COVER SHEET

RESPONSIBLE AGENCY: U.S. DEPARTMENT OF ENERGY (DOE)

COOPERATING AGENCY: U.S. AIR FORCE

TITLE: Draft Site-Wide Environmental Impact Statement for Sandia National Laboratories/New Mexico (DOE/EIS-0281)

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Abstract: The DOE proposes to continue operating the Sandia National Laboratories/New Mexico (SNL/NM) located in central New Mexico. The DOE has identified and assessed three alternatives for the operation of SNL/NM: (1) No Action, (2) Expanded Operations, and (3) Reduced Operations. In the No Action Alternative, the DOE would continue the historical mission support activities SNL/NM has conducted at planned operational levels. In the Expanded Operations Alternative, the DOE would operate SNL/NM at the highest reasonable levels of activity currently foreseeable. Under the Reduced Operations Alternative, the DOE would operate SNL/NM at the minimum levels of activity necessary to maintain the capabilities to support the DOE mission in the near term. Under all of the alternatives, the affected environment is primarily within 50 miles (80 kilometers) of SNL/NM. Analyses indicate little difference in the environmental impacts among alternatives.

Public Comments: Comments on the Draft SWEIS may be submitted through the end of the 60-day comment period (expected to be June 15, 1999), which will commence with the publication of the Environmental Protection Agency's *Federal Register* Notice of Availability for this document. Comments may be submitted in writing, orally, or by electronic mail to the DOE at the addresses and phone number indicated above. Oral or written comments may also be submitted at public meetings to be held during the comment period on dates and locations to be announced in the *Federal Register* and via other public media shortly after issuance of the Draft SWEIS. Comments submitted will be considered in preparation of the Final SWEIS.

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Appendixes

Table of Contents

Appendix F Accidents

Appendix G Transportation

Appendix H Waste Generation

List of Figures

List of Tables

Acronyms

58th SOW	58th Special Operations Wing
A/BC AQCB	Albuquerque/Bernalillo County Air Quality Control Board
ACGIH	American Conference of Governmental Industrial Hygienists
ACPR II	Annular Core Pulsed Reactor II
ACRR	Annular Core Research Reactor
ACS	American Cancer Society
AEA	*Atomic Energy Act*
AEHD	Albuquerque Environmental Health Department
AEI	average exposed individual
AFRL	Air Force Research Laboratory
AFSC	Air Force Safety Center
AL	Albuquerque Operations Office
ALARA	as low as reasonably achievable
ALOHA	*Areal Locations of Hazardous Atmospheres*
AMPL	Advanced Manufacturing Processes Laboratory
ANSI	American National Standards Institute
APCD	Air Pollution Control Division
APPRM	Advanced Pulsed Power Research Module
AQCR	Air Quality Control Region
ARF	airborne release fraction
AT&T	American Telephone and Telegraph
BEA	Bureau of Economic Analysis
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BLS	Bureau of Labor Statistics
CAA	*Clean Air Act*
CAB	Citizens Advisory Board
CAMP	Capital Assets Management Process
CAMU	Corrective Action Management Unit
CAP88-PC	*Clean Air Assessment Package*
CAS	Chemical Abstract Service
CDG	Campus Design Guideline

Note: Italics are used to denote formal names or titles of acts, published documents, or computer models.

