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## **SUPPLEMENTAL INFORMATION SOURCE DOCUMENT**

### **LONG-TERM ENVIRONMENTAL STEWARDSHIP**

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# **LONG-TERM ENVIRONMENTAL STEWARDSHIP**

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### **Abstract**

The purpose of this Supplemental Information Source Document is to effectively describe Long-Term Environmental Stewardship (LTES) at Sandia National Laboratories/New Mexico (SNL/NM). More specifically, this document describes the LTES and Long-Term Stewardship (LTS) Programs, distinguishes between the LTES and LTS Programs, and summarizes the current status of the Environmental Restoration (ER) Project.

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## ACRONYMS AND ABBREVIATIONS

CAC	Corrective Action Complete
COOC	Compliance Order on Consent
DOE	Department of Energy
DSS	Drain and Septic Systems
EMS	Environmental Management System
ER	Environmental Restoration
LTES	Long-Term Environmental Stewardship
LTS	Long-Term Stewardship
NEPA	National Environmental Policy Act
NMED	New Mexico Environment Department
RCRA	Resource Conservation and Recovery Act
SNL/NM	Sandia National Laboratories/New Mexico
SWEIS	Site-Wide Environmental Impact Statement

# 1. INTRODUCTION

The intent of the Sandia National Laboratories/New Mexico (SNL/NM) Site-Wide Environmental Impact Statement (SWEIS) Development Project is to develop a set of source documents describing environmentally-relevant aspects of SNL/NM facilities and operations to be utilized by the Department of Energy (DOE) and its designated contractor, for the development of the SNL/NM SWEIS. The purpose of this Supplemental Information Source Document is to effectively describe Long-Term Environmental Stewardship (LTES) at SNL/NM. Specifically, this document:

- Describes the LTES Program
- Describes the Long-Term Stewardship (LTS) Program
- Distinguishes between the LTES and LTS Programs
- Summarizes the current status of the ER Project

## **2. LONG-TERM ENVIRONMENTAL STEWARDSHIP PROGRAM**

### **2.1 Mission and Objectives**

The LTES Program is responsible for providing a corporate-wide process for minimizing adverse environmental impacts from SNL/NM operations including new, active, and legacy sites. The LTES Program has adopted the stewardship program definition contained in DOE Order 450.1A, Environmental Protection Program (DOE 2008). It is defined as a program that should “...promote the long-term stewardship of a site’s natural and cultural resources throughout its design and construction, operation, closure, and post-closure life cycle.” Through DOE Order 450.1A, Sandia Corporation (Sandia) determined that LTES would be incorporated into already existing functions with improvements being made to the environmental evaluation process and life-cycle cost management of ongoing (active), new, and legacy sites through the LTES program. The LTES’ mission ensures long-term protection of human health and the environment, and proactive management toward sustainable use and protection of natural and cultural resources affected by SNL/NM operations and operational legacies. This mission will be accomplished by working with SNL/NM personnel and support organizations to proactively identify potential environmental impacts and apply environmental processes.

The objectives of the LTES Program are to:

- Protect the environment from the aspects/impacts of past, present, and future operations (including the prevention of adverse environmental impacts or contamination through comprehensive management of multi-media environmental contamination - including remediation), which could potentially result from ongoing operations (spills, discharges, emissions, etc.)
- Manage legacy contamination that was not included in the ER Project, or newly identified contamination resulting from changes in requirements
- Preserve and protect natural and cultural resources
- Apply environmental life-cycle management, as discussed below, to SNL/NM operations
- Integrate management of post-closure care of LTS (legacy) contamination with ongoing corporate environmental monitoring
- Include LTES as a program within the SNL/NM Environmental Management System (EMS)

### **2.2 Life-Cycle Management**

The LTES Program reviews all federally-funded proposed projects and activities as well as proposed projects and activities on Federal lands through documentation prepared in accordance with the National Environmental Policy Act (NEPA) and its implementing regulations. NEPA requires federal agencies, and their contractors, to consider environmental aspects and impacts in their decisions for proposed actions and reasonable alternatives to those proposed actions. At SNL/NM, proposed project planning is documented through the electronic Integrated Safety Management System’s NEPA Module. A NEPA review is required for all federally-funded proposed actions, including privately funded actions performed on federal facilities. In effect, NEPA applies to all SNL activities performed on private and government properties.



The LTES Program reviews all NEPA checklists for projects and activities that have the potential to contaminate the environment, impact a legacy ER site, or affect the external community (i.e., offsite locations) through environmental impacts.

The purpose and goals of life-cycle management are to:

- Address environmental impacts early in the planning process
- Sustain mission work without site closures through proactive mitigation
- Minimize environmental impacts through a cradle-to-grave evaluation
- Develop a life-cycle model that considers activities such as pre-planning, prevention, monitoring/sampling, and clean up

For further information on the LTES Program, refer to the LTES Program Plan (SNL, 2009a).

