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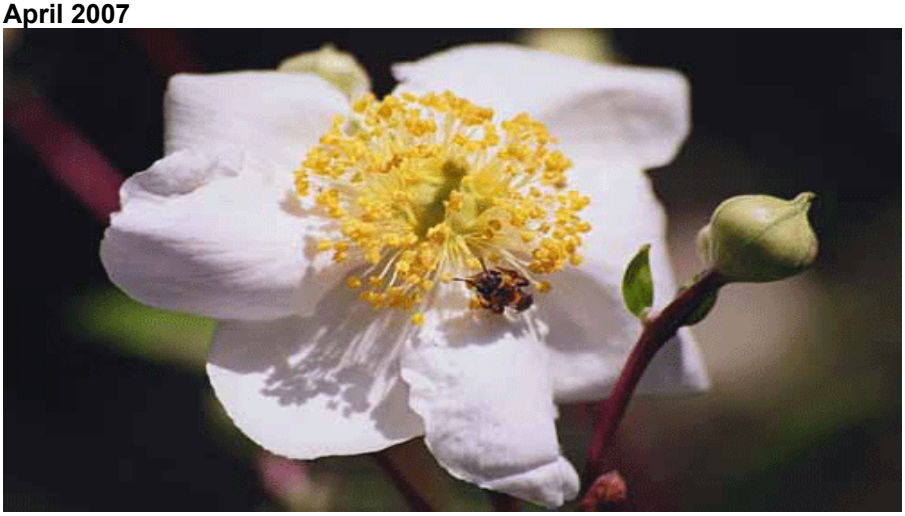
Sandia National Laboratories, California
Pollution Prevention Program
Annual Report

April 2007



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Sandia National Laboratories, California Pollution Prevention Program Annual Report

April 2007

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ABSTRACT

The annual program report provides detailed information about all aspects of the SNL/CA Pollution Prevention Program for a given calendar year. It functions as supporting documentation to the *SNL/CA Environmental Management System Program Manual*. The program report describes the activities undertaken during the past year, and activities planned in future years to implement the Pollution Prevention Program, one of six programs that supports environmental management at SNL/CA.

Contents

Tables

Figures

Summary of Document Changes

Significant changes made to the 2007 edition of the Pollution Prevention Program Report are summarized in Table 1.

Table 1. Summary of Significant Changes to Pollution Prevention Program Report

Section	Page	Change
2.0	7-15	Regulatory changes that occurred in 2006 are summarized and included in Table 2.
4.0	16-17	Two new regulatory documents required under the Universal Waste Management requirements are discussed and included in Table 4.
5.4	20	A section on specialized training and assignments was added.
6.0	20	Radioactive waste included in discussion of performance measurement of minimization of hazardous waste.
6.2	22	Figure displaying trend of radioactive waste generation decreasing included in section.
6.3	22-23	Minimizing quantity of landfill waste through reduced consumption and/or reuse/recycle section expanded to include additional waste streams recycled.
7.1	25	Updated risk assessment for 2007.
8.1	27	This section describes follow-up on results from 2005 Line performance assessment.
8.3	27	Summarizes the results of the 2006 Line Performance assessment on electronic waste management
9.0	28-29	Updated accomplishments to reflect 2006 activities
10.0	29-30	Updated trends in regulatory requirements, addition of universal waste management to the program and budget reduction
11.0	30-31	Added targets and actions for minimizing hazardous waste and for minimizing landfill waste. Retired three targets for minimizing hazardous waste, minimizing landfill waste, and minimizing energy use.
App A	32	Includes an updated spreadsheet of the types of waste streams recycled at SNL/CA.
App B	33	Includes an updated Table of staff and assignments.
App C	34-37	Includes an updated Program Risk Assessment completed in January 2007.
App D	38	Includes an updated program document review form
App E	40-48	Includes an updated Line Assessment of electronic waste management completed in January 2007

1 Program Description

The Pollution Prevention Program is one of six programs under the Environmental Management Department at Sandia National Laboratories, California (SNL/CA). The Program provides SNL/CA guidance and specific strategies, activities, and methods to reduce the quantity and toxicity of waste and pollutants, conserve energy and resources, and purchase environmentally preferable products. The Pollution Prevention Program is part of the SNL/CA Environmental Management System (EMS) and maintains responsibility for implementing the DOE Pollution Prevention performance based goals. The Program is funded through the NNSA/DOE Readiness and Technical Base Facilities (RTFB) budget, which funds the corporate Waste Management Program managed at Sandia National Laboratories/New Mexico (SNL/NM).

This program report provides detailed information about all aspects of the Pollution Prevention Program. It provides supporting documentation to the *SNL/CA EMS Program Manual.* The program report is updated annually to reflect the dynamic nature of program operations, accomplishments, and goals.

Specific responsibilities of the Pollution Prevention Program at SNL/CA include:

- Provide support to SNL/CA Facilities in the implementation of sustainable design for new and renovated facilities.

- Develop and implement Environmental Management System goals, targets and tasks in conjunction with DOE Headquarter goals.

- Facilitate the execution of Environmentally Preferable Purchasing (EPP) especially those product categories related to Facilities and Maintenance to influence the purchasing of EPP products.

- Provide assistance to line organizations in implementing effective reuse of equipment and chemicals.

- Develop and coordinate recycling programs. Appendix A contains information about the waste streams that are recycled or reused.

- Provide assistance in developing and communicating strategies to reduce the use of SNL/CA's natural resources.

2 Regulatory / Corporate Drivers

Environmental compliance drivers include laws, regulations, orders, directives, and other corporate and site-specific requirements. The drivers that are applicable to the Pollution Prevention Program are listed and summarized in Table 2.

The Pollution Prevention Program uses a variety of sources to stay current on applicable compliance drivers. The primary source used is the Sandia corporate notification service provided by the legal staff. Sandia legal monitors DOE requirements and federal, state, and local government publications for regulatory issues applicable to SNL operations. These notifications are then reviewed for applicability to SNL/CA operations. Additional sources of information on regulatory changes include direct communication with DOE and regulating agencies, and periodic review of agency web sites. New requirements are incorporated into program activities and communicated to the site through electronic notifications, the ES&H Interdisciplinary Team process, self-assessments, targeted presentations, program documents and the Pollution Prevention web page.

Two new laws went into effect in 2006. On January 1, 2006 AB 2277 (California) Appliance Recycling became effective. The new state law controls the recycling of discarded major appliances. Under the new law materials such as refrigeration fluid (CFCs), used oil, and mercury are required to be removed from major appliances by a state Certified Appliance Recycler. On July 1, 2006 Cell Phone Recycling Act became effective, The new state law requires all vendors of cell phones to have a system in place to recycle their consumer cell phones. Under the new law all of SNL/CA cell phones must be recycled.

On January 24, 2007 a new Executive Order (EO) 13423 "Strengthening Federal Environmental, Energy, and Transportation Management was approved. This new order revokes and consolidates five Executive Orders specifically 12843, 13101, 13123, 13148, and 13149. The new EO strengthens and establishes new and updated goals, practices, and reporting requirements for environmental, energy, and transportation performances and accountability.

The Electronic Waste Recycling Act requires CRTs and electronic waste to be managed as universal waste. In 2007 Pollution Prevention will begin managing the oversight of these waste streams as a universal waste under Title 22 California Code of Regulations (CCR) section 66273 "Universal Waste Management".

Table 2. Compliance Drivers for Pollution Prevention Program

Driver	Summary	Regulating Authority
Federal Laws		
Resource Conservation and Recovery Act (RCRA)	RCRA establishes a cradle to grave management framework and a regulatory system for solid waste. Waste generators must have a waste minimization program in place that reduces volume and toxicity of waste. Another section of the Act requires procurement of products that container recycled-content or recovered materials.	Environmental Protection Agency (EPA)
Pollution Prevention Act of 1990	The Pollution Prevention Act of 1990 establishes a national policy for Pollution Prevention, and introduces what is known as the Pollution Prevention hierarchy. The hierarchy requires facilities to prevent Pollution Prevention at the source whenever feasible, followed by reuse/recycle, then treatment, and disposal.	EPA
Clean Water Act (CWA)	The CWA requires industrial storm water discharge facilities to have an onsite Pollution Prevention plan. It also directs the EPA to promote the inclusion of Pollution Prevention technologies in industrial effluent standards and promote source reduction in industrial water effluent guidelines.	EPA
Clean Air Act (CAA)	The Clean Air Act directs EPA to consider Pollution Prevention technologies when selecting Maximum Achievable Control Technologies (MACT) for sources of Air Pollutants.	EPA
Energy Policy Act of 2005	The Energy Policy Act of 2005 requires the Secretary of Energy to work with federal agencies to significantly reduce the use of energy and promote energy efficiency and the use of renewable energy technologies.	EPA

Table 2. Compliance Drivers for Pollution Prevention Program (cont.)