CDI chronic daily intake

CEQ Council on Environmental Quality

CERCLA *Comprehensive Environmental Response, Compensation, and Liability Act*

CFR *Code of Federal Regulations*

CHEST Conventional High Explosives and Simulation Test

CIS Chemical Information System

CPMS Criteria Pollutant Monitoring Station

CRMP Cultural Resource Management Plan

CSRL Compound Semiconductor Research Laboratory

CTA Central Training Academy

CTTF Containment Technology Test Facility

CWA *Clean Water Act*

CWL Chemical Waste Landfil

CY calendar year

D&D decontamination and decommissioning

DARHT dual-axis radiographic hydrotest

DEAR Department of Energy Acquisitions Regulations

DF decontamination factor, dispersion factor

DFG Deutsche Forschungemeinschaft

DNL day-night average noise level

DoD U.S. Department of Defense

DOE U.S. Department of Energy

DOI U.S. Department of the Interior

DOL U.S. Department of Labor

DOT U.S. Department of Transportation

DP Defense Programs

DR damage ratio

DU depleted uranium

EA environmental assessment

EAL Explosives Applications Laboratory

ECF Explosive Components Facility

EDE effective dose equivalent

EF emission factor

EID environmental information document

EIS	environmental impact statement
ELCR	excess lifetime cancer risk
EM	Office of Environmental Management
EMP	electromagnetic pulse
EO	*Executive Order*
EOD	explosive ordnance disposal
EPA	U.S. Environmental Protection Agency
EPCRA	*Emergency Planning and Community Right-to-Know Act*
ER	Environmental Restoration (Project)
ERPG	emergency response planning guideline
ES&H	Environment, Safety, and Health
ETC	Energy Training Center
FAA	Federal Aviation Administration
FCDSWA	Field Command, Defense Special Weapons Agency
FFCA	*Federal Facilities Compliance Act*
FM&T/NM	Federal Manufacturing & Technology/New Mexico
FONSI	Finding of No Significant Impact
FR	*Federal Register*
FSID	*Facilities and Safety Information Document*
FY	fiscal year
GHA	ground hazard area
GIF	Gamma Irradiation Facility
GIS	geographic information system
GRABS	Giant Reusable Air Blast Simulator
GWPMPP	*Groundwater Protection Management Program Plan*
HA	hazards assessment
HAP	hazardous air pollutants
HBWSF	High Bay Waste Storage Facility
HCF	Hot Cell Facility
HEAST	Health Effects Assessment Summary Tables
HEPA	high efficiency particulate arrestance
HERMES	High-Energy Radiation Megavolt Electron Source
HERTF	High-Energy Research Test Facility
HI	hazard index

HLW	high-level radioactive waste
HPML	High Power Microwave Laboratory
HQ	headquarters
HR	hydrogeologic region
HSWA	*Hazardous and Solid Waste Amendments*
HVAR	high velocity aircraft rocket
HWMF	Hazardous Waste Management Facility
IBMRL	Ion Beam Materials Research Laboratories
ICF	inertial confinement fusion
ICRP	International Commission on Radiological Protection
IDLH	immediately dangerous to life and health
IH	industrial hygiene
IHE	insensitive high explosives
IHIL	Industrial Hygiene Instrumentation Laboratory
IHIR	Industrial Hygiene Investigation Report
IMRL	Integrated Materials Research Laboratory
IPS	Integrated Procurement System
IRIS	Integrated Risk Information System
IRP	Installation Restoration Program
ISC	industrial source complex
ISCST3	*Industrial Source Complex Short-Term Model, Version 3*
ISS	interim storage site
JIT	just-in-time
JP	jet propulsion
KAFB	Kirtland Air Force Base
KAO	Kirtland Area Office
KUMMSC	Kirtland Underground Munitions and Maintenance Storage Complex
L90	the A-weighted background sound pressure level that is exceeded 90 percent of the time, based on a maximum of a 1-hour period
LADD	lifetime average daily dose
LANL	Los Alamos National Laboratory
LANMAS	Local Area Network Nuclear Material Accountability System
LBERI	Lovelace Biomedical and Environmental Research Institute, Inc.
LCF	latent cancer fatality

LLMW	low-level mixed waste
LLNL	Lawrence Livermore National Laboratory
LLW	low-level waste
LPF	leak path factor
LSA	low specific activity
LSF	Lightning Simulation Facility
LWDS	Liquid Waste Disposal System
M&O	management and operations
M.W.	molecular weight (in grams)
MAC	maximum allowable concentration
MACCS2	*MELCOR Accident Consequence Code System, Version 2*
MAR	material-at-risk
MBTA	*Migratory Bird Treaty Act*
MCL	maximum contaminant level
MDL	Microelectronics Development Laboratory
MEI	maximally exposed individual
MEMF	Mobile Electronic Maintenance Facility
MEPAS	Multimedia Environmental Pollutant Assessment System
MIPP	Medical Isotopes Production Project
MOBILE 5a	*Mobile Source Emission Factor (model)*
MOU	Memorandum of Understanding
MSDS	material safety data sheet
MTRU	mixed transuranic waste
MWL	Mixed Waste Landfill
NAAQS	*National Ambient Air Quality Standards*
NAGPRA	*Native American Graves Protection and Repatriation Act*
NASA	National Aeronautics and Space Administration
NCA	*Noise Control Act*
NCEA	National Center for Environment Assessment
NCRP	National Council on Radiation Protection and Measurements
ND	not detected
NEPA	*National Environmental Policy Act*
NESHAP	*National Emissions Standards for Hazardous Air Pollutants*
NEW	net explosive weight

