

CHAPTER 1

Introduction and Purpose and Need for Agency Action

This chapter introduces Sandia National Laboratories' (SNL's) role in supporting the United States (U.S.) Department of Energy's (DOE's) and National Nuclear Security Administration's (NNSA's) statutory missions and operations. It also provides a statement of the purpose and need for the Agency's action, a description of the DOE missions for SNL, an overview of the alternatives to be considered, and discusses the public participation process and related National Environmental Policy Act (NEPA) documents. Finally, it discusses the organization and contents of the remaining chapters in the Site-Wide Environmental Assessment (SWEA).

1.1 INTRODUCTION

Sandia National Laboratories (SNL) is one of three national laboratories that support the DOE's statutory responsibilities for nuclear weapons research and design, development of energy technologies, and basic scientific research. SNL is composed of four geographically separated facilities: Albuquerque, New Mexico (SNL/NM); Tonopah, Nevada; Kauai, Hawaii; and Livermore, California (SNL/CA). This SWEA focuses on SNL/CA.

SNL/CA has an annual budget estimated at \$130 million and a workforce of approximately 1,080. SNL/CA comprises approximately 410 acres of Federal land (owned by the DOE) east of the City of Livermore, California (Figure 1-1). SNL/CA is located directly south of Lawrence Livermore National Laboratory (LLNL). East Avenue separates the two facilities. The NNSA, responsible for carrying out the national security responsibilities of DOE, has prepared the SNL/CA SWEA to examine the environmental impacts associated with three alternatives for SNL/CA's continued operation. In the SNL/CA SWEA, the NNSA describes the consequences, both onsite and offsite, of ongoing and proposed SNL/CA operations, and compares the potential consequences to three alternative levels of future operations. DOE and NNSA activities, at the national laboratories and production facilities, are known as mission/business lines. Descriptions of the DOE mission/business lines are:

- **National Security**—enhancing national security through military application of nuclear technology and by reducing global danger from the potential spread of weapons of mass destruction.
- **Energy Resources**—promoting the development and deployment of systems and practices that provide energy that is clean, efficient, reasonably priced, and reliable.
- **Environmental Quality**—cleaning up the legacy of nuclear weapons and nuclear research activities, safely managing nuclear materials, and disposing of radioactive wastes.
- **Science**—advancing science and scientific tools to provide the foundation for the DOE's applied mis-

sions and to provide insights into our physical and biological world.

