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NEW MEXICO ENVIRONMENT DEPARTMENT
ENVIRONMENTAL REVIEW COMMENT FORM

* TO: Sandra Martin (John Kieling)
HWB FROM:

GEDI CIBAS
OFFICE OF THE SECRETARY
HAROLD RUNNELS BUILDING
P.O. BOX 26110
SANTA FE, NM 87505-4182
Tel.: 827-2176 Fax: 827-2836
gedi_cibas@nmenv.state.nm.us

DATE: 9-3-03

PROJECT TITLE:
PDEA: Consolidation of Certain Dynamic Experimentation
Activities at the Two-Mile Mesa Complex, LANL

NMED FILE NO.: 1768 ER

SAI NO.: _____

A. Please review the attached document and return your comments to me (1) in hard copy AND (2) electronically, via E-mail or diskette (using WORD format); by no later than 9-15-03

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- (2) All deficiencies or inaccuracies in the information provided which prevent an adequate environmental assessment of the project;
- (3) If applicable, whether the anticipated accomplishments of the proposal justify the requested funding;
- (4) Other information which may be helpful to understand the environmental impact of the project (e.g., other environmental problems in the vicinity, other project impacts, problems which may develop for which no specific NMED law and regulations apply, and so on).

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DOE/EA-1447

Predecisional Draft

Environmental Assessment for the
Proposed Consolidation of
Certain Dynamic Experimentation Activities
at the Two-Mile Mesa Complex
Los Alamos National Laboratory,
Los Alamos, New Mexico



August 14, 2003

Department of Energy
National Nuclear Security Administration
Los Alamos Site Office

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Thank,
G.

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ACRONYMS AND TERMS

ac	acres	FY	fiscal year
AEA	<i>Atomic Energy Act</i>	ha	hectares
AEIs	areas of environmental interest	HAPs	hazardous air pollutants
AOC	area of concern	HE	high explosive
BACMs	best available control measures	HEPA	high-efficiency particulate air
BMPs	best management practices	HMP	Habitat Management Plan
CAA	<i>Clean Air Act</i>	HVAC	heating, ventilation, and air conditioning
CERL	Collaborative Energetics Research Laboratory (Building)	IDLH	immediately dangerous to life or health
CFR	Code of Federal Regulations	kg	kilograms
CHEM	Characterization of Highly Energetic Materials	km	kilometers
DARHT	Dual-Axis Radiographic Hydrodynamics Testing (Facility)	km ²	square kilometers
dBA	A-weighted frequency scale	kV	kilovolt
DOE	(U.S.) Department of Energy	LANL	Los Alamos National Laboratory
DOI	(U.S.) Department of the Interior	lb	pounds
DQF	Detonator Qualification Facility	LLW	low-level radioactive waste
DU	depleted uranium	m	meters
DX	Dynamic Experimentation (Division)	m ²	square meters
EA	environmental assessment	m ³	cubic meters
EDE	effective dose equivalent	MEI	maximally exposed individual
EDF	Electronics Diagnostic Facility	mi	miles
EIS	environmental impact statement	mi ²	square miles
EO	Executive Order	NAAQS	National Ambient Air Quality Standards
EOC	Emergency Operations Center	NEPA	<i>National Environmental Policy Act of 1969</i>
EPA	(U.S.) Environmental Protection Agency	NESHAP	National Emission Standard for Hazardous Air Pollutants
ER	Environmental Restoration	NFA	no further action
ERPG	Emergency Response Planning Guideline	NMAC	New Mexico Administrative Code
ft	feet	NMAAQs	New Mexico Ambient Air Quality Standards
ft ²	square feet	NMED	New Mexico Environment Department
ft ³	cubic feet		

NNSA	National Nuclear Security Administration	SHPO	State Historic Preservation Officer
NPDES	National Pollutant Discharge Elimination System	SIP	State Implementation Plan
NRHP	National Register of Historic Places	SR	State Road
Plan	Contractor Safety Plan	SWEIS	Site-Wide Environmental Impact Statement
PPE	personal protective equipment	SWMUs	solid waste management units
PRs	potential release sites	SWSC	Sanitary Wastewater System Consolidation
Rad NESHAP	NESHAP for Radiation	TA	Technical Area
RCRA	<i>Resource Conservation and Recovery Act</i>	TLV	Threshold Limit Value
ROD	Record of Decision	UC	University of California
SDP	Shock and Detonation Physics (Building)	U.S.	United States
SEA	Special Environmental Analysis	WTA	Western Technical Area
		yd ³	cubic yards

