

FOCUS ON ENVIRONMENT

2007

ENVIRONMENTAL RESPONSIBILITY

Environmental stewardship has evolved at Sandia National Laboratories over the more than 50 years since its founding. Sandia strives to integrate environmental protection in all activities. This is accomplished by recycling resources, community environmental partnerships, incorporating sustainable design in new and renovated facilities, and environmental restoration. We are trustees of the splendid flora, fauna, and land on which we work, such as surrounding the Coyote Springs Wetland.



The Coyote Springs Wetland is located within a remote area utilized by Sandia.

The surrounding grassland vegetation is generally in excellent condition at Coyote Springs and other remote areas used by Sandia. This is in part due to the long period of protection from grazing. Such sites continue to be protected and monitored.

ENVIRONMENTAL MANAGEMENT SYSTEM

Sandia Corporation's (Sandia) Environmental Management System (EMS) is a continuing cycle of planning, evaluating, implementing, and improving processes and actions to achieve environmental goals. EMS requires Sandia's workforce to perform work in a way that is environmentally friendly, sustainable, and cost-effective.



EMS represents a progressive, proactive approach to protecting the environment, and ensuring the health and safety of Sandia's employees and the community.

All members of Sandia's workforce are encouraged to consider environmental protection as a regular part of their job responsibilities. In particular, the workforce looks for ways to prevent pollution and protect natural resources by doing the following:

- Limiting the generation of sanitary, hazardous, and radioactive wastes;
- Increasing the purchase of recycled products; and,
- Reducing energy and water usage.

During 2006, Sandia California's (SNL/CA's) EMS program received ISO 14001 certification. Successful



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ISO registration gives added credibility to SNL/CA's EMS. This demonstrates to our DOE customer, industrial and academic partners, other government agency customers, and environmental regulators that our EMS is sound, effective, and of high quality. ISO certification supports improvement in environmental performance, fosters compliance, and supports cost reduction. During 2006, Sandia received the Environmental Protection Agency's Waste Wise Award, which recognized Sandia's accomplishments in waste prevention, recycling collection, and buying recycled-content products. EMS is incorporated in the Integrated Safety Management System.

ENVIRONMENTAL RESTORATION (ER) ADVANCES TO STEWARDSHIP

The Environmental Restoration Project at Sandia is nearing completion. Of 265 project sites scheduled for cleanup, all have been proposed for "Corrective Action Complete" (CAC), and of these sites, 204 have received final regulatory approval for CAC by the New Mexico Environment Department (NMED). The remaining 61 sites are currently in the regulatory approval process, with the exception of the Mixed Waste Landfill which is pending implementation of a corrective measure upon approval by the NMED. Regulatory requirements for long-term monitoring and institutional controls for the project sites are defined through the Resource Conservation and Recovery Act (RCRA) permit process, which is expected to progress through FY 2007. ER project sites that have been remediated to a residential risk-level will not require institutional controls. Sites that meet industrial risk-levels and engineered units will require land-use controls and, in some cases, physical controls. Once ER sites' corrective actions are approved by the NMED, monitoring and maintenance will be managed by the long-term stewardship program at Sandia.

ENERGY MANAGEMENT PROGRAM ACHIEVEMENTS IN FISCAL YEAR 2006

Sandia has a proven record of reducing energy use and is already using almost 40% less energy per square foot in office facilities than we did in 1985. However, Secretary of Energy Bodman has asked DOE sites to comply with

President Bush's Presidential Directive on Energy and Fuel Conservation by Federal Agencies. The goal is to reduce FY 2006 energy use by 10% from FY 2004 levels. Thus, Sandia must do even better. Significant steps in FY 2006 to cut back on energy and water use include the following:

- Since December 2005, most office and corridor spaces controlled by the centralized Facilities Control System (FCS) at Sandia/New Mexico were changed to cool only if the temperature rose above 78° F and to heat only if the temperature fell below 68° F. This change will result in both electrical (summer cooling) and gas (winter heating) savings.
- Building 833 was re-roofed with a new thermal propylene olefin (TPO) membrane that contains photovoltaic (PV) cells (see the photo). This PV roof is the first of its kind at Sandia and could be a model for future roofing projects. The new roof could generate a potential 3 to 4kW of power that will be used in the building or fed back to the power grid. That's enough to power 1 to 3 homes. If the technology works, it could be used on some of Sandia's larger buildings to produce significant amounts of electricity.



The New Photovoltaic Roof on Building 833

- New computerized irrigation systems save 3 million gallons of water per year.
- A program to replace obsolete light fixtures has saved 2.2 megawatts per year (which works out to \$325,000 a year).