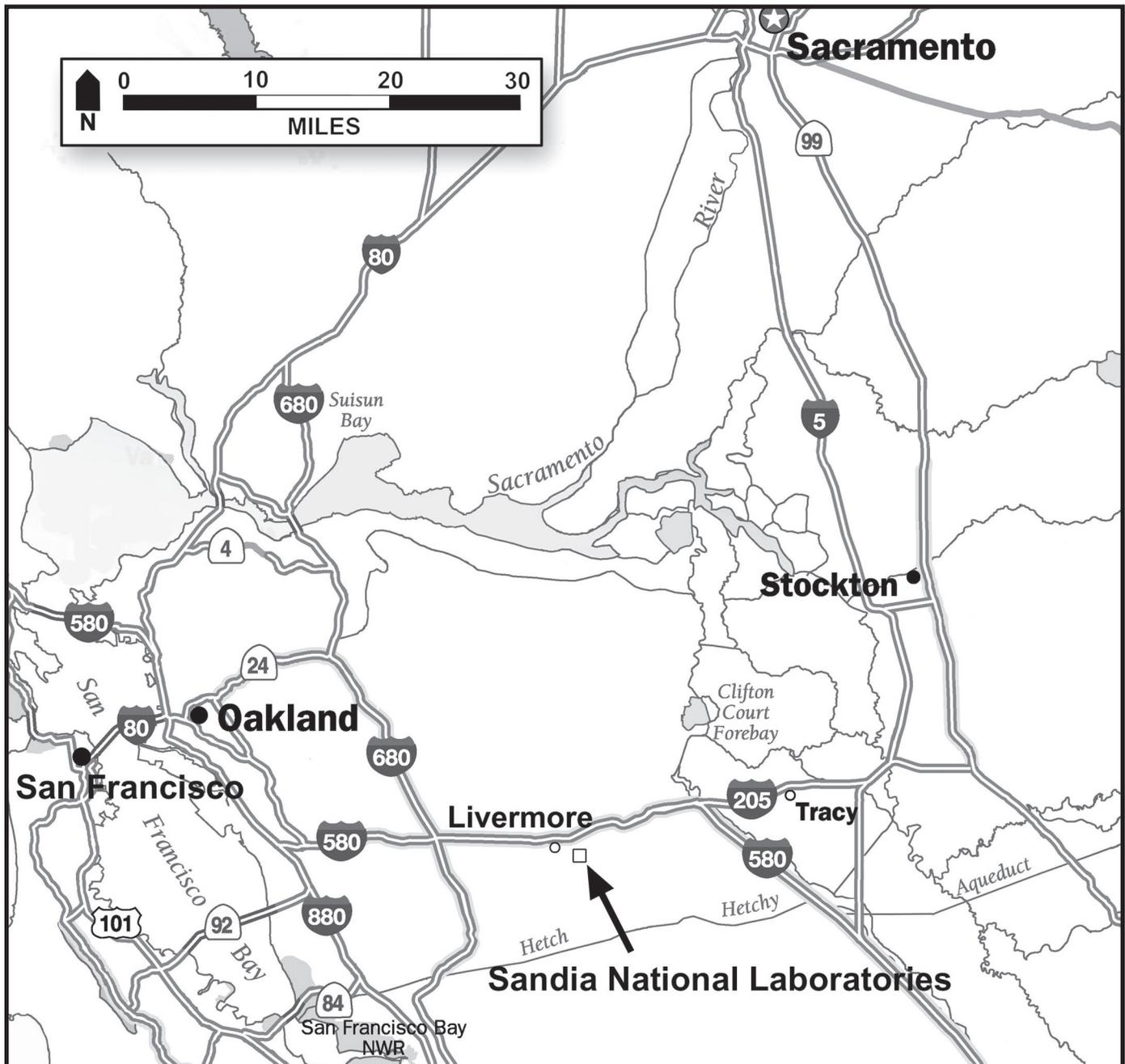
In 2000, the NNSA was created within the DOE to carry out the department's national security responsibilities. Its mission includes maintenance of a safe, secure and reliable stockpile of nuclear weapons and associated materials capabilities and technologies; promotion of international nuclear safety and nonproliferation; and administration and management of the naval nuclear propulsion program. The NNSA officially began operations on March 1, 2000 (NNSA 2002a). The majority of activities, operations, and facilities at SNL/CA are under the responsibility of the NNSA.

The U.S. Department of Energy's Mission Statement

To foster a secure and reliable energy system that is environmentally and economically sustainable; to be a responsible steward of the Nation's nuclear weapons; to clean up the DOE's facilities; to lead in the physical sciences and advance the biological, environmental, and computational sciences; and to provide premier scientific instruments for the Nation's research enterprise (DOE 2002a).

The National Nuclear Security Administration's Mission Statement

To enhance United States national security through the military application of nuclear energy; to maintain and enhance the safety, reliability, and performance of the United States nuclear weapons stockpile, including the ability to design, produce, and test, in order to meet national security requirements; to provide the United States Navy with safe, militarily effective nuclear propulsion plants and to ensure the safe and reliable operation of those plants; to promote international nuclear safety and nonproliferation; to reduce global danger from weapons of mass destruction; and to support United States leadership in science and technology (NNSA 2002a).



Source: CDT 2002a

Figure 1-1. Sandia National Laboratories, California is Located East of Livermore in Alameda County, California

Historically, national security has meant defense against foreign military threats. However, over time the threats to our nation have become increasingly varied and complex. To meet these challenges, the DOE/NNSA missions for SNL have evolved in response to emerging national needs. As a result of the terrorist attacks on September 11, 2001, the NNSA believes SNL capabilities in enhancing national security through military application of nuclear technology and developing technologies to reduce the global danger from weapons of mass destruction are needed to support the Office of Homeland Security. Support of the

Office of Homeland Security is part of the ongoing mission lines of the DOE and NNSA.