NF not found

NGF Neutron Generator Facility

NGIF New Gamma Irradiation Facility

NHPA *National Historic Preservation Act*

NRHP National Register of Historic Places

NIOSH National Institute of Occupational Safety and Health

NMAAQS *New Mexico Ambient Air Quality Standards*

NMAC *New Mexico Administrative Code*

NMED New Mexico Environment Department

NMEIB New Mexico Environmental Improvement Board

NMFRCD New Mexico Forestry and Resource Conservation Division

NMDGF New Mexico Department of Game and Fish

NMSA *New Mexico Statutes Annotated*

NMSU New Mexico State University

NMWQCC New Mexico Water Quality Control Commission

NNSI Nonproliferation and National Security Institute

NOI Notice of Intent

NOVA North Vault

NPDES National Pollutant Discharge Elimination System

NPS National Park Service

NRC U.S. Nuclear Regulatory Commission

NRHP National Register of Historic Places

NTS Nevada Test Site

OBODM *Open Burn/Open Detonation Model*

OEL occupational exposure limits

OLM ozone limiting method

ORPD Occupational Radiation Protection Division

ORPS Occurrence Reporting and Processing System

OSHA Occupational Safety and Health Administration

PBCA Particle Bed Critical Assembly

PBFA Particle Beam Fusion Accelerator

PCB polychlorinated biphenyl

PDFL Photovoltiac Device Fabrication Laboratory

PDL Power Development Laboratory

PEIS	Programmatic Environmental Impact Statement
PEL	permissible exposure limit
PL	*Public Law*
$PM_{2.5}$	particulate matter smaller than 2.5 microns in diameter
PM_{10}	particulate matter smaller than 10 microns in diameter
PNM	Public Service Company of New Mexico
PPE	personal protective equipment
PSD	prevention of significant deterioration
PSL	Production Primary Standards Laboratory
PT	product tester
R&D	research & development
RCRA	*Resource Conservation and Recovery Act*
REL	recommended exposure limit
REMS	Radiation Exposure Monitoring System
RF	respirable fraction
RHEPP	Repetitive High Energy Pulsed Power
RHI	risk hazard index
RITS	Radiographic Integrated Test Stand
RME	reasonable maximum exposure
RMMA	Radioactive Materials Management Area
RMP	Risk Management Plan
RMSEL	Robotic Manufacturing Science Engineering Laboratory
RMWMF	Radioactive and Mixed Waste Management Facility
ROD	Record of Decision
ROI	region of influence
RV	reentry vehicle
SA	safety assessment
SABRE	Sandia Accelerator & Beam Research Experiment
SAR	Safety Analysis Report
SARA	*Superfund Amendments and Reauthorization Act*
SDWA	*Safe Drinking Water Act*
SECOM	Secure Communication Center
SHPO	State Historic Preservation Officer (NM)
SIP	State Implementation Plan

SMERF Smoke Emission Reduction Facility

SMS Scenery Management System

SNAP Systems for Nuclear Auxiliary Power

SNL/CA Sandia National Laboratories/California

SNL/HI Sandia National Laboratories/Hawaii

SNL/NM Sandia National Laboratories/New Mexico

SNL/NV Sandia National Laboratories/Nevada

SNM special nuclear material

SPA sawdust-propellant-acetone

SPHINX Short-Pulse High Intensity Nanosecond X-Radiator

SPR Sandia Pulsed Reactor

SSM stockpile stewardship and management

SST safe, secure transport

START Strategic Arms Reduction Treaty

STEL short-term exposure limit

STL Simulation Technology Laboratory

STP standard temperature and pressure

SVOC semivolatile organic compound

SWEIS Site-Wide Environmental Impact Statement

SWISH Small Wind Shielded Facility

SWMU solid waste management unit

SWTF Solid Waste Transfer Facility

TA technical area

TAP toxic air pollutants

TBF Terminal Ballistics Facility

TCP traditional cultural property

TEDE total effective dose equivalent

TESLA Tera-Electron Volt Semiconducting Linear Accelerator

TEV threshold emission value

TLV threshold limit value

TRU transuranic

TSCA *Toxic Substances Control Act*

TSD Transportation Safety Division

TSP total suspended particulates

TTF	Thermal Treatment Facility
TWA	time weighted average
U.S.	United States
U.S.C.	*United States Code*
UBC	Uniform Building Code
UNM	University of New Mexico
UPS	United Parcel Service
USAF	U.S. Air Force
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tan
VDL	vacuum diode load
VHI	vapor hazard index
VHR	vapor hazard ratio
VMF	vehicle maintenance facility
VOC	volatile organic compound
WARE	Worksite Accident Reduction Expert
WFO	work for others
WIPP	Waste Isolation Pilot Plant
WM	Waste Management

UNIT OF MEASURE	ABBREVIATION
acre	ac
billion gallons per year	BGY
centimeters	cm
cubic feet	ft^3
cubic feet per second	ft^3/s
cubic meters	m^3
cubic yards	yd^3
Curie	Ci
decibel	dB
degrees Celsius	°C
degrees Fahrenheit	°F
feet	ft
gallon	gal
gallons per day	gpd
gram	g
grams per second	g/sec
gravity	*g*
hectare	ha
Hertz	Hz
hour	hr
kelvin	K
kilogram	kg
kilojoule	kJ
kilometer	km
kilometer per hour	km/hr
kilovolt	kV
kilovoltampere	kVA
kilowatt	kW
kilowatt hour	kWh
liter	L
megajoule	MJ
megavolt-ampere	MVA