### **3. LONG-TERM STEWARDSHIP PROGRAM**

As part of the SNL/NM EMS, under DOE Order 450.1A, SNL/NM personnel developed an LTES Program. The LTES Program provides the corporate framework for the LTS Program. For the purposes of this document, LTS applies to legacy contaminated sites and is defined as the physical controls, institutional controls, monitoring activities, and other mechanisms necessary to ensure the protection of people and the environment at sites where DOE has completed cleanup (e.g., landfill covers, remedial actions, removal actions, and facility stabilization). LTS includes land-use controls, monitoring, maintenance, and information management. LTS at SNL/NM includes continued mitigation of risk from residual hazardous and radioactive contaminants present at completed Environmental Restoration Project sites and newly discovered sites, as well as compliance with the law and regulations, DOE Directives and internal corporate requirements to confirm the protection of human health and the environment. Administration and management processes will be implemented to effectively coordinate these activities and ensure that the objectives of LTS are being met at SNL/NM. Continued mitigation of risk is achieved by ensuring that the residual hazardous and radiological constituents do not migrate from the controlled sites. The comprehensive monitoring program currently in place will be continued to demonstrate and verify that the contaminants have not migrated. For some sites, mitigation of the risk will be accomplished by institutional controls such as land-use and limiting or restricting access to the sites. An important component of LTS is an effective public outreach program that keeps the general public and potentially affected parties informed. Meetings and presentations will be conducted to inform the public and other stakeholders of the progress of LTS, and to request feedback on program policies and changes.

The LTS Implementation Plan (SNL, 2006) and LTS Site Execution Plan (SNL, 2009a) provide further information on the LTS program including future activities at SNL/NM to support the general objectives of the LTS Program.

## 4. ENVIRONMENTAL RESTORATION PROJECT

The SNL/NM ER Project personnel identify, assess, and remediate sites potentially contaminated by past spill, release, or disposal activities in accordance with the Resource Conservation and Recovery Act (RCRA) and its implementing regulations. The United States Environmental Protection Agency formally authorized the implementation and enforcement of corrective action requirements under RCRA to the New Mexico Environment Department (NMED). In light of this authority, Sandia, DOE, and NMED negotiated a Compliance Order on Consent (COOC) which was effective in April 2004. The COOC governs corrective actions for releases of hazardous waste or hazardous constituents at SNL/NM. The COOC will terminate upon the completion of its requirements, with the exception of record preservation, and the Hazardous Waste Facility Permit will remain as the enforceable document (SNL, 2009b).

Waste generated from SNL/NM ER sites include hazardous waste, radioactive low-level waste, mixed waste (hazardous plus radioactive waste), Toxic Substances Control Act waste (primarily polychlorinated biphenyls with some asbestos), and industrial solid waste (SNL, 2009b).

The initial identification of ER sites at SNL/NM was completed in 1987. At that time, there were 117 identified sites. Since then, a total of 500 individual sites, potential sites, or individual historical activities have been identified for investigation. In 1992, the ER Project at SNL/NM was officially initiated to implement assessment and remediation activities for sites contaminated or potentially contaminated because of past SNL/NM operations (SNL, 2009b).

DOE and Sandia request that NMED list the status of ER sites as corrective action complete (CAC) when they appear to meet specific NMED criteria. The criteria include a determination that there is an acceptable level of risk to human health and the environment presented by the contaminants at the site. The level of contamination remaining, and the appropriate land-use category (i.e., industrial, residential, or recreational use) are used, together with the available information and conceptual model for each site, to determine any risk to human health and the ecosystem. Table 1 reflects the status of ER sites at SNL/NM.

Further information on the history and current status of the ER projects is summarized in the current version of the SNL Annual Site Environmental Report (SNL, 2009b). This includes specific information on the Chemical Waste Landfill, Mixed Waste Landfill, Groundwater Management Units, and the Corrective Action Management Unit. In addition, ER site land-use controls (i.e., CAC with controls) and the locations of all ER sites are summarized in the Operational Assessment Environmental Evaluations (SNL, 2009c-k).

**Table 1. ER Site Status Summary<sup>a</sup>**

Year	A	B	C	D	E	F <sup>b</sup>
	Total ER Sites Remaining at Start of FY	ER Sites Proposed for CAC	Sites Approved for CAC <sup>c</sup>	Corrective Actions Completed by End of Year	New ER Sites Identified During Year	Total ER Sites Remaining at End of FY
2008	61	0	28	0	0	33
2007	61	1	0	0	0	61
2006	110	6	49	3	0	61
2005	126	21	18	51	2 <sup>d</sup>	110
2004	125	41	0	1	1 <sup>e</sup>	126
2003	126	15	0	5	-1	125
2002	158	3	30	2	-2	126
2001	87	7	0	4	71	158
2000	146	10	64	10	5	87
1999	146	4	0	20	0	146
1998	146	16	0	0	0	146
1997	153	30	7	4	0	146
1996	155	35	2	29	0	153
1995	191	61	36	34	0	155
1994	219 <sup>f</sup>	48	28	3	0	191
1993	219 <sup>f</sup>	0	0	0	0	219
1992	172	0	0	0	47	219

<sup>a</sup>SNL, 2009b.

<sup>b</sup>Column totals:  $F = A - C + E$ .

<sup>c</sup>Includes all final submittals of CAC documentation including Notice of Disapproval.

<sup>d</sup>Two Drain and Septic Systems (DSS) sites determined inactive in FY05 were submitted for CAC.

<sup>e</sup>One DSS Area of Concern was determined to be inactive in FY04 and submitted for CAC.

<sup>f</sup>Some of the original 219 sites included Tonopah Test Range, Kauai Test Facility, and other off-site areas.

ER = Environmental Restoration.

FY = Fiscal Year.

CAC = Corrective Action Complete.

Column A = Total ER Sites remaining to be removed from the Resource Conservation and Recovery Act (RCRA) Permit.

Column B = ER Sites submitted for CAC, including reinvestigations, per New Mexico Environment Department (NMED).

Column C = ER Sites receiving final regulatory approval (Class III Permit Mod) by NMED.

Column D = Fieldwork completed including reinvestigations.

Column E = Newly identified sites or sites reopened by NMED.

Column F = Total Sites remaining on the RCRA Permit at the end of the FY.

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