1.2 PURPOSE AND NEED FOR AGENCY ACTION

The DOE needs to continue to meet its responsibilities for national security (including homeland security), energy resources, environmental quality, and science at SNL/CA. The DOE needs to continue to fulfill its responsibilities as mandated by statute, Presidential Decision Directive (PDD), and congressional authorization

The Office of Homeland Security Mission Statement

On October 8, 2001, the President established within the Executive Office of the President an Office of Homeland Security and the Homeland Security Council (Executive Order [EO] 13228). The mission of the Office will be to develop and coordinate the implementation of a comprehensive national strategy to secure the United States from terrorist threats or attacks. The Office will coordinate the executive branch's efforts to detect, prepare for, prevent, protect against, respond to, and recover from terrorist attacks within the United States (66 FR 51812).

and appropriation, while meeting this need in a manner that protects human health and the environment. As previously stated, the DOE missions for SNL have evolved over time in response to national needs (for example, EO 13228). When assigning missions to SNL, the DOE considers many factors, including the following PDDs; the *National Defense Authorization Act* of 2002 (P.L. 107-107); the Department of Defense (DoD) Nuclear Posture Review; and treaties, both implemented and proposed, including the Nuclear Nonproliferation Treaty, Strategic Arms Reduction Treaty (START) I, proposed START II, and the proposed Comprehensive Test Ban Treaty. Operations at SNL/CA comprise four broad areas: weapons, integrated systems and technologies, research, and exemplary operations. Following are specialized capabilities SNL/CA provides in support of the DOE's mission/business lines:

- science-based performance and reliability testing and computer-based modeling of nuclear weapon components;
- development, design, and testing of nonnuclear components for nuclear weapon systems;
- materials and diagnostic equipment research and testing (involves biological, chemical, waste, and radiological materials including research and testing associated with Homeland Defense);
- energy and environmental research;
- microelectronics, microsystems, and nanotechnologies.

1.3 ALTERNATIVES

The NNSA proposes to continue operating SNL/CA and managing its resources in a manner that meets evolving DOE mission lines and that responds to the concerns of affected and interested individuals and agencies. The NNSA identified three alternatives—No Action, Planned Utilization and Operations, and Maximum Operations—

that will meet its purpose and need for agency action and support existing and potential future program-related activities at SNL/CA.

1.3.1 NO ACTION ALTERNATIVE

The No Action Alternative includes continuing and historical research and development operations and related activities of SNL/CA. Specifically, the No Action Alternative includes:

- continuing the level of activity at 10 existing facilities/groups as discussed in Section 3.2
- continuing the level of support specified as “balance of operations” as detailed in Section 3.5
- constructing and operating (details in Section 3.2) the LIGA Technologies Facility (see LIGA text box in Section 2.3.2), Distributed Information Systems Laboratory, and the Glass Furnace and Melting Laboratory
- continuing modifications to the Hazardous Waste Storage Facilities
- continuing removal of several small structures totaling approximately 15,000 square feet (sq ft)
- continuing routine SNL/CA activities such as maintenance support, environmental monitoring, chemical materials management, and waste management (see Section 2.3.3)
- completing several General Plant Projects previously approved.

1.3.2 PLANNED UTILIZATION AND OPERATIONS ALTERNATIVE

The Planned Utilization and Operations Alternative would include all the operations and activities identified in the No Action Alternative, plus implementing planned facility operations in support of SNL/CA's assigned missions (see Section 3.3), and changing current land use.

This alternative differs from the No Action Alternative in that:

- Thirteen facilities/groups would operate at generally higher levels of activity and staffing (see Section 3.3).
- “Balance of operations” (see Section 3.5) would increase to support higher levels of activity and staffing. In general, the increase would be based on a 13 percent site-wide staffing increase above current levels.
- Arroyo Seco would undergo improvements as described in the *Management Plan for Arroyo Seco* and the Biological Assessment.

- A 30-acre wildlife reserve would be established.
- A Grant of Easement and Agreement would be made with the landowner concerning the land along the SNL/CA western boundary.
- 93 acres would be designated as future construction sites including onsite soil management.
- 122 acres would, for future land use, be identified as undesignated.
- Storm water runoff areas would be upgraded including new sewer line supports and East Avenue security grate.
- Onsite soil management (25 acres within the 93 acres designated as future construction) of clean dirt/fill from Arroyo Seco improvements, storm water projects, and construction projects would be established.
- General Plant Projects including upgrades to the water distribution system would be completed.
- Renovation of Building 916 would be completed.
- A new 5,000 sq ft badge office complex including parking, bus turnaround, and lane improvements would be constructed (8 acres within the 93 acres designated for future construction).

1.3.3 MAXIMUM OPERATIONS ALTERNATIVE

The Maximum Operations Alternative would include all the operations and activities identified in the Planned Utilization and Operations Alternative, plus implementing two shifts at specific facilities in support of SNL/CA's assigned missions (see Section 3.4), changing current land uses, and constructing two new facilities.

