RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE

GEORGE DIALS, MANAGER
CARLSBAD AREA OFFICE

OCTOBER 24, 1994
CARLSBAD AREA OFFICE IS IN TRANSITION AND TRANSITION REQUIRES CHANGES

- Formed a new DOE organization
- National Transuranic Office established in CAO
- Westinghouse and Sandia transitioning from RAD waste tests at WIPP to accelerated compliance activities
- Accelerated compliance causes DOE to look for new methods to evaluate what is needed
MISSION

The mission of the Carlsbad Area Office is to protect human health and the environment by opening and operating the Waste Isolation Pliot Plant for safe disposal of TRU waste and by establishing an effective system for management of TRU waste from generation to disposal.
CARLSBAD AREA OFFICE

Manager
George Dials
Deputy Manager
Vernon Daub

FTE TOTAL = 68

Administrative Branch
Mike Daugherty
- Planning
- Programming/Scheduling
- Budgets
- Contracts
- Program Administration
- Security
- Human Resources

WIPP Site Branch
Kent Hunter
- Facility Management
- Mine Operations
- Engineering
- ES&H Management
- NEPA & Permitting
- Site Programs
- Emergency Management

Compliance Branch
Jim Mewhinney (Acting)
- EPA Lead Interface
- Repository Compliance
- QA Oversight
- QA Planning

National TRU Program Office
Mark Matthews
- Planning & Integration
- Treatment Technology
- Generator/Storage Interface
- System Studies
- Waste Characterization
- Waste Certification
- Transportation
- Engineering
- Emergency Response
- Waste Acceptance
- Programmatic EIS
- FFCA Inventory

Experimental Programs Branch
Mike McFadden
- Program Review
- SNL Management
- NAS Interface
- Test Program
- Performance Assessment
- Engineering Alternatives

October 21, 1994
1094H:5601
TRU DEFENSE WASTE GENERATING AND STORAGE SITES
Including Small Sites
WELCOME TO THE WIPP UNDERGROUND
YOU HAVE JUST ENTERED AN ENVIRONMENT COMMITTED TO SAFETY
CARLSBAD AREA OFFICE

COMMITMENT TO SAFETY

- Emphasized in employee orientation, training, and daily interactions
- Environment, safety and health criteria in all managers' evaluation plans
- Federal Employee Safety Committee
WIPP CONTRACTOR COMMITMENT

- Reflected in superior safety performance
  - Mine Safety and Health Administration inspections
  - Injury case rate
  - Voluntary Protection Program Star Status
MINE SAFETY AND HEALTH ADMINISTRATION INSPECTIONS

Findings per Inspection

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WASTE ISOLATION PILOT PLANT
INJURY/ILLNESS CASE RATES

Rate = Number of Injuries X 200,000/Work Hours

- WID
- WIPP Subcontractors
- DOE Average (Only Available Through Second Quarter 1993)
- Industry Average (Only Available Through 1993)
VOLUNTARY PROTECTION PROGRAM

- Voluntary Protection Program established in 1993 by Secretary of Energy Notice
  - Recognizes contractor excellence in safety and health programs

- Program elements
  - Management leadership
  - Employee involvement
  - Annual program evaluation
  - Worksite hazard analysis
    - Prevention and control
  - Safety and health training

- Westinghouse Waste Isolation Division first government contractor to earn "Star" status
  - Outstanding protectors of safety and health
  - Highest level attainable
NATIONAL MINE RESCUE TEAM CHAMPIONSHIP

August 17-18, 1994
Las Vegas, Nevada

- WIPP Blue Mine Rescue Team won national championship
  - Competed in field of 38 private industry and government teams
  - Judged by Mine Safety and Health Administration representatives

- Individual honors National Benchman's Competition
  - First place, Fred Miller – WIPP Silver Team
  - Second place, Joe Baca – WIPP Blue Team

- Trophies captured include
  - National Mine Rescue Traveling Trophy
  - Congressional Trophy
  - Dragger Self-Rescuer Trophy
  - Assistant Secretary for U.S. Department of Labor Traveling Trophy
GOALS OF THE CARLSBAD AREA OFFICE WORKING ENVIRONMENT

• Minimize risk of injury to personnel

• Protect facility and programs from property damage, accidents, and fires

1994 Safety Objective

• Maximize employee participation in key elements of the Voluntary Protection Program
"You represent the best project, the only project that is likely to proceed on schedule...and complete its work in a timely fashion. We (DOE) need to focus on the things that are working well...We want a nation finally ready to deal with nuclear waste...WIPP has to open. It must open."

