efficient products or services that exceeds regulatory requirements. Potential for minor non-compliance
	Non toxic material and chemical use							X	X	X	X		X						Reduction in pollution or use of recycled or resource efficient products or services that exceeds regulatory requirements.

A	Air	W	Water	S	Soil	B	Biota	C	Cultural Resources	N	Natural Resources
EI	Environmental impact	PP	Pollution Prevention	LR	Legal & other requirements	SC	Stakeholder concern	MI	Mission Impact		

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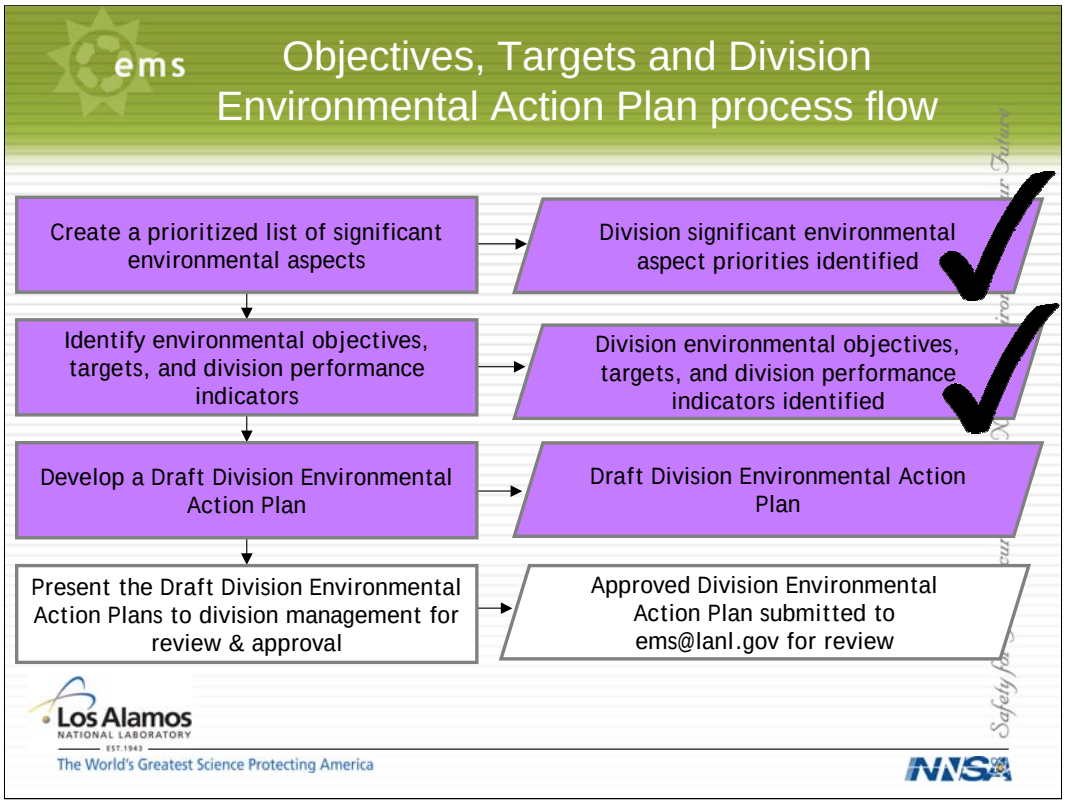
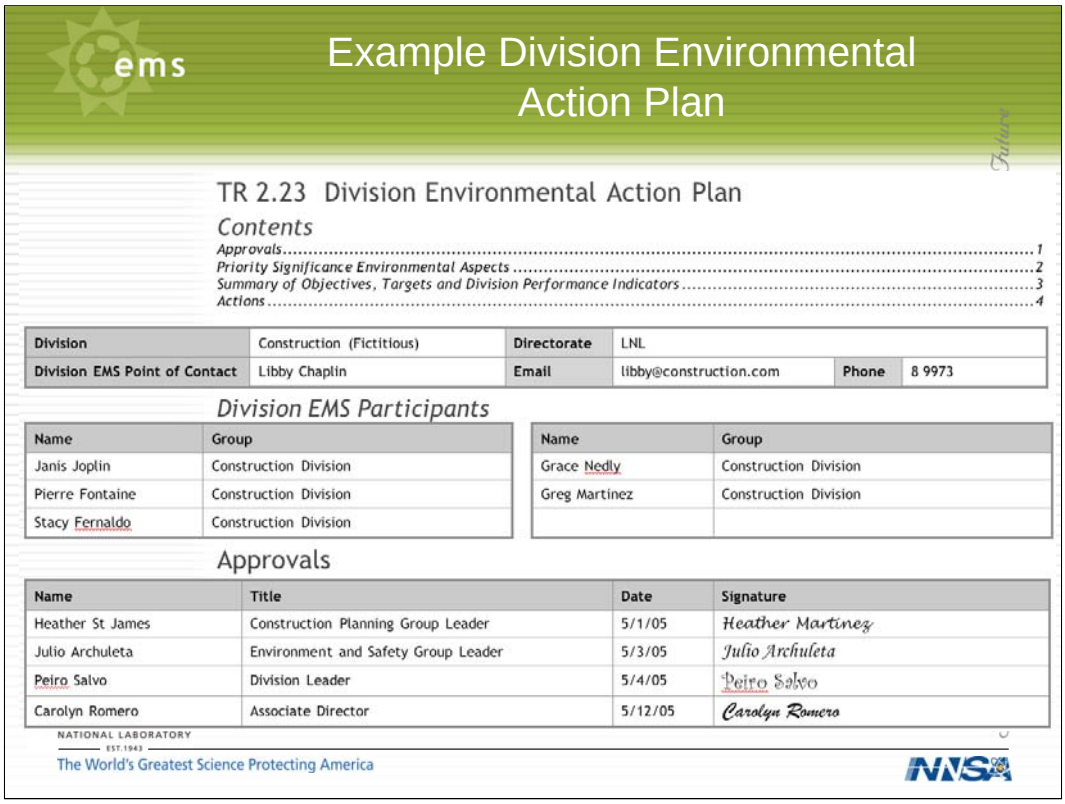
Significance: what do we need to work on?