This alternative differs from the Planned Utilization and Operations Alternative in that:

- Most of 13 facilities/groups would operate with two shifts (see Section 3.4).
- "Balance of operations" (see Section 3.5) would increase to support higher levels of activity and staffing. In general, the increase would be based on a 53 percent site-wide staffing increase above current levels.
- Building 916 (42,000 sq ft) would be replaced with a building twice the size (84,000 sq ft).
- A new 16,000 sq ft facility, similar to the existing Chemical and Radiation Detection Laboratory (CRDL), would be constructed for research and development.
- Up to 100,000 sq ft of facilities determined to be beyond economically useful life would be removed.

1.4 OBJECTIVE OF THE SITE-WIDE ENVIRONMENTAL ASSESSMENT

The DOE established its NEPA implementing regulations (10 *Code of Federal Regulations* [CFR] Part 1021.330) that allow preparation of site-wide documents for certain large, multiple-facility sites, such as SNL/CA. Pursuant to NEPA of 1969 (42 *United States Code* [U.S.C.] §4321 *et seq.*), the Council on Environmental Quality's (CEQ's) NEPA regulations (40 CFR Parts 1500-1508) and the DOE NEPA regulations (10 CFR Part 1021), the DOE/NNSA decided to complete a SWEA for the SNL/CA site.

The objective of the SNL/CA SWEA is to provide the DOE, NNSA, other agencies, and the public with:

- an analysis of the potential environmental impacts caused by ongoing and reasonably foreseeable new operations and facilities and reasonable alternatives at SNL/CA;
- a basis for site-wide decision making;
- improved coordination of agency plans, functions, programs, and resource utilization;
- a clearer understanding of the impacts created by SNL/CA operations separate from LLNL operations;
- sufficient information to facilitate routine decisions by the DOE regarding verification of operational status; and
- an understanding of SNL/CA's contribution to cumulative environmental impacts for inclusion in the proposed 2003 LLNL SWEIS (DOE/EIS-0157) (DOE 1992a).

The SNL/CA SWEA provides authorization limits for the Laboratory. The SNL/CA SWEA will also enable NNSA to "tier" its NEPA documentation, to eliminate repetitive discussion of the same issues in future NEPA reviews, and to focus on the actual issues ready for decisions at each level of environmental review.

In February 2002, the NNSA identified the need to update baseline information and impact analysis to support the current SNL/CA site planning. To meet this need, NNSA decided to prepare a SWEA and sepa-

Sandia Site Office (SSO)

The OKSO is the DOE/NNSA onsite presence and serves as a steward for the preservation and enhancement of SNL as a national resource for science and technology. The main office of OKSO is located on Kirtland Air Force Base in Albuquerque, New Mexico.

rate the analysis of SNL/CA operations from those at LLNL. The previous site-wide analysis of SNL/CA operations was contained in a joint 1992 Environmental Impact Statement (EIS)/ Environmental Impact Report (EIR) (DOE 1992a) prepared for the two sites. At the time that the SWEA decision was made, a revision date for the LLNL EIS/EIR had not been set. The LLNL site-wide EIS/EIR has since been proposed for 2003. The NNSA recognizes and understands that the SNL/CA SWEA will provide valuable information for use in the LLNL NEPA process and analysis of cumulative impacts. NNSA also recognizes that waiting for the next LLNL site-wide EIS (SWEIS) would delay planned actions at SNL/CA and place unnecessary burdens on the NNSA/[Sandia Site Office \(SSO\)](#) NEPA compliance and decision-making process. As a result, the NNSA decided to continue with preparation of a SWEA to provide a thorough environmental analysis and description of impacts for ongoing and proposed SNL/CA operations.

1.5 DECISIONS TO BE SUPPORTED BY THE SITE-WIDE ENVIRONMENTAL ASSESSMENT

The SWEA will be used to support the DOE/NNSA's decisions on the levels of operations at SNL/CA, and serve as a basis for tiering future NEPA analyses and decisions regarding specific activities. If mitigation measures, monitoring, or other conditions are adopted as part of the DOE/NNSA decision, these too, will be summarized. The NNSA's Notice of Intent (NOI) (67 FR 5089) proposed two preliminary alternatives, the No Action and Expanded Operations Alternatives, to be considered in the SWEA. The SWEA analyzes the environmental impacts of activities at SNL/CA associated with three alternatives, as well as activities common to all alternatives including maintenance support and material management.