EXPONENTIAL NOTATION: Many values in the text and tables of this document are expressed in exponential notation. An exponent is the power to which the expression, or number, is raised. This form of notation is used to conserve space and to focus attention on comparisons of the order of magnitude of the numbers (see examples):

1×10^4	=	10,000
1×10^2	=	100
1×10^0	=	1
1×10^{-2}	=	0.01
1×10^{-4}	=	0.0001

Metric Conversions Used in this Document

Multiply	By	To Obtain
Length		
inch (in.)	2.50	centimeters (cm)
feet (ft)	0.30	meters (m)
yards (yd)	0.91	meters (m)
miles (mi)	1.61	kilometers (km)
Area		
acres (ac)	0.40	hectares (ha)
square feet (ft ²)	0.09	square meters (m ²)
square yards (yd ²)	0.84	square meters (m ²)
square miles (mi ²)	2.59	square kilometers (km ²)
Volume		
gallons (gal.)	3.79	liters (L)
cubic feet (ft ³)	0.03	cubic meters (m ³)
cubic yards (yd ³)	0.76	cubic meters (m ³)
Weight		
ounces (oz)	29.60	grams (g)
pounds (lb)	0.45	kilograms (kg)
short ton (ton)	0.91	metric ton (t)

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EXECUTIVE SUMMARY

The National Nuclear Security Administration (NNSA)¹ has assigned a continuing role to Los Alamos National Laboratory (LANL) in carrying out NNSA's national security mission. To enable LANL to continue this enduring responsibility requires that NNSA maintain the capabilities and capacities required in support of its national mission assignments at LANL. These assignments include maintaining core intellectual and technical competencies in nuclear weapons and a safe, and reliable, national nuclear weapons stockpile. The NNSA fulfills this commitment through the Stockpile Stewardship Program. LANL's Dynamic Experimentation Division's (DX) primary function is nuclear stockpile stewardship, with certification responsibility for the substantial majority of the nation's active nuclear weapons stockpile. DX's stockpile stewardship activities currently involve facilities primarily located in buildings and structures at Technical Area (TA) 6, TA-8, TA-9, TA-14, TA-15, TA-22, TA-36, TA-39, TA-40, and TA-69. Most of these buildings have many identified structural and systemic problems that make it difficult to meet the functional and safety requirements of the operations that these facilities house. Wildfire and traffic safety issues at DX facilities have also been identified. NNSA needs to correct these problems so that the necessary programmatic, management, and support functions housed at LANL can continue to function with a high level of efficiency. Additionally, NNSA also needs to minimize energy and resource consumption and reduce the cost of maintaining operations.

The Proposed Action is to construct and operate offices, laboratories, and shops within the Two-Mile Mesa Complex, located at TA-22, TA-6, and TA-40, where work would be consolidated from other locations at LANL. The Proposed Action would also remove or demolish certain vacated structures that are no longer needed. The Proposed Action includes constructing 15 to 24 new structures over a 10-year time frame to replace about 59 structures currently used for DX operations. These new structures would consist of two to five combination office and laboratory buildings, a Characterization of Highly Energetic Materials laboratory, an Engineering Diagnostic Facility, five Contained Firing Capability buildings and the associated support structures, a High Bay Laboratory, a Detonator Qualification Laboratory, two to four Gas Gun Facility buildings, a Machine Shop, a Classified High Explosives Storage building, and a lecture hall. The Proposed Action would also involve upgrading or constructing new roads, parking, fencing, and utilities within the Two-Mile Mesa Complex, including construction of a new road and security gate to provide access to the DX complex. In addition, when construction is completed, the Two-Mile Mesa Complex would be landscaped. Many existing DX operations, personnel, and support staff would be relocated to the new buildings at the Two-Mile Mesa Complex. Once temporary buildings are vacated, they would be removed from the DX complex and made available for reuse. Permanent buildings that are vacated as part of the Proposed Action are not expected to have future uses and, consequently, this Environmental Assessment analyzes demolition of these structures. If any other use is identified before demolition, additional *National Environmental Policy Act of 1969* compliance reviews would be performed to consider future use of the structures.