The result of the process is a Division specific Environmental Action Plan that summarizes what the Division will work on for the following year.



ems

Example Division Environmental Action Plan

Future

TR 2.23 Division Environmental Action Plan

Contents

Approvals 1
Priority Significance Environmental Aspects 2
Summary of Objectives, Targets and Division Performance Indicators 3
Actions 4

Division	Construction (Fictitious)	**Directorate**	LNL		
Division EMS Point of Contact	Libby Chaplin	**Email**	libby@construction.com	**Phone**	8 9973

Division EMS Participants

Name	Group
Janis Joplin	Construction Division
Pierre Fontaine	Construction Division
Stacy Fernaldo	Construction Division

Name	Group
Grace Nedly	Construction Division
Greg Martinez	Construction Division

Approvals

Name	Title	Date	Signature
Heather St James	Construction Planning Group Leader	5/1/05	Heather Martinez
Julio Archuleta	Environment and Safety Group Leader	5/3/05	Julio Archuleta
Peiro Salvo	Division Leader	5/4/05	Peiro Salvo
Carolyn Romero	Associate Director	5/12/05	Carolyn Romero

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EXAMPLE

The action plan must be signed by the management chain responsible for the work and that is including in employee performance assessment processes.

Example Division Environmental Action Plan

Actions

Objective 1.	Minimize storm-water contamination
Target	Zero non-conformances found during Management Self Assessment by Dec 2006
Division Performance Indicator	Quarterly results of Management Self Assessments

Action	Who	Due	Resources ($, people, time, equipment materials)	Status Update
Purchase stormwater monitoring kits for all construction teams	Pierre Fontaine	5/4/05	Stormwater monitoring kits - 24 x $15	Quotes obtained and order placed
Ensure constructions teams are briefed on the use of stormwater monitoring kits	Pierre Fontaine	6/4/05	24 Presentations x 1 Hr x 1 TSM & 24 Presentations x 15 minutes x staff (TSM/SSM?...)	Waiting for kits to arrive in order to prepare appropriate briefing materials
Investigate stormwater protection best practices	Stacy Fernaldo	6/4/04	16 Person-Hours (Within existing resources) Staff: 1TSM	Underway
Prepare a briefing note for all site supervisors	Grace Nedly	7/4/04	8 Person-Hours (Within existing resources) Staff: 1SSM	
Ensure Management Self Assessments monitor stormwater quality	Heather St James	6/4/05	1 Hour per quarter. Staff 1 TSM Management	

Objective 2.	To successfully recycle concrete and asphalt
Target	To increase recovery of asphalt and concrete recycling by 75% by 2006
Division Performance Indicator	Material recovery data from County Receipts