1.6 PUBLIC PARTICIPATION

Public participation is part of the process used in the preparation of the SWEA. This section summarizes the public scoping process.

1.6.1 SCOPING PROCESS

Scoping is a process for determining the range of issues addressed in a NEPA document and for identifying significant issues associated with the alternatives (40 CFR Part 1501.7). The objectives of the scoping process are to notify interested persons, agencies, and other groups about the proposed action and the alternatives being considered; solicit comments about environmental issues, alternatives, and other items of interest; and consider those comments in the preparation of the SWEA.

Scoping for the SWEA consisted of both internal NNSA scoping and external public scoping processes. The internal NNSA scoping process began with working groups comprised of DOE/NNSA managers and SNL/CA managers. The external scoping process period began after the publication of the NOI (67 FR 5089) on February 4, 2002, and continued until March 6, 2002. The NOI notified the public that the NNSA was intending to prepare a SWEA on SNL/CA operations and to invite other Federal agencies, Native American tribes, state and local governments, and the general public to participate in the scoping process. The NOI also presented background information on SNL/CA and preliminary alternatives and issues identified through the internal scoping process.

Public scoping meetings for the general public were held on February 20, 2002. At these meetings, the DOE/NNSA presented information on its proposal to prepare the SWEA and the alternatives to be analyzed.

The public was invited to present oral and/or written comments at the scoping meetings. Comments were accepted by mail, facsimile, electronic mail, or by a toll-free telephone number.

1.6.2 SUMMARY OF SCOPING ISSUES AND CONCERNS

During the public scoping process, no individuals or organizations submitted requests for information or made oral or written comments.

1.6.3 PUBLIC COMMENT PROCESS

The NNSA released the Draft SWEA in November 2002 for review and comment by the state of California, Native American tribes, local governments, other Federal agencies, and the general public. The formal public comment period lasted 30 days, ending on November 30, 2002.

The NNSA anticipated answering all comments received during the public comment period, to evaluate the accuracy and adequacy of the Draft SWEA and to determine whether it needed to correct, clarify, or otherwise revise the SWEA text. During the Draft SWEA comment period, a limited number of comments were received, a summary of the changes to the SWEA are found in Section 1.6.4 below.

1.6.4 CHANGES TO THE DRAFT SWEA

The NNSA revised the Draft SWEA in response to the limited number of comments received from other Federal agencies; tribal, state, and local governments; nongovernmental organizations; the general public and internal reviews. The NNSA received no comments from other Federal agencies; tribal, local governments, or nongovernmental organizations. One member of the general public submitted comments primarily associated with geology,

soils, and water resources. A letter from the State of California Governor's Office of Planning and Research was received with no comments attached. All comments received were considered and every effort was made to incorporate changes to the document.

In addition, revisions were made on internal reviews. The text was changed to provide additional environmental baseline information, correct inaccuracies, make editorial correction, and provide additional discussions of technical considerations and clarify text.

1.6.5 NEXT STEPS

Based on the analysis in the SWEA, NNSA will determine whether the three alternatives are a major federal action significantly affecting the quality of the human environment within the meaning of NEPA, 42 U.S.C. 4321, *et seq.* NNSA will publish the decision to issue a Finding of No Significant Impact (FONSI) or to prepare an EIS.

1.7 RELATED NATIONAL ENVIRONMENTAL POLICY ACT DOCUMENTS

The following NEPA documents analyzed ongoing programs and activities at SNL/CA:

- Final (September 1996) Programmatic EIS (PEIS) for Stockpile Stewardship and Management (SSM) (DOE/EIS 0236-F).
- Final (May 1997) Waste Management PEIS for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste (DOE/EIS-0200-F).
- Nonnuclear Consolidation Environmental Assessment (EA) (June 1993) (DOE/EA-0792).
- Final (August 1992) EIS and EIR for Continued Operation of LLNL and SNL/CA (DOE/EIS-0157).
- Supplement Analysis (March 1999) for Continued Operation of LLNL and SNL/CA (DOE/EIS-0157-SA-01).
- Draft (May 2002) EA for the East Avenue Security Upgrade at LLNL and SNL/CA (DOE/EA 1439).

