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**Title: Record of Decision: Site-Wide Environmental Impact Statement for the Continued Operation of Los Alamos National Laboratory, Los Alamos, NM**

**Action:** Record of decision.

#### Agency

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DEPARTMENT OF ENERGY (DOE) > National Nuclear Security Administration

#### Synopsis

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**SUMMARY:** The National Nuclear Security Administration (NNSA), a separately organized agency within the U.S. Department of Energy (DOE), is issuing this Record of Decision (ROD) for the continued operation of the Los Alamos National Laboratory (LANL) in Los Alamos, New Mexico, pursuant to the *Final Site-Wide Environmental Impact Statement for the Continued Operation of Los Alamos National Laboratory, Los Alamos, New Mexico*, DOE/EIS-0380 (SWEIS) (73 FR 28453, May 16, 2008). This ROD is the second ROD based on the information and analyses contained in the SWEIS and other factors, including comments received on the SWEIS, costs, technical and security considerations, and the missions of NNSA. These decision factors also include results from the analyses in the October 24, 2008, *Final Complex Transformation Supplemental Programmatic Environmental Impact Statement* (DOE/EIS-

0236-S4, 73 FR 63460) (Complex Transformation SPEIS) and its two RODs (73 FR 77644, 73 FR 77656, December 19, 2008). NNSA issued the first ROD for the continued operation of LANL based on the SWEIS (73 FR 55833) on September 26, 2008.

In the LANL SWEIS, NNSA analyzed three alternatives for the continued operation of LANL: (1) No Action, (2) Reduced Operations, and (3) Expanded Operations. NNSA identified the Expanded Operations Alternative as its Preferred Alternative.

For this second ROD, NNSA continues to select the No Action Alternative, announced in the 2008 ROD as its decision for continuing the operation of LANL, and has decided to implement additional elements of the Expanded Operations Alternative. Specific projects that will be implemented under this ROD are: (1) Complete the environmental remediation and closure of Technical Area 18 (TA-18) Pajarito Site; (2) complete the environmental remediation and closure of TA-21 (also referred to as the Delta Prime or DP Site); (3) refurbish the Plutonium Facility Complex at TA-55; (4) construct and operate a new Radioactive Liquid Waste Treatment Facility in TA-50 and operate a zero liquid discharge facility in TA-52 as an auxiliary action; (5) install additional processors and equipment to further expand the capabilities and operation level of the Nicholas C. Metropolis Center for Modeling and Simulation in TA-3; and (6) construct and operate a new Science and Engineering Complex at TA-62. These projects and the changes in operations associated with them are needed to support DOE and NNSA missions; to maintain and improve the safety and security of existing capabilities at LANL; and to further LANL intra-site facility consolidation. Decisions that NNSA is announcing in this ROD will not change the plutonium pit production throughput capability at LANL (20 plutonium pits per year), nor will they influence or be impacted by future decisions that may be made based on the upcoming Nuclear Posture Review. n1

n1 The Nuclear Posture Review is a congressionally mandated comprehensive review of U.S. nuclear deterrence policy and strategy that the Secretary of Defense will conduct in consultation with the Secretary of Energy and the Secretary of State. The requirement for this review can be found in the National Defense Appropriations Act for 2008, Public Law 110-181.

## Text

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**SUPPLEMENTARY INFORMATION:** NNSA prepared this ROD pursuant to the regulations of the Council on Environmental Quality (CEQ) for implementing NEPA (40 CFR parts 1500-1508) and DOE's NEPA Implementing Procedures (10 CFR part 1021). Decisions presented in this second ROD are based on information and analysis contained in the SWEIS (including a classified appendix that assesses the potential environmental impacts of a representative set of credible intentional destructive acts that include terrorism scenarios) (73 FR 28453, May 16, 2008), comments received on the Final SWEIS; NNSA's two December 19, 2008, RODs resulting from information and analysis contained in the Complex Transformation SPEIS (73 FR 77644, 73 FR 77656); and other factors, including costs, technical and security considerations, and the missions of NNSA.