- Secretary of Energy Hazel O'Leary to Carlsbad, NM community
March 5, 1994
ACCELERATED COMPLIANCE

• Objectives
  - Meet all applicable federal, state, and other regulations
  - Protect human health, welfare, and the environment
  - Employ cost-effective methodology
  - Help solve the national radioactive waste problem
  - Provide national and international leadership in radioactive waste management
ACCELERATED COMPLIANCE APPROACH

- Focus on activities needed for compliance
- Perform simulated waste tests in laboratories
- Consolidate leadership for WIPP and transuranic waste management in Carlsbad
COMPONENTS OF COMPLIANCE

• Resource Conservation and Recovery Act, Part B Permit
  - Requires protection against hazardous components of WIPP waste
  - New Mexico Environment Department (NMED) issues Part B Permit jointly with Environmental Protection Agency
  - New Mexico Environment Department authorized DOE to modify permit application to cover disposal operations with a complete revised application by 5/31/95
  - State's decision sought by 12/97
COMPONENTS OF COMPLIANCE
(cont.)

- No-Migration Variance Petition
  - Would exempt DOE from treatment of waste for certain restricted hazardous constituents for disposal at WIPP
  - Environmental Protection Agency-HQ issues variance determination

- TRUPACT-II certification
  - Requires DOT approval of container for shipping waste to WIPP
  - Certification issued by Nuclear Regulatory Commission, June 1994
COMPONENTS OF COMPLIANCE

(cont.)

• Supplement Environmental Impact Statement
  - Requires DOE to evaluate potential impacts of disposal operations
  - Secretary of Energy approves proposed action after considering comments from regulatory agencies and stakeholders

• Compliance with federal statutes and regulations mandated by Land Withdrawal Act
  - Clean Air Act
  - Solid Waste Disposal Act
  - Safe Drinking Water Act
  - Toxic Substances Control Act (PCBs)
  - Superfund
COMPONENTS OF COMPLIANCE
(cont.)

- 40 CFR 191 Long-term Protection Standards
  - Requires demonstration of WIPP's ability to contain hazardous and radioactive wastes for 10,000 years
  - Regulations set forth in 40 CFR 191
  - Criteria for compliance with regulations will be defined in 40 CFR 194
  - DOE will submit compliance package to EPA for certification
  - EPA will certify compliance
ACCELERATED COMPLIANCE SCHEDULE

- Draft Compliance Certification to EPA, March 1995
- No Migration Variance Petition for Disposal to EPA, May 1995
- Draft revised RCRA Part B Application to NMED, June 1995
- Final compliance package to EPA, December 1996
- Final Disposal Phase Supplement Environmental Impact Statement, October 1997
- Secretary of Energy decision regarding opening of WIPP, January 1998
- Disposal operations begin, June 1998
- Schedule issues
  - Schedule is aggressive but achievable
  - We must have a target if we are to make progress
# WIPP Disposal Decision Plan

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<td><strong>Regulatory/Technical Processes</strong></td>
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<tr>
<td>Environmental Protection Agency (EPA) Issue 40CFR 194</td>
<td>Submit No Migration Variance Petition for Disposal to EPA 3/95</td>
<td>Submit Compliance Certification Package (Rev. 0) to EPA 12/96*</td>
<td>Submit Final Disposal Phase Supplemental Environmental Impact Statement 10/97</td>
<td>Issue Final Disposal Permit Issued 12/97*</td>
<td>Issue Biennial Environmental Compliance Report 10/94*</td>
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<tr>
<td>WIPP Program Status Report 3/94</td>
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| **Stakeholders/Oversight** | | | | | |
| Stakeholders/Oversight Legend | | | | | |
| NM & Environmental Evaluation Group Quarterly Meetings | National Academy of Sciences Quarterly Meetings | EPA Scheduled Meetings | Annual Bureau of Mines Safety Evaluation | Annual NM State Advisory Panel Medical Training Report | Schedule for additional periodic Stakeholder meetings to be determined. Stakeholder milestones are based on best current estimate. |
| Stakeholders/Oversight | | | | | |

| **Experimental Programs & Performance Assessment (PA)** | | | | | |
| Sandia National Laboratories (SNL) Documentation to 3/95 | Draft Compliance Package 12/94 | |

| **National Transuranic Program Office** | | | | | |
| Waste Characterization | | | | | |
| Performance Based Waste Acceptance Criteria Preliminary Baseline Assumptions 10/94 | Provide Supplemental Inventory Data to PA Based on Waste Characterization Plan 12/95 | Inventory Definition to Final Compliance Package 12/96* | Publish First Baseline Inventory Report 6/94 | Inventory Definition to Compliance Package 3/95 |

| **Operations** | | | | | |

**Notes**
- 1991-1999 milestones are dependent on funding allocation from Program Budget Cycle.
- Contact David Holmes, 505/234-7314, for information or questions related to this document.
- * All associated compliance LWA requirements.