Driver	Summary	Regulating Authority
DOE Directives		
DOE Order 4700.1, Project Management System	DOE Order 4700.1, Project Management establishes the project management system that DOE design projects must follow. It includes numerous Pollution Prevention concepts and requirements. This Order limits contamination of facilities, provides design features that ease decontamination, and incorporates features that promote the reuse of facilities.	DOE
DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets	DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets establish the general requirements for capital assets, and include numerous Pollution Prevention and sustainable design concepts and requirements.	DOE
DOE Order 430.2A Departmental Energy and Utilities Management	DOE Order 430.2A Departmental Energy and Utilities Management, establishes energy requirements as described in EO 13123 and includes requirements to reduce energy consumption, green house gas emissions and use of renewable resources. This Order requires the application of sustainable design principles to new buildings and building alterations, and the submission of a Sustainable Design Report.	DOE
DOE Order 435.1, Radioactive Waste Management	DOE Order 435.1, Radioactive Waste Management requires waste minimization and Pollution Prevention to be implemented at all facilities that manage radioactive waste.	DOE

Table 2. Compliance Drivers for Pollution Prevention Program (cont.)

Driver	Summary	Regulating Authority
DOE Order 450.1, Change 2, Environmental Protection Program	DOE Order 450.1 Environmental Protection Program requires implementation of sound stewardship practices that are protective of air, water, land, cultural and ecological resources impacted by DOE operations. The Order establishes DOE goals that are to be achieved through the integration of Pollution Prevention into EMS.	DOE
Executive Orders		
Executive Order (E.O.) 12088, Federal Compliance with Pollution Control Standards	E.O. 12088, Federal Compliance with Pollution Control Standards makes the head of each Federal Agency responsible for the prevention of environmental pollution at Federal facilities and as well as for all activities that are under the control of that agency.	DOE as responsible federal agency for SNL facilities
E.O. 12856, Federal Compliance with Right-to-know Laws and Pollution Prevention	E.O. 12856, Federal Compliance with Right-to-know Laws and Pollution Prevention requires Federal agencies to reduce toxins entering waste streams and release to the environment through source reduction; to report toxic-chemicals entering the waste stream and releases to the environment; to improve emergency planning, response, and accident notification; to encourage markets for clean technologies and safe alternative to hazardous substance and toxic-chemicals; and to set waste reduction goals.	DOE as responsible federal agency for SNL facilities

Table 2. Compliance Drivers for Pollution Prevention Program (cont.)

Driver	Summary	Regulating Authority
E.O. 12843, Procurement Requirements and Policies for Federal Agencies for Ozone-Depleting Substances	E. O. 12843, Procurement Requirements and Policies for Federal Agencies for Ozone-Depleting Substances, requires Federal agencies to develop programs to minimize procurement of materials and substances that contribute to the depletion of stratospheric ozone. These programs include giving preference to the procurement of chemicals; produces and manufacturing process that reduce overall risk to human health and the environment by lessening depletion of stratospheric ozone. Retired in January 2007 by new E.O. 13423.	DOE as responsible federal agency for SNL facilities
E. O. 13101, Green the Government through Waste Prevention Recycling and Federal Acquisition	E. O. 13101, Green the Government through Waste Prevention Recycling and Federal Acquisition reinforces RCRA 6002 by expanding and strengthening the federal government's commitment to recycling and buying recycled content and environmentally preferable products and services. The Executive Order states that federal agencies are to make more efficient use of natural resources by maximizing recycling and prevention waste whenever possible. Retired in January 2007 by new E.O. 13423.	DOE as responsible federal agency for SNL facilities
E. O. 13123, Greening the Government through Efficient Energy Management	E. O. 13123, Greening the Government through Efficient Energy Management establishes goals for reducing greenhouse gases improving energy efficiency, reducing energy consumption, expanding the use of renewable energy facilities, reducing use of petroleum, and reducing water consumption. Retired in January 2007 by new E.O. 13423.	DOE as responsible federal agency for SNL facilities

Table 2. Compliance Drivers for Pollution Prevention Program (cont.)

Driver	Summary	Regulating Authority
E. O. 13148, Greening the Government through Leadership in Environmental Management	E. O. 13148, Greening the Government through Leadership in Environmental Management requires federal agencies to develop environmental management systems, use Pollution Prevention as a means to achieve and maintain compliance, establish goals for reducing toxic, hazardous and ozone-depleting chemicals use, and promote environmentally beneficial landscaping. Retired in January 2007 by new E.O. 13423.	DOE as responsible federal agency for SNL facilities
E. O. 13149 Greening the Government through Federal Fleet and Transportation	E. O. 13149 Greening the Government through Federal Fleet and Transportation requires Federal agencies to use alternative fuels, and to reduce petroleum consumption through improvements in fleet fuel efficiency and through the use of alternatively fuel vehicles. Retired in January 2007 by new E.O. 13423.	DOE as responsible federal agency for SNL facilities
E.O. 13423 Strengthening Federal Environmental, Energy, and Transportation Management	EO13423 Strengthening Federal Environmental, Energy, and Transportation Management revokes and consolidates five Executive Orders specifically 12843, 13101, 13123, 13148, and 13149. The new EO strengthens and establishes new and updated goals, practices, and reporting requirements for environmental, energy, and transportation performances and accountability.	DOE as responsible federal agency for SNL facilities

Table 2. Compliance Drivers for Pollution Prevention Program (cont.)

Driver	Summary	Regulating Authority
California Laws		
California Health and Safety Code, Div 20, Ch 6.5, §§ 25244.12-25244.24.) Hazardous Waste Source Reduction Act of 1989	The Hazardous Waste Source Reduction and Management Review Act of 1989, also known as Senate Bill 14, requires hazardous waste generators to complete a Source Reduction and Evaluation Review and Plan. Each generator regulated under the Act must conduct the source reduction evaluation review and plan every four years.	Department of Toxic Substances Control (DTSC)
California Health and Safety Code, Div. 20, Ch. 6.5, §§25202.9	Waste Minimization Certification The generator must certify annually that the facility has a program in place to reduce the volume and toxicity of all hazardous wastes.	DTSC
California Health and Safety Code, Div. 20, Ch. 6.5, §§25211	Appliance Recycling Controls the recycling of discarded major appliances. A state Certified Appliance Recycler must remove special materials such as refrigeration fluid (CFCs), used oil, and mercury prior to the disposal of major appliances.	DTSC

Table 2. Compliance Drivers for Pollution Prevention Program (cont.)

Driver	Summary	Regulating Authority
California Regulations		
Title 22 Code of Regulations (CCR) Div. 4.5, Ch. 16. Recyclable Materials	Recyclable Materials The management of recyclable materials. Mandates specific waste streams are recycled instead of landfilled.	DTSC
Title 22 CCR, Div. 4.5, Ch. 31. Waste Minimization (SB14)	Hazardous Waste Source Reduction and Management Review. Every four years the site must review its operations and prepare a report.	DTSC
Title 22 CCR, Div 4.5. Chapter 23, Universal Waste Management	Universal Waste Management Requires universal waste generators register with the State, manage waste appropriately and report activity.	DTSC
Public Resource Code, §§ 42490-42499. Cell Phone Recycling Act	Cell Phone Recycling Act Requires all vendors of cell phones to have a system in place to recycle their consumer cell phones.	DTSC
Public Resource Code, §§ 42961 Tire Waste Manifest System	Tire Waste Manifest System Requires generators of waste tires to properly manage waste tires and participate in the Waste Tire Manifest Program	County of Alameda Environmental Health Department

The Pollution Prevention Program is periodically audited by DTSC, DOE, Alameda County Environmental Health Department, Sandia Corporation, and Lockheed Martin, Sandia's parent company.

The Pollution Prevention Program Lead and Project Lead communicate with DOE/NNSA/SSO (SSO) counterparts regularly to keep them informed of issues and trends of importance to the program. The Pollution Prevention Program staff at SNL/CA work together with the SNL/NM counterparts and DOE/NNSA/SSO to resolve concerns and to develop effective approaches to program implementation. The Pollution Prevention Program and SSO maintain an open and cooperative relationship.