Action	Who	Due	Resources ($, people, time, equipment materials)	Status Update
Meet with the County to determine their specifications for receiving concrete and asphalt	Heather St James	5/4/05	Within existing resources	Scheduled for 5/2/05
Establish concrete and Asphalt recovery procedure	Grace Nedly	6/4/05	16 Hours (Within existing resources)	Waiting on outcomes of the meeting with the County
Brief Construction recover material and provide to the County within their specifications	Pierre Fontaine & Grace Nedly	7/4/05	Training will occur during nested safety meetings	

April 16, 2005
Version 0

Page 2

TR 2.23

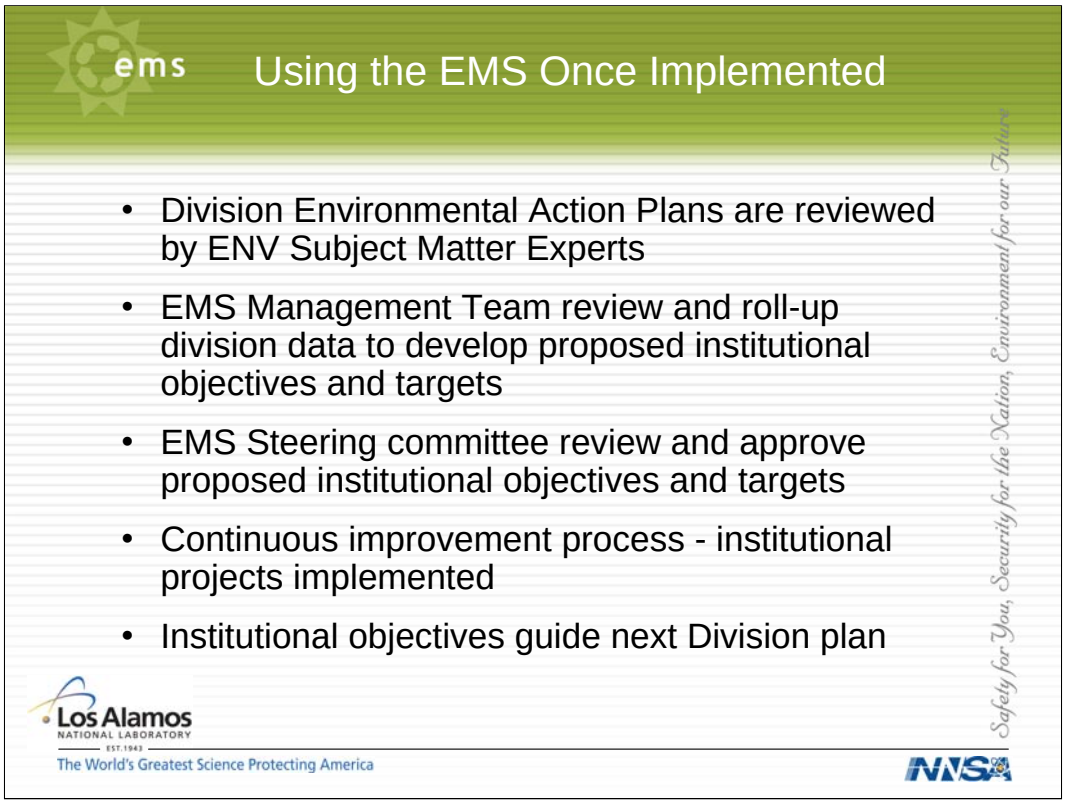
Initials of Approvers:

Each action comes with specific times, dates and people for performance

These actions are the heart of the LANL EMS

IN FY 06, the Divisions have committed to nearly 600 improvement actions.

As of mid-year, the vast majority of the action projects are on target for completion.

