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## **SUPPLEMENTAL INFORMATION SOURCE DOCUMENT**

## **ENVIRONMENTAL MANAGEMENT SYSTEM**

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### **Abstract**

The purpose of the Sandia National Laboratories/New Mexico (SNL/NM) Environmental Management System (EMS) is identification of environmental consequences from SNL/NM activities, products, and/or services to develop objectives and measurable targets for mitigation of any potential impacts to the environment. This Source Document discusses the annual EMS process for analysis of environmental aspects and impacts and also provides the fiscal year (FY) 2010 analysis. Further information on the EMS structure, processes, and procedures are described within the programmatic EMS Manual (PG470222).

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## ACRONYMS AND ABBREVIATIONS

CEDR	Consolidated Energy Data Report
EMS	Environmental Management System
EPEAT	Electronic Product Environmental Assessment Tool
FY	fiscal year
ISMS	Integrated Safety Management System
LTSMG	Laboratory Transformation Strategic Management Group
POC	Point of Contact
SNL/NM	Sandia National Laboratories/New Mexico
UMC	Unneeded Materials and Chemicals
WM	Waste Management

# 1. INTRODUCTION

In accordance with U.S. Department of Energy Order 450.1A, Environmental Protection Program, Sandia National Laboratories/New Mexico (SNL/NM) personnel implemented an Environmental Management System (EMS) as part of the Integrated Safety Management System (ISMS). The EMS is the framework SNL/NM personnel use to continually improve environmental compliance and sustainability practices. The EMS identifies the environmental consequences of SNL/NM activities, products, and/or services to develop objectives and measurable targets for mitigation of any potential impacts to the environment.

SNL/NM personnel initiated implementation of the EMS in December 2005. Since that time, SNL/NM personnel have worked to fully implement and establish the EMS in conjunction with ISMS in all site operations. SNL/NM received International Organization for Standardization 14001 Certification in June 2009. The EMS Manual (PG470222) is a programmatic document outlining the components of the SNL/NM EMS. This EMS Source Document includes annual information that is not a part of the EMS Manual.

## 2. FY10 ASPECTS AND IMPACTS

The SNL/NM EMS includes the annual performance of an analysis to identify environmental aspects associated with SNL/NM activities, products, and/or services with any potential environmental impacts related to those aspects. An environmental aspect is any element of SNL/NM activities, products, and/or services that can interact with the environment. Environmental impacts are any change in the environment, whether adverse or beneficial, wholly or partially resulting from SNL/NM activities, products, or services. Once environmental aspects and impacts have been identified, a semi-quantitative approach is used to rank environmental aspects by evaluating associated impacts for potential consequences. Those aspects with the three highest risk scores are considered significant aspects. Section 3.2 of the EMS Manual discusses the process associated with SNL/NM Aspect and Impact Analysis in greater detail. The list below captures the fiscal year (FY) 2010 Environmental Aspects. Significant aspects are represented in **bold**.

### 2.1 Environmental Aspects

- **Energetic Releases**
- **Land Use**
- **Air Emissions**
- **Hazardous Material Use and Storage**
- **Resource Use (water, natural gas, electricity)**
- **Personnel Transportation**
- Water Discharge (Sanitary Sewer and Storm Water)
- Material Transportation
- Fire Risk

- Noise and Vibration
- Radioactive Material Use, Storage, and Waste Management (WM)
- Hazardous WM
- Solid Waste Generation, Handling, and Disposal
- Use, Storage, and Disposal of Biological Hazards

## **2.2 Potential Environmental Impacts**

The following lists the potential environmental impacts for which each environmental aspect is evaluated during the Aspects and Impacts Analysis:

- Contamination of Ground / Surface Water
- Contamination of Soils
- Contamination of Air
- Contamination of Facility (building or equipment)
- Over-Exposure to Workforce
- Cultural Resources
- Depletion of Natural Resources
- Exposure to Public
- Wildlife Habitat

## **3. FY10 OBJECTIVES AND TARGETS**

Based on the results from the corporate aspects and impacts analysis described in Section 2.0 of this document, objectives and targets are established annually to mitigate the impacts of selected significant aspects. Section 3 of the EMS Manual discusses the process associated with SNL/NM Objective and Targets. Table 1 captures the FY10 Objectives and Targets.

## **4. REFERENCES**

Sandia National Laboratories (SNL), 2009, *Environmental Management System Manual*, PG470222, Revision 1. Sandia National Laboratories, Albuquerque, NM.