LANL is a multidisciplinary, multipurpose research institution in north-central New Mexico,

about 60 miles (97 kilometers) north-northeast of Albuquerque, and about 25 miles (40 kilometers) northwest of Santa Fe. LANL occupies about 25,600 acres (10,360 hectares), or approximately 40 square miles (104 square kilometers). About 2,000 structures with approximately 8.6 million square feet under roof serve to house LANL operations and activities, with about half the square footage used as laboratory or production space, and the remaining half used for administrative, storage, service, and other purposes.

LANL is one of three national security laboratories within NNSA's Nuclear Security Enterprise. The main role of LANL in the fulfillment of NNSA and DOE missions is scientific and technological work that supports nuclear materials handling and processing, and weapons component fabrication; stockpile management; materials and manufacturing technologies; nonproliferation programs; and waste management activities. LANL plays a key role in providing stewardship for the nation's nuclear stockpile that includes manufacturing some nuclear weapons components, such as plutonium pits. In addition to weapons component manufacturing, LANL performs weapons component testing, stockpile assurance, component replacement, surveillance, and maintenance. Research and development activities at LANL include high explosives processing, chemical research, nuclear physics research, materials science research, systems analysis and engineering, human genome mapping, biotechnology applications, and remote sensing technologies. Work at LANL is also conducted for other Federal agencies such as the Departments of Defense and Homeland Security, as well as for universities, institutions, and private entities.

The alternatives evaluated in the SWEIS span a range of potential operations from minimum levels that would maintain essential mission support capabilities (Reduced Operations Alternative), through the highest reasonably foreseeable levels that could be supported by current facilities or new facilities (Expanded Operations Alternative). The No Action Alternative analyzed in the SWEIS is essentially a continuation of current operations based on previous NEPA analyses and decisions, including the 1999 LANL SWEIS (DOE/EIS-0238, January 1999) and its ROD (64 FR 50797, September 20, 1999). The Reduced Operations and Expanded Operations Alternatives analyzed in the SWEIS are reductions or expansions of the level of operations for the No Action Alternative. As a matter of convenience, actions associated with implementing the March 2005 LANL Compliance Order on Consent (Consent Order) with the State of New Mexico<sup>n2</sup> are only analyzed in the Expanded Operations Alternative. However, NNSA stated in the SWEIS that DOE intends to implement actions necessary to comply with the Consent Order, regardless of decisions it makes on other actions analyzed in the LANL SWEIS.

<sup>n2</sup> The March 2005 LANL Compliance Order on Consent was issued pursuant to the New Mexico Hazardous Waste Act and entered into by the State of New Mexico, the Department of Energy and its Management and Operating Contractor to address requirements concerning certain groundwater contaminants toxic pollutants and explosive compounds. The Consent Order may be viewed at [http://www.lanl.gov/environment/compliance/consent\\_order.shtml](http://www.lanl.gov/environment/compliance/consent_order.shtml).

The 2008 SWEIS ROD announced NNSA's decision to continue to implement the No Action Alternative with certain elements of the Expanded Operations Alternative. These specific elements were: (1) Continuing to implement actions necessary to comply with the Consent Order, which requires investigation and remediation of environmental contamination at LANL;

(2) broadening the types and quantities of radioactive sealed sources for isotopes of Cobalt, Iridium, Californium and Radium, (Co-60, Ir-192, Cf-252, Ra-226), that LANL will manage and store prior to disposal; (3) expanding the capabilities and operational level of the Nicholas C. Metropolis Center for Modeling and Simulation to support the Roadrunner super computing platform; (4) performing research regarding beryllium detection and mitigation measures; (5) retrieving and disposing of about 3,100 cubic yards of contact-handled and 130 cubic yards of remote-handled legacy transuranic (TRU) waste from below-ground storage; (6) planning, design, construction, and operation of the Waste Management Facilities Transition projects to facilitate actions required by the Consent Order; (7) repairing and replacing mission critical cooling system components for buildings in Technical Area-55 (TA-55); and (8) completing final design of a new Radioactive Liquid Waste Treatment Facility, and designing and constructing the zero liquid discharge facility auxiliary component of the new treatment facility.