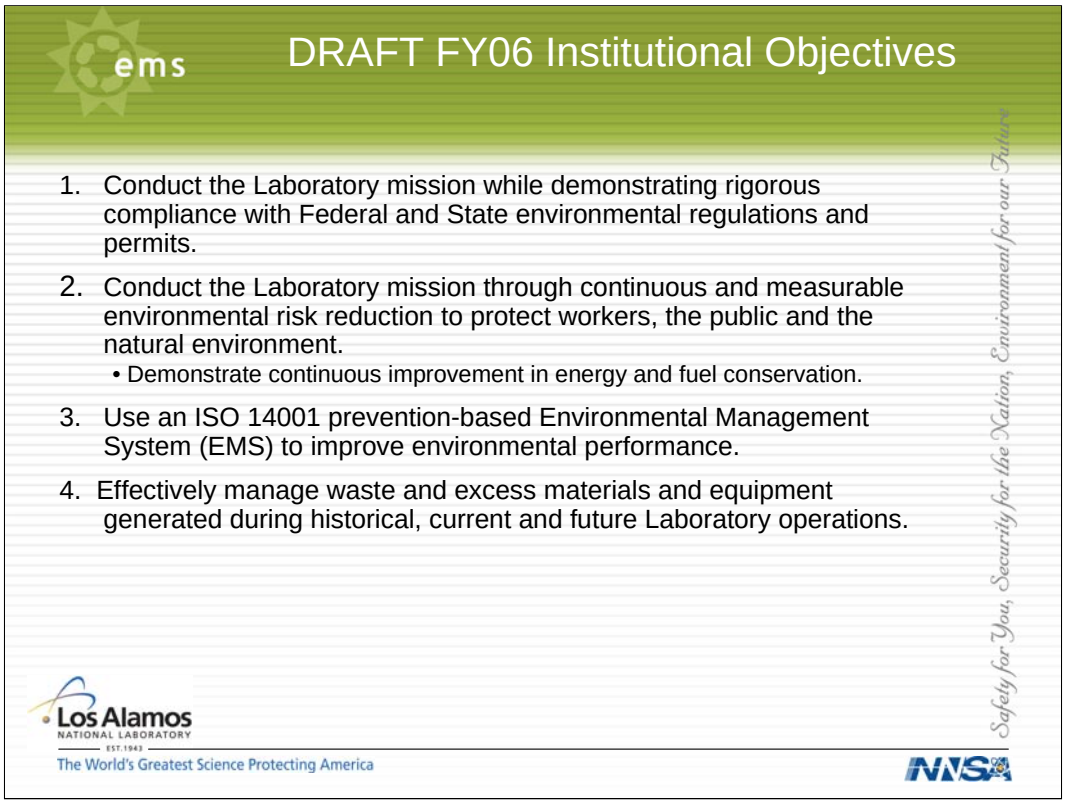


The intent of the LANL EMS is to identify and resolve major institutional issues. We do this by:

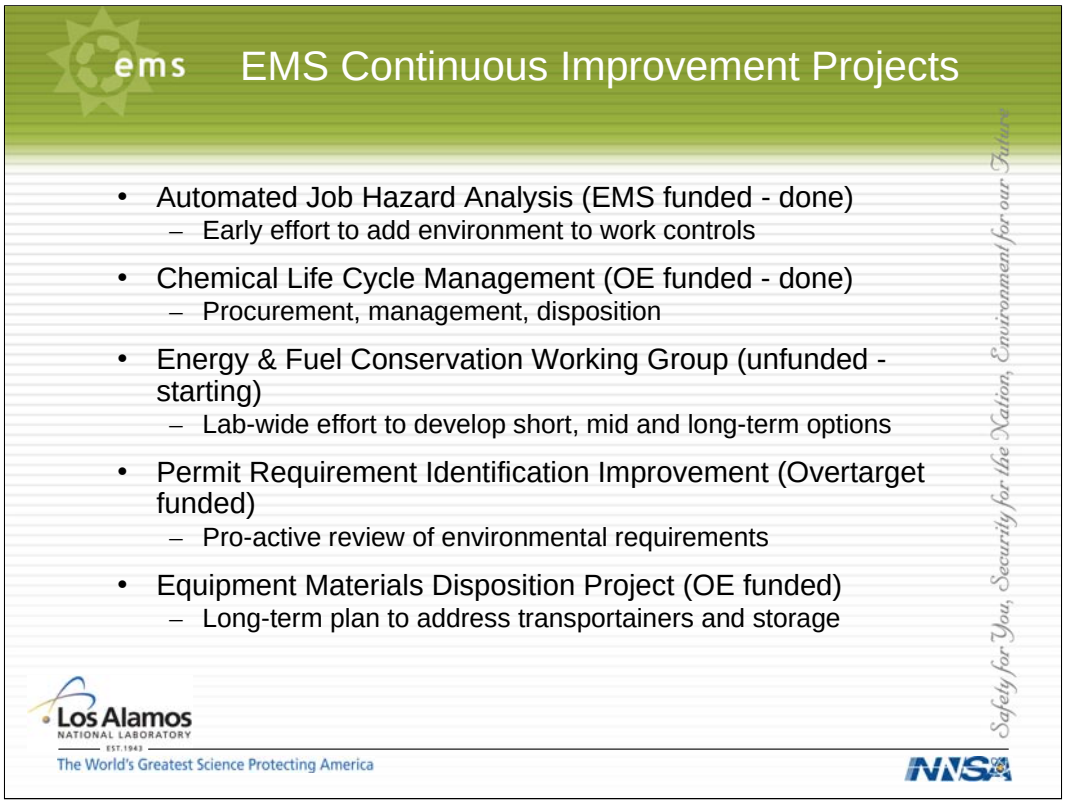
-Finding big issues identified by the Divisions but too big for the Divisions to solve by themselves.