3 Operational Controls

The Pollution Prevention Program uses technical work documents, administrative and engineering controls, as operational controls. Table 3 lists the technical work documents applicable to the Pollution Prevention Program operations. They include the Hazardous Waste Facility Permit, an ES&H Manual supplement document "GN470075 Guidelines for Waste Generators at SNL/CA", preliminary hazard screening documents, and other site-specific requirements. Administrative controls include checklists, reporting forms, site documentation review, collection point locations for recyclables and construction debris to minimize trash generation and maximize recycling and reuse. Administrative controls also include blocking the ordering of specific non-recycled or lower than required recycled content products to improve the purchasing of required recycled-content products.

Table 3. Technical Work Documents for the Pollution Prevention Program

Title	Current Version
California Environmental Protection Agency, Department of Toxic Substances Control (CAL-EPA, DTSC) Hazardous Waste Facility Permit	September 2003
ES&H Manual Supplement, GN470075 Guidelines for Waste Generators at SNL/CA	May 2005
SNL06A00127-002, Pollution Prevention/Waste Minimization Program Activities	February 2007

4 Documents Produced

Table 4 identifies the documents and reports generated by the Pollution Prevention Program. Two new documents were added in 2006. The new documents are 1.) Notification for Handlers/Handlers-Recyclers of Universal Waste Electronic Devices and/or CRTs and 2.) Annual Report for Handlers/Handlers-Recyclers of Universal Waste Electronic Devices and/or CRTs. These were submitted in January 2007 to CAL-EPA/DTSC.

Table 4. Pollution Prevention Program Documents and Reports.

Document	Due Date	Frequency	Distribution	Purpose
Waste Minimization Certification: Certifies Pollution Prevention Program is in place.	March 01	Annual	CAL-EPA/DTSC	State requirement
Notification for Handlers/Handlers-Recyclers of Universal Waste Electronic Devices and/or CRTs: Provides one-time notification site generates universal waste.	February 01	One-time	CAL-EPA/ DTSC	State requirement
Annual Report for Handlers/Handlers-Recyclers of Universal Waste Electronic Devices and/or CRTs: Requires annual reporting of a facility's universal waste generation, treatment and disposition data.	February 01	Annual	CAL-EPA/ DTSC	State requirement
Annual Waste Generation and Pollution Prevention Progress Report: Provides waste generation data, recycling data, and accomplishments.	December	Annual	DOE/SSO	DOE requirement
Affirmative Procurement Report: Provides data for AP purchases including successes and failures.	December	Annual	DOE/SSO	DOE requirement
Sandia Annual Program Report: Provides summary of Pollution Prevention activities, program and goals.	October	Annual	DOE/SSO, SNL Management	Information
Quarterly Reporting: Provides update of Pollution Prevention Program activities.	Quarterly	Quarterly	DOE/Service Center	Information
Monthly Report: Provides update of Pollution Prevention monthly activities	10th of each month	Monthly	DOE/SSO SNL Management	Information
Source Reduction and Evaluation Review and Plan (SB-14)	September 01, 2007	Every 4 years	CAL-EPA/DTSC	State requirement

5 Approved Job Descriptions, Qualifications and Job-Specific Training

Job assignments in the Pollution Prevention Program include a Program Lead, a Project Lead, and a Pollution Prevention Laborer. Job descriptions and qualifications for each assignment follow. Appendix B provides a list of personnel supporting each job assignment.
Sandia views training, development, and education as a strategic investment in Sandia's future. The policy of Sandia Corporation is to maintain a high level of technical and administrative competence in support of its mission. In support of this policy, Sandia maintains a set of general corporate training requirements that cover a wide range of areas such as security (physical, information, computer), business ethics and diversity, general ES&H, and general business processes. Standard corporate requirements are identified for each individual in the online Corporate Education, Development, and Training database at https://hrprod.sandia.gov/cfdocs/prod/hris/ctd/apps/cedtweb/comp/comp.cfm. The online database tracks completion status for all corporate training requirements and provides electronic reminders when a course is due to all Pollution Prevention personnel. Sandia training coordinators identify corporate training requirements for new hires. Sandia has developed online training courses to meet these requirements.

In addition to corporate training requirements, each program assignment has job-specific training requirements. These training requirements address safety as well as specific job functions. The Environmental Management Department Manager, Program Lead, or Department ES&H Coordinator may identify job-specific training requirements. Most of these requirements are tracked in the online database. Table 5 presents job-specific training requirements for the Pollution Prevention Program.

5.1 Pollution Prevention Program Lead

The Program Lead is responsible for management and oversight of all program activities, interacting with the DOE/SSO on all Pollution Prevention issues, interacting with state and federal regulatory agencies, and participating on the ES&H Interdisciplinary Team. Management and oversight responsibilities encompass a range of activities including budgeting, monitoring costs, identifying investments needs, task assignment and oversight, contract management, conducting program self assessments, maintaining the program website, reporting, developing operational controls, and participating in special site events and department projects. The Program Lead serves as the Pollution Prevention subject matter expert for SNL/CA. The Lead is responsible for monitoring changes in program compliance drivers and for communicating these changes to the site.

At a minimum, the Program Lead is required to hold a Bachelor of Art degree with at least 10 years experience in an environmental field, or a Bachelor of Science degree in an engineering, environmental, or science field with three years of related work experience. Desirable qualifications for this position include proficiency in technical writing, project management skills, and pollution prevention or waste management expertise. Registration as an environmental manager is optional, but encouraged, for the Program Lead position.

5.2 Pollution Prevention Project Lead

The Project Lead is responsible for management and coordination of all program activities, maintaining a positive relationship with the DOE/SSO and SNL/NM on all Pollution Prevention issues, interacting with state and federal regulatory agencies, and participating on the ES&H Interdisciplinary Team. Management and coordination responsibilities encompass a range of activities including creative thinking and implementing new ways to improve the program in its support to the site, identifying new recycling streams, task assignment and oversight, contract management, conducting program self assessments, maintaining the program website, providing Pollution Prevention awareness, data collection, reporting, developing operational controls, and providing backup support to the Pollution Prevention Laborer.

At a minimum, the Project Lead is required to hold an Associate Arts degree or a minimum of 5-years of relevant experience in pollution prevention or waste management. Desirable qualifications for this position include proficiency in technical writing, project management skills, and Pollution Prevention expertise. Registration as an Environmental Technician is optional, but encouraged, for the Program Lead-Technician position

5.3 Pollution Prevention Laborer

The Pollution Prevention Laborer is responsible for providing labor support to the Pollution Prevention Program for implementation of the recycling programs. The responsibilities include monitoring, collecting, transporting and processing of the site's non-hazardous recycled waste, performing miscellaneous tasks, such as assisting with special events, and maintaining equipment in a clean orderly fashion.

At a minimum, the Pollution Prevention Laborer is required to have a high school diploma. Desirable qualifications include experience in vehicle operations including forklifts, good customers relations skills, experience with site operations, and attention to detail. Computer skills are optional, but encouraged, for the Pollution Prevention Laborer position.

Table 5. Pollution Prevention Training Matrix

Training Requirement	Training Method	Program Lead Staff	Program Project Lead	Pollution Prevention Laborer	Frequency
Pollution Prevention Workshops	Offsite	●	●		When Available
Pollution Prevention Teleconferences	Onsite	●	●		Quarterly
Program Workshops-seminars	Offsite	●	●		When Available
ESH100 ES&H Awareness	Web based	●	●	●	Annual
FKL 153R Forklift: Operation Refresher	Sandia class		●	●	Triennial
FKL 153 Forklift: Hands on Use	Sandia class		●	●	One time only

5.4 Specialized Training

The Pollution Prevention Program has identified staff in other SNL/CA organizations who are required to be trained in the management of Universal Waste as required Title 22 CCR Ch. 23, Universal Waste Management specifically proper handling and emergency spill procedures. This is a one-time training and records are retained by the Pollution Prevention Program. These individuals support the site with collection and storage of universal waste.

6 Performance Measures

EMS objectives that are applicable to the Pollution Prevention Program include the procurement and use of environmentally friendly products and materials, the minimization of the generation of hazardous and radioactive waste, the minimization of the generation of solid waste and the minimization of site electrical and natural gas consumption. To assess performance in meeting these objectives the Pollution Prevention Program monitors waste generation, recycling of waste streams, environmentally friendly products and material purchases, and consumption of electricity and natural gas. The following summarizes the Pollution Prevention Program's progress in the last year.