NNSA has previously announced its determination that the Expanded Operations Alternative is both its Preferred Alternative and the Environmentally Preferred Alternative. Considering the many aspects of the alternatives analyzed in the SWEIS, and looking out over the long term, NNSA believes that the implementation of changes analyzed in the Expanded Operations Alternative would allow it to best achieve both its mission and environmental responsibilities. Under this alternative, NNSA would be better positioned to minimize the use of electricity and water; streamline operations through consolidation; replace older laboratory and production facilities with new buildings that incorporate modern safety, security, and energy efficiency standards improving NNSA's ability to protect human health; reduce the "footprint" of LANL as a whole; and allow some areas to return to a natural state.

NNSA published as Volume 3 of the SWEIS all comments received on the **[33234]** Draft SWEIS together with NNSA's responses, and discussions of how comments resulted in changes to the document. The 2008 SWEIS ROD included a detailed discussion of the comments received on the Final SWEIS, and will not be repeated here. In response to the concern raised by several of the commenters that proceeding with an increase in plutonium pit production at this time would be premature, NNSA agrees that making decisions at this time on future plutonium pit production levels is premature, and will delay making any decisions in this area until after the completion of the upcoming Nuclear Posture Review. Decisions that NNSA is announcing in this ROD will not change the 20 plutonium pits per year level of plutonium pit production throughput capability established in the 1999 LANL SWEIS ROD.

On December 19, 2008, NNSA issued two RODs based in part on the Complex Transformation SPEIS for the continued transformation of the nuclear weapons complex. One ROD addressed the implementation of programmatic alternatives involving plutonium, uranium, and the assembly and disassembly of nuclear weapons (73 FR 77644). The other announced the implementation of project-specific alternatives involving tritium research and development, flight test operations, and major environmental test facilities (73 FR 77656). NNSA's programmatic decision to retain and consolidate plutonium pit manufacturing and research and development work at LANL means that special nuclear materials and work performed with plutonium will be consolidated from some of the other NNSA sites to LANL. This decision



supports the transformation of the nuclear weapons complex into a smaller, more efficient nuclear security enterprise that can respond to changing national security challenges and ensure the long-term safety, security, and reliability of the nuclear weapons stockpile. Two of NNSA's project-specific decisions also directly affect LANL operations: (1) The consolidation of tritium research and operations at the Savannah River Site, which reduces tritium operations at LANL; and (2) the consolidation of major environmental test facilities at Sandia National Laboratories/New Mexico, which closes four facilities at LANL.

### **Basis for Decision**

In this second ROD, NNSA is announcing its decision to continue to implement the No Action Alternative with the addition of elements from the Expanded Operations Alternative of the SWEIS. NNSA has also decided that it will now implement additional elements from the Expanded Operations Alternative that complement the actions taken under the 2008 SWEIS ROD. These additional elements collectively include increases in the operation of some existing facilities and the implementation of a limited number of additional new facility projects needed to support ongoing stockpile stewardship and environmental closure and remediation programs; to enhance nuclear safety and security; and to provide modern features for the protection of workers and the environment. NNSA will continue to undertake intra-site consolidation of operations and activities to reduce the physical "footprint" of LANL and improve efficiency and address the LANL Land Transfer requirements of Public Law 105-119. NNSA also will continue to coordinate with the DOE's Office of Environmental Management to execute environmental closure and remediation actions including major material disposal area (MDA) remediation, canyon cleanups and all activities necessary to meet Consent Order requirements, the LANL Federal Facility Compliance Agreement, and DOE commitments regarding the use of resources provided through the American Recovery and Reinvestment Act of 2009 (ARRA) (Pub. L. 111-5).

### **Environmental Impacts Associated With Decisions**

In making the decisions announced in this ROD, NNSA considered the potential impacts for normal operations (those operations without accidents or intentional destructive acts) as well as impacts analyzed in the SWEIS from potential accidents and intentional destructive acts, including credible terrorism scenarios, on workers and surrounding populations, as it did in developing the 2008 ROD. NNSA also evaluated the potential impacts associated with the irreversible or irretrievable commitments of resources, and the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity. These analyses and results are described in the Summary and Chapters 4 and 5 of the SWEIS. Additional project specific analyses are included in the Appendices to the SWEIS.