¹ The NNSA is a separately organized agency within the United States Department of Energy (DOE) established by the 1999 *National Nuclear Security Administration Act* [Title 32 of the *Defense Authorization Act* for Fiscal Year 2000].

The No Action Alternative is also considered. Under this alternative DOE would not construct new buildings for the functions described in the Proposed Action—nor would DOE demolish the buildings that currently contain those functions. Outdoor firing tests would continue to be performed. Environmental advantages of contained firing tests would not be realized. Poor-quality office and laboratory space would continue to be used, and the effectiveness of current staff and the ability to recruit and retain qualified employees would remain problematic. DX operations would continue to be conducted in dispersed facilities; there would be no reduction in the cost of facility maintenance. Aging heating, ventilation, and air conditioning systems and other building components would fail and would be expensive or impossible to repair or replace. Areas of buildings or entire structures that are deemed unsuitable for continuous human occupancy would be abandoned in place. This is not an alternative that meets NNSA's purpose and need for action.

The proposed construction sites would be located within the Two-Mile Mesa Complex area. Some mature trees may need to be removed from areas near the periphery of the complex. No construction would be conducted within a floodplain or a wetland. New construction areas would be sited to avoid adverse effects to cultural resources and sensitive habitat areas. There are several potential release sites at Two-Mile Mesa; however, these areas would be avoided, where possible, or, if affected by the Proposed Action, would be sampled and remediated in accordance with New Mexico Environment Department requirements before construction. The Proposed Action is designed to decrease current traffic congestion in the area. There would be adequate parking for University of California (UC) personnel and construction workers. Construction and demolition wastes would be trucked to a licensed commercial landfill or reused for backfilling. Construction and demolition activities for the proposed Two-Mile Mesa complex would be expected to produce only temporary and localized air emissions. Once construction was complete, operational emissions may decrease due to increased efficiency with more modern equipment and facilities. Consolidation of operations under the Proposed Action would have no effects on visual resources, water quality, or adverse health effects on UC employees or construction workers. None of the buildings to be constructed as part of the Proposed Action would be sited over the geological fault trace or within 50 ft (15 m) of any known active fault. The demolition of various buildings could have an adverse effect on some historical structures that are eligible for the National Register of Historic Places. The importance of these buildings to LANL's history is being assessed. A plan is being developed that will identify research tools to preserve the historical knowledge and features of these structures.

Cumulative effects of the Proposed Action, along with past, present, and reasonably foreseeable actions, on LANL and surrounding lands are anticipated to be negligible. No increases in LANL operations are anticipated as a result of this action.

1.0 PURPOSE AND NEED

1.1 Introduction

The *National Environmental Policy Act of 1969* (NEPA) requires Federal agency officials to consider the environmental consequences of their proposed actions before decisions are made. In complying with NEPA, the United States (U.S.) Department of Energy (DOE), National Nuclear Security Administration (NNSA)², follows the Council on Environmental Quality regulations (40 CFR 1500-1508) and DOE's NEPA implementing procedures (10 CFR 1021). The purpose of an environmental assessment (EA) is to provide Federal decision makers with sufficient evidence and analysis to determine whether to prepare an environmental impact statement (EIS) or issue a Finding of No Significant Impact.

Los Alamos National Laboratory (LANL) is a national security laboratory located at Los Alamos, New Mexico, that comprises about 40 square miles (mi²) (103.6 square kilometers [km²]) of buildings, structures, and forested land (Figure 1). It is administered by NNSA for the Federal government and is managed and operated under contract by the University of California (UC). The NNSA must make a decision whether to consolidate and construct new facilities for the Dynamic Experimentation Division (DX), including offices, laboratories, and other support structures, to create a "campus-like" cluster of facilities at LANL's Two-Mile Mesa Complex, which comprises portions of Technical Area (TA) 6, TA-22, and TA-40. This Proposed Action would involve constructing new buildings; consolidating existing operations and offices; enhancing utilities, roads, and security infrastructure; and demolishing or removing older buildings, structures, and transportables at various technical areas used by DX (Figure 2). This EA has been prepared to assess the potential environmental consequences of this proposed construction, operational consolidation, and demolition project.