6.1 Material Procurement and Use Objective: Procure and Use Environmentally Friendly Products and Materials

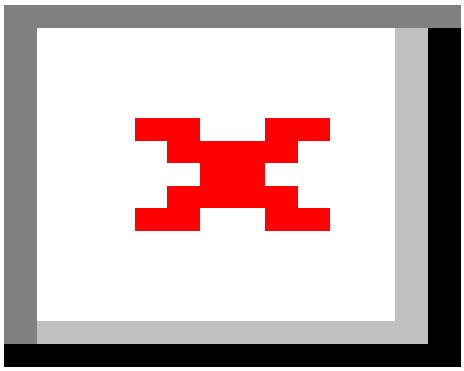


Figure 1. Procurement of Environmentally Friendly Products

SNL/CA's target for material procurement and use is to increase affirmative procurement in 2007 by ten percent over the fiscal year 2004/2005 average, from 81.5 to 89.6 percent of total available products procured. In 2006, Figure 1 shows an increase of 6.4 percent in affirmative procurement and that we are well positioned to reach the ten percent target in 2007. The increase in fiscal year 2006 was due primarily to increases in recycled content paper, filing products, and furniture. During 2006, the Green Purchasing Team initiated efforts to review a variety of office product categories for procurement improvements that can be implemented in 2007. Additionally, SNL/CA will begin using bio-based products in 2007, which will also contribute to achieving our ten percent target.

6.2 Hazardous and Radioactive Waste Objectives: Minimize the Generation of Hazardous and Radioactive Waste

Although SNL/CA does not have a specific target for this objective, we strive to minimize the generation of hazardous and radioactive waste through process controls, recycling, and reapplication of chemicals from one activity to another. Figures 2 and 3 show hazardous and radioactive waste generated since 2000, respectively. For both categories of waste, the trend shows a steady decline in quantities generated.

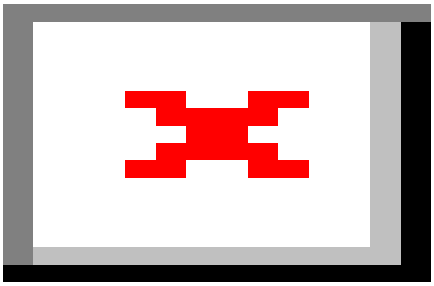


Figure 2. Hazardous Waste Generated at SNL/CA

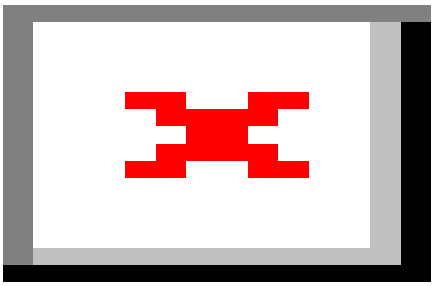


Figure 3. Radioactive Waste Generated at SNL/CA

6.3 Solid Waste Objective: Minimize the Quantity of Landfill Waste Through Reduced Consumption and/or Reuse/Recycling

SNL/CA transports non-hazardous solid waste (trash and construction debris) generated from site operations to local landfills for disposal. In fiscal year 2006, SNL/CA transported 137 metric tons of solid waste to landfills, a decrease of 28 metric tons from 2005. SNL/CA attributes the reduction in quantity of solid waste transported to landfills to the addition of four waste streams to the recycling program in 2006. Figure 4 presents solid waste data for fiscal years 2003 to 2006. Recycling data for significant waste streams are presented in Figures 5 through 7.

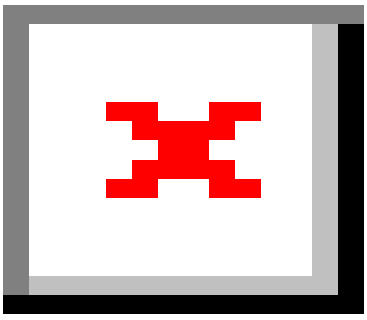


Figure 4. SNL/CA Landfill Waste

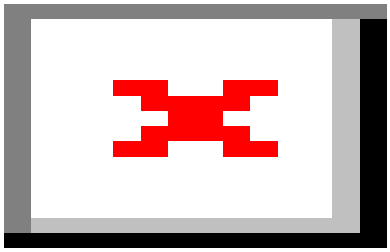


Figure 5. Recycled Scrap Metal, Paper, and Wood

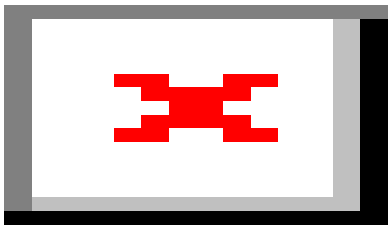


Figure 6. Recycled Cardboard and Electronics

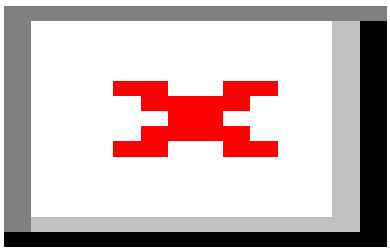


Figure 7. Small Quantity Recyclables

6.4 Energy Use Objectives: Minimize Site Consumption of Natural Gas and Electricity

The Energy Policy Act of 2005 establishes an energy reduction goal for federal agencies of two percent per year over a ten-year period starting in fiscal year 2006, using 2003 data as the baseline. Figure 8 displays SNL/CA's energy reduction target for 2006 through 2015. Data shows electricity and natural gas combined into British Thermal Units (BTUs). Between 2003 and 2006, SNL/CA reduced energy consumption by about seven percent, exceeding the established target for 2006 by five percent. SNL/CA attributes the reduction in energy consumption to two factors: 1) bringing two large facilities online that are energy efficient, and 2) a targeted energy conservation campaign.

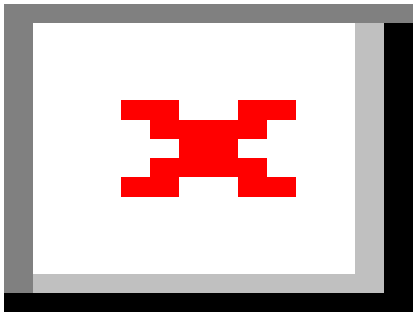


Figure 8. SNL/CA Energy Consumption

In fiscal year 2006, the National Nuclear Security Administration (NNSA) issued a one-year challenge to reduce overall energy consumption by ten percent at all NNSA facilities using 2004 as the baseline. Although SNL/CA implemented a targeted energy conservation campaign, the challenge was not met primarily because the site experienced a twelve percent increase in building square footage between 2004 and 2006. The increase in total energy use at SNL/CA in 2006 was 0.6 percent.

7 Quality Assurance

7.1 Program Risk Assessment

In January 2007, the Pollution Prevention Program completed a program risk assessment. The risk assessment identified two potential risks associated with Pollution Prevention.

1. The potential risk of a contaminated container or equipment being released to the public sector.

The large number of containers and the amount of equipment sent off-site, it is considered a high probability that a contaminated container or piece of equipment will be sent off-site at some point during the life of the facility.

The impacts of contact with a contaminated container or piece of equipment are considered low.

A risk rating of medium was calculated for this risk.

In response to the medium risk rating the Pollution Prevention Program has worked with Waste Management, Reclamation and Facilities to identify recyclable types that have the highest potential to be chemically contaminated. The following measures were implemented:

1.) Empty chemical containers are inspected and if applicable are placed into an access controlled collection bin.
2.) Scrap metals and excess equipment are surveyed for radioactive contamination and if clean transported to LLNL for recycle.
3.) Facilities-generated construction debris is identified during the IDT process and debris is surveyed for asbestos, lead, and other contaminates. Disposal for contaminated construction debris is handled on a case-by-case basis.

2. The potential risk of a reduction in program funding by 10%.

Increasing constraints on site budgets is expected to continue. The probability that funding will decrease is medium.

The impacts of a reduction are considered low.

A risk rating of medium was calculated for this risk.

In response to the medium risk factor Pollution Prevention will develop a plan with management to outline how to meet the goals of DOE Order 450.1 “Environmental Protection Program” and the Executive Order 13423 “Strengthening Federal Environmental, Energy and Transportation Management” with a potential reduction of available resources.

The complete risk assessment is included in Appendix C.

7.2 Maintaining Program Quality

Pollution Prevention applies the following program-specific elements to assure quality is maintained in data collection, analyses, and reporting.

- Waste Generation/Recycling data is captured by WIMS and data is verified with Waste Management.
- Sanitary Waste data is matched to invoices and/or verbal verification is received by Landfill or SNL/CA Maintenance staff.
- Affirmative Procurement data is reviewed and checked against the Staples electronic ordering system, Pro Card purchases, catalog or suppliers.
- Internal reports and documents are subjected to internal review and technical editing before finalizing.
- Published reports are reviewed before finalizing by DOE/SSO, applicable SNL/CA staff, and technical editors.