UNIT OF MEASURE	ABBREVIATION
megawatt	MW
megawatt hour	MWh
megawatt-electric	MWe
megawatt-thermal	MWt
meter	m
meters per second	m/sec
microcurie	µCi
microcuries per gram	µCi/g
microgram	µg
micrograms per cubic meter	$\mu g/m^3$
micrograms per kilogram	µg/kg
micrograms per liter	µg/L
micron or micrometer	µm
microohms per centimeter	µohms/cm
micropascal	mPa
mile	mi
miles per hour	mph
millicurie	mCi
millicurie per gram	mCi/g
millicurie per millimeter	mCi/ml
milligram	mg
milligram per liter	mg/L
milliliter	ml
millimeters of mercury	mmHg
million	M
million electron volts	MeV
million gallons per day	MGD
million gallons per year	MGY
millirem	mrem
millirem per year	mrem/yr
nanocurie	nCi
nanocuries per gram	nCi/g

UNIT OF MEASURE	ABBREVIATION
part per billion	ppb
part per billion by volume	ppbv
part per million	ppm
particulate matter of aerodynamic diameter less than 10 micrometers	PM_{10}
particulate matter of aerodynamic diameter less than 25 micrometers	PM_{25}
pascal	Pa
picocurie	pCi
picocuries per gram	pCi/g
picocuries per liter	pCi/L
pound	lb
pounds mass	lbm
pounds per square inch	psi
pounds per year	lb/yr
quart	qt
Roentgen equivalent, man	rem
second	sec
square feet	ft^2
square kilometers	km^2
square meters	m^2

Metric Conversion Chart

TO CONVERT FROM U.S. CUSTOMARY INTO METRIC			TO CONVERT FROM METRIC INTO U.S. CUSTOMARY		
If you know	**Multiply by**	**To get**	**If you know**	**Multiply by**	**To get**
Length					
inches	2.540	centimeters	centimeters	0.3937	inches
feet	30.48	centimeters	centimeters	0.03281	feet
feet	0.3048	meters	meters	3.281	feet
yards	0.9144	meters	meters	1.094	yards
miles	1.609	kilometers	kilometers	0.6214	miles
Area					
square inches	6.452	square centimeters	square centimeters	0.1550	square inches
square feet	0.09290	square meters	square meters	10.76	square feet
square yards	0.8361	square meters	square meters	1.196	square yards
acres	0.4047	hectares	hectares	2.471	acres
square miles	2.590	square kilometers	square kilometers	0.3861	square miles
Volume					
fluid ounces	29.57	milliliters	milliliters	0.03381	fluid ounces
gallons	3.785	liters	liters	0.2642	gallons
cubic feet	0.02832	cubic meters	cubic meters	35.31	cubic feet
cubic yards	0.7646	cubic meters	cubic meters	1.308	cubic yards
Weight					
ounces	28.35	grams	grams	0.03527	ounces
pounds	0.4536	kilograms	kilograms	2.205	pounds
short tons	0.9072	metric tons	metric tons	1.102	short tons
Temperature					
Fahrenheit (°F)	subtract 32, then multiply by 5/9	Celsius (°C)	Celsius (°C)	multiply by 9/5, then add 32	Fahrenheit (°F)
kelvin (°k)	subtract 273.15	Celsius (°C)	kelvin (°k)	Multiply by 9/5, then add 306.15	Fahrenheit (°F)

Metric Prefixes

PREFIX	EXPONENT CONVERTED TO WHOLE NUMBERS	PREFIX	EXPONENT CONVERTED TO WHOLE NUMBERS
atto-	10^{-18} = 0. 000,000,000,000,000,001	**dekta-**	10^{1} = 10
femto-	10^{-15} = 0. 000,000,000,000,001	**hecto-**	10^{2} = 100
pico	10^{-12} = 0. 000,000,000,001	**kilo-**	10^{3} = 1,000
nano-	10^{-9} = 0. 000,000,001	**mega-**	10^{6} = 1,000,000
micro-	10^{-6} = 0.000,001	**giga-**	10^{9} = 1,000,000,000
milli	10^{-3} = 0.001	**tetra-**	10^{12} = 1,000,000,000,000
centi	10^{-2} = 0.01	**peta-**	10^{15} = 1,000,000,000,000,000
deci-	10^{-1} = 0.1	**exa-**	10^{18} = 1,000,000,000,000,000,000
Note: 10^{0} = 1			