The objectives of this EA are to (1) describe the underlying purpose and need for NNSA action; (2) describe the Proposed Action and identify and describe any reasonable alternatives that satisfy the purpose and need for agency action; (3) describe baseline environmental conditions at LANL; (4) analyze the potential indirect, direct, and cumulative effects to the existing environment from implementation of the Proposed Action, and (5) compare the effects of the Proposed Action with the No Action Alternative and other reasonable alternatives. For the purposes of compliance with NEPA, reasonable alternatives are identified as being those that meet NNSA's purpose and need for action by virtue of timeliness, appropriate technology, and applicability to LANL. The EA process provides NNSA with environmental information that can be used in developing mitigative actions, if necessary, to minimize or avoid adverse effects to the quality of the human environment and natural ecosystems should NNSA decide to proceed with implementing the Proposed Action at LANL.

Ultimately, the goal of NEPA, and this EA, is to aid NNSA officials in making decisions based on an understanding of environmental consequences and in taking actions that protect, restore, and enhance the environment.

² The NNSA is a separately organized agency within the DOE established by the *1999 National Nuclear Security Administration Act* [Title 32, of the *Defense Authorization Act* for Fiscal Year 2000 (Public Law 106-65)].

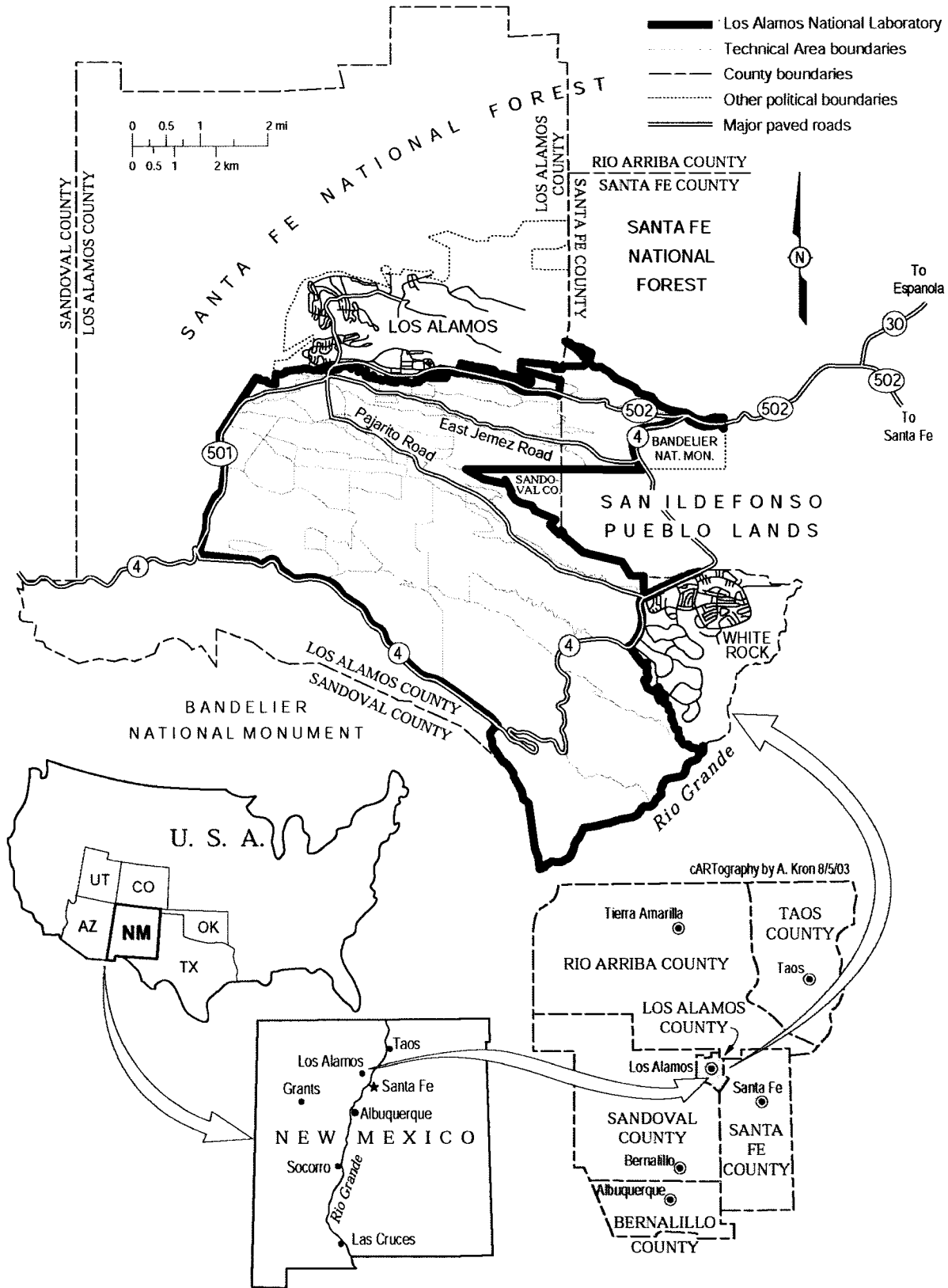


Figure 1. Location of Los Alamos National Laboratory.

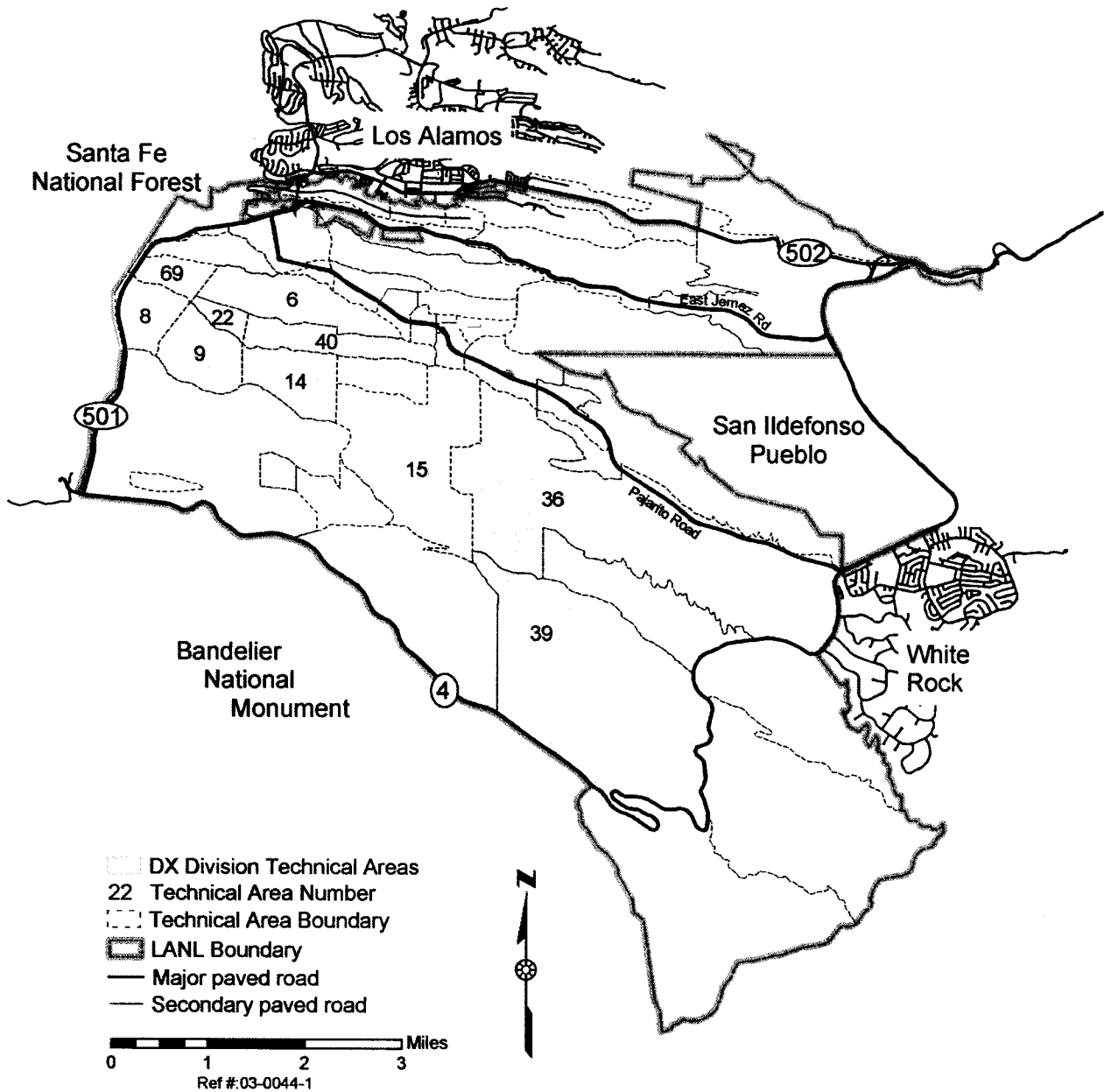


Figure 2. DX technical areas at LANL.