8 Program Assessments

The Pollution Prevention staff completes a self-assessments annual that includes two parts. Part 1 is an assessment of the mechanisms and workings of the program to include but not necessarily be limited to: program procedures; program web site, directory and other communications information; field infrastructure and signage; program documents; program financials and contracts; etc. This is an inward looking part of the assessment.

Part 2 is an assessment of the effectiveness of the environmental program as evidenced by compliance of requirements performed by the line. These assessments are discussed in Sections 8.2 and 8.3.

The Pollution Prevention program is assessed annually by the DOE Service Center located in New Mexico with participation from the Sandia Site Office. SNL/CA did not receive any findings in 2006.

The DTSC audits Waste Management and Pollution Prevention annually. The Pollution Prevention aspect of the DTSC audit consists of a review of affirmative procurement practices, the Waste Minimization Certificate, SB-14 Source Reduction Evaluation Review and Plan, and training as required by the Part B Permit. Pollution Prevention did not receive any findings in 2006.

The Alameda County Environmental Health Department audits the Waste Tire Manifest program. The Alameda County Environmental Health Department audited SNL/CA's Waste Tire Manifest program in January 2007. Pollution Prevention did not receive any findings in the audit. Note, Alameda County Environmental Health Department did not audit this program in 2006.

8.1 Follow-up on 2005 Program Assessments

In 2005, Pollution Prevention assessed the site's awareness of Pollution Prevention and how the site incorporates these practices into their daily activities. These activities include purchasing EPP products, energy conservation and recycling. The assessment found the majority of the site personnel interviewed were aware of the Pollution Prevention Program, however the majority were not aware of how their work habits affected energy usage at the site. The assessment also found site personnel preferred TNT, email, and the Porcelain Press as methods for communicating information. However the site stated that new Porcelain Press issues are never posted.

In response to the information discovered, Pollution Prevention established a Green Team that evaluates and recommends EPP products for the site, writes articles for the bimonthly Administration Professional Council (APC) letter (topics have included the creation of the Green Team and the type of products to purchase, specifications regarding CPG purchases), and finally Pollution Prevention is developing a new EPP brochure to provide to the site. To improve the site's understanding of how their work habits affect energy conservation Pollution Prevention has purchased posters and sandwich boards that are displayed routinely around the site. Finally, the Manager of the Department responsible for the distributing the Porcelain Press retired, and Pollution Prevention will brief the new manager on the observation in hope of resurrecting the posting of the Porcelain Press.

8.2 Program Mechanics

In 2006, Pollution Prevention completed a self-assessment of the program mechanics. This assessment included a review of all technical work documents, processes, and web pages. The results of this assessment are documented on a Program Self Assessment Document Review Form included in Appendix D.

8.3 Line Performance Assessment

Pollution Prevention completed a line performance assessment of how the site managed its electronic waste between October 2006 and January 2007. This assessment focused on line implementation and included a review of regulations, documentation, and processes. Three findings and one observation were assigned as a result of this assessment. A copy of this part of the self-assessment is included in Appendix E. During 2007, Pollution Prevention will develop a set of action items to address the results of the 2006 assessment. Action items will include developing a process with the appropriate SNL/CA's departments to correctly manage and implement the different electronic waste streams, training employees, establishing properly maintained storage areas, and notifying the site of improvements.

8.4 Environmental Program Representative Assessment

During 2006, Pollution Prevention worked with the Environmental Protection Representative (EPR) to correct concerns found during the EPR assessments. The EPR submits a formal assessment to the line and notifies Pollution Prevention of any concerns found during the assessments. The Pollution Prevention staff worked with the Line to mitigate concerns. The final resolutions are communicated to the EPR. Typical concerns found during 2006 included:

- Customer wanted recycling containers.
- Customer incorrectly recycling a waste stream.
- Customer inquiring about adding a new recycling waste stream.
- Customer unaware of recycling requirements.

8.5 Corporate / Line Self Assessment

During 2006, the corporate / line self assessment process did not assess any elements of the Pollution Prevention Program.

9 Accomplishments

During 2006, Pollution Prevention accomplished the following activities.

- Provided guidance and assistance for SNL/CA's bi-annual Site clean-up. Pollution Prevention team evaluated equipment for reuse, advertised excess equipment, and assisted in recycling waste streams. Through out the year Pollution Prevention continues to advertise and reapply excess equipment and chemicals for the site.

- Assisted in eliminating the generation of a RCRA waste stream by initiating a process change. Lead water, generated from a hand washing process at the SNL/CA Firing Range, was collected and managed as hazardous waste. After sampling results indicated that the water met wastewater discharge limits, the process was modified and the waste stream was eliminated.

- Assisted with the successful recycling of 2.19 metric tons of copper jacketed lead slag (a RCRA hazardous waste), which was generated from the partial restoration of the onsite Firing Range emplacement wall.

- Reviewed the different computers and laptops on the preferred SNL purchasing list for Electronics Product Assessment Tool (EPEAT) standards. Many computers and laptops offered met the standards.

- On April 19, 2006 SNL/CA held it's annual Earth Day celebration. The celebration was held at the café patio area of Bldg. 915. Information was provided on the successes of

the Environmental Management's EMS program; pricing information on toner cartridges with recycled content; and the benefits of organics foods. To help meet, the Energy Policy Act of 2005, the P2 team took pledges from staff to monitor their areas for electric and gas saving opportunities, and our electric vehicles were showcased. A vendor provided information on solar energy for home use. Approximately 200 people attended.

- Organized Take Your Motorcycle to Work Day. This national event, encourages rider-ship and is economically efficient & a socially responsible form of transportation that saves energy and helps the environment. Approximately 40 members of the work force participated in this event and many more picked up information and looked at bikes during the lunch hour.

- Participated as a member of the Energy Management team that encouraged the Site to lower the temperatures of their work areas, take home personal appliances, and evaluate the lighting in their areas. A hotline was established to request lamp removal for unnecessary lighting. 600 Fluorescent light tubes were removed last year to help meet the Energy Policy Act of 2005.

- Participated as a member of the Energy Management team that collected baseline electrical and gas usage data to evaluate potential energy saving opportunities around the Site. This information has been added to the Environmental Management webpage metrics.

- Participated as a core member of the team who developed and implemented the process used for establishing SNL/CA's Environmental Management System. The process was audited and received ISO 140001 certification.

- Submitted one DOE Pollution Prevention Award Application. In early January 2007 SNL/CA received an Environmental Stewardship Award. The award was for the process used in establishing an Environmental Management System.

- The Program Lead and Project Lead attended the DOE Pollution Prevention Conference at Oakridge National Laboratory. The Project Lead presented information on the clean-out of the 943 High Bay. This project was a previous Environmental Stewardship award winning process.

10 Trends

In 2006 the regulatory drivers for the Pollution Prevention Program strengthened. Two new laws went into effect. On January 1, 2006 AB 2277 (California) Appliance Recycling became effective. The new state law controls the recycling of discarded major appliances. Under the new law materials such as refrigeration fluid (CFCs), used oil, and mercury are required to be removed from major appliances by a state Certified Appliance Recycler. On July 1, 2006 Cell Phone Recycling Act became effective, The new state law requires all vendors of cell phones to

have a system in place to recycle their consumer cell phones. Under the new law all of SNL/CA cell phones must be recycled. These regulations will add new waste streams that need to be managed. On January 24, 2007 a new Executive Order (EO) 13423 "Strengthening Federal Environmental, Energy, and Transportation Management was approved. This new order revokes and consolidates five Executive Orders specifically 12843, 13101, 13123, 13148, and 13149. The new EO strengthens and establishes new and updated goals, practices, and reporting requirements for environmental, energy, and transportation performances and accountability. The new order adds additional requirements that will need to be implemented.

Pollution Prevention conducted a line assessment in late 2006 (Appendix E). This assessment found SNL/CA as a site was incorrectly describing discarded equipment as an asset. This inaccurate determination resulted in the incorrect management of the recycling of cathode ray tubes, fluorescent light tubes and electronic devices. In 2007 Pollution Prevention will correctly manage the oversight of these waste streams as a universal waste under Title 22 California Code of Regulations (CCR) Ch.23, "Universal Waste Management.