**Table 1. FY10 EMS Corporate Objectives and Targets**

<b>Significant Aspect</b>	<b>Objective</b>	<b>Target</b>	<b>Means</b>	<b>Responsible Org.<sup>a</sup></b>	<b>Supporting Org.</b>
Land Use	Minimize SNL/NM's impact on the environment	Complete remaining 4 sub-area plans for the SNL/NM site (for a total of 6 plans) by August 30, 2010.  Report quarterly to EMS team.	Complete the National Security Research and Development Campus study. Incorporate best planning practices in site development and use of land.	Dept. 4853 <i>Strategic Corporate Partnership Laboratory Transformation Strategic Management Group (LTSMG)</i>  <i>Point of Contact (POC): Ralph Cipriani</i>	Dept. 4131 <i>Environmental Planning,</i>  Dept. 4133 <i>Environmental Programs &amp; Assurance</i>
Air Emissions	Minimize discharge of regulated air pollutants	Develop expanded baseline of regulated air emissions by 9/30/10 to establish a reduction metric in FY11.  Report quarterly to EMS team.	Hands-on inventory of all site-wide mobile emission sources (reference Air Quality Compliance Program Plan, PG470229).	Dept. 4133 <i>Environmental Programs &amp; Assurance - Air Quality Compliance Program</i>  <i>POC: Joanna Eckstein</i>	Dept. 4131 <i>Environmental Planning - EMS</i>
Personnel Transportation	Reduce the environmental impact of transporting personnel on-site	Reduce petroleum use by 2% relative to FY09.  Report quarterly to EMS team.	Replace gasoline vehicles and equipment with alternative fuel vehicles and electric vehicles when available.	Dept. 10265 Fleet Services  <i>POC: Mark Crawford</i>	Dept. 4131 <i>Environmental Planning - EMS</i>
Hazardous Material Use and Storage	Remove Unneeded Materials and Chemicals (UMC) inventory following the WM hierarchy	Reduce Tonopah Test Range UMC Inventory by 40% over FY09 inventory by 9/30/10.  Report quarterly to EMS team.	Develop an FY10 UMC Project Plan.	Dept. 4131 <i>Environmental Planning –UMC</i>  <i>POC: Bonnie Little</i>	N/A
	Safely and efficiently remove explosives / energetic material	Transfer 45,000 pounds of excess explosives, energetic materials and / or rocket motors for disposal, destruction, or beneficial reuse.  Report quarterly to EMS team.	Work with KAFB Explosives Ordinance Disposal Unit and Hill Air Force Base to determine their capacity and subsequently transfer materials.  Deliver a five-year Rocket Motor Inventory Management Plan to outline projected need for rocket motors, inventory status, acquisition management, and the projected disposal of unneeded motors.	Dept. 4139 Regulated Waste / Nuclear Material Disposition  <i>POC: James Thompson</i>	Dept. 4131 <i>Environmental Planning</i>

**Table 1. FY10 EMS Corporate Objectives and Targets (Continued)**

<b>Significant Aspect</b>	<b>Objective</b>	<b>Target</b>	<b>Means</b>	<b>Responsible Org.<sup>a</sup></b>	<b>Supporting Org.</b>
Energetic Releases	Minimize the impact of energetic releases	Increase the amount of avoided explosives by 5% over FY09 baseline.  Report quarterly to EMS team.	Determine the FY09 baseline of avoided explosives by weight. Employ computer modeling and scaling to minimize the amount of explosives used.	Dept. 5916 <i>Energetic Systems Research</i>  Dept. 1534 <i>Mechanical Environments</i>  <i>POC: Greg Scharrer</i>	Dept. 4131 <i>Environmental Planning</i>
Resource Use	Reduce annual energy use	By FY15, reduce energy intensity by 30 percent relative to FY03 (excluding buildings that meet the guidelines for Federal Energy Management Program excluded buildings).  Report quarterly to EMS team.	See Consolidated Energy Data Report (CEDR) of the Executable Plan	Dept. 4853 <i>Strategic Corporate Partnership LTSMG</i>  <i>POC: Chris Evans</i>	Dept. 4821 <i>Infrastructure Department,</i>  Dept. 4824 <i>Building Ops Area II – V &amp; Remote,</i>  Dept. 4826 <i>Building Ops – Area I North,</i>  Dept. 4827 <i>Building Ops – Area I SE</i>
	Reduce water use	By FY15, reduce potable water consumption by 16 percent relative to FY07.  Report quarterly to EMS team.	See CEDR of the Executable Plan	Dept. 4821 <i>Infrastructure Department</i>  <i>POC: Marti Adams</i>	Dept. 4824 <i>Building Ops Area II – V &amp; Remote,</i>  Dept. 4826 <i>Building Ops – Area I North,</i>  Dept. 4827 <i>Building Ops – Area I SE</i>

**Table 1. FY10 EMS Corporate Objectives and Targets (Concluded)**

<b>Significant Aspect</b>	<b>Objective</b>	<b>Target</b>	<b>Means</b>	<b>Responsible Org.<sup>a</sup></b>	<b>Supporting Org.</b>
Resource Use (Continued)	Increase purchase of environmentally preferable products	Increase Electronic Product Environmental Assessment Tool (EPEAT) Gold Qualified Purchases to 85% of total purchases by 9/30/10.  Report quarterly to EMS team.	Work with Procurement and Just-In-Time suppliers to promote EPEAT Gold qualified monitors.  Presentations to SNL/NM organizations and spotlighting at special events to raise awareness	Dept. 4131 <i>Environmental Planning – P2</i>  <i>POC: Ralph Wrons</i>	
	Increase closed loop recycling	Place one mile of conphalt (paving product made at SNL/NM from project concrete and asphalt debris) on remote area roads, reducing water and chemical use for dust suppression.  Report quarterly to EMS team.	Facilities Organization 4846 arranges the application of conphalt (mixture of crushed recycled concrete and asphalt) to existing SNL/NM remote area dirt roads.	Dept. 4846 <i>Infrastructure Operations</i>  <i>POC: Darell Rogers</i>	Dept. 4131 <i>Environmental Planning – P2</i>

<sup>a</sup>Organization responsible for the execution of the activities (means) and reporting data related to assigned target(s).

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