### **Decisions**

Operations at LANL provide a wide range of scientific and technological capabilities for NNSA's National Nuclear Security Enterprise (Nuclear Weapons Complex). NNSA's decisions are based on its current and anticipated mission responsibilities and its need to continue to operate LANL in a manner that allows NNSA to efficiently and effectively fulfill its mission

responsibilities in an environmentally protective and fiscally prudent manner. The need for the decisions identified in this ROD exists regardless of any future decisions that may be made about the level of plutonium pit production at LANL. National security policies and related laws require NNSA to maintain the Nation's nuclear weapons stockpile, as well as its core competencies in nuclear weapons. The nuclear facilities at LANL are essential to NNSA's ability to execute this core program and to support NNSA's aggressive and far-reaching nuclear non-proliferation efforts. The changes in operations and new projects announced in this ROD are needed to fulfill NNSA and DOE mission responsibilities and meet various requirements that have arisen since 1999, and are consistent with recent decisions regarding the nuclear weapons complex transformation.

Consistent with the decisions announced in the first ROD under the SWEIS, NNSA and DOE's Office of Environmental Management will continue to implement actions required by the March 2005 Consent Order along with other activities needed for environmental cleanup at LANL:

(1) Analytical chemistry sample processing, waste management activities such as waste characterization operations and waste processing, storage and transportation actions, as well as waste disposal at appropriate waste disposal facilities located both on-site and off-site; (2) the clearing of site vegetation; (3) decontamination, decommissioning and demolition (DD&D) of structures and buildings with priority to those that must be removed to reach buried contamination; (4) exhumation of buried contamination; (5) exhumation and transportation of soil and rock from on-site borrow pits; (6) construction of roads to reach sites with heavy equipment, lay-down areas for equipment and materials and waste storage and staging, and parking sites to meet the needs of vehicles involved in transporting wastes, equipment and materials; and (7) delineation and fencing of clean-up sites.

Environmental cleanup projects that will be undertaken and completed under this ROD include:

- Completing the remediation and closure of TA-18 Pajarito Site. This would include relocating remaining operations to existing facilities within LANL, performing the DD&D of existing **[33235]** site structures and completing remediation of the TA-18 canyon-bottom site.
- Completing the remediation and closure of TA-21 Delta Prime (DP) Site with an emphasis on DD&D and environmental remediation of MDAs. This would include the DD&D of the TA-21 buildings. Those structures that cover or could interfere with activities to investigate and remediate MDAs and other potential release sites under the Consent Order would be given priority. Both DP West and DP East facilities will undergo DD&D and thorough characterization, decontamination, and demolition, with waste disposal dependent on facility characterization information. The underlying waste sites can then be properly investigated, considered for corrective actions that may be required under the Consent Order and remediated as appropriate.

The NNSA has also decided to implement the additional projects specified in this ROD that involve the design, construction and operation of new replacement buildings, and the renovation of certain existing facilities. This decision includes the implementation of all

associated actions needed to facilitate construction or renovation projects, including those related to the transfer of operations, and those necessary for the DD&D of spaces vacated by moving existing facilities. These projects are part of the vision that NNSA has established for the future Nuclear Security Enterprise.

NNSA's vision for the future remains a smaller, safer, more secure and less expensive enterprise that leverages the scientific and technical capabilities of its workforce to meet all our national security requirements. The specific projects that NNSA has decided to implement are:

- Refurbish the Plutonium Facility Complex (PF-4) at TA-55: This refurbishment project consists of seven subprojects that either replace or upgrade obsolete and/or worn-out facility components/safety systems or address regulatory-driven requirements at the PF-4 building in TA-55. Replacement and maintenance of critical infrastructure and safety systems is necessary to ensure the reliability of this facility and compliance with safety and regulatory requirements.
- Construct and operate a new Radioactive Liquid Waste Treatment Facility, (RLWTF), at TA-50 together with the operation of a zero liquid discharge facility at TA-52 as an auxiliary action: These actions replace/restore an existing capability at LANL for processing radioactive liquid wastes. The existing RLWTF at TA-50 is the only facility available at LANL to treat a broad range of transuranic and low-level radioactive liquid wastes. It is an aging facility (over 40 years old) that has exceeded its design life.
- Install additional processors and equipment as necessary to further expand the capabilities and operation level of the Nicholas C. Metropolis Center for Modeling and Simulation at TA-3: These actions will be undertaken to support future operations up to the level of operations analyzed in the SWEIS as attainable through the consumption of a maximum electric power use of 15 megawatts, and a maximum potable water use of 51 million gallons per year. Calculations performed at the Nicholas C. Metropolis Center support the continued certification of the nuclear weapons stockpile without conducting underground nuclear tests, and also support research on global energy challenges and other scientific issues.
- Construct and operate a new Science and Engineering Complex at TA-62 (analyzed as the Science Complex Option 1 in Appendix G of the SWEIS): This action consolidates offices and light laboratories currently located in several outmoded structures at LANL into a new, state-of-the-art facility of approximately 400,000 gsf. It would support scientific research activities in both basic and applied sciences. Execution of this project would be accompanied by DD&D of excess structures at LANL.

The NNSA will implement changes to operational levels at existing facilities and install new infrastructure analyzed as part of the Expanded Operations Alternative that support decisions announced in this ROD, the 2008 SWEIS ROD and the two SPEIS RODs. The changes to on-going operational levels at existing facilities (and their replacement facilities) include: (1) Changes and increases to the capabilities for waste storage, characterization, packaging, and labeling at solid and liquid radioactive waste and chemical waste management and treatment

facilities to support the processing and disposition of transuranic, low-level and mixed low-level radioactive waste, and chemical waste from site DD&D activities; and (2) the performance of site assessments, soil remediation, and the enhancement of field capabilities to support of environmental remediation and risk mitigation at LANL.

### **Mitigation Measures**

As described in the SWEIS, NNSA and LANL operate pursuant to a number of Federal laws including environmental laws, DOE Orders, and Federal, State, and local controls, and agreements. Many of these mandate actions that serve to mitigate potential adverse environmental impacts. A Los Alamos Mitigation Action Plan (MAP) for the SWEIS RODs has been issued and will be reviewed and updated as necessary to implement this ROD. As discussed in the 2008 ROD, this MAP contains a summary of all commitments for LANL that are either underway or will be initiated. These commitments include such actions as continued forest management efforts, trail management efforts, and implementation of a variety of site sampling and monitoring measures, as well as additional measures to reduce potable water use and pollutant emissions and implement resource conservation initiatives.

In addition, with respect to concerns raised by the Santa Clara Pueblo, as discussed in the 2008 ROD, NNSA will continue its efforts to support the Pueblo and other tribal entities in matters of human health and will participate in various intergovernmental efforts to protect indigenous practices and locations of concern. NNSA will conduct government-to-government consultations with the Pueblo and other tribal entities to incorporate these matters into the MAP.

Issued at Washington, DC, this 29 day of June 2009.

**Thomas P. D'Agostino,**

*Administrator, National Nuclear Security Administration.*

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## **Contacts**

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**FOR FURTHER INFORMATION CONTACT:** For copies of the SWEIS, the 2008 SWEIS ROD or this ROD, or to receive further information about other issues regarding the Los Alamos Site Office's National Environmental Policy Act (NEPA) compliance program, contact: Mr. George J. Rael, Assistant Manager Environmental Operations, NEPA Compliance Officer, U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Site Office, 3747 West Jemez Road, Los Alamos, NM **[33233]** 87544. Mr. Rael may be contacted by telephone at (505) 665-5658, or by e-mail at LASO.SWEIS@doeal.gov. For information on the DOE NEPA process, contact: Ms. Carol M. Borgstrom, Director, Office of NEPA Policy and Compliance (GC-20), U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586-4600, or leave a message at (800) 472-2756. Additional



information regarding DOE NEPA activities and access to many DOE NEPA documents, including those referenced in this ROD, are available on the Internet through the DOE NEPA Web site at <http://www.gc.energy.gov/nepa/>.

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