Increasing constraints on site budgets is expected to continue for the next several years. An evaluation to streamline the Pollution Prevention Program would be performed. Only those program activities that are required by regulation, Sandia policy, technical work documents, or DOE/NNSA would be conducted. Discretionary training, purchases and travel for program staff would be reduced.

11 Goals and Objectives

Table 6 presents SNL/CA EMS objectives, targets, and actions that support Pollution Prevention elements. Selected targets and actions are intended to increase the procurement and use of environmentally friendly products and materials, minimize the generation of hazardous waste, minimize the quantity of solid waste disposed of through reduced consumption and/or recycling/reuse, and minimize site electrical and natural gas consumption.

Table 6. EMS Objectives, Targets, and Actions Supporting Pollution Prevention Program Elements

Objective	Target	2006 Action Items Completed	2007 Action Items
Procure and use environmentally friendly products and materials	In FY07 purchases made by Affirmative Procurement Program will increase by 10% from a FY04/05 average.	Established a Green Team and developed a charter. Executed an awareness campaign about recycled products.	Continue to hold meetings with Green Team. Publish information about recycled products in TNTs and in the Administrative Professional (APC) newsletter and Communicator. Develop training for the site on the Affirmative Purchasing Program. Provide training to Procurement and each Center
Minimize the generation of hazardous waste.	In FY06 increase the recycling of empty containers by 20% from a FY04/05 average.	The amount of empty containers recycled increased by 51%.	Retire target

Objective	Target	2006 Action Items Completed	2007 Action Items Execute PPOA for Maintenance actions
Minimize the quantity of landfill waste through reduced consumption and/or recycling/reuse.	In FY06 increase the amount of paper that is recycled by 20% from aFY04/05 average.	The amount of paper recycled increased by 13.4%. In FY 2003 a new paper recycling process was investigated. The process was piloted in FY 2004. As a result paper recycling has more than doubled since FY 2003.	Retire target
	By October 1, 2010 decrease the amount of copy paper purchased by 5% from the FY05/06 average.		Evaluate the types of copy paper being purchased and work with Procurement to block inappropriate items.
	By the end of FY07 increase the number of recycling waste streams from 21 to 25.	SNL/NM and SNL/CA Pollution Prevention staff worked together to prepare a PPOA that evaluatee the location and need for a Recycling Center.	PPOA expected to be completed by May 2007. Recommendations stated in PPOA for Recycling Center will be evaluated and presented to management.
Minimize site electrical and natural gas consumption.	Achieve a 10% reduction in overall energy consumption in 2006 with respect to a 2004 baseline.	Perform public/sitewide outreach to encourage reduction of electric and natural gas use	Retire target
	Reduce energy used per square foot of building by 2% per year beginning in FY 2006 through FY 2015 with respect to a FY 2003 baseline		Perform public/site-wide outreach to encourage reduction of electric and natural gas use

Appendix A Recycle/Reuse Waste Streams

The following waste streams are sent offsite for recycle, minimizing hazardous waste generation and waste sent to the local landfill and increasing many environmental benefits. It supports local recycling programs by creating markets for the collected materials that are processed and used to manufacture new products. It creates jobs and helps strengthen the economy, conserves natural resources; saves energy; and reduces solid waste, air and water pollutants, and greenhouse gases that contribute to global warming.

Waste stream	Disposition	FY2006-mt
Aluminum cans	Recycle	0.62
Asphalt/concrete	Recycle	1512.02
Batteries	Recycle	3.38
Cardboard	Recycle	19.91
Carpet tiles	Recycle	0
Ceiling tiles	Recycle	2.06
CFC's	Recycle	0
Coolant	Recycle	0
Electronic waste	Recycle	14.6
Empty 55-gal drums	Recycle	0
Empty containers	Recycle	0.74
Fire extinguishers	Recycle	0
Fluorescent light tubes	Recycle	2.78
Gas cylinders	Recycle	0.28
Glass beverages	Recycle	0.4
Green waste	Composted	51.21
Lead	Recycle	2.19
Mercury-contaminated items	Recycle	0.03
Oil	Recycle	1.99
Oil filters	Recycle	0.28
Paper	Recycle	63.53
Pipette boxes	Recycle	0.03
Plastic beverage containers	Recycle	0.3
Precious metals	Recycle	0.01
Resin bottles	Recharged	2.75
Scrap metal	Recycle	136.9
Tires	Recycle	0.08
Toner cartridges	Remanufactured	1.74
Wallboard	Recycle	0
Wood	Recycle	20.23

Appendix B Current Program Staff Assignments

Pollution Prevention Program Assignments

Job Assignment	Personnel	Back-Up
Pollution Prevention Program Lead	Janet Harris	Laurie Farren
Pollution Prevention Project Lead	Laurie Farren	Janet Harris
Pollution Prevention Laborer	Doug Garceau	None
Waste Management Technician-CRTs and Electronic Devices	Robert Oteri	None
Communications Technologist-cell phones	Marcia Jacobs	None
Facilities Technologist-light tubes	Carlise Smith	None
Reapplication-CRTs and electronic devices	Harold Hernandez	None

Appendix C Pollution Prevention Program Risk Assessment

Pollution Prevention/Waste Minimization Program Risk Assessment (Feb 2007)

The risk assessment process for the Pollution Prevention/Waste Minimization Program follows the general steps of

1. Identify the risk
2. Identify the probability of the event occurring
3. Identify the consequence if the event occurs.

The following tables will be used to assign a numeric value to the probabilities and consequence categories.

Likelihood/Probability Of Occurrence Level	Likelihood/Probability Criteria
Very High	• Everything points to this occurring
High	*• High chance • Lack of relevant processes or experience contribute to a high chance of occurrence*
Medium	*• Even chance*
Low	*• Not much of a chance*
Negligible	• Negligible chance this will occur

CONSEQUENCE/ SEVERITY LEVEL	CONSEQUENCE/SEVERITY CRITERIA
High	*• Damage (e.g., ozone depletion, rad soil contamination) • Serious environmental impact resulting in recovery actions lasting 5 years or more (e.g., TCE in aquifer) • Results in General Emergency (affects both onsite and offsite) • Unsatisfactory rating by external regulators or cease and desist order • Affects lab leadership, including prime contract • Actions, inactions or events that pose the most serious threats to national security interests and/or critical DOE assets, create serious security situations, or could result in deaths in the workforce or general public (i.e., IMI-1) † • Actions, inactions or events that pose threats to national security interests and/or critical DOE assets or that potentially create dangerous situations (i.e., IMI-2) † • Unallowable costs or fines >$1M • Adverse public opinion – high interest/widespread open public attention or debate (lasting weeks to months) • Customer dissatisfaction results in permanent loss of lab customer • Catastrophic failure to meet internal requirements* • Loss of major program within the division (>$10M)
Medium	*• Has the potential for adverse impact on Sandia's programmatic performance or the achievement of corporate strategic or operational objectives • Significant injury/illness -fully recoverable with a long recovery time • Significant environmental impact resulting in recovery actions lasting up to 5 years (e.g., major oil spill) • Results in Site/Area Emergency (affects multiple onsite facilities) • One of regulator "hot buttons" (e.g., NNSA, NMED) • Results in increased oversight of limited number of functions • Actions, inactions, or events that pose threats to DOE security interests or that potentially degrade the overall effectiveness of DOE's safeguards and security protection program (i.e., IMI-3) † • Unallowable costs or fines >$500K and <$1M • Adverse public opinion – moderate interest, limited PR problems of short duration (days) • Customer dissatisfaction results in partial loss of program • Significant failure to meet internal requirements* • Loss of program within division (>$1M)
Low	*• Minimal injury/illness – Fully recoverable with a short recovery time • Minimal environmental impact that can be improved within days • Results in increased short-term oversight • Results in an Operational Emergency (affects a single onsite facility) • Actions, inactions, or events that could pose threats to DOE by adversely impacting the ability of organizations to protect DOE safeguards and security interests (i.e., IMI-4) † • Unallowable costs or fines <$500K • Adverse public opinion with short-term local negative publicity or embarrassment*
Negligible	• Little or no attention, might be discussed as lesson learned

The risk level will be graded according to the following matrix. Adapted from DOE O 471.4.