-Putting together institutional objectives and targets to resolve the problem.

- Feeding those objectives back to Divisions with new tools for implementation



This year the institutional objectives for LANL include compliance, risk reduction through pollution prevention and dealing with legacy equipment and materials on the site.



These projects are examples of inprovment efforts that have come out of the LANL EMS

Independent Third-Party Review

- LANL completed ISO 14001-2004 audit process in March 2006 and was certified to the standard in April 2006

A Subsidiary of NSF International
789 North Dixboro Road, Ann Arbor, Michigan 48105
(888) NSF-9000

Certificate of Registration

This certifies that the Environmental Management System of

Los Alamos National Laboratory

Mail Stop M992

Los Alamos, New Mexico, 87545 USA

has been assessed by NSF-ISR and found to be in conformance to the following standard(s):

ISO 14001:2004

Scope of Registration:

Research and Development concerning National Security.

Industrial Classification:

IAF: 35
SIC: 87
NACE: K 74

Certificate Number: 79571-E1
Certificate Issue Date: 04/11/2006
Company Initial Date: 05/24/2006
Registration Date: 03/24/2006
Expiration Date*: 03/23/2009

Christine B. Lupo, General Manager
NSF-ISR, Ltd.

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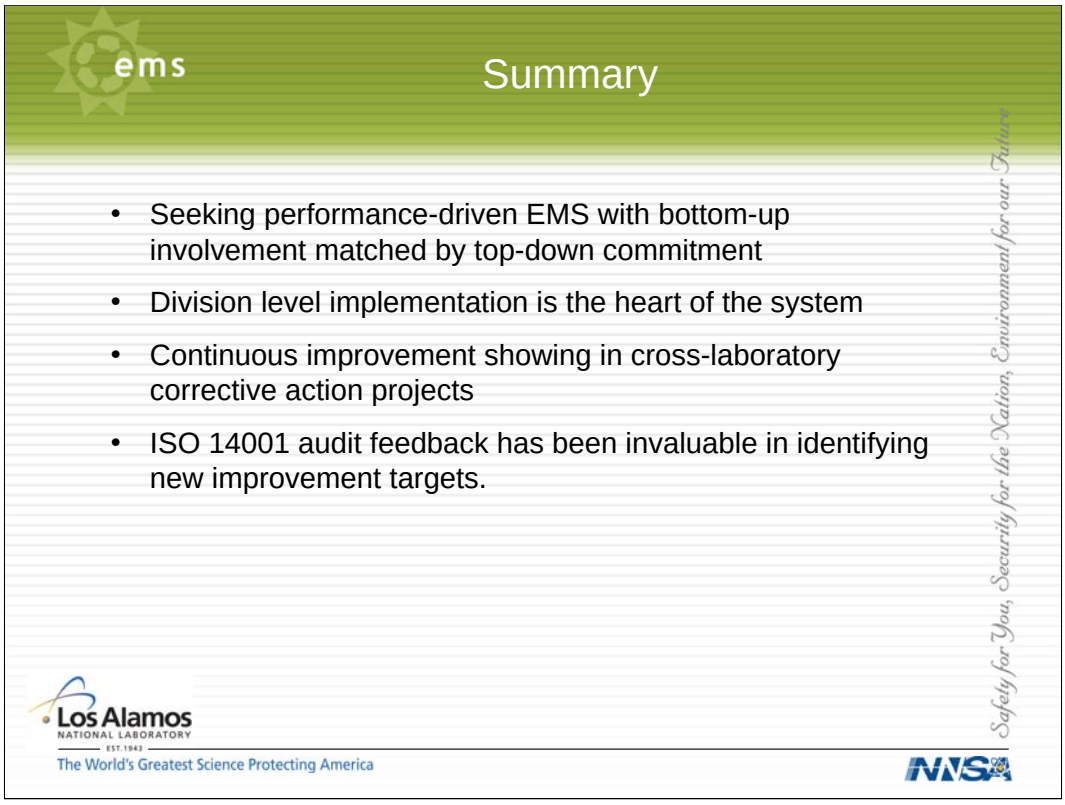
Safety for

The LANL process underwent 73 auditor days of review this past year and the findings have been used to quickly improve our system.



We are happy to be certified but our real objective is performance

Without pushing the system down to the worker level we would never achieve the level of environmental awareness we are looking for

We are using the system to attack the big problems and using the system to eliminate those problems before they become mission-threatening liabilities.