1.7.1 FINAL (SEPTEMBER 1996) STOCKPILE STEWARDSHIP AND MANAGEMENT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT (DOE/EIS-0236-F)

The DOE prepared the SSM PEIS to evaluate stockpile stewardship activities required to maintain a high level of confidence in the safety, reliability, and performance of nuclear weapons in the absence of underground testing and to be prepared to resume underground testing of nuclear weapons if directed by the President. Stockpile management activities include maintenance, evaluation, repair, or replacement of weapons in existing stockpiles.

The SSM PEIS examined the existing basic capabilities of the DOE laboratory and industrial complex, including those of SNL. The Record of Decision (ROD) for the PEIS determined SNL would continue as one of three weapons laboratories possessing most of the core intellectual and technical competencies of the U.S. in nuclear weapons.

1.7.2 FINAL (MAY 1997) WASTE MANAGEMENT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR MANAGING TREATMENT, STORAGE, AND DISPOSAL OF RADIOACTIVE AND HAZARDOUS WASTE (DOE/EIS-0200-F)

In the Waste Management PEIS (WM PEIS), the DOE evaluated the environmental impacts of alternatives for managing five types of radioactive and/or hazardous waste generated by defense and research activities at a variety of DOE sites around the United States. SNL/CA manages three of the five waste types: low-level waste (LLW), low-level mixed waste (LLMW), and hazardous waste.

On January 23, 1998, the DOE decided SNL/CA would continue to ship its hazardous waste offsite for treatment (DOE 1998a). The DOE decided on a national strategy for treatment and disposal of LLW and LLMW; SNL/CA would ship both waste types offsite for disposal.

1.7.3 NONNUCLEAR CONSOLIDATION ENVIRONMENTAL ASSESSMENT (JUNE 1993) (DOE/EA-0792)

The DOE prepared the Nonnuclear Consolidation EA to evaluate the consolidation of nonnuclear component manufacturing, storage, and surveillance functions (DOE 1993a). The EA discussed six categories of capabilities: electrical/mechanical; tritium handling; detonation; beryllium technology and pit support; neutron generators, cap assemblies, and batteries; and special products. The Finding of No Significant Impact (FONSI) for the EA determined the significance of impacts for the continuation of SNL/CA's existing research, development, testing, and prototyping capability (DOE 1993a).

1.7.4 FINAL (AUGUST 1992) ENVIRONMENTAL IMPACT STATEMENT AND ENVIRONMENTAL IMPACT REPORT FOR CONTINUED OPERATION OF LAWRENCE LIVERMORE NATIONAL LABORATORY AND SANDIA NATIONAL LABORATORIES, LIVERMORE (DOE/EIS-0157)

In the Final EIS and EIR for Continued Operation of LLNL and SNL/CA, the DOE evaluated the environmental impacts of alternatives for continuing operations, programmatic enhancements, and near-term proposed projects (DOE 1992a).

**1.7.5 SUPPLEMENT ANALYSIS (MARCH 1999)
FOR CONTINUED OPERATION OF LAWRENCE
LIVERMORE NATIONAL LABORATORY AND
SANDIA NATIONAL LABORATORIES, LIVERMORE
(DOE/EIS-0157-SA-01)**

The DOE prepared the Supplement Analysis for Continued Operation of LLNL and SNL/CA to consider whether the 1992 EIS/EIR should be supplemented, a new environmental impact statement should be prepared, or no further NEPA documentation was required.

In March 1999, the DOE decided that supplementation of the 1992 EIS/EIR was not needed and therefore, no further NEPA documentation was required (DOE 1999a).

**1.7.6 DRAFT (MAY 2002) ENVIRONMENTAL
ASSESSMENT FOR THE EAST AVENUE SECURITY
UPGRADE AT LAWRENCE LIVERMORE NATIONAL
LABORATORY/SANDIA NATIONAL LABORATORIES,
LIVERMORE (DOE/EA-1439)**

The DOE is preparing the East Avenue EA to evaluate the upgrade of the 1.25-mi roadway running between the LLNL and SNL/CA. The EA discusses three alternatives: the Proposed Action, No Action, and construction of new facilities and relocation of personnel and equipment. The Proposed Action would restrict the roadway to the general public on either a temporary or a permanent basis to improve security.

**1.8 THE SITE-WIDE
ENVIRONMENTAL ASSESSMENT**

The remaining chapters in the SWEA include an overview of SNL/CA operations, alternatives for continuing operations at SNL/CA, the affected environment, the environmental consequences, and cumulative impacts.

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