RISK GRADING LEVELS					
		Consequence/Severity			
		Negligible	***Low***	***Medium***	***High***
Likelihood of Occurrence	***Very High***	*Low*	*Medium*	*High*	*High*
	High	*Low*	*Medium*	*High*	*High*
	Medium	*Low*	*Medium*	*Medium*	*High*
	Low	*Low*	*Low*	*Low*	*Medium*
	Negligible	*Low*	*Low*	*Low*	*Low*

Risks Associated with the Pollution Prevention/Waste Minimization Program

1. Release of Contaminated Container or Equipment

a. Identification of Risk

SNL/CA sends empty chemical containers off-site for recycling. Used equipment may also be reapplied or recycled. There is a chance that a chemical container could be recycled before it is empty, or that equipment contaminated with a chemical or radioactivity could be inadvertently sent off-site.

b. Probability of Occurrence

In the past, there has been at least one incident of radioactive material inadvertently being sent to the landfill.

Given the number of containers and the amount of equipment sent off-site, it is considered High that a contaminated container or piece of equipment will be sent off-site at some point during the life of the facility.

c. Consequence of Occurrence

Contact with a contaminated container or piece of equipment could result in minor injury to personnel handling such items. Minor cleanup of the receiving facility could also be a cost imposed on SNL/CA. SNL/CA could also lose its privileges to dispose of waste at the local landfill. The consequence is considered Low.

d. Overall Risk Category

In accordance with the chart above for a risk with a probability of High and a consequence of Low, the risk category is **Medium.**

2. Reduction in Program Funding by 10%

a. Identification of Risk

SNL/ CA is experiencing pressure to reduce expenses for direct-funded organizations, including Environmental Management. Because the majority of Pollution Prevention expenditures are labor and recycling programs, a 10% reduction in funding would impact staffing and recycling programs onsite.

b. Probability of Occurrence

Increasing constraints on site budgets is expected to continue for the next several years. Consequently, the probability that funding for the Pollution Prevention Program will decrease by 10% from FY 2007 levels is Medium.

c. Consequence of Occurrence

A 10% reduction in program funding would result in the cancellation of the recycling contracts paid for by the Pollution Prevention budget. These contracts include Shred-It and the Lamp Recycling (AERC). Purchases for recycling containers would be eliminated. The Pollution Prevention Laborer's hours would be reduced by 60%. This would result in the collection of recycling waste streams such as paper, beverage containers, cardboard, wood pallets to be significantly reduced and disposed of as solid waste. The reduction in recycling would result in SNL/CA not meeting the goals of the DOE Order 450.1 and the Executive Order 13423 "Strengthening Federal Environmental, Energy and Transportation Management" which could impact the award fee for Lockheed Martin. Only those programs activities that are required by regulation such as Universal Waste would be conducted. Discretionary training and travel would be eliminated. The consequence is considered Low.

d. Overall Risk Category

In accordance with the chart above for a risk with a probability of Medium and a consequence of Low, the risk category is **Medium.**

Appendix D Program Self Assessment Documents Review

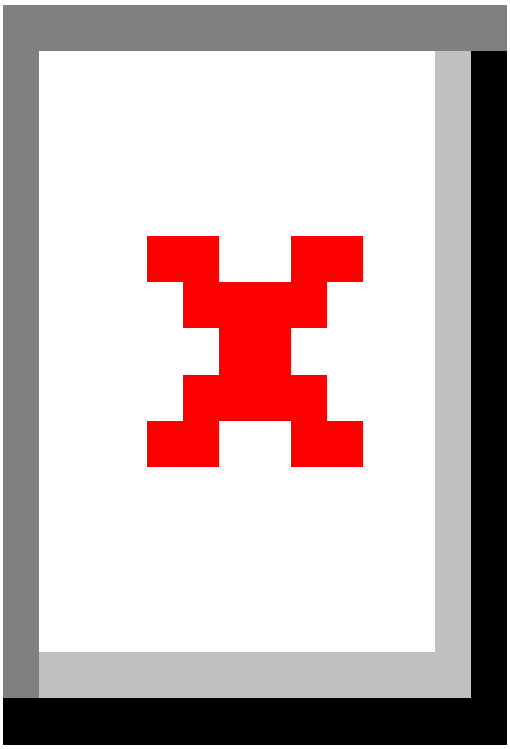
Annual Program Assessment
Program Management

Organization: 8516 **Program: Pollution Prevention**

Date: 12/13/06 **Signature:**
Program Co-Leads

Document Type	Document Title	Review Complete / Date	Changes Made	Comments
Operating Procedures	OP for Recycling Activities needs to be written.	☒ 12/13/06	☐ Yes ☐ No	OP should be completed 2/07
PHS	Pollution Prevention/Waste Minimization Program Activities (SNL06A00127-001)	☒ 3/09/06	☐ Yes ☒ No	
Other Program Documents	Waste Minimization Certification	☒ 2//28/06	☒ Yes ☐ No	
	Annual Waste Generation and Pollution Prevention Progress Report:	☒ 11/30/06	☒ Yes ☐ No	
	Affirmative Procurement Report	☒ 11/30/06	☒ Yes ☐ No	
	Source Reduction and Evaluation Review and Plan (SB-14)	☒ 12/13/06	☐ Yes ☒ No	Reviewed 2003 SB 14 report. Contacted Karin King, LSO/DOE for information regarding coordination of report due Sept 2007
	Annual Pollution Prevention/Waste Minimization Program Report	☒ 5/3/06	☒ Yes ☐ No	
	SNL Pollution Prevention Program Plan	☒ 9/29/06	☒ Yes ☐ No	
Web Pages	General Web Page	☒ 12/13/06	☐ Yes ☒ No	Reviewed web page updates pending
	Program Web Pages	☒ 12/13/06	☐ Yes ☒ No	Reviewed web page updates pending
	Program Metrics	☒ 12/13/06	☐ Yes ☒ No	Reviewed web page updates pending

Appendix E Environmental Programs Assessment Report



Environmental Programs Assessment Report

Pollution Prevention Program
Electronic Waste Recycling Program

February 2, 2007

Submitted by:

_____ _____
Janet Harris, Co-Lead Assessor Date
Pollution Prevention Co-Program Lead

Submitted by:

_____ _____
Laurie Farren, Co-Lead Assessor Date
Pollution Prevention Co-Program Lead

Approved by:

_____ _____
Gary Shamber, Manager Date
Environmental Management Department

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- *Ed Cull, Level II Manager, 8510*
- *Pat Smith, Director, 8500*
- *ES&H Records Center*

Summary of Results

This assessment examined how SNL/CA manages its cathode ray tubes (CRTs) and electronic waste. It also evaluates whether the process is in compliance with the federal, state and local regulations and DOE guidance.

The assessment found that surplus CRTs at SNL/CA are being managed as a property asset that is transferred to Lawrence Livermore National Laboratory (LLNL) Reclamation rather than being managed as universal waste electronic devices. Once LLNL takes possession of these assets they are normally included in an auction to be sold to vendors who sell, refurbish or recycle CRTs.

It became apparent during the assessment that the description of surplus equipment as asset transfers was an inaccurate determination. As a result CRTs have not been managed according to the state regulations specifically labeling requirements and training.

The assessment also concluded that SNL/CA had incorrectly defined electronic waste therefore, managing it incorrectly. Per Title 22 CCR Chapter 23 electronic waste is defined as a universal waste electronic devices (UWED) requiring labeling, employee training, notification and reporting. UWED is defined in Title 22 CCR Chapter 23 as computers, computer peripherals, telephones, answering machines, radios, stereo equipment, tape players/recorders, phonographs, video cassette players/recorders, compact disc players/recorders, calculators and some appliances.

It was determined UWEDs containing sensitive information are sanitized in accordance with OPSEC requirements. The sanitization includes removal of any recordable media and other components as needed. After removal, the components such as hard drives, recordable media, etc. are transferred offsite to be destroyed. This destruction is observed and filmed by SNL/CA to ensure security protocols are satisfied. The remaining dismantled equipment is placed into a scrap bin and transferred to LLNL as scrap metal, a commodity.

The assessment also discovered that UWEDs are being placed in scrap metal bins throughout the site and therefore not being managing correctly specifically labeling requirements and training. In addition, the assessment found cell phones and accessories should be sent back to the supplier to be recycled. However, OPSEC requirements concerning call logs and address book information left on the cell phones has resulted in the equipment being collected and stored by

Department 8949, Communication and Network Department. The batteries are being removed from the cellular equipment and managed correctly as hazardous waste. The cell phones are being collected until a decision is made regarding the security concern.

The results of the assessment indicate the management of CRTs and UWEDs at SNL/CA needs to be modified to be in compliance.