1.2 Background

The U.S. National Security Policy requires NNSA to maintain core intellectual and technical competencies in nuclear weapons and to maintain a safe, and reliable, national nuclear weapons stockpile. NNSA fulfills its national security nuclear weapons responsibilities through the Stockpile Stewardship Program, which involves activities performed at LANL. LANL is one of three national laboratories that support DOE's responsibilities for national security, energy resources, environmental quality, and science. NNSA's national security mission includes the

safety and reliability of the nuclear weapons in the stockpile; maintenance of the nuclear weapons stockpile in accordance with Executive directives; stemming the international spread of nuclear weapons materials and technologies; developing technical solutions to reduce the threat of weapons of mass destruction; and production of nuclear propulsion plants for the U.S. Navy. The energy resources mission of DOE includes research and development for energy efficiency, renewable energy, fossil energy, and nuclear energy. The DOE's environmental quality mission includes treatment, storage, and disposal of DOE wastes; cleanup of nuclear weapons sites; pollution prevention; storage and disposal of civilian radioactive waste; and development of technologies to reduce risks and reduce cleanup costs for DOE activities. DOE's science mission includes fundamental research in physics, materials science, chemistry, nuclear medicine, basic energy sciences, computational sciences, environmental sciences, and biological sciences and often contributes to the other three DOE missions. LANL provides support to each of these departmental missions, with a special focus on national security.

To carry out its Congressionally assigned mission requirements, NNSA must maintain a safe and reliable infrastructure at each of the national security laboratories. The 1999 Final *Site-Wide Environmental Impact Statement for Continued Operations of the Los Alamos National Laboratory* (SWEIS) (DOE 1999a) discusses each of the previously identified DOE missions in greater detail and analyzes four different levels of operations at LANL that support these missions. The SWEIS identified the various technical areas at LANL, their associated activities, and buildings. The SWEIS also identified emerging actions at LANL (see Section 1.6.3.1 of the SWEIS) and included a discussion of a variety of options for the renovation of infrastructure at LANL's TA-3 that could include the replacement of a number of aging structures either individually or as part of a multi-building effort. The SWEIS stated that more than half of LANL facilities are aging and are in poor, fair, or failing condition. Many of the buildings and structures at LANL were built after World War II ended in the mid-1940s. When the SWEIS was finalized in 1999, it was anticipated that one or more building replacements (offices and laboratories) would be needed to continue housing existing types of activities pursued at TA-3. Planning for renovations and replacements in TA-3 was still underway and the effects of these actions were not considered in the SWEIS. Proposals to replace aging structures at other technical areas at LANL were not sufficiently developed to be analyzed in the SWEIS. Soon thereafter, however, tighter budget allocations and newly identified possible solutions for saving overall costs once again raised the issue of replacing aging structures. Proposals to consolidate activities into grouped facilities at LANL, with an overall reduction in the size of facilities, have resulted from evaluations of the capabilities needed to meet the requirements of mission programs, the cost savings in long-term operating dollars, and the efficiency of operations that consolidation would bring.

The existing DX facilities at LANL were constructed before and during the Cold War Era when the mission of DOE's predecessor agency was to sustain aggressive system development, nuclear testing, and stockpile deployment. Today DX's primary function is nuclear stockpile stewardship, with certification responsibility for a substantial majority of the nation's active nuclear weapons stockpile. DX's stockpile stewardship activities currently involve facilities primarily located in buildings and structures at TA-6, TA-8, TA-9, TA-14, TA-15, TA-22, TA-36, TA-39, TA-40, and TA-69. Many of the buildings and structures in the technical areas that support weapons research and development and processing were built in the 1940s and 1950s (Photo 1). Most of these buildings (with the exception of the office buildings and buildings and