COMMUNITY INVOLVEMENT

- During the last week of September 2005, the Energy Star® feature was enabled on more than 9,300 monitors at Sandia, so that the monitor hibernates when not in use rather than going to a screen saver. When in “energy mode,” monitors use much less electricity but can be reactivated by a simple movement of the mouse. The Energy Management Program estimates that this simple change will save more than 1,300 MWH every year. That’s enough to power about 45 average households for one year.

LONG-TERM ENVIRONMENTAL STEWARDSHIP

Sandia’s Long-Term Environmental Stewardship (LTES) project is responsible for providing a corporate-wide process for minimizing adverse environmental impacts from Sandia operations, including new, active, and legacy sites. The LTES mission promotes the 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 operations and operational legacies. A key principle will be evaluating life-cycle activities conducted at Sandia to minimize negative environmental impacts. For additional information on Sandia’s environmental activities, please visit <http://environment.sandia.gov/>.

THE JOINT COMPUTATIONAL ENGINEERING LABORATORY (JCEL) RECEIVES LEED SILVER CERTIFICATION

The JCEL facility received “Leadership in Energy and Environmental Design” (LEED) certification from the U.S. Green Building Council (USGBC). The LEED program evaluates buildings based on six categories of sustainable design: Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials & Resources, Indoor Environmental Quality, and Innovation & Design Process. The JCEL facility was awarded 33 points from the LEED review team and has received Silver Certification. The JCEL LEED process began during the initial programming of the facility in November 2000 when the occupant representatives and engineering teams established goals based on these six categories. Numerous aspects of the facility such as landscaping, building orientation, use of windows for interior lighting and views, interior and exterior finishes, equipment selection and sizing, use of recycled materials, storm water management, low emitting paints and adhesives, construction waste management, and system commissioning are directly related to the LEED certification

process. By establishing these LEED goals early in the design process, the team was able to incorporate sustainable design features with relatively little or no additional cost. Sandia currently has five other facilities that are registered with the USGBC for LEED certification.



Southwest Elevation of JCEL

ENVIRONMENTAL HEALTH CONFERENCE

Sandia helped plan, promote, sponsor, and provide presenters for the 11th Annual New Mexico Environmental Health conference. The conference is a major regional event and one of the largest environmental health conferences in the country. It attracted several hundred participants in 2006. The 2007 conference is being planned for October 13-18, 2007. See www.nmehc.net for more information.

YOUTH CONFERENCE

The 10th Annual Youth Conference on the Environment is a one-day event for high school science and environmental clubs that are interested in learning about environmental issues in New Mexico. The conference is co-sponsored by Sandia, the Environmental Education Association of New Mexico, and the City of Albuquerque South Broadway Cultural Center. This year’s event will be held April 3rd at the South Broadway Cultural Center and the theme will be Urban Environmental Issues. Topics of discussion may include Albuquerque’s Brown Cloud, mass transit, and wildlife displacement. Contact Katrina Wagner at 844-1810 for more information.

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INVESTMENT IN YOUTH OF THE NEXT GENERATION THE INTEL INTERNATIONAL SCIENCE AND ENGINEERING FAIR

Students in the United States must improve their performance in mathematics and science if they are to succeed in today's world and if the United States is to remain competitive in an integrated global economy. Science Fairs provide a venue for students to learn to analyze information, make accurate observations, develop questions, and test hypotheses. For the first time in 25 years, Albuquerque will host the Intel International Science and Engineering Fair 2007. The fair will utilize the entire Albuquerque Convention Center for the week of May 13-19, 2007, plus Tingley Coliseum for opening and closing ceremonies.

This is the world's largest pre-college (9th - 12th grades) competition and celebration of science. The event brings together nearly 1,500 high school students from over 40 countries, and territories to compete for nearly \$4 million in scholarships, tuition grants, internships, etc. Major universities, government agencies, the military, and businesses come to recruit from the best pool of future scientists and engineers in the world. Several Nobel Prize

Winners will attend and be involved with the event.



Science Fair Competitor with Project

Share your expertise as a Grand Awards Judge by completing the on-line form, which will give us the necessary information on your area of scientific expertise, any specialized area of concentration, and some personal information that will help us assist you while you are at the fair. You can obtain more information about becoming a Grand Awards Judge by going to "Info for Judges" and follow the prompts at <http://www.sciserv.org/isef>.

Visit us at <http://www.sandia.gov/about/community/index.html> or call **(505) 284-5200** for more information.

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