Assessment Result Details

1. **Scope**
    a. The 2006 self-assessment of the Pollution Prevention/Waste Minimization Program focused on determining if the current method SNL/CA is using to manage their electronic waste is in compliance with federal, state and local regulations and DOE guidance. The assessment helped the P2 program to better understand the recycling of electronic waste onsite. The audit included all electronic devices such as CRTS, computers, cell phones, printers, copiers, etc. The audit reviewed federal, state, and DOE documents. The only local document was the Memorandum of Understanding (MOU) between LLNL and SNL/CA regarding transfer of property assets. A copy of the MOU was still in signature chain at LLNL and not available for review.
    b. The organizations assessed included 8516, 8523, 8949, and LLNL Reclamation.
    c. The 8516 Pollution Prevention Program documents and web page were also reviewed during the assessment.
2. **Methodology**

    The methods used during this assessment, regulation review and personnel interviews.

    1. Regulation review for compliance with electronic waste regulations.
    2. Interviews were conducted with SNL/CA Environmental Regulation Specialist; SNL/CA Property Management and Reapplication; LLNL Donation, Utilization and Sales Group; and the state of California Department of Toxic Substances Control.
    3. A self-assessment of the Pollution Prevention Program documentation required by Federal, State, and DOE regulations was conducted. The completed Program Document Review checklist is in Appendix 3.

3. **Items in Compliance**

   The state regulations require that CRTs and UWEDs only be accumulated onsite for one year. The assessment found SNL/CA routinely transfers CRTs and scrap metal to LLNL.

4. **Strengths**
   a. SNL/CA has a working Pollution Prevention program works with the site in particular Waste Management, Property Management, Reapplication, and Maintenance to recycle numerous waste streams. The Pollution Prevention webpage provides information on how to recycle these waste streams.
   b. SNL/CA has a working Property Management and Reapplication program. The program is site wide and includes a wide variety of equipment collected for reuse and recycle.
   c. SNL/CA is a small site and partners with LLNL to efficiently dispose and recycle unneeded material and equipment.

5. **Observations/Recommendations**

   Observation Number: 001

   The SNL/CA-owned cell phones and accessories are being collected and stored by Department 8949, Communication and Network Department instead of being sent back to the supplier to be recycled. This is the result of OPSEC requirements concerning call logs and address book information left on the equipment. Cell phones are included in the definition of UWEDs, which can only be stored onsite for one year. In addition during storage UWEDs must be labeled correctly and employees who manage them trained. The storage of unwanted cell phones could be interpreted as storing discarded materials, which meet the definition of UWEDs.

   Recommendations:

   1. Host a meeting with Security and 8949 to discuss disposition options for cell phones.
   2. Establish a storage area
   3. Label storage area
   4. Label container used to store “used cell phones” with “Universal Waste Electronic Devices” and date first “used cell phone” was placed into it
   5. Develop a monitoring system to track date to ensure “used cell phones” are onsite less than one year.
   6. Provide training to personnel who is managing “used cell phones”
   7. Prepare an AOP to describe how Universal Waste is managed, include cell phones and require a signature from 8949 Manager.

6. **Findings**

Finding Number: 001

Requirement: Title 22 California Code of Regulations (CCR) section 66261.2 (b) defines a waste as a discarded material which is recycled or accumulated, stored or treated before recycling. Section 66273.82 requires a CRT Material Handler (defined as a site that manages more than 5000 kgs of CRTs) to notify and report to DTSC.

Condition as Noted: SNL/CA did not consider surplus CRTs as a universal waste; instead have treated them as a surplus asset. However, SNL/CA did notify the state in March 2006 that SNL/CA is a CRT Material Handler. An annual report was filed in 2007 for calendar year 2006.

Recommendation:

1. SNL/CA will manage CRTs as a universal waste.
2. SNL/CA will update the notification documentation to the state of California – EPA, Department of Toxic Substances Control that SNL/CA is a CRT Material Handler.
3. SNL/CA will submit an annual report to DTSC on the management of CRTs onsite.

Finding Number: 002

Requirement: Title 22 California Code of Regulations (CCR) section 66273.82 -66273.86 requires a CRT Material Handler (defined as a site that manages more than 5000 kgs of CRTs) to manage their CRTs as universal waste specifically labeling requirements and employee training.

Condition as Noted: SNL/CA is not in compliance with the CRT regulations specifically labeling and employee training.

Recommendations:

1. Host a meeting with Logistics and Procurement and 8516 to discuss changes in management of Universal Waste CRTs.
2. Label storage area
3. Label container used to store “CRTs” with “Universal Waste CRTs” and date first “used CRT” was placed into it
4. Develop a monitoring system to track date to ensure “used CRTs” are onsite less than one year.
5. Provide training to personnel who manage “used CRTs”
6. Prepare an AOP to describe how Universal Waste is managed, include CRTs and require a signature from 8523 Manager.

Finding Number: 003

Requirement: Title 22 California Code of Regulations (CCR) section 66273.30-66273.37 requires a generator of UWEDs who manually dismantles the UWEDs to manage them as universal waste. The requirements include notification to DTSC, labeling, accumulation storage limits, employee training and a report to DTSC.

Condition as Noted: SNL/CA did not consider the dismantled electronic equipment as a universal waste instead considered them as a scrap metal which was a recyclable commodity. As a result of the incorrect definition SNL/CA is not in compliance with the UWEDs regulations.

Recommendation:

1. SNL/CA will manage UWEDs as a universal waste.
2. SNL/CA will submit the notification documentation to the state of California – EPA, Department of Toxic Substances Control that SNL/CA is a UWED Recycler.
3. SNL/CA will submit an annual report to DTSC on the management of UWEDs onsite.
4. Host a meeting with Logistics and Procurement and 8516 to discuss management of UWEDs.
5. Label storage area
6. Label container used to store "UWEDs" with "Universal Waste UWEDs" and date first "used UWED" was placed into it
7. Develop a monitoring system to track date to ensure "used UWEDs" are onsite less than one year.
8. Provide training to personnel who manage "used UWEDs". Provide training to site about how to properly dispose of used UWEDs in order to be correctly recycled onsite.
9. Prepare an AOP to describe how Universal Waste is managed, include UWEDs and require a signature from 8523 Manager.

7. **Personnel Interviewed**

Steve Costa, SNL/CA
Wendy Dolstra, SNL/CA
Leighton Ford, SNL/CA
Harold Hernandez, SNL/CA
Marcia Jacobs, SNL/CA
Robert Sullivan, DTSC
Al Olsen, LLNL
Ralph Lopez, LLNL
John Buchanan, LLNL
Stan Terusaki, LLNL

Appendices

1. **Assessment Team**
   Janet Harris, 08516
   Laurie Farren, 08516

2. **Assessment Schedule**
   Nov 30, 2006 -Jan 12, 2007 Review the federal, state, and local regulations, DOE Orders, and SNL requirements
   Jan 2-12, 2007 Investigate how SNL/CA manages the different electronic waste streams.
   Jan 15-26, 2007 Conduct an evaluation of SNL/CA management practices against the requirements and determine what modifications need to be incorporated.
   Jan 29-Feb 2, 2007 Prepare and finalize report.

Appendix 3: Program Document Review

Annual Program Assessment
Program Management

Organization: 8516 **Program: Pollution Prevention**

Date: 12/13/06 **Signature:** _____
Program Co-Leads

Document Type	Document Title	Review Complete / Date	Changes Made	Comments
Operating Procedures	OP for Recycling Activities needs to be written.	☒ 12/13/06	☐ Yes ☐ No	OP should be completed 2/07
PHS	Pollution Prevention/Waste Minimization Program Activities (SNL06A00127-001)	☒ 3/09/06	☐ Yes ☒ No	
Other Program Documents	Waste Minimization Certification	☒ 2//28/06	☒ Yes ☐ No	
	Annual Waste Generation and Pollution Prevention Progress Report:	☒ 11/30/06	☒ Yes ☐ No	
	Affirmative Procurement Report	☒ 11/30/06	☒ Yes ☐ No	
	Source Reduction and Evaluation Review and Plan (SB-14)	☒ 12/13/06	☐ Yes ☒ No	Reviewed 2003 SB 14 report. Contacted Karin King, LSO/DOE for information regarding coordination of report due Sept 2007
	Annual Pollution Prevention/Waste Minimization Program Report	☒ 5/3/06	☒ Yes ☐ No	
	SNL Pollution Prevention Program Plan	☒ 9/29/06	☒ Yes ☐ No	
Web Pages	General Web Page	☒ 12/13/06	☐ Yes ☒ No	Reviewed web page updates pending
	Program Web Pages	☒ 12/13/06	☐ Yes ☒ No	Reviewed web page updates pending
	Program Metrics	☒ 12/13/06	☐ Yes ☒ No	Reviewed web page updates pending