

## Environmental Life-cycle Management at Sandia National Laboratories

*“Look deep into nature, and then you will understand everything better.”*

*~Albert Einstein*

### What is Environmental Life-cycle Management?

The Sandia National Laboratories (SNL) Environmental Life-cycle Management (ELM) Program involves stewardship activities for past, present and future activities. The ELM program “promotes the long term stewardship of a site’s natural and cultural resources throughout its operational, closure, and post closure life cycle” (Department of Energy Order 450.1A, *Environmental Protection Program*).

The ELM 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 Sandia National Laboratories operation and operational legacies. This mission will be accomplished by working with the line and support organizations in proactively identifying potential environmental impacts and applying environmental processes and guidance.

### ELM Program Overview

The ELM Program is responsible for providing a corporate wide process for minimizing adverse



Sunrise over Sandia National Laboratories



Hummingbird at Sandia National Laboratories

environmental impacts from SNL operations, including new, active and legacy sites. This process will identify and manage cumulative environmental impacts prior to reaching regulatory limits. The Environmental Restoration (ER) Project will continue the cleanup of legacy contamination and closures at SNL. Department of Energy (DOE) Order 450.1 (DOE 2005a) “promotes the long term stewardship of a site’s natural and cultural resources throughout its operational, closure, and post closure life cycle.” Through DOE Order 450.1, Sandia Corporation determined that LTS (Long-Term Stewardship, i.e., legacy) would be incorporated into already existing functions; therefore, it is a component of ELM. The SNL ELM Program seeks to utilize various characteristics, principles, and attributes associated with stewardship programs.

The objectives of the ELM Program are to:

- Protect human health and the environment from the aspects/impacts of past, present, and future operations,
- Preserve and protect natural and cultural resources, and
- Apply lifecycle cost principles to



# Environmental Life-cycle Management



Scaled Quail at Sandia National Laboratories

environmental impacts of SNL operations.

laboratory inventory efforts.

## Life-Cycle Management Through the NEPA Review Process

The ELM Program reviews all proposed projects and activities that have the potential to impact the environment through the National Environmental Policy Act (NEPA). The NEPA is a federal law that requires federal agencies, and their contractors, to consider environmental aspects and impacts in their decision-making on proposed actions. At Sandia, consideration of the environment happens early in proposed project planning and is documented through the Integrated Safety Management System (ISMS) electronic 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. Through these NEPA reviews, ELM strives to minimize a project's overall environmental impacts.

## Chemical Exchange Program

SNL/NM's Chemical Exchange Program (CEP) was developed in 1989 as a Hazardous Waste Management Waste Minimization program. The goal of the CEP is to reduce the amount of usable chemicals disposed as waste, resulting in cost avoidance for both new acquisitions and disposal. The program has been through multiple transformations since then. In July of 2007, the CEP was revitalized to address the unopened excess chemicals identified during

Under direction of the ELM Program, the CEP team also worked with Chemical Inventory System (CIS) to develop a user friendly, web-based interactive tool for using the CEP. In 2008, the CEP was introduced as a module within CIS available to the workforce at both SNL/NM and SNL/CA. This tool allows members of the Sandia work force to submit, browse, and request chemicals. Once a chemical has been accepted, it goes onto a searchable list of available chemicals and continues to be properly managed by the current owner for up to six months. After six months, the owner will be notified automatically via email. If another member of the workforce requests the chemical, transportation to the new owner is arranged by the CEP. The only cost involved is if the chemical needs to be transported between sites (i.e., from SNL/NM to SNL/CA).

In 2011, the CEP reapplied 415 chemicals. This resulted in a reduction of 960 kilograms of hazardous waste saving \$82,227 in waste disposal costs, and \$27,254 in new purchase costs.

## Contact Us!

For more information about ELM at Sandia, visit our website for a Calendar of Events, the Community Checklist, and e-mail contact information:

<http://elm.sandia.gov/>