**Approved:**

George E. Pilis Date
Manager, Carlsbad Area Office
RELATIONSHIPS WITH REGULATORS AND OVERSIGHT GROUPS

- Monthly technical exchange meetings with Environmental Protection Agency
  - Focused discussions on technical and compliance topics
  - Draft Compliance Package will go to Environmental Protection Agency to get regulator feedback before final submission
RELATIONSHIPS WITH REGULATORS AND OVERSIGHT GROUPS (cont.)

- Regular meetings with state organizations
  - Regulator: New Mexico Environment Department
  - Technical oversight: New Mexico Environmental Evaluation Group
  - Governor's Oversight: Governor's Consultative Task Force on Radioactive Wastes
  - Radioactive and Hazardous Materials Committee
  - WIPP Medical Working Group
OUTREACH INITIATIVES

- Public Affairs strategic plan will improve outreach effort
- Tours and speakers bureau will target key audiences
- Toll-free phone line will enhance information flow
- Stakeholder newsletter will provide timely information
WIPP STAKEHOLDER FORUM

- Held September 26-27 in Albuquerque
- Invited 170 individuals
  - 70 persons attended

- Environmental Protection Agency
- Local governments
- Oversight groups
- Media
- Congressional representatives

- State governments
- Tribal governments
- Environmental groups
- Citizen groups
- Regional government groups

- Stakeholders presented issues
  - DOE listened
STAKEHOLDER MEETINGS

- Environmental Protection Agency technical exchange meetings
  - March 24, 1994 - October 24-26, 1994 *
  - May 3-5, 1994 - November 28-30, 1994 *
  - June 14-15, 1994 - January 10-12, 1995 *

- Environmental Evaluation Group/New Mexico Environment Department/New Mexico Energy, Minerals, and Natural Resources Department quarterly meetings
  - January 12, 1994 - July 21, 1994
  - April 13, 1994 - October 20, 1994 *

- Resource Conservation and Recovery Act meetings with state agencies
  - January 28, 1994 - August 24-25, 1994
  - March 31, 1994 - August 31, 1994

- Budget meeting (activity data sheets)
  - March 30, 1994

- Panel 1 utilization meeting
  - May 19, 1994

* Future meetings
STAKEHOLDER MEETINGS
(cont.)

- System Prioritization Method workshops
  - August 30–31, 1994
  - September 28–29, 1994
  - October 27–28, 1994 *
  - December 1–2, 1994 *
  - January 9, 1995 *

- Community update meetings in southeastern New Mexico
  - Artesia, May 11, 1994
  - Roswell, May 11, 1994
  - Hobbs, June 2, 1994
  - Carlsbad, June 21, 1994

* Future meetings
CARLSBAD AREA OFFICE

Resources

- Government has spent $1.571 billion on establishing a permanent disposal repository since 1976
  - Siting and construction phase cost approximately $0.922 billion and was completed in 1990
  - Test Phase strategy was changed in 1993 to lab testing instead of in-situ

- Now averaging $185 million a year for testing, site operations, and compliance certification

- Will require approximately $755 million between FY95 and FY98 to complete testing, submit compliance packages, and bring the site staff back up to receive TRU waste
CARLSBAD AREA OFFICE

WIPP Budget Requirements

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</tr>
</tbody>
</table>
CARLSBAD AREA OFFICE

Requested Budget by Function
(FY94-FY98)

Site Operations
$401

Generator Sites
$43

Technical Support
$67

Transuranic Integration
$55

Carlsbad Area Office Management/Stakeholder
$85

(Dollars in Millions)
CARLSBAD AREA OFFICE
Resource Issues

**Good News**

- Revised test strategy
  - Estimated $139M cost savings
  - Two-year earlier WIPP operating proposed (FY 1998 versus FY 2000)

- Carlsbad Area Office implementation
  - Accelerated compliance approach
  - Disposal Decision Plan
  - System Prioritization Method
  - Cost savings now estimated at $208M
  - Commitment to FY 1998 disposal operations

**Concerns**

- Maintaining budget levels to support the Disposal Decision Plan
- Funding for the National Transuranic Program
- Integration of storage/generator site activities
COMMITMENT TO SUCCESS

- Disposal Decision Plan provides a timeline to opening WIPP
- System Prioritization Method will determine activities leading to compliance
- DOE/contractor team jointly committed to achieving scheduled milestones
- Barriers to success have been identified
  - Working to remove the barriers
- Best-in-class
  - Voluntary Protection Program
  - Safety
  - Contract reform
DISPOSAL DECISION PLAN

- Time line of major activities leading to opening of WIPP
- Key milestones in each major activity area
- Developed through analysis and interaction among programmatic groups
  - DOE, contractors, regulators
  - Approved April 5, 1994
- Treated as living document
  - Will be modified to reflect budgetary, scientific, programmatic changes
# WIPP Disposal Decision Plan

## Regulatory/Technical Processes

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<td>EPA Certification 12/97*</td>
<td>RCI Permit Issued 12/97*</td>
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## Stakeholders/Oversight

- NM & Environmental Evaluation Group Quarterly Meetings
- National Academy of Sciences Quarterly Meetings
- EPA Scheduled Meetings
- Annual Bureau of Mines Safety Evaluation
- Annual NM State Advisory Panel Medical Training Report

Schedule for additional periodic Stakeholder meetings to be determined. Stakeholder milestones are based on best current estimate.

## Experimental Programs & Performance Assessment (PA)

- Final Models to PA for 9/96
  - Complementary Cumulative Distribution Function (CCDF) 9/95
- Final Performance Input for the 12/96 Compliance Certification Package 10/96
- Draft Compliance Package 12/94

## National Transuranic Program Office Waste Characterization

- Performance Based Waste Acceptance Criteria Preliminary Baseline Assumptions 10/94
- Inventory Definition to Compliance Package 3/95
- Supplemental Inventory Data to PA Based on Waste Characterization Plan 12/95

- Inventory Definition to Final Compliance Package 12/96*
- Publish Final Baseline Inventory Report 6/94
- Publish Baseline Systems Design Report 10/95
- Final CCDF Calculations to Compliance Package 9/96
- Sands National Laboratories (SNL) Documentation to 3/95

## Operations

- Issue Decommissioning & Post Decommissioning Plan 10/97*
- Notify States & Indian Tribes of Intent to Transport 12/97*
- Carver Operational 6/97
- Complete Disposal Phase Final Safety Analysis Report 3/97
- Operational Readiness Declaration 12/97
- Begin CH Disposal Operations 6/98

- RCI Operational Readiness Declaration 3/99
- Nuclear Regulatory Commission (NRC) Recertifies TRU-PACT II 8/94
- Complete Remote Handled (RH) Strategy 3/95
- Complete RH Safety Analysis Report for Packaging 1/96
- NRC Approval of RH Recycling Plan 3/95

## Notes

- 1995-1999 milestones are dependent on funding allocation from Program Budget Cycle.
- Contact David Holm, 505/234-7314, for information or questions related to this document.
- All associated compliance LWA requirements.

## Approved

George E. Dials 6/9/94
Manager, Carlsbad Area Office
SYSTEM PRIORITIZATION METHOD
FOCUS ON COMPLIANCE

• Process to determine activities leading to demonstration of compliance at a given cost, schedule, and probability of success

• Compliance approach that addresses regulators/stakeholders concerns

• Provides adequate confidence in performance assessment process to regulators/stakeholders
SYSTEM PRIORITIZATION
METHOD STRATEGY

Technical baseline with regulatory/stakeholder input

PA Codes (Present state of knowledge)

Expected results from tests

Activity Sets

Y

Comply

N

SPM

Prepare Final compliance package

Implement decisions

Decision tree/matrix

Prepare Final compliance package

Implement decisions

Decision tree/matrix

EA - Engineered Alternatives
PBWAC - Performance-Based Waste Acceptance Criteria
PA - Performance Assessment
DECISION TREE/MATRIX
EXAMPLE OF THE RESULT

Increasing Cost

Increasing Time

P = 0.1
Activity Set 11

P = 0.2
Activity Set 64

P = 0.4
Activity Set 18

P = 0.5
Activity Set 58

P = 0.3
Activity Set 77

P = 0.5
Activity Set 52

P = 0.7
Activity Set 68

P = 0.8
Activity Set 34

P = 0.4
Activity Set 13

P = 0.6
Activity Set 22

P = 0.8
Activity Set 42

P = 0.9
Activity Set 8

An Activity Set includes various experiments, engineered enhancements, models, etc.
GEOLOGIC PROFILE

Surficial Sand

Dewey Lake Redbeds

Rustler Formation

Salado Formation

Sea Level

Castile Formation

Bell Canyon Formation

Feet

0

540

850

1000

2000

2150

3000

3400

4000

4500

Ground Level

Mudstone and Siltstone

Interbedded Layers

Waste Repository Level

Evaporites (Salt)

Sea Level

Salt and Anhydrite

1929:5542
WIPP LAyOUT
The WIPP is a world class facility engineered to the highest standards.

It's the right solution to the national TRU waste problem.